

# LG

Single Free Combination

Cooling only

MFL67986344

# TOTAL HVAC SOLUTION PROVIDER

ENGINEERING PRODUCT DATA BOOK

Single Free Combination  
General Information

**Model Line Up**

1. Model Line Up

Product	Phase	Chassis	Capacity Index	Model Name	Combination Indoor Unit
			kW		
Free Combination	1	U12A	3.5	ZUUQ12GA0 [ZUAA1]	ZBNQ09GL1A0 [ZBNQ09GL1A0]
					ZTNQ18GPLE0 [ZTNQ18GPLE0]
					ZBNQ12GL2A0 [ZBNQ12GL2A0]
					ZTNQ12GULA0 [ZTNQ12GULA0]
		U18A	5.3	ZUUQ18GA0 [ZUAB1]	ZBNQ18GL2A0 [ZBNQ18GL2A0]
					ZTNQ18GPLA0 [ZTNQ18GPLA0]
					ZTNQ24GNLE0 [ZTNQ24GNLE0]
					ZBNQ18GM1A0 [ZBNQ18GM1A0]
		U24A	7	ZUUQ24GA0 [ZUAC1]	ZTNQ18GTLA0 [ZTNQ18GTLA0]
					ZBNQ24GM1A0 [ZBNQ24GM1A0]
					ZPNQ24GS1A0 [ZPNQ24GS1A0]
					ZTNQ24GTLA0 [ZTNQ24GTLA0]
	ZTNQ36GNLE0 [ZTNQ36GNLE0]				
	ZTNQ30GNLE0 [ZTNQ30GNLE0]				
	ZTNQ24GPLA0 [ZTNQ24GPLA0]				
	ZBNQ24GL3A0 [ZBNQ24GL3A0]				
	ZPNQ36GT3E0 [ZPNQ36GT3E0]				
	ZPNQ30GR5E0 [ZPNQ30GR5E0]				
	U36A	10.6	ZUUQ36GA0 [ZUAD1]	ZTNQ36GYLA0 [ZTNQ36GYLA0]	
				ZBNQ48GM3A0 [ZBNQ48GM3A0]	
				ZTNQ48GMLA0 [ZTNQ48GMLA0]	
				ZBNQ36GM3A0 [ZBNQ36GM3A0]	
				ZTNQ36GNLA0 [ZTNQ36GNLA0]	
				ZPNQ48GT3A0 [ZPNQ48GT3A0]	
				ZTNQ48GYLA0 [ZTNQ48GYLA0]	
				ZPNQ36GR5A0 [ZPNQ36GR5A0]	
	3	ZUUQ36LA0 [ZUAD3]	ZTNQ36LNLA0 [ZTNQ36LNLA0]		
ZPNQ48LT3A0 [ZPNQ48LT3A0]					
ZTNQ48LMLA0 [ZTNQ48LMLA0]					
ZBNQ36LM3A0 [ZBNQ36LM3A0]					
ZBNQ48LM3A0 [ZBNQ48LM3A0]					
ZPNQ36LR5A0 [ZPNQ36LR5A0]					

\* The capacity index may differ from actual capacity values.

**Single Free Combination  
Product Data**

## 1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

## 1.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	2.64
		Btu/h	9000
	Min ~ Max	kW	1.25 ~ 3.19
		Btu/h	4260 ~ 10900
	Sensible Heat (Rated)	kW	2.218
		Btu/h	7560
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 0.75 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.52
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 3.41 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	0.63
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	15
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	47 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	9.1
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	6.5
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U12A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	28 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DST102MAA x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	900 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	280 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 22 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.31
Dimensions	Net(W x H x D)	mm	717 x 483 x 230
	Shipping(W x H x D)	mm	842 x 530 x 322
Weight	Net	kg	24.2
	Shipping	kg	25.8
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.75
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]****1.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

## 1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

### 1.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

#### Note

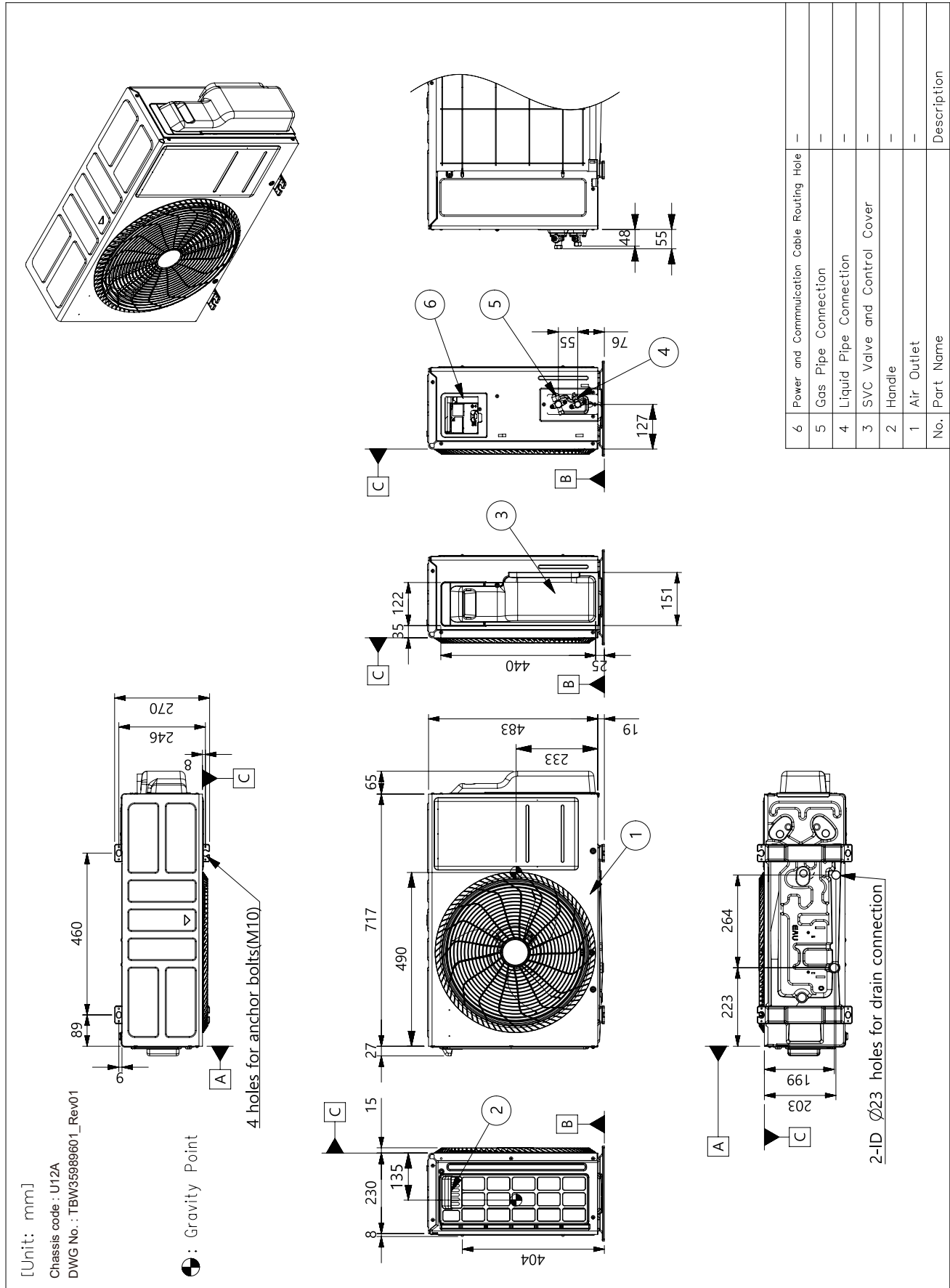
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

1.4 Dimensions

1.4.1 Product



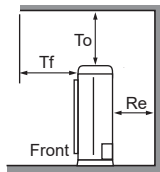
# 1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

## 1.4.2 Install Space

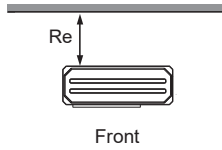
For Side Discharge (capacity < 28.0 kW)

### Obstacle on the Suction side

[Unit : mm(inch)]

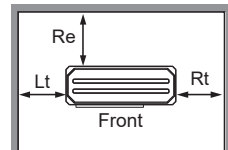


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

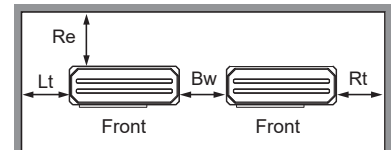


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



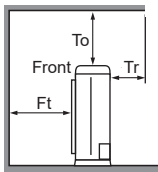
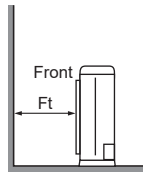
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



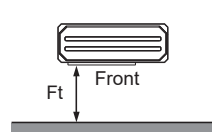
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

### Obstacle on the Discharge side

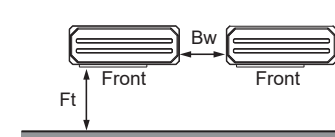
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

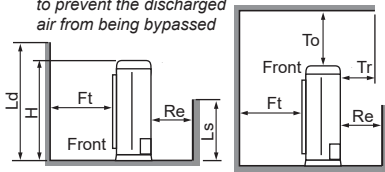


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

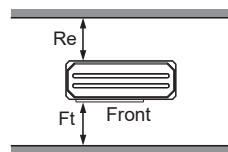
### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

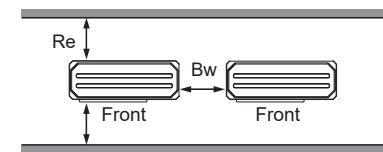
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

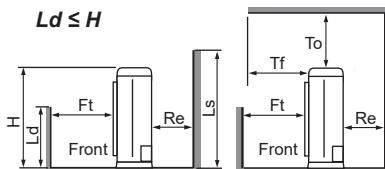


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



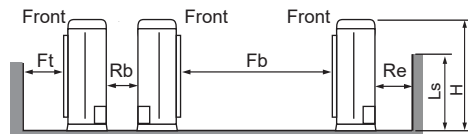
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

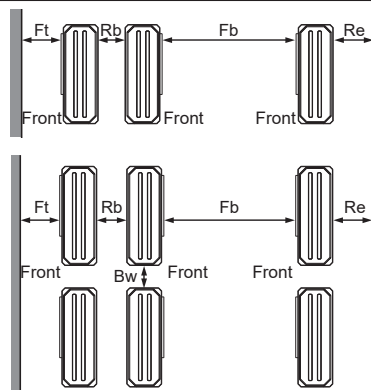
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

### Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



#### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

#### Multiple Columns

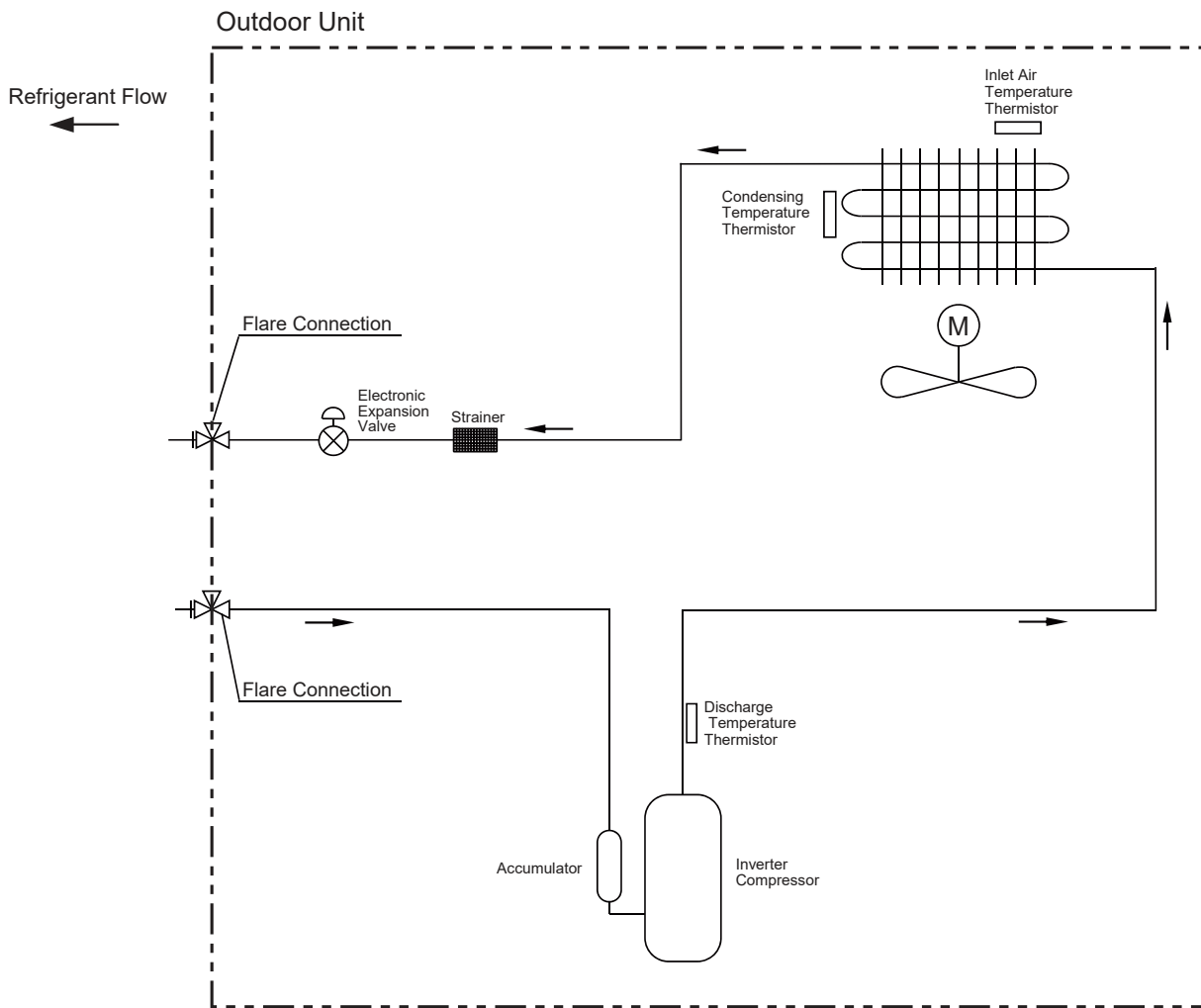
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

#### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

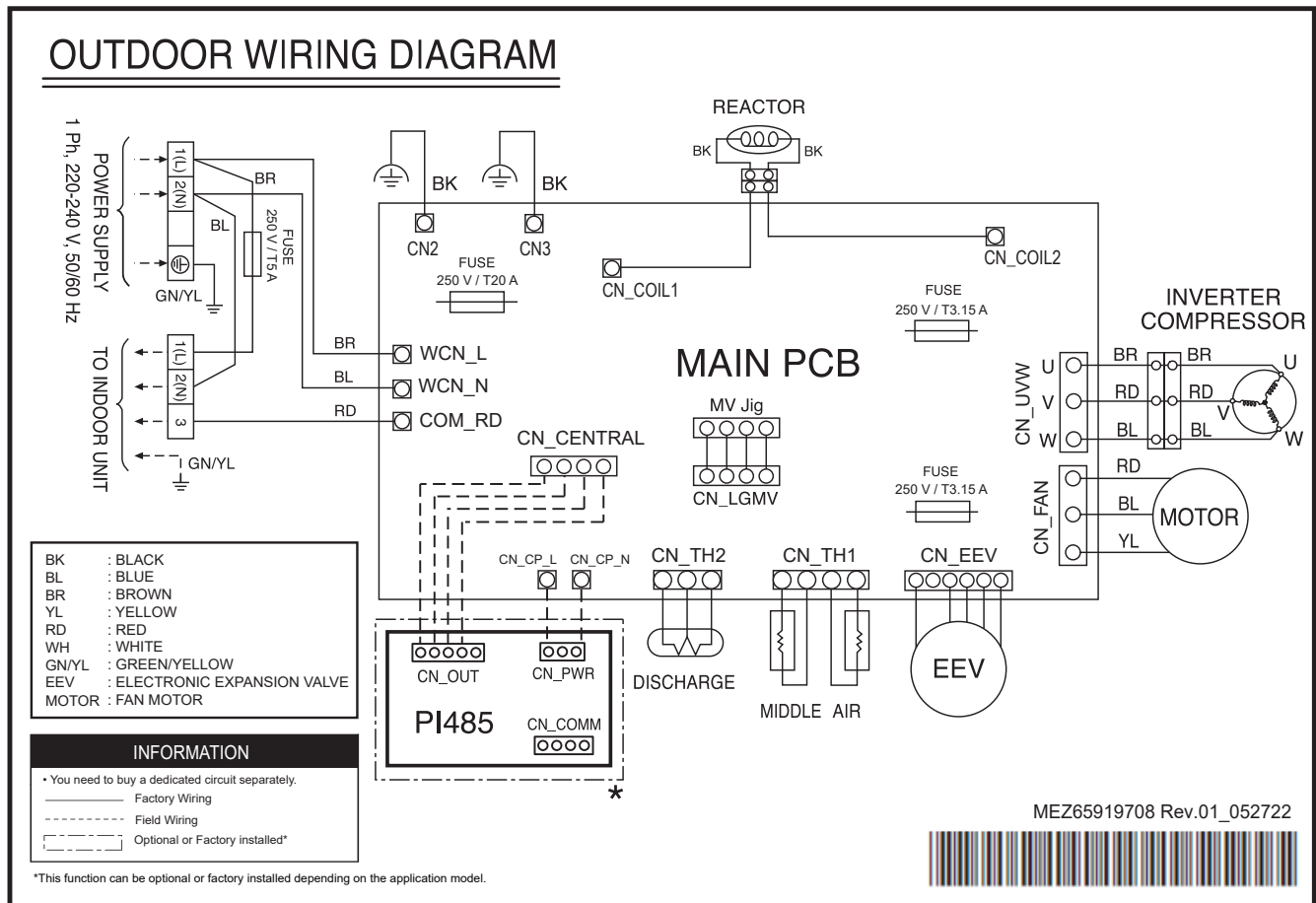
1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

1.5 Piping Diagrams



1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

1.6 Wiring Diagrams



**1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]****1.7 Capacity Tables****1.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	1.55	1.49	0.31	2.02	1.78	0.38	2.37	2.07	0.44	2.64	2.22	0.49	2.73	2.21	0.49	2.91	2.18	0.50	3.11	2.15	0.50
25	1.55	1.49	0.36	2.02	1.78	0.45	2.37	2.07	0.52	2.64	2.22	0.57	2.73	2.21	0.58	2.91	2.18	0.59	3.11	2.15	0.60
32	1.55	1.49	0.44	2.02	1.78	0.55	2.37	2.07	0.64	2.64	2.22	0.70	2.73	2.21	0.71	2.91	2.18	0.72	3.11	2.15	0.72
35	1.55	1.49	0.47	2.02	1.78	0.59	2.37	2.07	0.68	2.64	2.22	0.75	2.73	2.21	0.76	2.91	2.18	0.77	3.11	2.15	0.78
40	1.55	1.49	0.50	2.02	1.78	0.63	2.37	2.07	0.72	2.64	2.22	0.79	2.73	2.21	0.80	2.91	2.18	0.82	3.11	2.15	0.82
43	1.55	1.49	0.51	2.02	1.78	0.65	2.37	2.07	0.75	2.64	2.22	0.82	2.73	2.21	0.83	2.91	2.18	0.85	3.11	2.15	0.85
46	1.55	1.49	0.53	2.02	1.78	0.67	2.37	2.07	0.77	2.64	2.22	0.85	2.73	2.21	0.86	2.91	2.18	0.87	3.11	2.15	0.88
48	1.55	1.49	0.55	2.02	1.78	0.69	2.37	2.07	0.80	2.53	2.15	0.82	2.60	2.12	0.83	2.75	2.07	0.84	2.91	2.02	0.85
50	1.55	1.49	0.57	2.02	1.78	0.71	2.37	2.07	0.77	2.43	2.07	0.79	2.48	2.03	0.80	2.59	1.96	0.81	2.71	1.89	0.82

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]****1.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

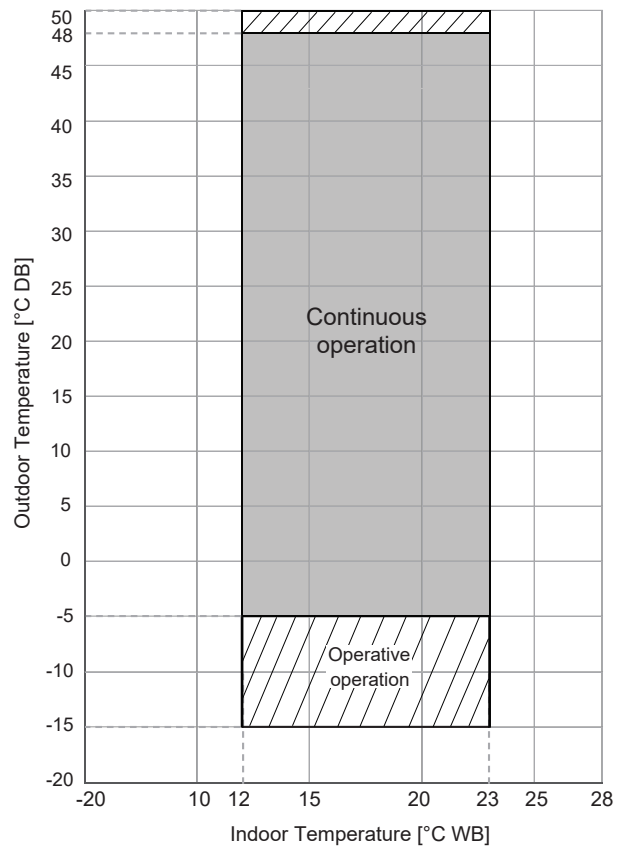
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

1.9 Operation Limits

1.9.1 Cooling



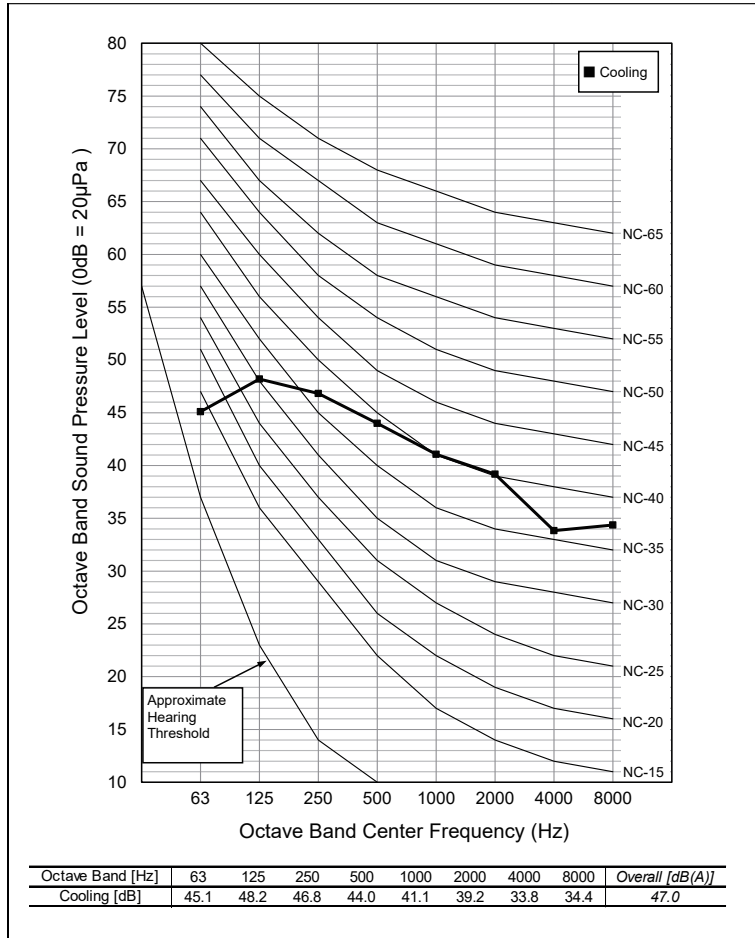
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

1. ZUUQ12GA0 [ZUAA1] + ZBNQ09GL1A0 [ZBNQ09GL1A0]

1.10 Sound Levels

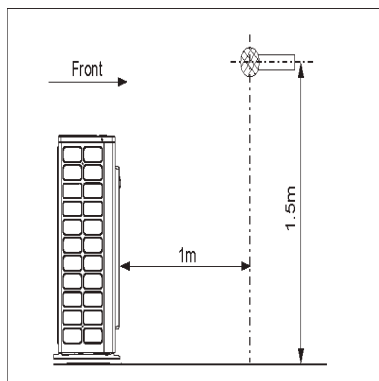
1.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	47 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

## 2.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	5.13
		Btu/h	17500
	Min ~ Max	kW	1.58 ~ 5.42
		Btu/h	5400 ~ 18500
	Sensible Heat (Rated)	kW	4.72
		Btu/h	16100
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 1.75 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	2.93
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 7.95 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.0
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	15
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	47 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	9.0
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	6.5
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U12A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	28 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DST102MAA x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	900 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	280 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 22 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.31
Dimensions	Net(W x H x D)	mm	717 x 483 x 230
	Shipping(W x H x D)	mm	842 x 530 x 322
Weight	Net	kg	24.2
	Shipping	kg	25.8
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.75
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]****2.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]****2.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

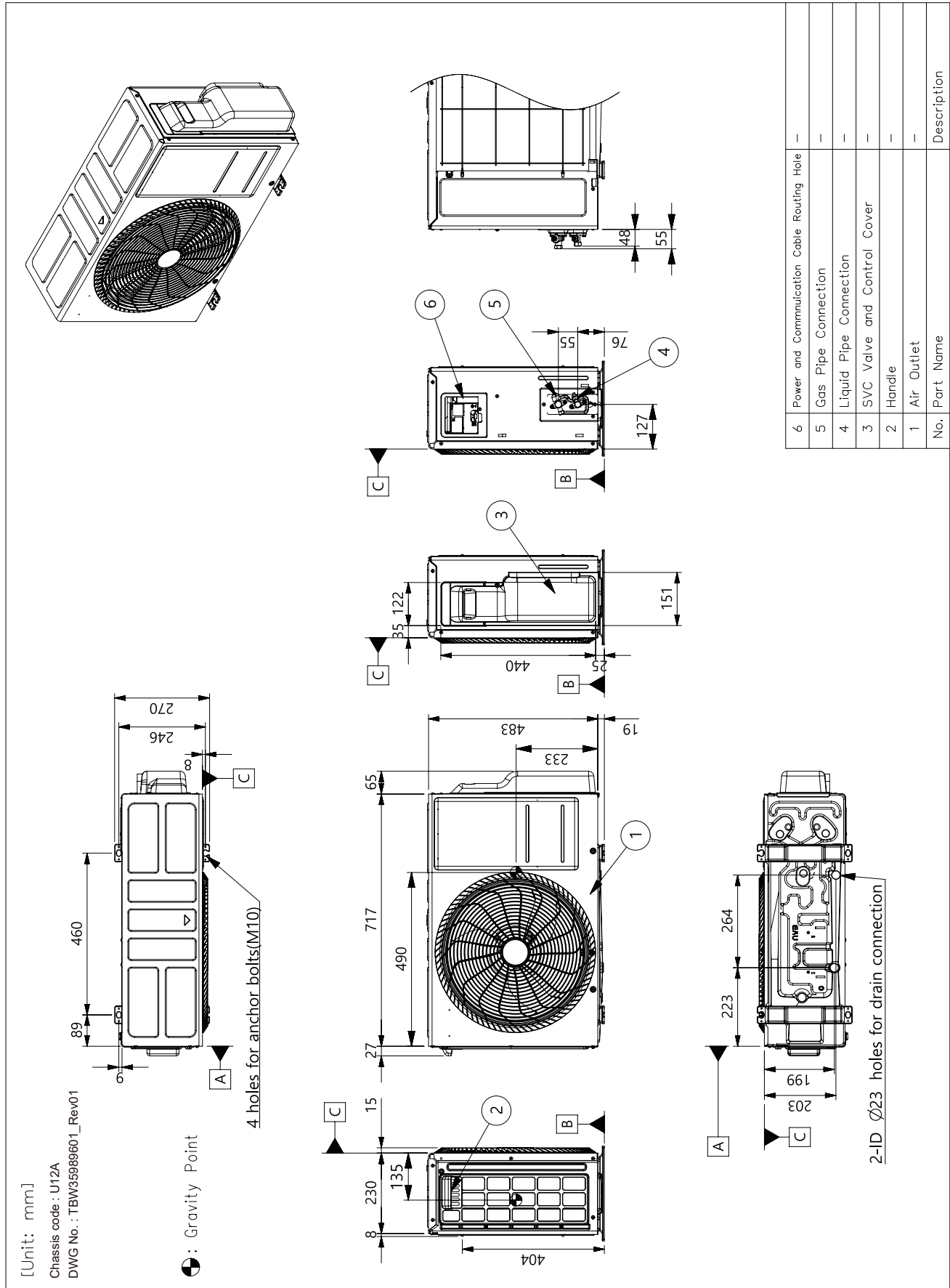
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

2.4 Dimensions

2.4.1 Product

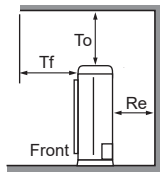


2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

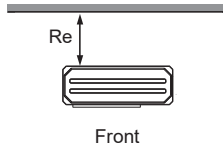
2.4.2 Install Space

For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

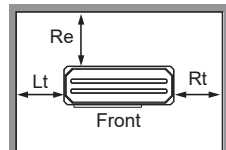


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

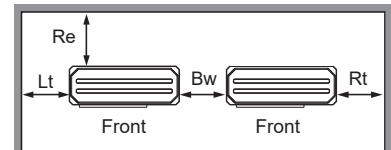


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)

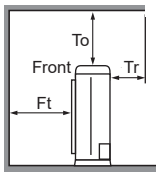
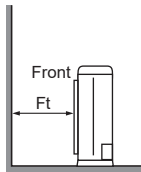


**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

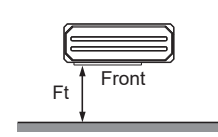
[Unit : mm(inch)]

Obstacle on the Discharge side

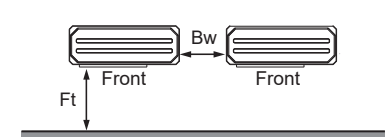
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

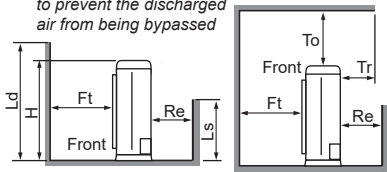


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

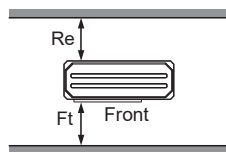
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

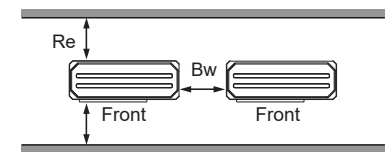
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

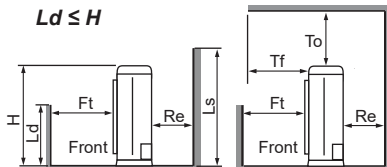


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



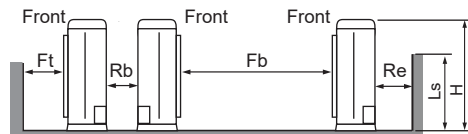
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

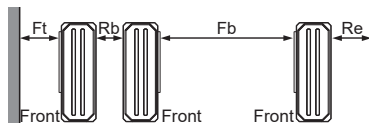
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

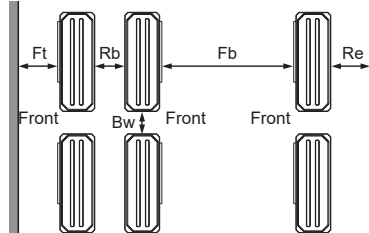


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

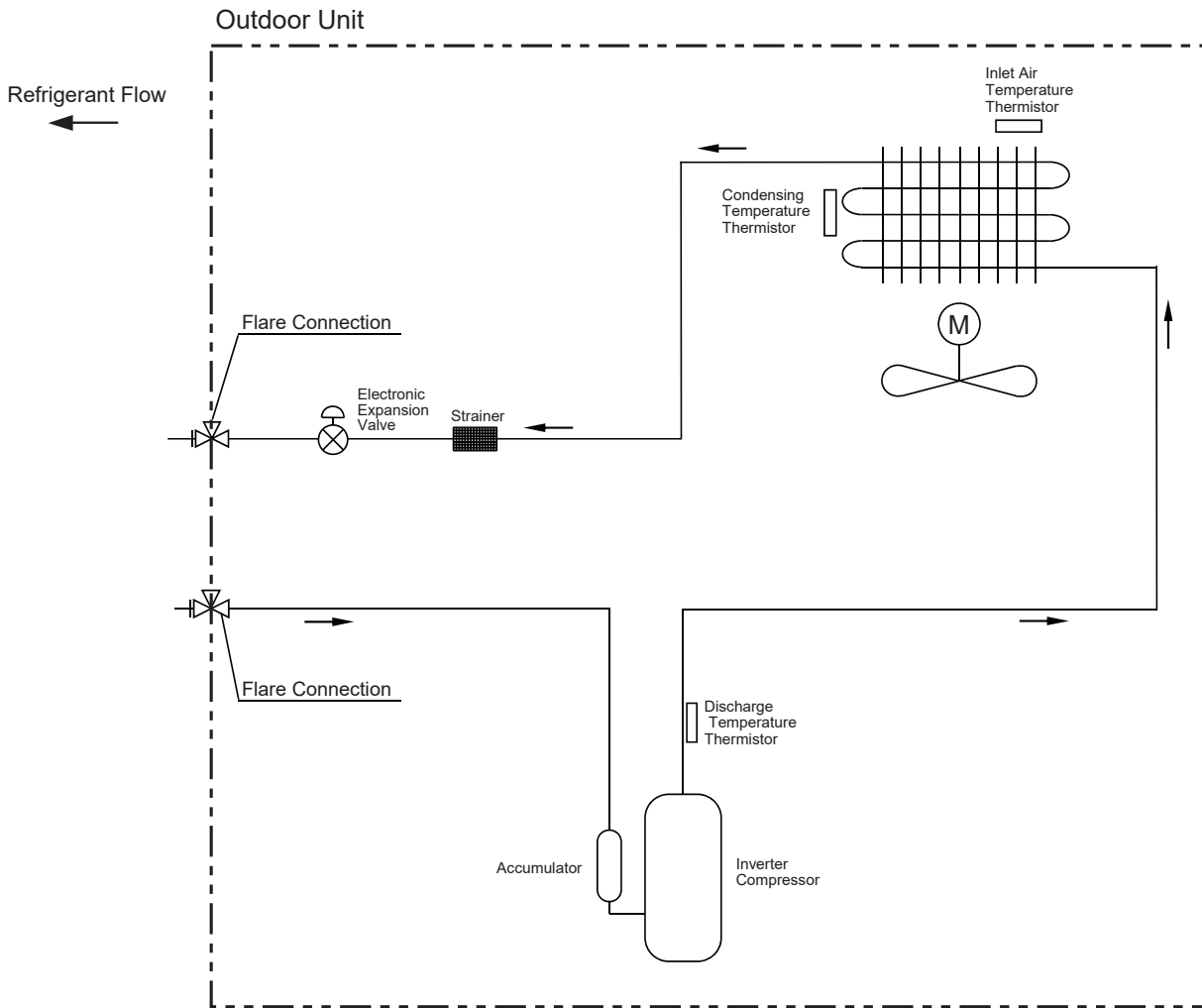
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

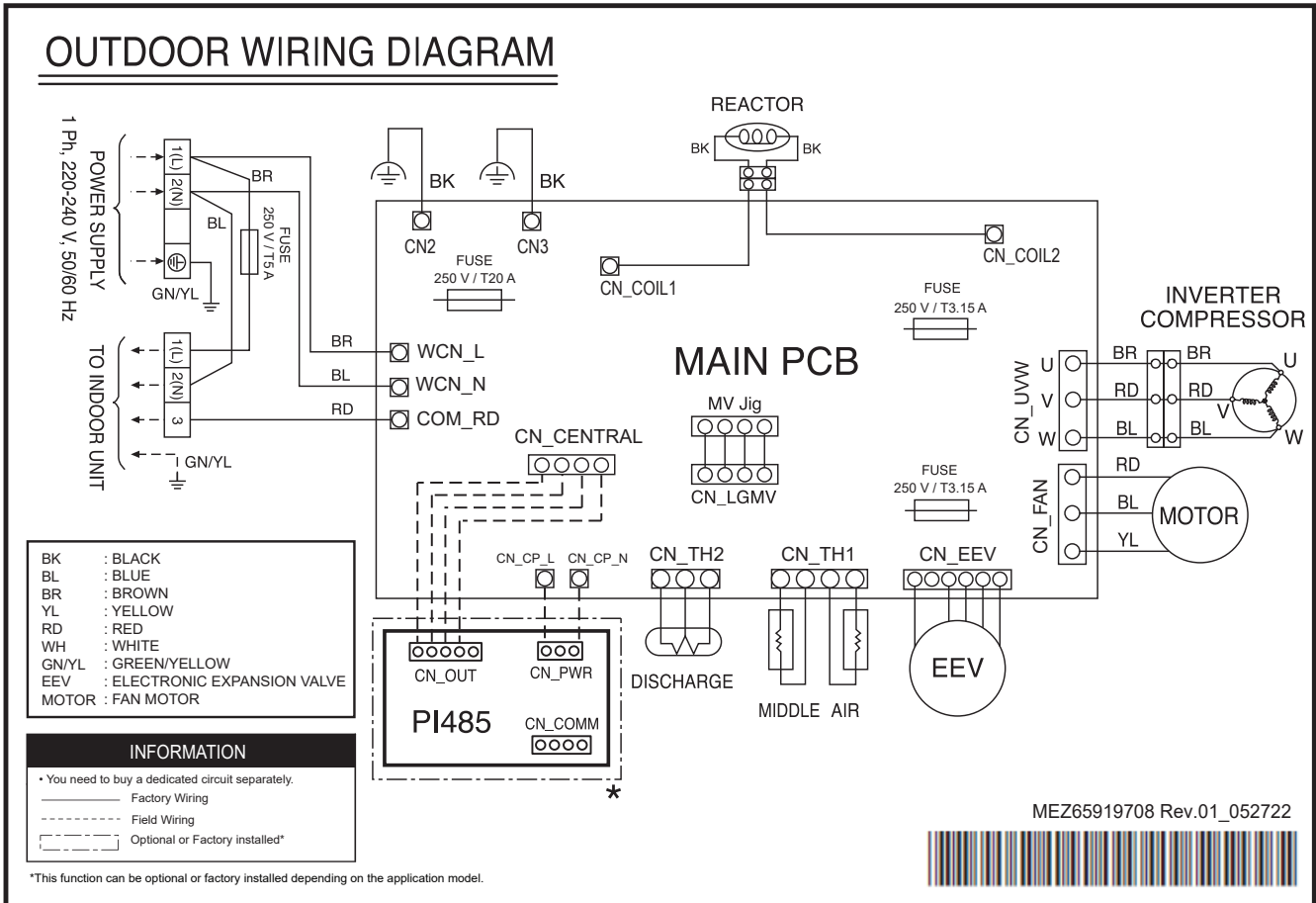
2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

2.5 Piping Diagrams



2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

2.6 Wiring Diagrams





**2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]****2.7 Capacity Tables****2.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.01	3.00	0.71	3.92	3.80	0.89	4.61	4.41	1.04	5.13	4.72	1.14	5.30	4.69	1.15	5.65	4.63	1.17	6.05	4.57	1.18
25	3.01	3.00	0.84	3.92	3.80	1.06	4.61	4.41	1.22	5.13	4.72	1.34	5.30	4.69	1.35	5.65	4.63	1.38	6.05	4.57	1.39
32	3.01	3.00	1.02	3.92	3.80	1.28	4.61	4.41	1.48	5.13	4.72	1.63	5.30	4.69	1.65	5.65	4.63	1.68	6.05	4.57	1.69
35	3.01	3.00	1.10	3.92	3.80	1.38	4.61	4.41	1.60	5.13	4.72	1.75	5.30	4.69	1.77	5.65	4.63	1.80	6.05	4.57	1.81
40	3.01	3.00	0.98	3.92	3.80	1.23	4.61	4.41	1.42	4.52	4.23	1.56	4.68	4.20	1.58	4.99	4.14	1.61	5.34	4.07	1.62
43	3.01	3.00	0.91	3.92	3.80	1.14	4.08	3.93	1.32	4.16	3.93	1.44	4.30	3.90	1.46	4.58	3.83	1.49	4.91	3.77	1.50
46	3.01	3.00	0.84	3.65	3.59	1.05	3.72	3.66	1.22	3.80	3.63	1.33	3.93	3.60	1.34	4.18	3.53	1.37	4.48	3.46	1.38
48	3.01	3.00	0.78	3.55	3.53	0.98	3.62	3.59	1.13	3.69	3.56	1.28	3.79	3.50	1.29	4.00	3.39	1.32	4.24	3.29	1.32
50	3.01	3.00	0.72	3.45	3.43	0.90	3.52	3.50	1.05	3.59	3.48	1.23	3.67	3.41	1.24	3.82	3.26	1.26	4.00	3.12	1.27

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table.  
Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

## 2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

### 2.8 Capacity Correction Factor

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

#### Note

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

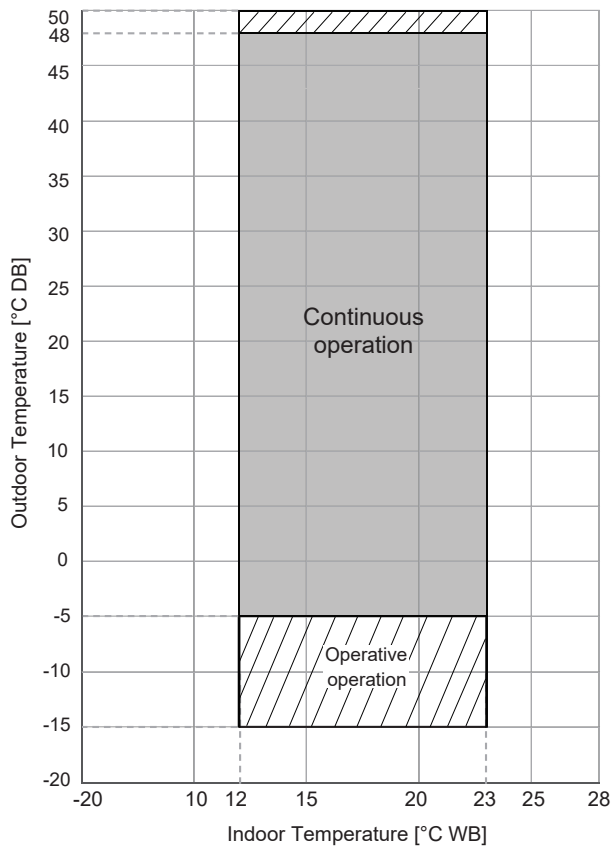
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

2.9 Operation Limits

2.9.1 Cooling



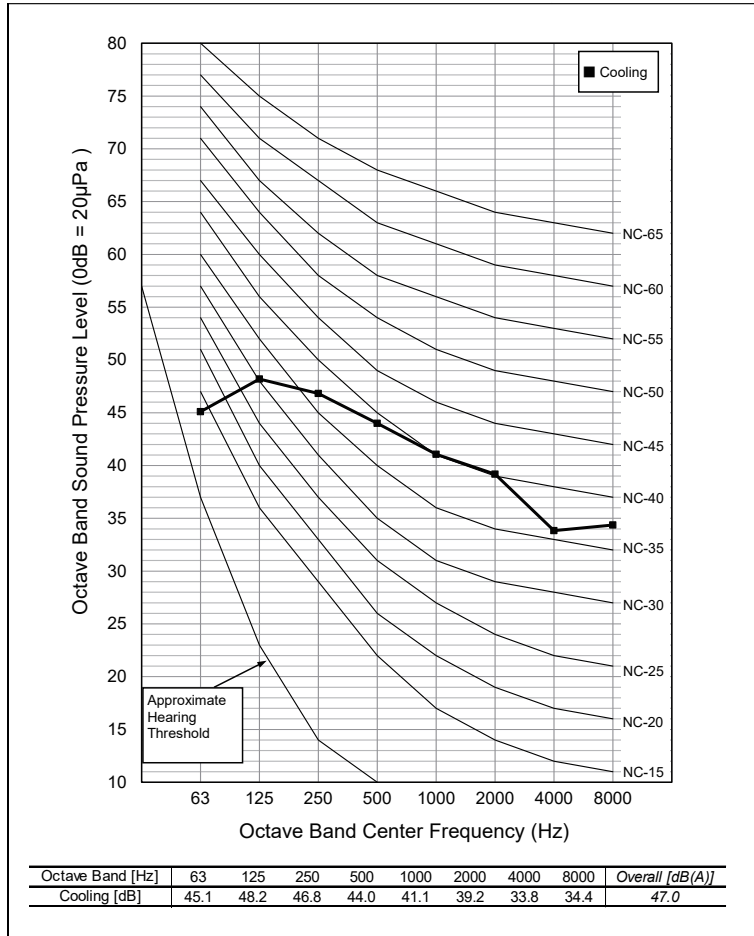
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

2. ZUUQ12GA0 [ZUAA1] + ZTNQ18GPLE0 [ZTNQ18GPLE0]

2.10 Sound Levels

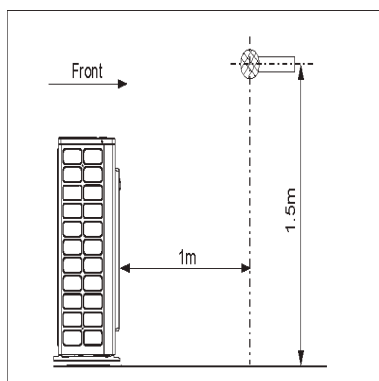
2.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	47 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

## 3.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	3.51
		Btu/h	12000
	Min ~ Max	kW	1.45 ~ 3.87
		Btu/h	4960 ~ 13200
	Sensible Heat (Rated)	kW	2.881
		Btu/h	9850
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 1.03 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.41
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 4.68 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	0.95
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	15
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	47 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	9.1
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	6.5
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U12A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	28 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DST102MAA x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	900 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	280 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 22 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.31
Dimensions	Net(W x H x D)	mm	717 x 483 x 230
	Shipping(W x H x D)	mm	842 x 530 x 322
Weight	Net	kg	24.2
	Shipping	kg	25.8
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.75
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]****3.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

### 3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

#### 3.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

#### Note

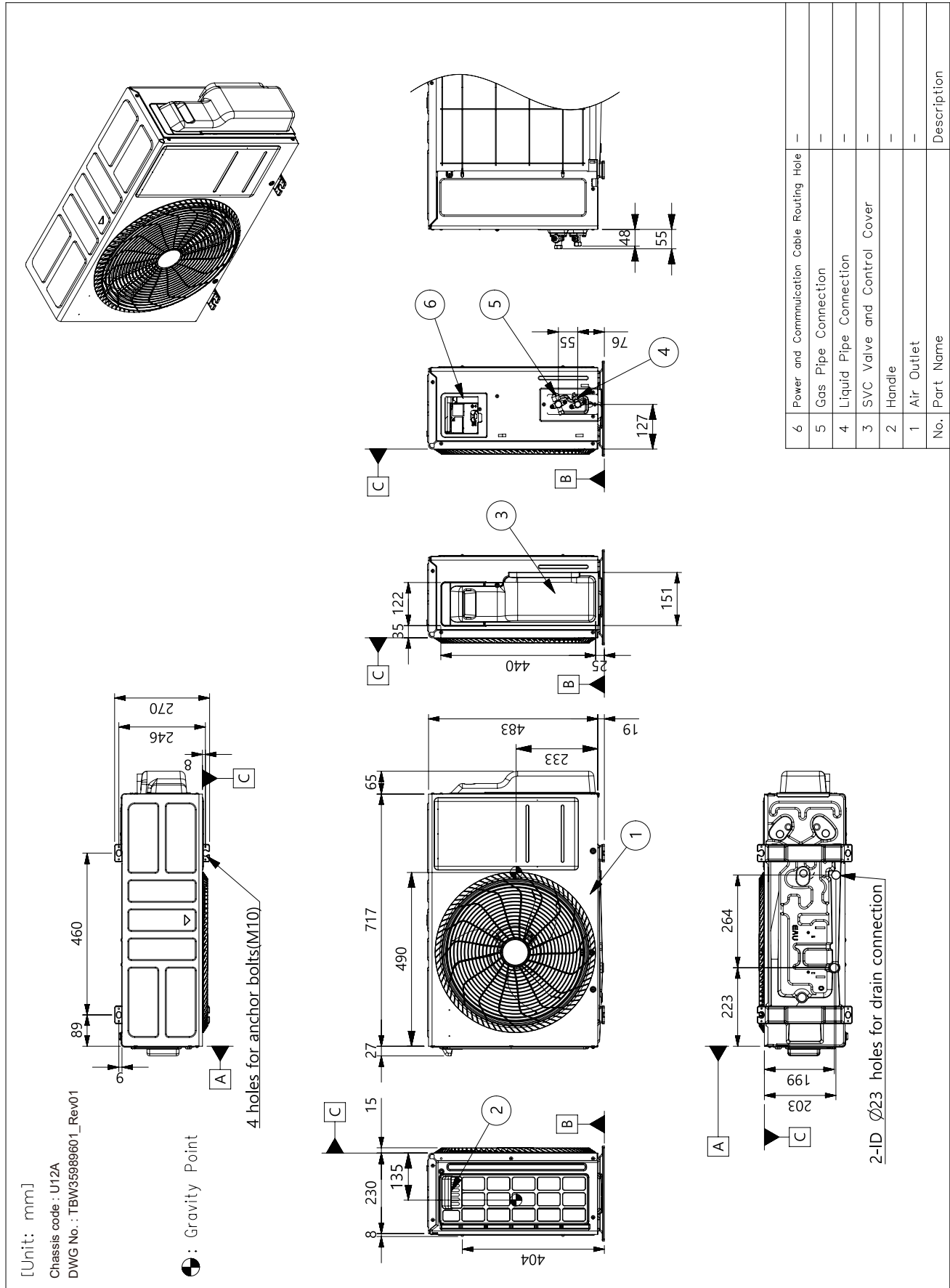
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

3.4 Dimensions

3.4.1 Product

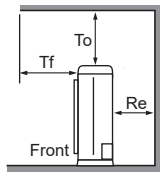


### 3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

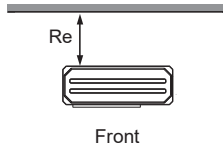
#### 3.4.2 Install Space

For Side Discharge (capacity < 28.0 kW)

##### Obstacle on the Suction side

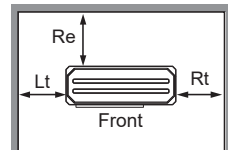


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

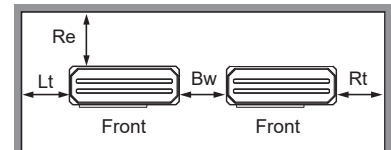


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



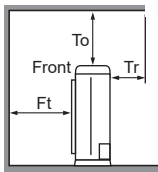
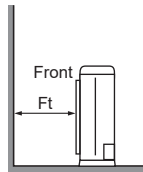
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



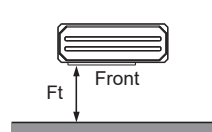
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

[Unit : mm(inch)]

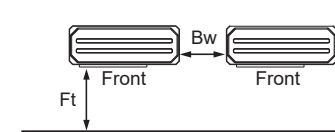
##### Obstacle on the Discharge side



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)



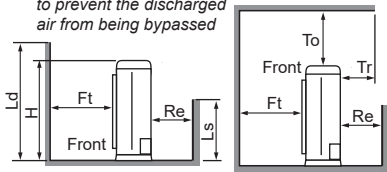
**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.

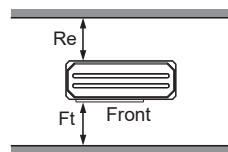
##### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

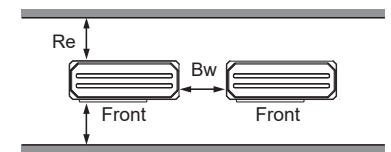
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

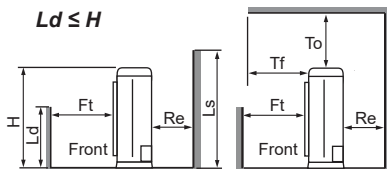


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



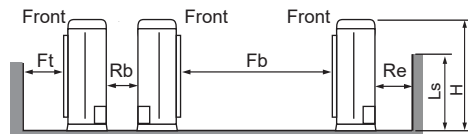
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

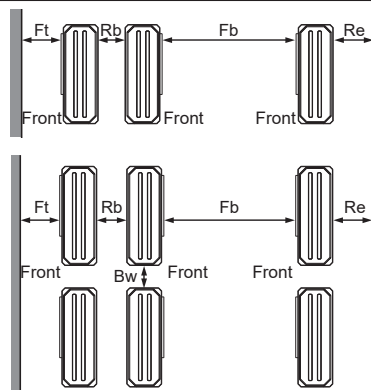
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

##### Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



##### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

##### Multiple Columns

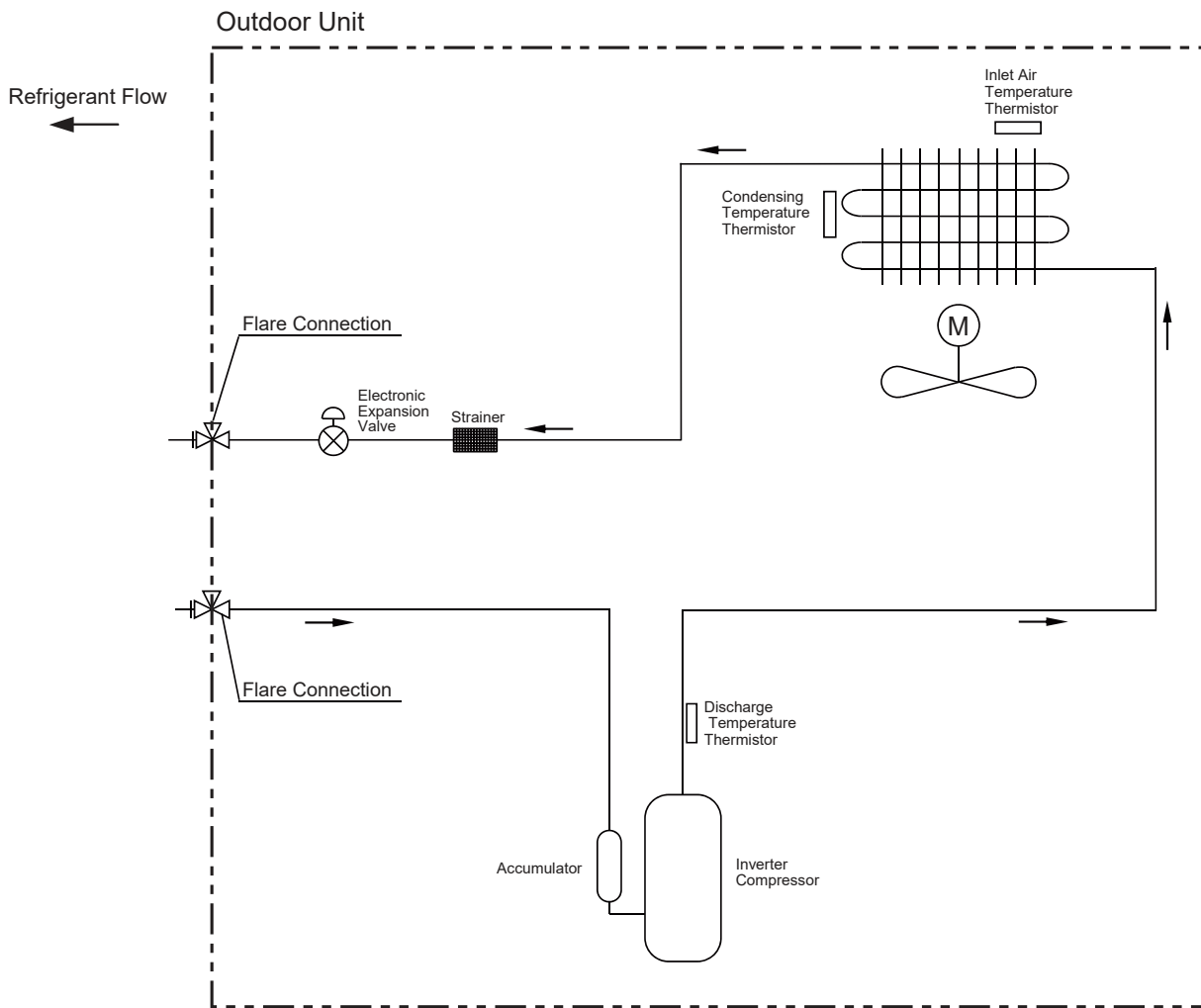
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

##### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

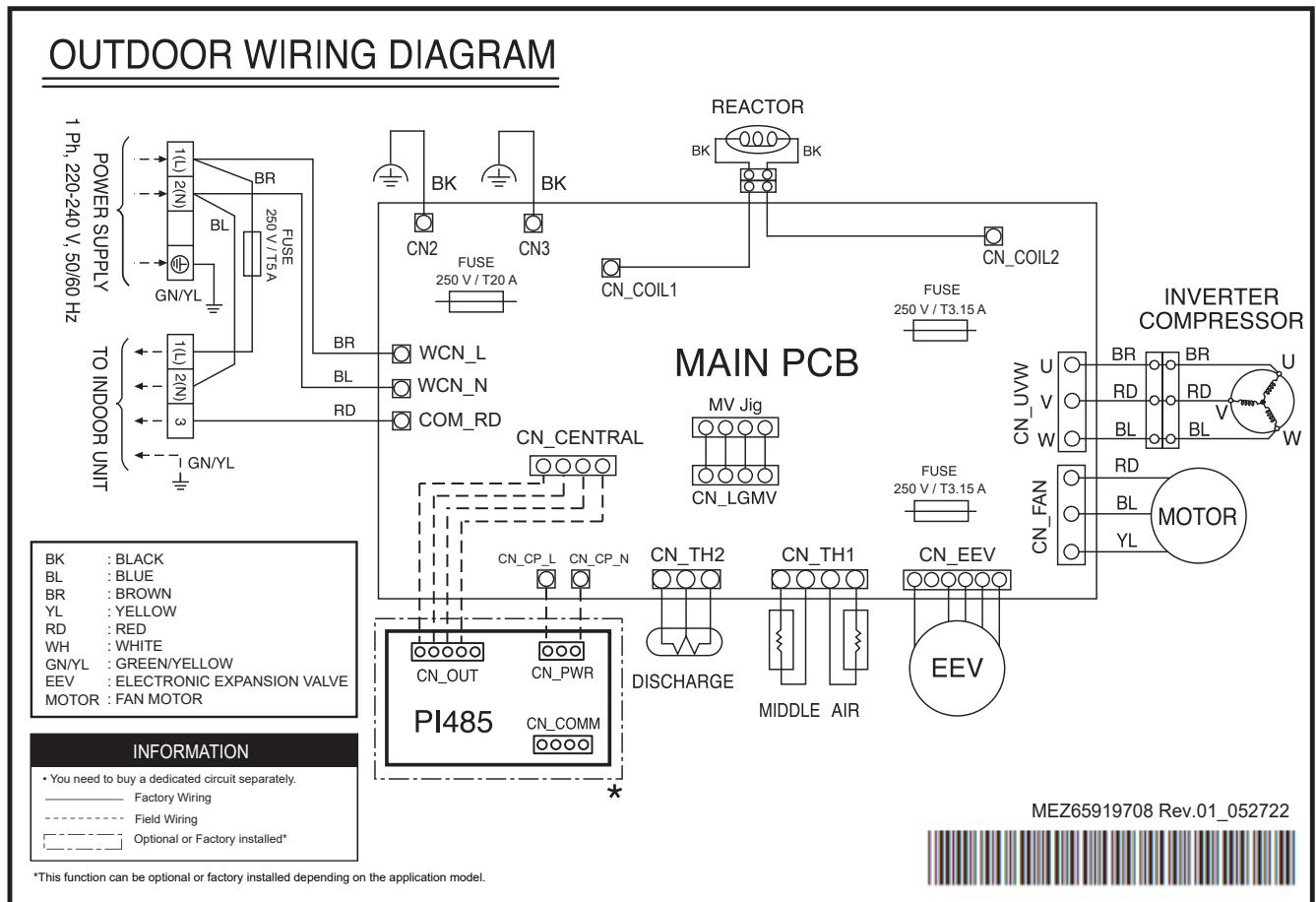
3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

3.5 Piping Diagrams



3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

3.6 Wiring Diagrams



**3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]****3.7 Capacity Tables****3.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	2.06	1.94	0.42	2.68	2.32	0.53	3.15	2.69	0.61	3.51	2.88	0.67	3.63	2.86	0.68	3.87	2.82	0.69	4.14	2.79	0.69
25	2.06	1.94	0.49	2.68	2.32	0.62	3.15	2.69	0.72	3.51	2.88	0.79	3.63	2.86	0.80	3.87	2.82	0.81	4.14	2.79	0.82
32	2.06	1.94	0.60	2.68	2.32	0.75	3.15	2.69	0.87	3.51	2.88	0.96	3.63	2.86	0.97	3.87	2.82	0.99	4.14	2.79	0.99
35	2.06	1.94	0.65	2.68	2.32	0.81	3.15	2.69	0.94	3.51	2.88	1.03	3.63	2.86	1.04	3.87	2.82	1.06	4.14	2.79	1.07
40	2.06	1.94	0.68	2.68	2.32	0.86	3.15	2.69	0.99	3.51	2.88	1.09	3.63	2.86	1.10	3.87	2.82	1.12	4.14	2.79	1.13
43	2.06	1.94	0.71	2.68	2.32	0.89	3.15	2.69	1.03	3.51	2.88	1.13	3.63	2.86	1.14	3.87	2.82	1.16	4.14	2.79	1.17
46	2.06	1.94	0.73	2.68	2.32	0.92	3.15	2.69	1.06	3.51	2.88	1.16	3.63	2.86	1.17	3.87	2.82	1.20	4.14	2.79	1.21
48	2.06	1.94	0.75	2.68	2.32	0.95	3.15	2.69	1.10	3.37	2.78	1.12	3.46	2.75	1.13	3.65	2.68	1.16	3.87	2.62	1.16
50	2.06	1.94	0.78	2.68	2.32	0.98	3.15	2.69	1.06	3.23	2.69	1.08	3.30	2.64	1.09	3.44	2.54	1.11	3.60	2.45	1.12

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

### 3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

#### 3.8 Capacity Correction Factor

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

#### Note

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

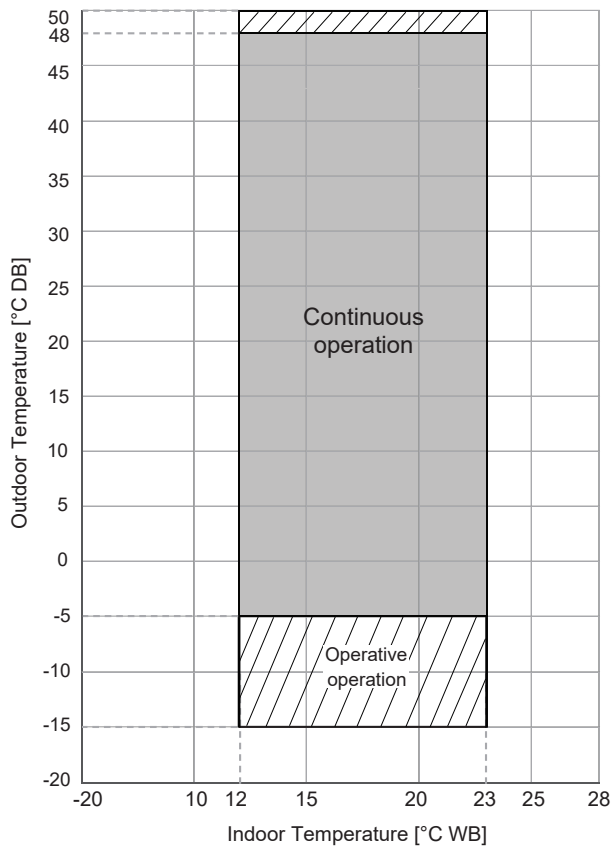
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

3.9 Operation Limits

3.9.1 Cooling



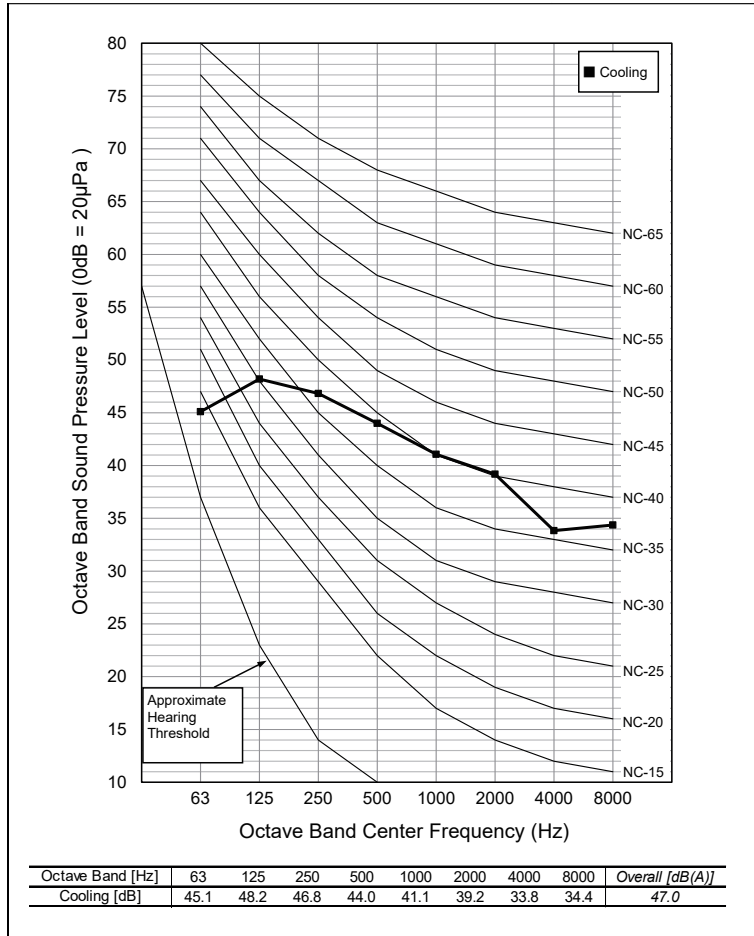
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

3. ZUUQ12GA0 [ZUAA1] + ZBNQ12GL2A0 [ZBNQ12GL2A0]

3.10 Sound Levels

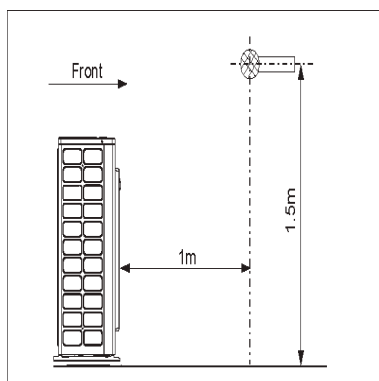
3.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	47 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

## 4.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	3.075
		Btu/h	10500
	Min ~ Max	kW	1.37 ~ 3.6
		Btu/h	4680 ~ 12290
	Sensible Heat (Rated)	kW	2.399
		Btu/h	8190
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 0.87 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.54
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 3.95 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.01
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	15
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	47 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	8.8
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	6.5
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U12A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	28 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DST102MAA x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	900 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	280 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 22 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.31
Dimensions	Net(W x H x D)	mm	717 x 483 x 230
	Shipping(W x H x D)	mm	842 x 530 x 322
Weight	Net	kg	24.2
	Shipping	kg	25.8
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.75
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ9.52 (3/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]****4.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

## 4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

### 4.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMD200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

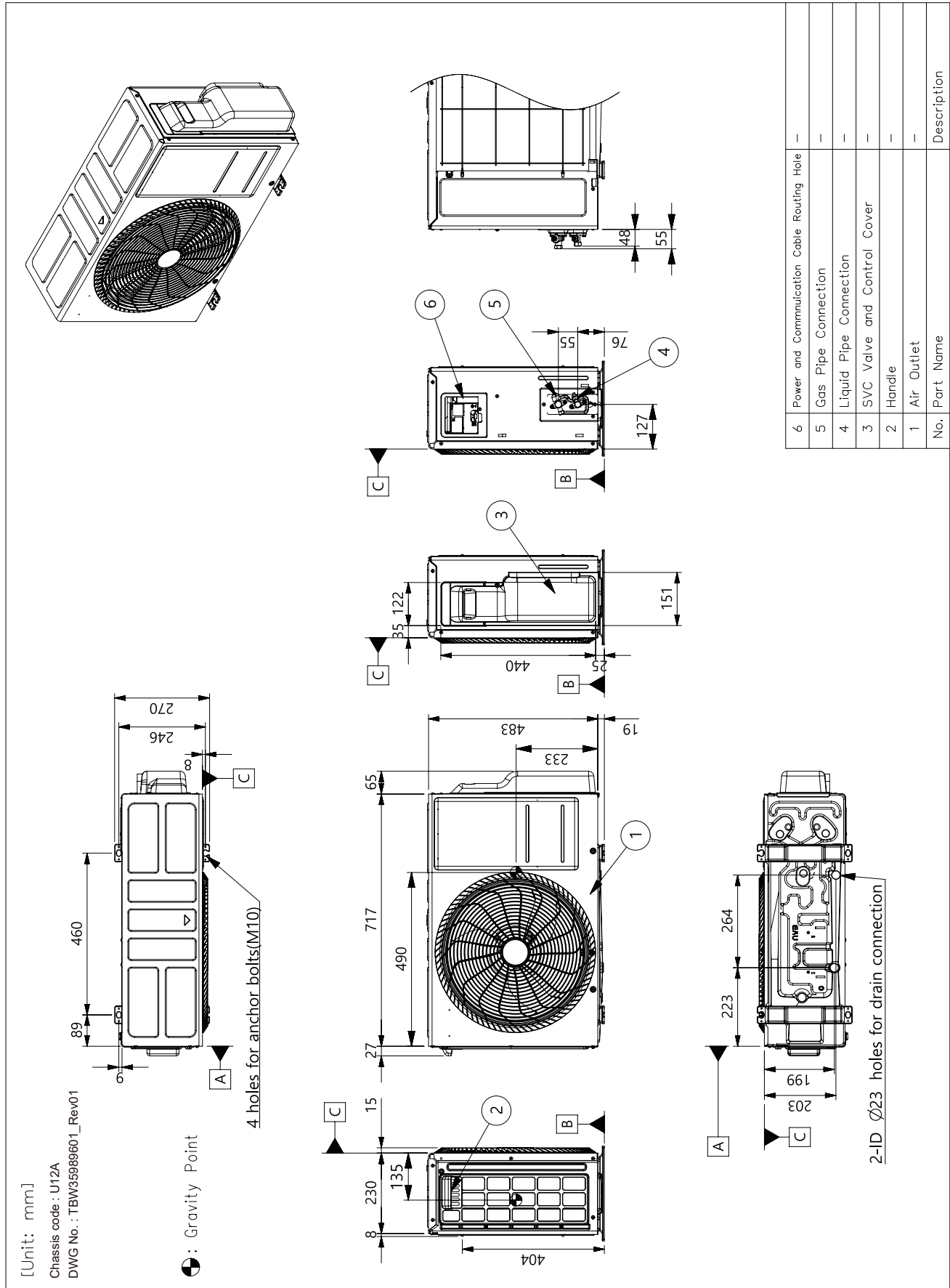
#### Note

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.4 Dimensions

4.4.1 Product



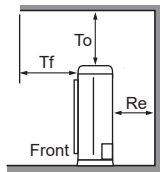
4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.4.2 Install Space

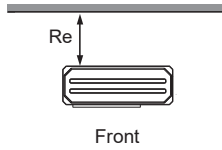
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

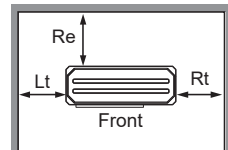


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

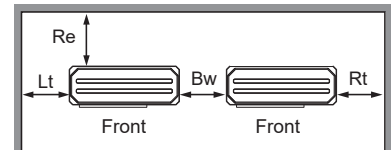


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



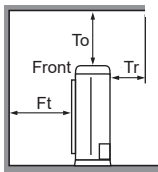
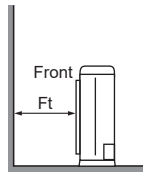
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



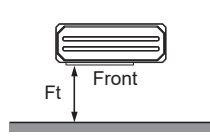
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

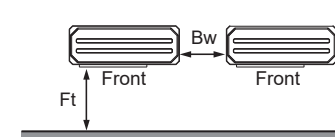
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

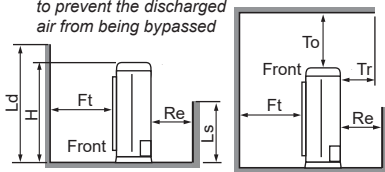


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

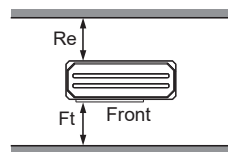
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

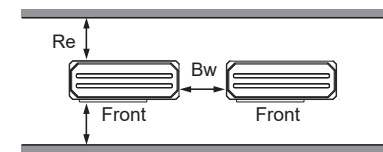
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



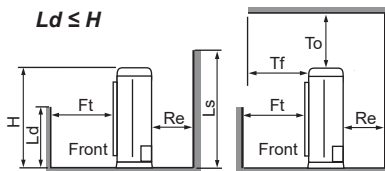
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

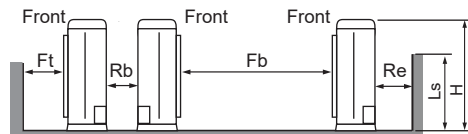


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

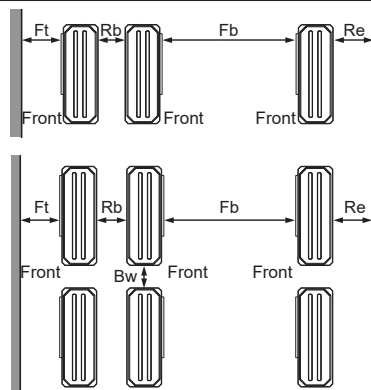
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

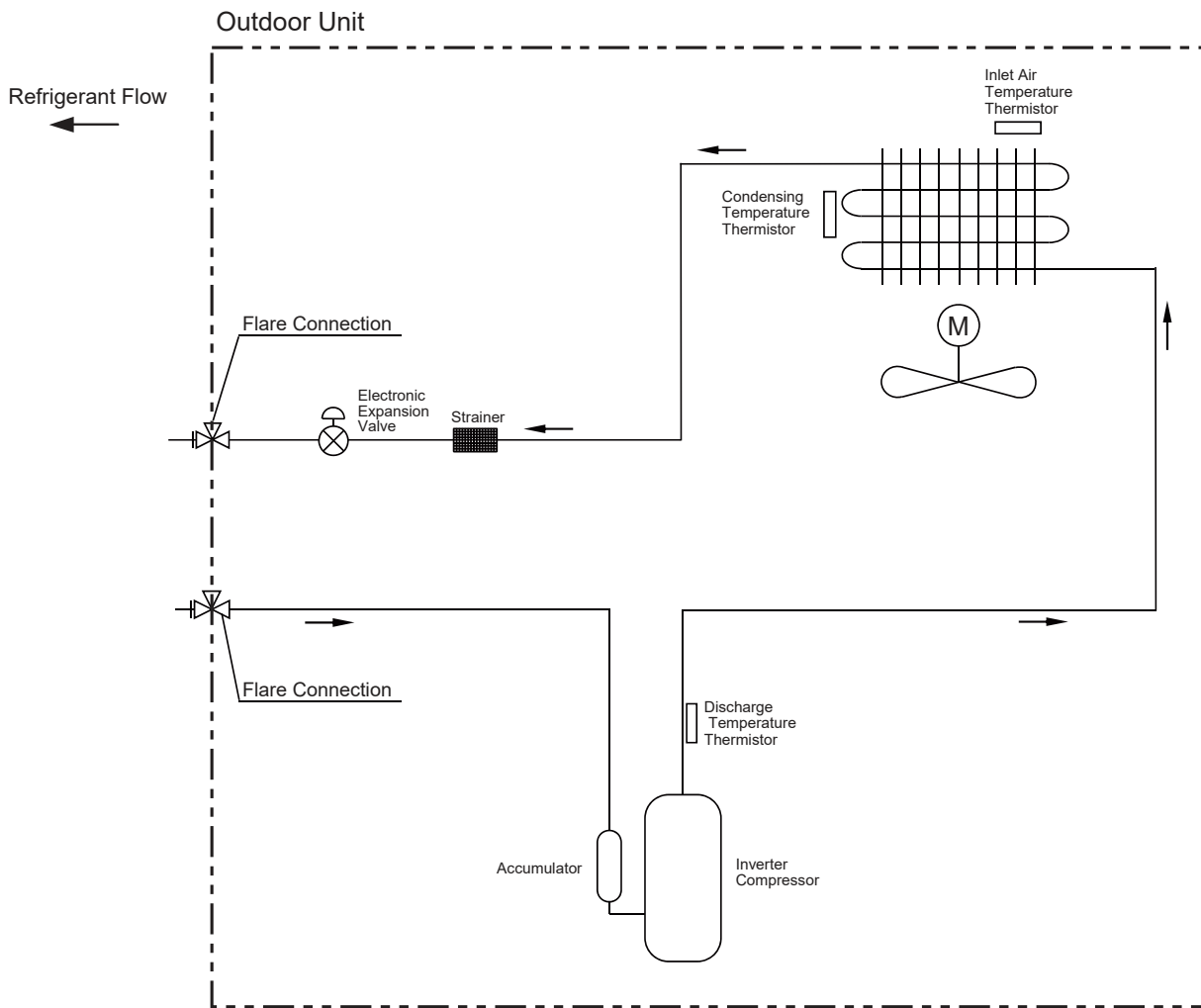
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

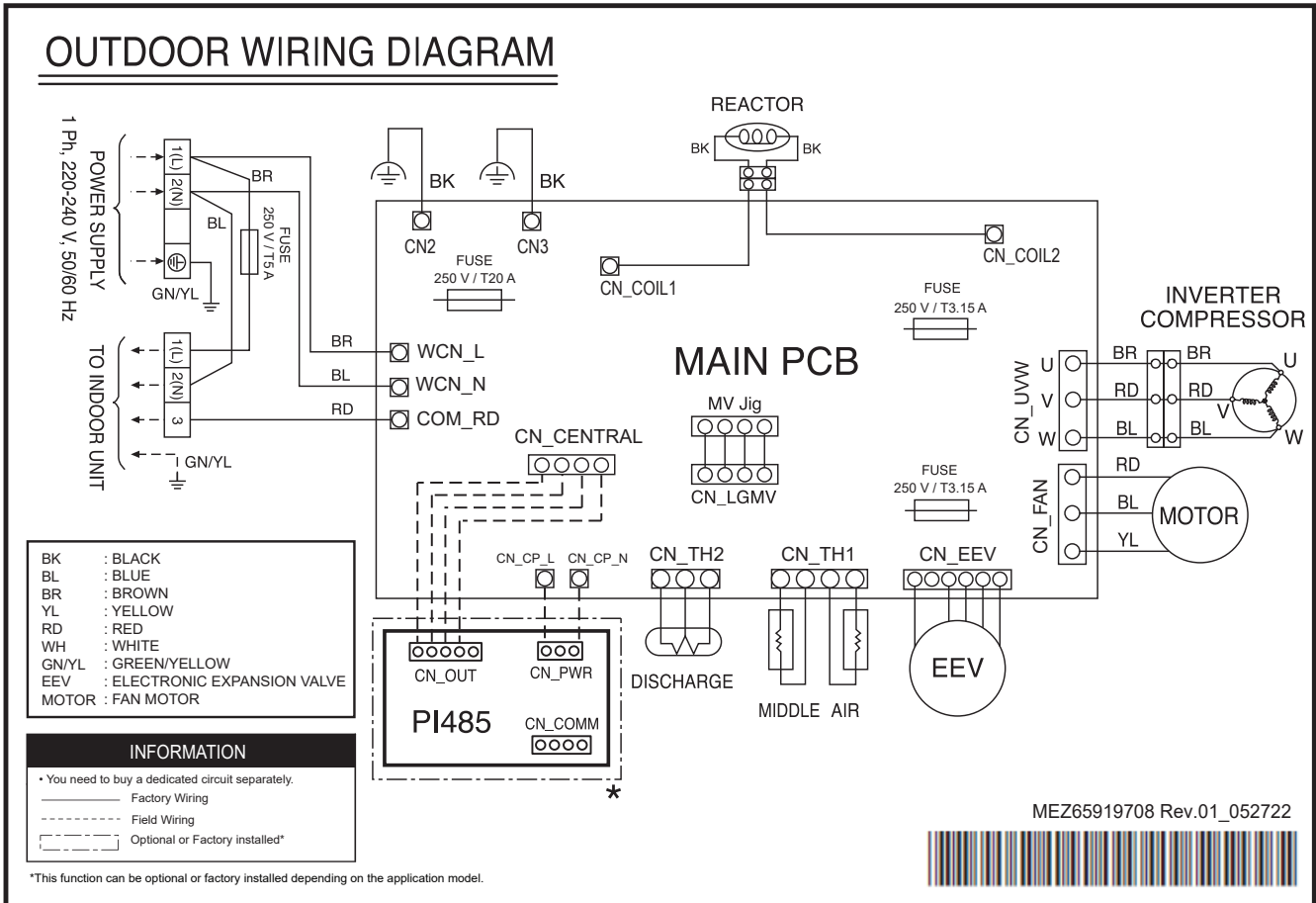
4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.5 Piping Diagrams



4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.6 Wiring Diagrams





## 4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

### 4.7 Capacity Tables

#### 4.7.1 Cooling

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	1.81	1.62	0.35	2.35	1.93	0.44	2.76	2.24	0.52	3.08	2.40	0.57	3.18	2.38	0.57	3.39	2.35	0.58	3.63	2.32	0.59
25	1.81	1.62	0.42	2.35	1.93	0.52	2.76	2.24	0.61	3.08	2.40	0.67	3.18	2.38	0.68	3.39	2.35	0.69	3.63	2.32	0.69
32	1.81	1.62	0.51	2.35	1.93	0.64	2.76	2.24	0.74	3.08	2.40	0.81	3.18	2.38	0.82	3.39	2.35	0.83	3.63	2.32	0.84
35	1.81	1.62	0.55	2.35	1.93	0.68	2.76	2.24	0.79	3.08	2.40	0.87	3.18	2.38	0.88	3.39	2.35	0.90	3.63	2.32	0.90
40	1.81	1.62	0.58	2.35	1.93	0.73	2.76	2.24	0.84	3.08	2.40	0.92	3.18	2.38	0.93	3.39	2.35	0.95	3.63	2.32	0.95
43	1.81	1.62	0.60	2.35	1.93	0.75	2.76	2.24	0.87	3.08	2.40	0.95	3.18	2.38	0.96	3.39	2.35	0.98	3.63	2.32	0.99
46	1.81	1.62	0.62	2.35	1.93	0.77	2.76	2.24	0.90	3.08	2.40	0.98	3.18	2.38	0.99	3.39	2.35	1.01	3.63	2.32	1.02
48	1.81	1.62	0.64	2.35	1.93	0.80	2.76	2.24	0.93	2.95	2.32	0.95	3.03	2.29	0.96	3.20	2.24	0.98	3.39	2.18	0.98
50	1.81	1.62	0.66	2.35	1.93	0.83	2.76	2.24	0.90	2.83	2.24	0.91	2.89	2.20	0.92	3.01	2.12	0.94	3.16	2.04	0.95

#### Note

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

## 4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

### 4.8 Capacity Correction Factor

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

#### Note

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

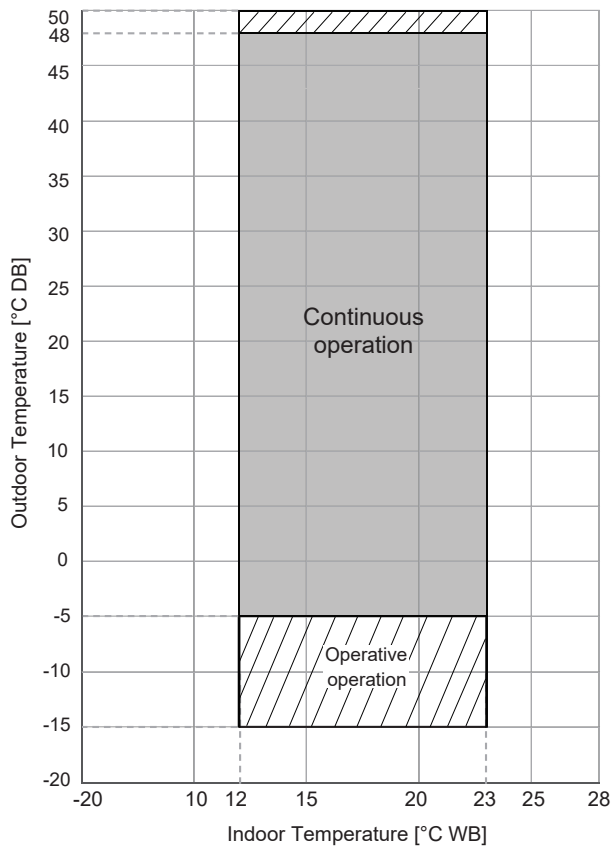
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.9 Operation Limits

4.9.1 Cooling



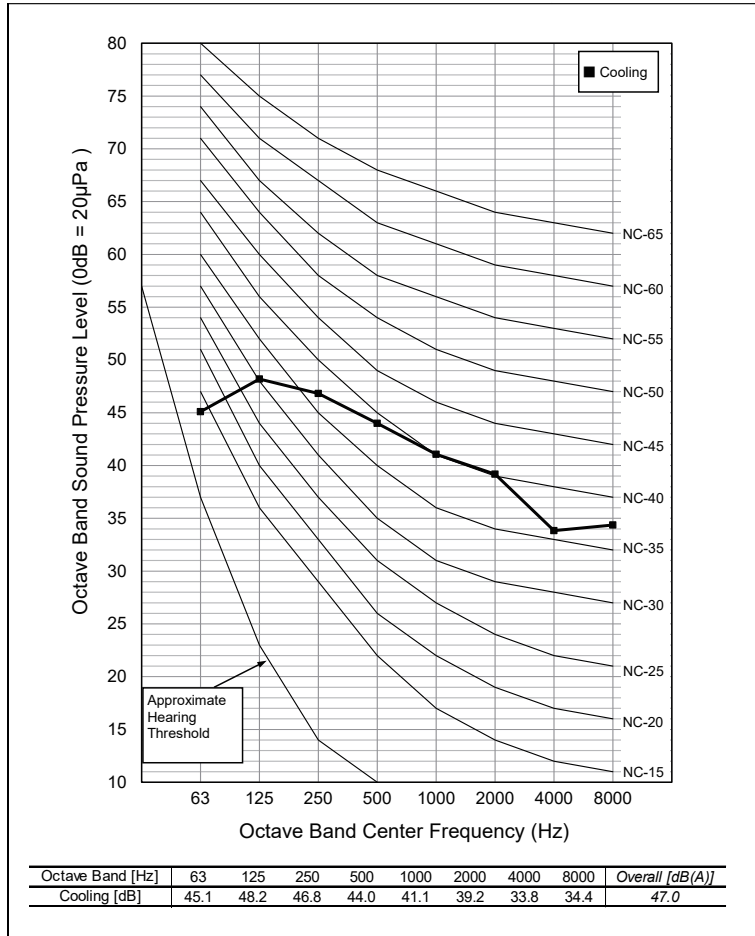
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

4. ZUUQ12GA0 [ZUAA1] + ZTNQ12GULA0 [ZTNQ12GULA0]

4.10 Sound Levels

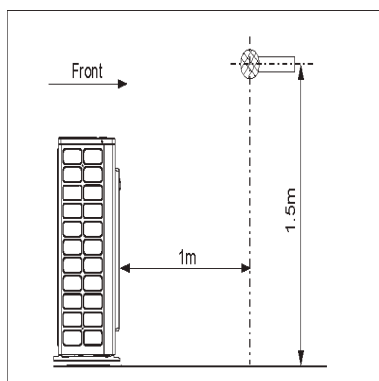
4.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	47 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

## 5.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	5.27
		Btu/h	18,000
	Min ~ Max	kW	1.40~6.01
		Btu/h	4,800~20,500
	Sensible Heat (Rated)	kW	4.06
		Btu/h	13,855
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~1.64~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.22
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 7.50/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.77
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	20
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	51 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	12.3
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	9
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U18A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DAT156MAD x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	400 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 24 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.41
Dimensions	Net(W x H x D)	mm	770 x 545 x 288
	Shipping(W x H x D)	mm	- x - x -
Weight	Net	kg	30.9
	Shipping	kg	33.2
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.98
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]****5.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]****5.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

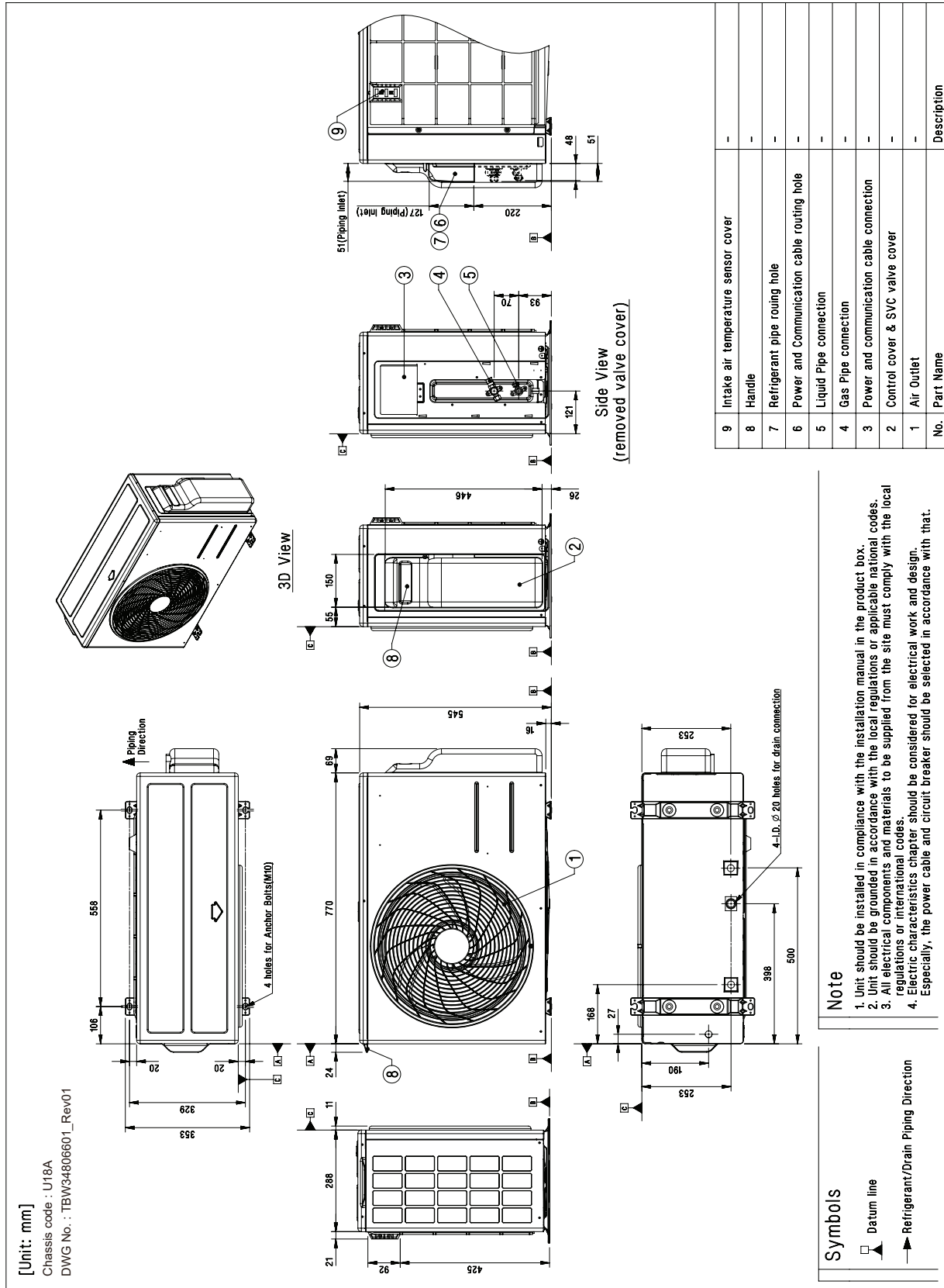
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.4 Dimensions

5.4.1 Product



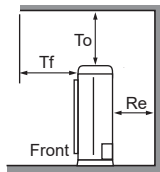
5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.4.2 Install Space

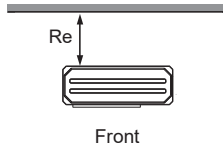
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

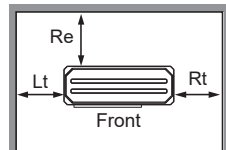


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

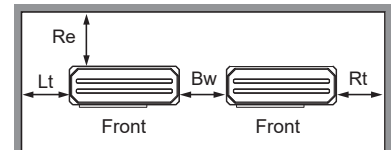


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



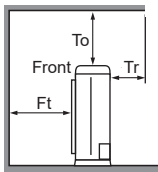
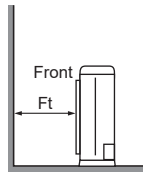
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



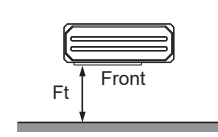
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

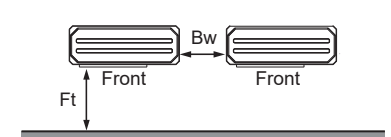
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

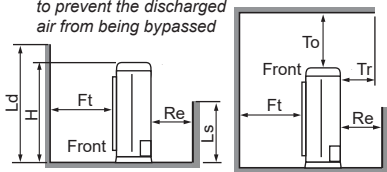


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

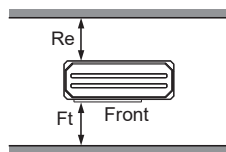
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

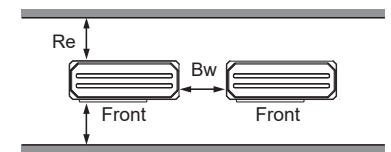
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

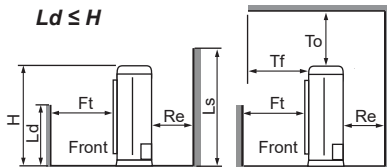


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



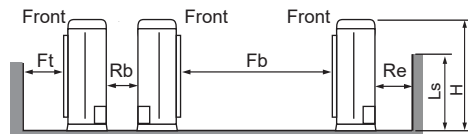
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

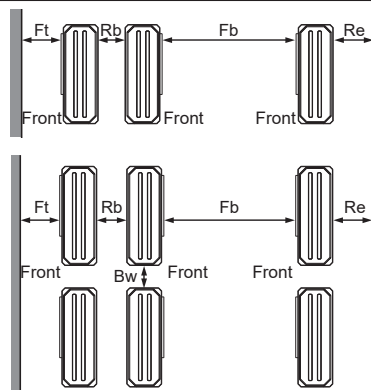
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

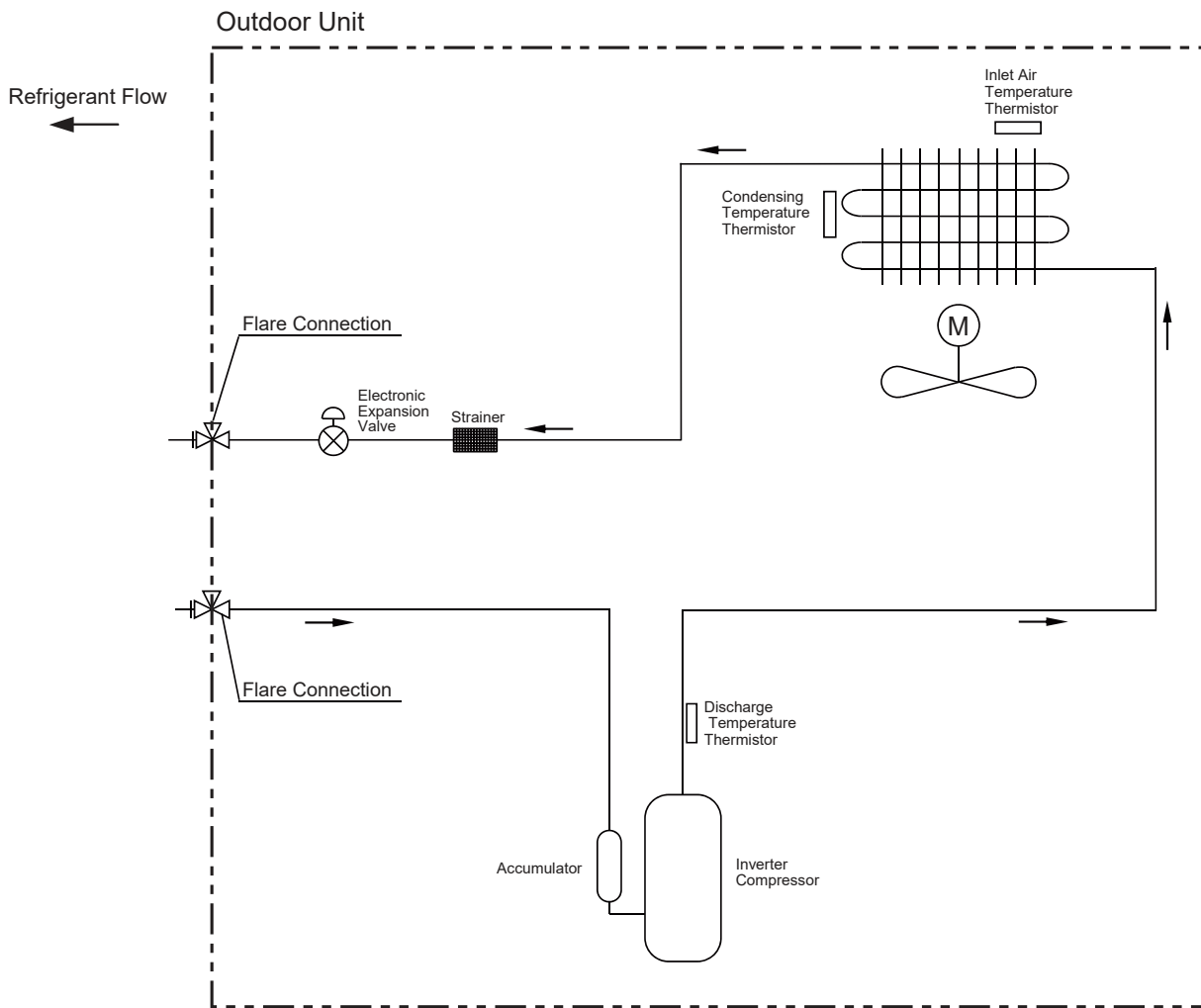
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

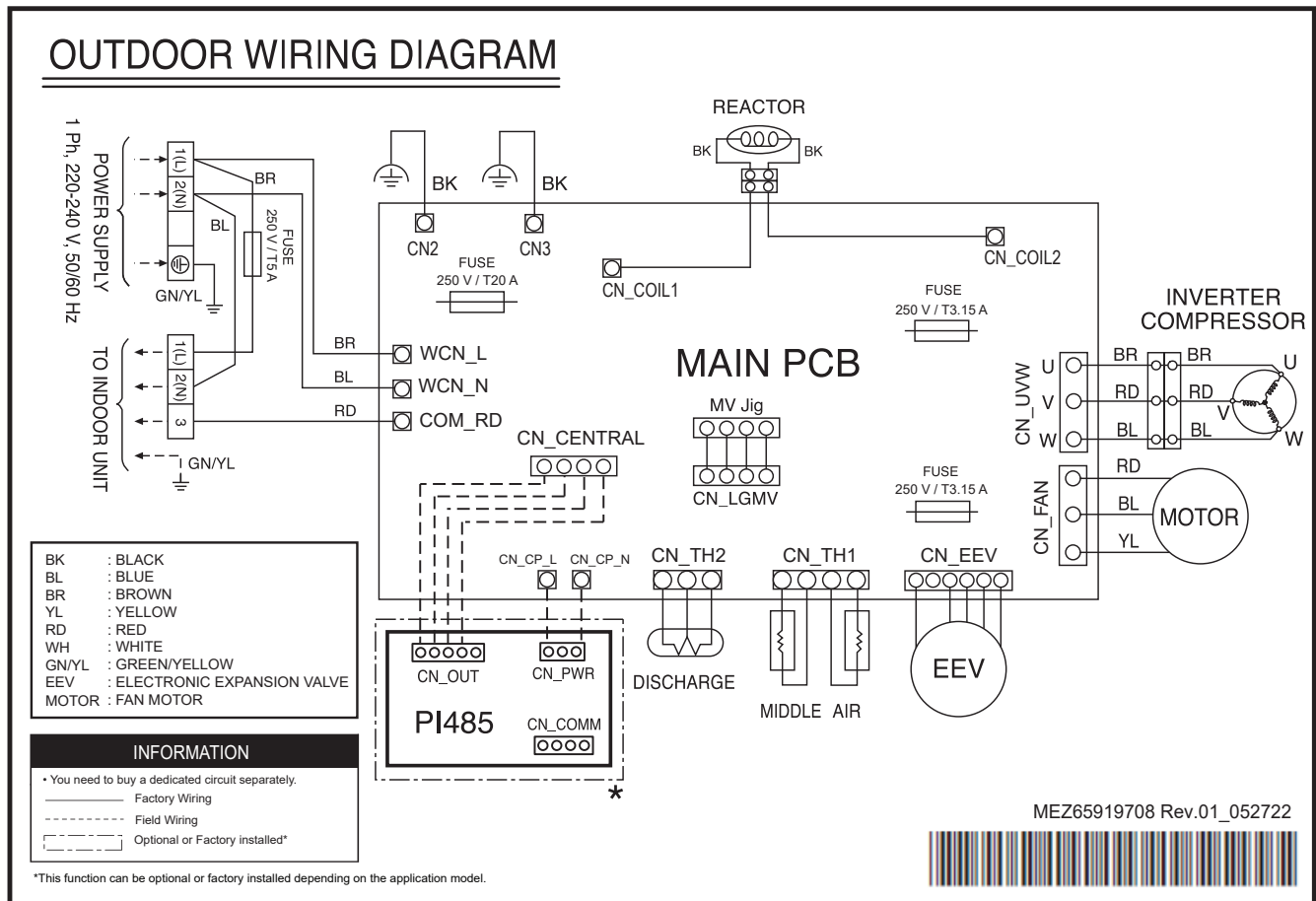
5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.5 Piping Diagrams



5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.6 Wiring Diagrams



## 5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

### 5.7 Capacity Tables

#### 5.7.1 Cooling

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.09	2.73	0.67	4.02	3.26	0.84	4.73	3.79	0.97	5.27	4.06	1.07	5.45	4.03	1.08	5.81	3.98	1.10	6.22	3.93	1.10
25	3.09	2.73	0.79	4.02	3.26	0.99	4.73	3.79	1.15	5.27	4.06	1.26	5.45	4.03	1.27	5.81	3.98	1.29	6.22	3.93	1.30
32	3.09	2.73	0.96	4.02	3.26	1.20	4.73	3.79	1.39	5.27	4.06	1.53	5.45	4.03	1.54	5.81	3.98	1.57	6.22	3.93	1.58
35	3.09	2.73	1.03	4.02	3.26	1.29	4.73	3.79	1.50	5.27	4.06	1.64	5.45	4.03	1.66	5.81	3.98	1.69	6.22	3.93	1.70
40	3.09	2.73	1.09	4.02	3.26	1.37	4.73	3.79	1.58	5.27	4.06	1.74	5.45	4.03	1.76	5.81	3.98	1.79	6.22	3.93	1.80
43	3.09	2.73	1.13	4.02	3.26	1.41	4.73	3.79	1.64	5.27	4.06	1.80	5.45	4.03	1.82	5.81	3.98	1.85	6.22	3.93	1.86
46	3.09	2.73	1.16	4.02	3.26	1.46	4.73	3.79	1.69	5.27	4.06	1.85	5.45	4.03	1.87	5.81	3.98	1.91	6.22	3.93	1.92
48	3.09	2.73	1.20	4.02	3.26	1.51	4.73	3.79	1.75	5.06	3.93	1.79	5.20	3.88	1.81	5.48	3.78	1.84	5.81	3.69	1.85
50	3.09	2.73	1.24	4.02	3.26	1.56	4.73	3.79	1.69	4.85	3.79	1.72	4.95	3.72	1.74	5.16	3.58	1.77	5.41	3.45	1.78

#### Note

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]****5.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

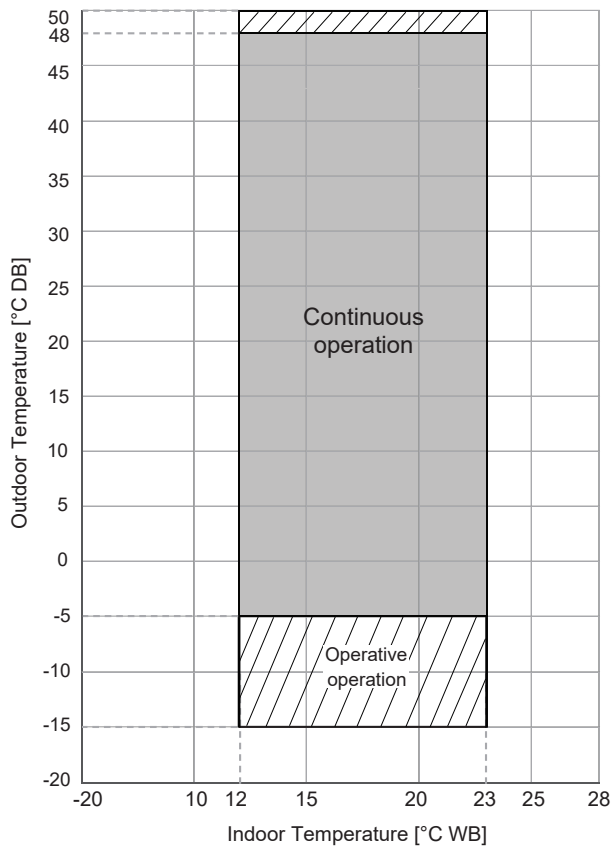
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.9 Operation Limits

5.9.1 Cooling



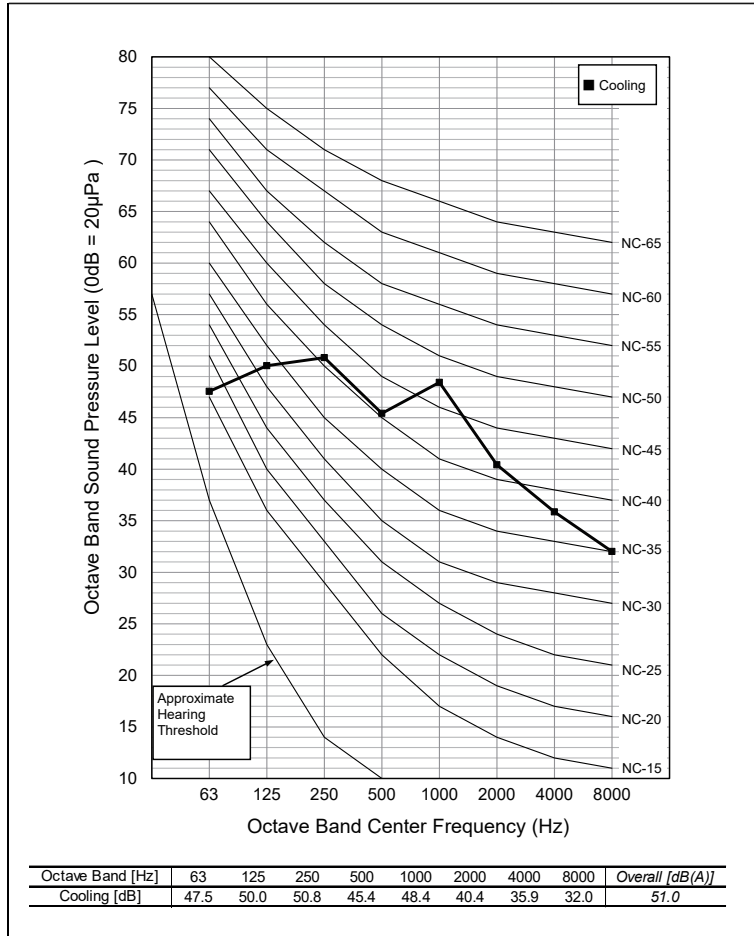
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

5. ZUUQ18GA0 [ZUAB1] + ZBNQ18GL2A0 [ZBNQ18GL2A0]

5.10 Sound Levels

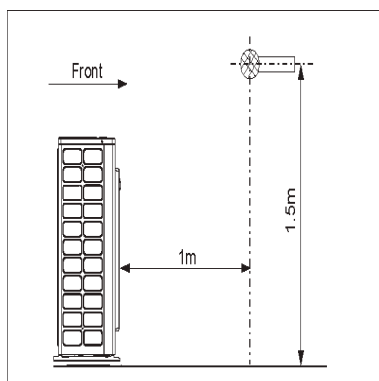
5.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	51 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





**6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]****6.1 Specifications**

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	5.27
		Btu/h	18,000
	Min ~ Max	kW	1.58~6.01
		Btu/h	5,400~20,500
	Sensible Heat (Rated)	kW	4.85
		Btu/h	16,560
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~1.43~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.69
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 6.50/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.3
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	20
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	51 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	12.1
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	9.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U18A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DAT156MAD x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	400 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 24 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.41
Dimensions	Net(W x H x D)	mm	770 x 545 x 288
	Shipping(W x H x D)	mm	- x - x -
Weight	Net	kg	30.9
	Shipping	kg	33.2
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.98
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]****6.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]****6.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

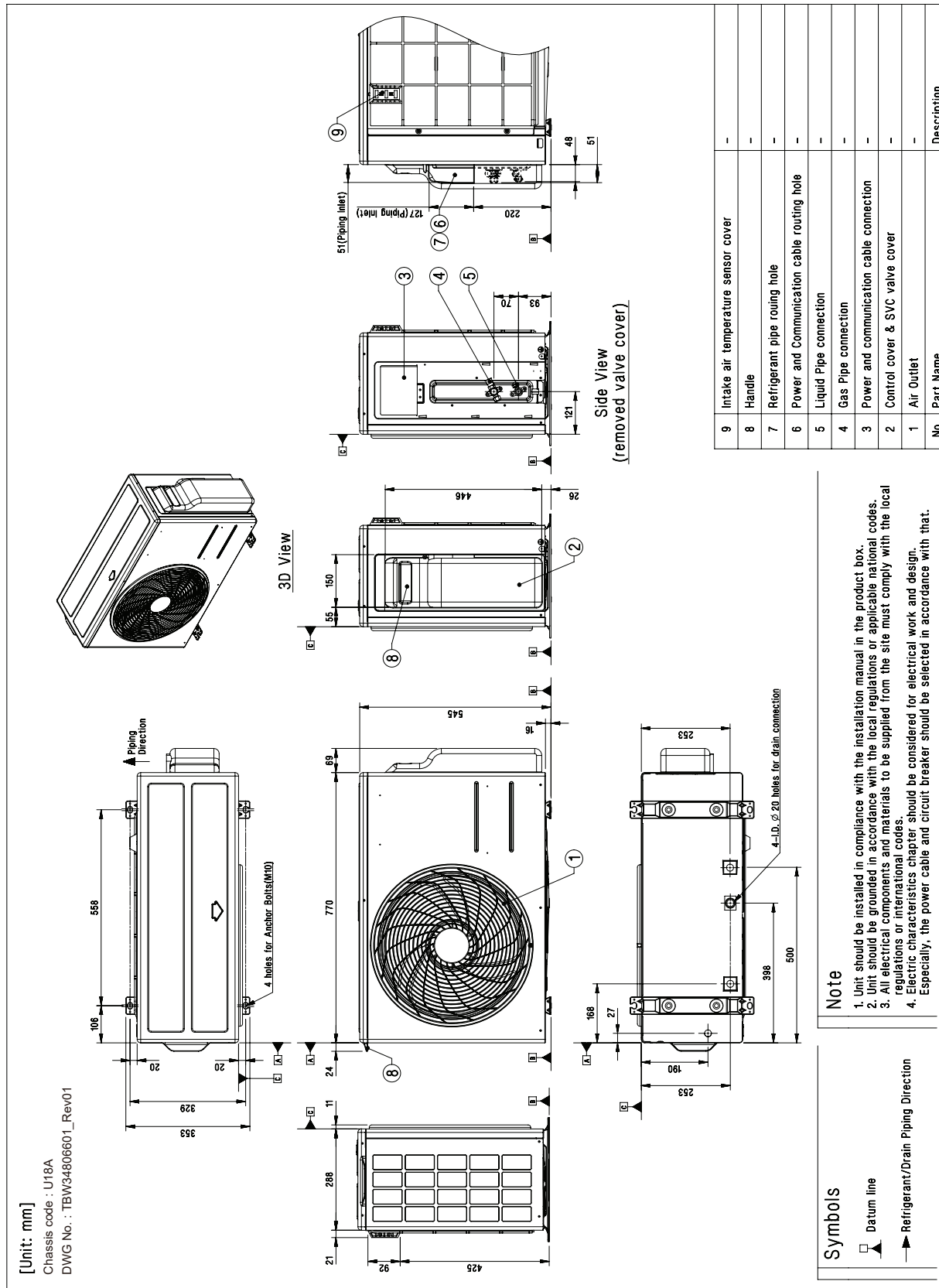
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.4 Dimensions

6.4.1 Product



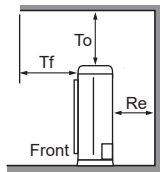
6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.4.2 Install Space

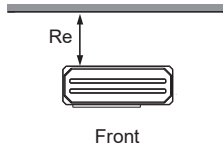
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

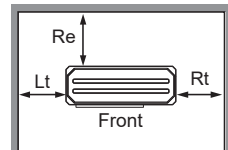


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

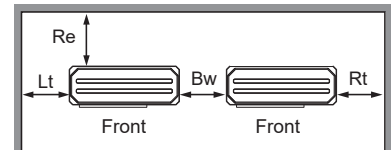


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



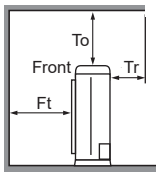
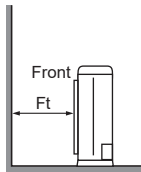
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



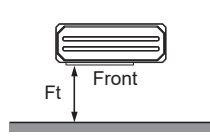
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

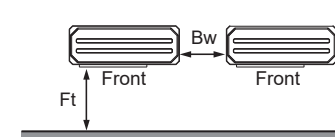
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

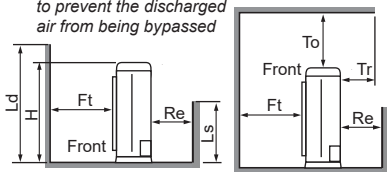


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

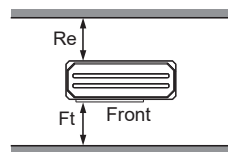
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

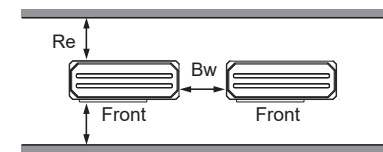
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

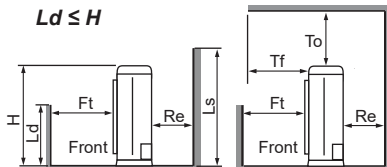


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H

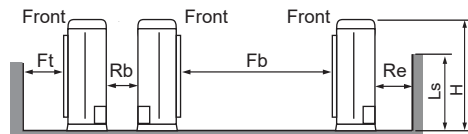


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

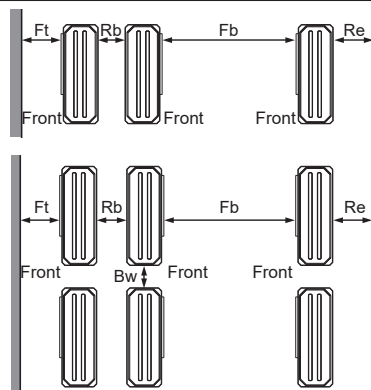
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

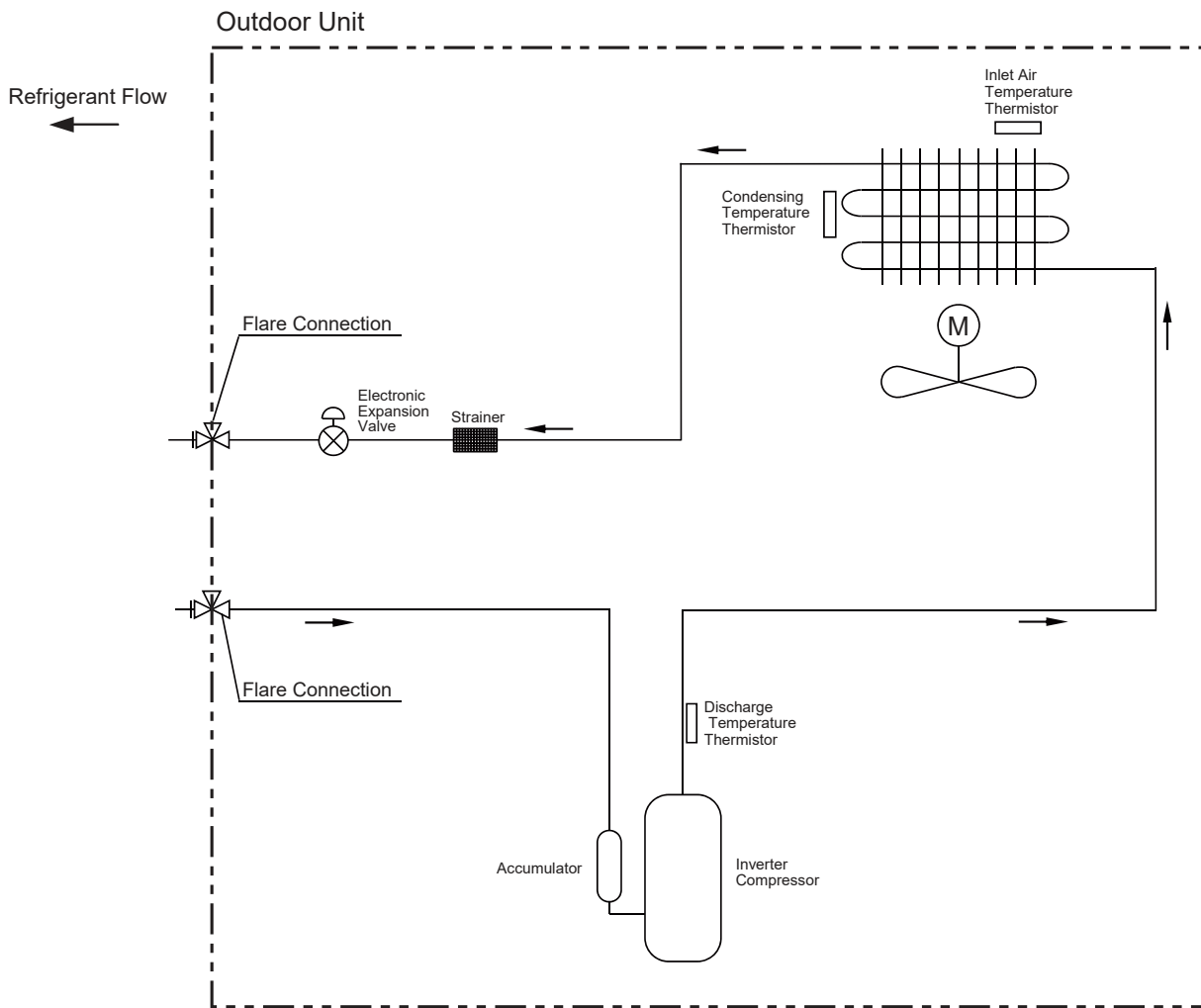
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

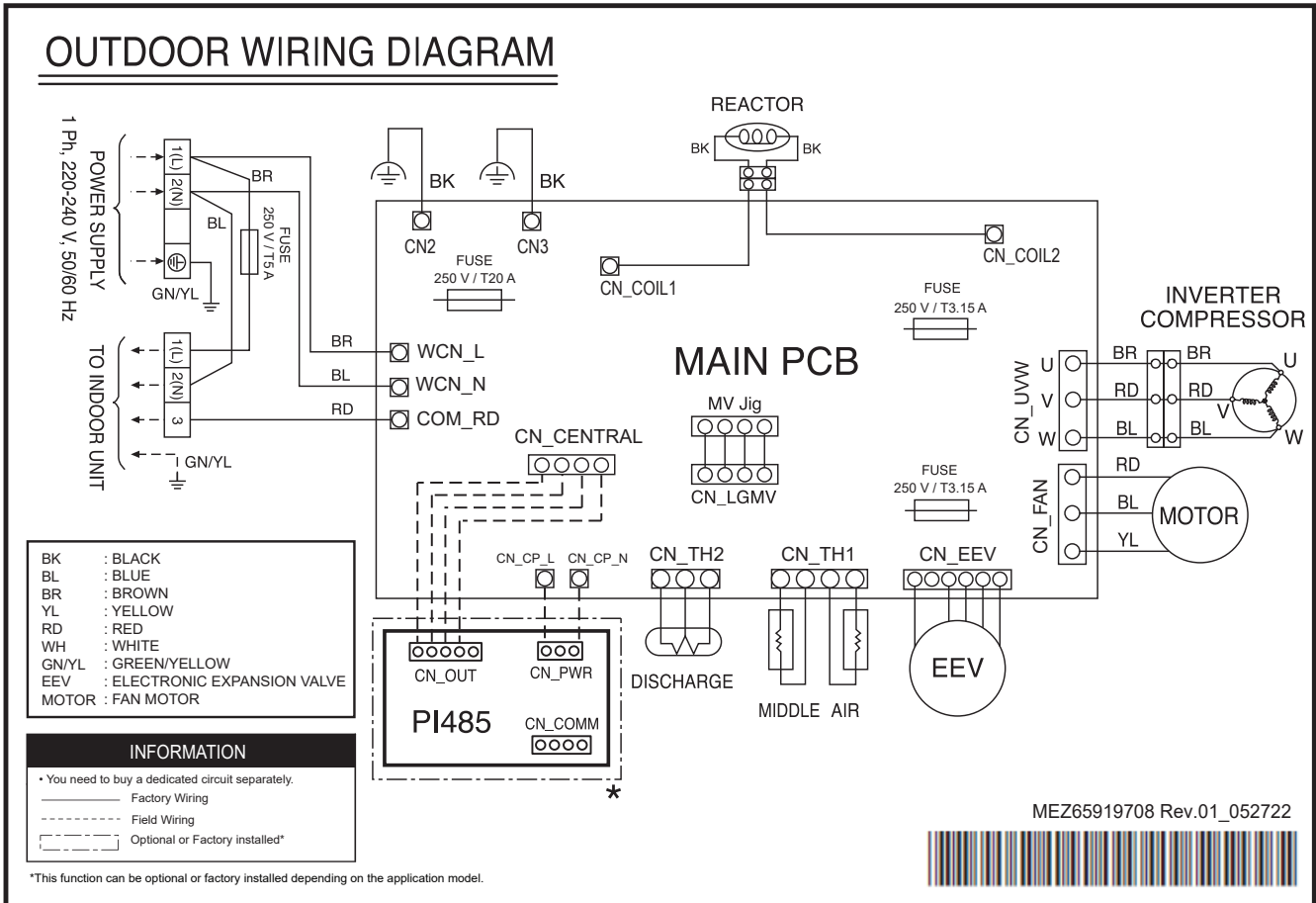
6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.5 Piping Diagrams



6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.6 Wiring Diagrams





**6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]****6.7 Capacity Tables****6.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.09	3.08	0.58	4.02	3.90	0.73	4.73	4.53	0.85	5.27	4.85	0.93	5.45	4.82	0.94	5.81	4.76	0.96	6.22	4.70	0.96
25	3.09	3.08	0.69	4.02	3.90	0.86	4.73	4.53	1.00	5.27	4.85	1.10	5.45	4.82	1.11	5.81	4.76	1.13	6.22	4.70	1.14
32	3.09	3.08	0.83	4.02	3.90	1.05	4.73	4.53	1.21	5.27	4.85	1.33	5.45	4.82	1.34	5.81	4.76	1.37	6.22	4.70	1.38
35	3.09	3.08	0.90	4.02	3.90	1.13	4.73	4.53	1.30	5.27	4.85	1.43	5.45	4.82	1.44	5.81	4.76	1.47	6.22	4.70	1.48
40	3.09	3.08	0.95	4.02	3.90	1.19	4.73	4.53	1.38	5.27	4.85	1.51	5.45	4.82	1.53	5.81	4.76	1.56	6.22	4.70	1.57
43	3.09	3.08	0.98	4.02	3.90	1.23	4.73	4.53	1.43	5.27	4.85	1.57	5.45	4.82	1.58	5.81	4.76	1.61	6.22	4.70	1.62
46	3.09	3.08	1.01	4.02	3.90	1.27	4.73	4.53	1.47	5.27	4.85	1.62	5.45	4.82	1.63	5.81	4.76	1.66	6.22	4.70	1.67
48	3.09	3.08	1.05	4.02	3.90	1.32	4.73	4.53	1.52	5.06	4.69	1.56	5.20	4.63	1.58	5.48	4.52	1.61	5.81	4.41	1.61
50	3.09	3.08	1.08	4.02	3.90	1.36	4.73	4.53	1.47	4.85	4.53	1.50	4.95	4.45	1.52	5.16	4.28	1.55	5.41	4.12	1.56

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]****6.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

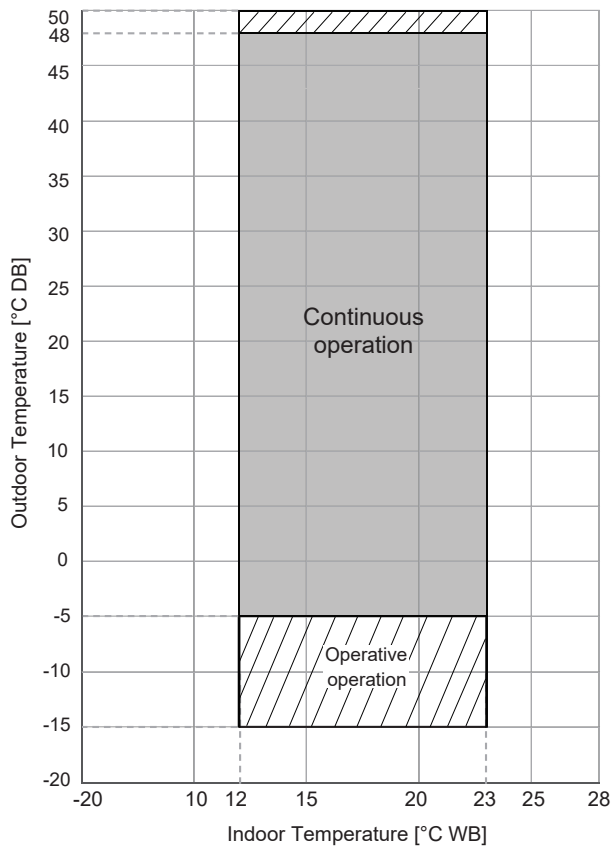
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.9 Operation Limits

6.9.1 Cooling



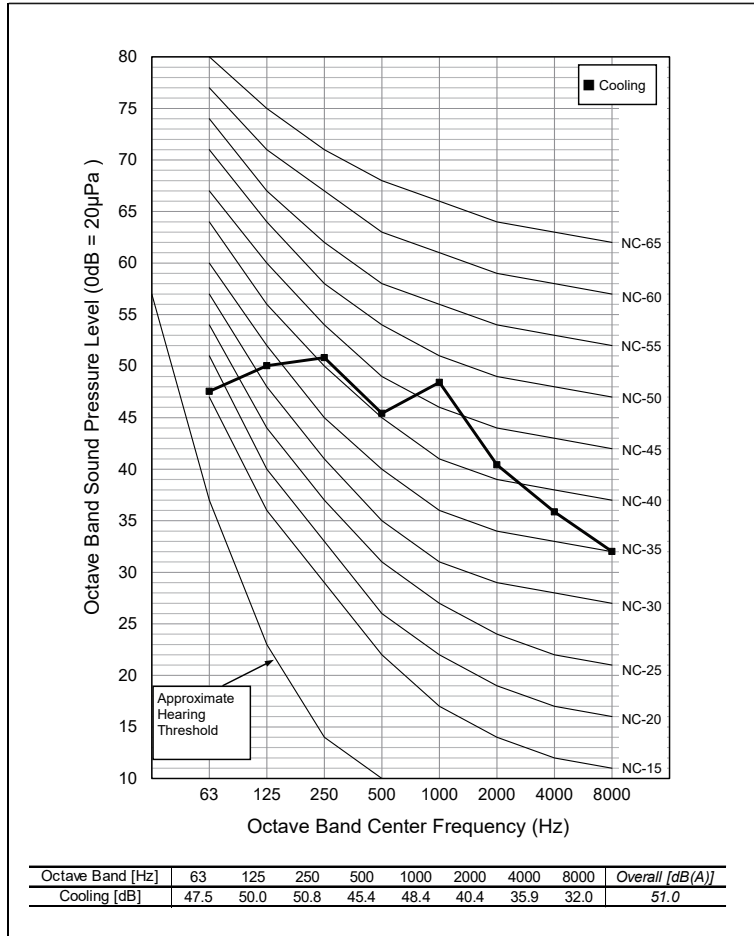
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

6. ZUUQ18GA0 [ZUAB1] + ZTNQ18GPLA0 [ZTNQ18GPLA0]

6.10 Sound Levels

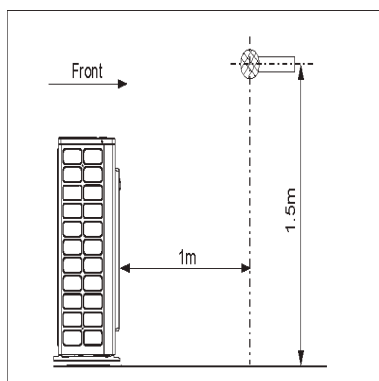
6.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	51 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

## 7.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	6.74
		Btu/h	23,000
	Min ~ Max	kW	2.11~7.09
		Btu/h	7,200~24,200
	Sensible Heat (Rated)	kW	6.20
		Btu/h	21,160
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~2.24~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.01
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 10.20 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.3
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	20
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	51 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	12.3
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	9.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U18A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DAT156MAD x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	400 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 24 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.41
Dimensions	Net(W x H x D)	mm	770 x 545 x 288
	Shipping(W x H x D)	mm	- x - x -
Weight	Net	kg	30.9
	Shipping	kg	33.2
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.98
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]****7.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

## 7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

## 7.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

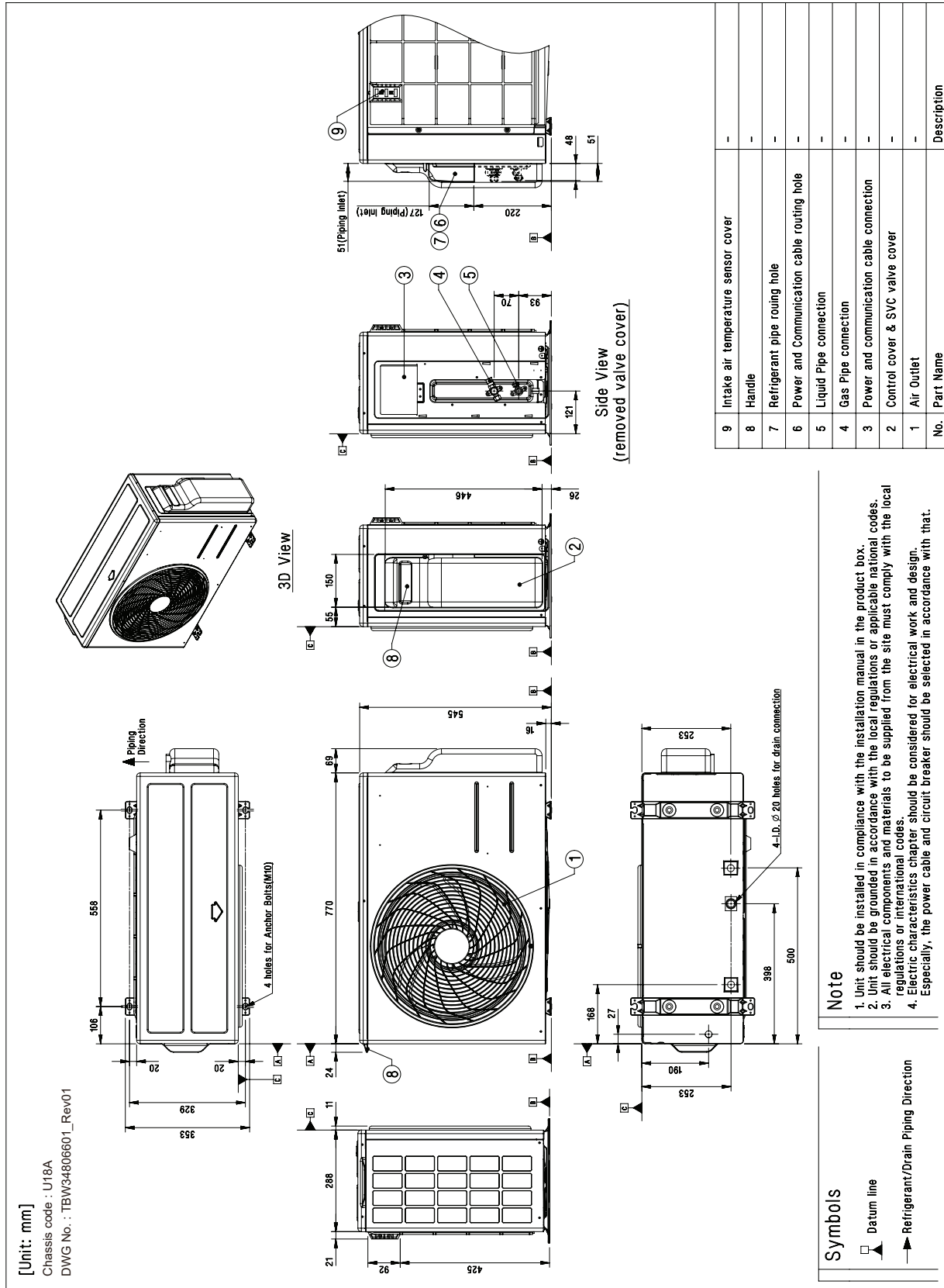
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

7.4 Dimensions

7.4.1 Product

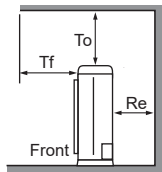


7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

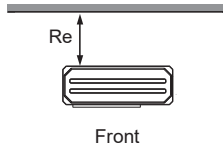
7.4.2 Install Space

For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

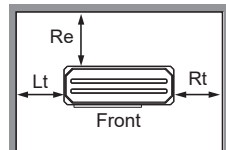


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

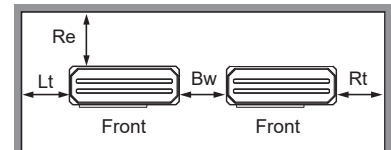


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)

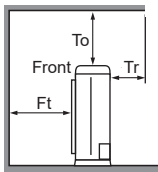
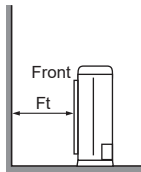


**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

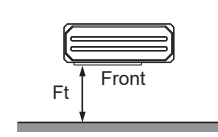
[Unit : mm(inch)]

Obstacle on the Discharge side

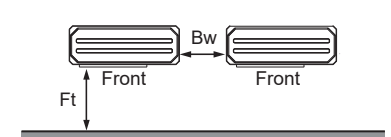
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

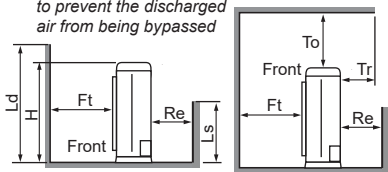


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

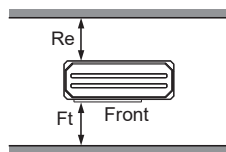
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

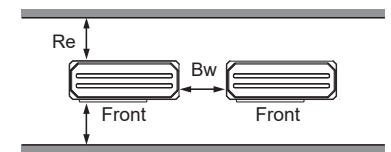
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

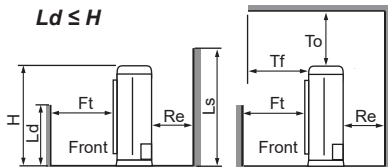


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H

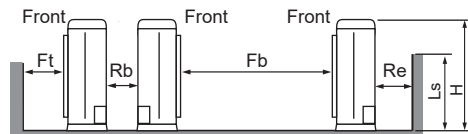


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

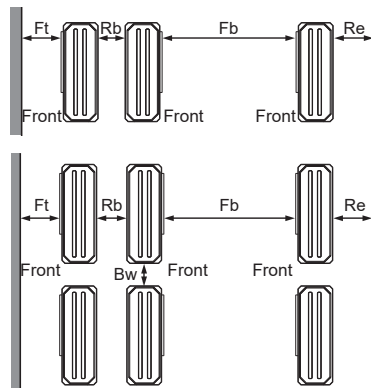
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

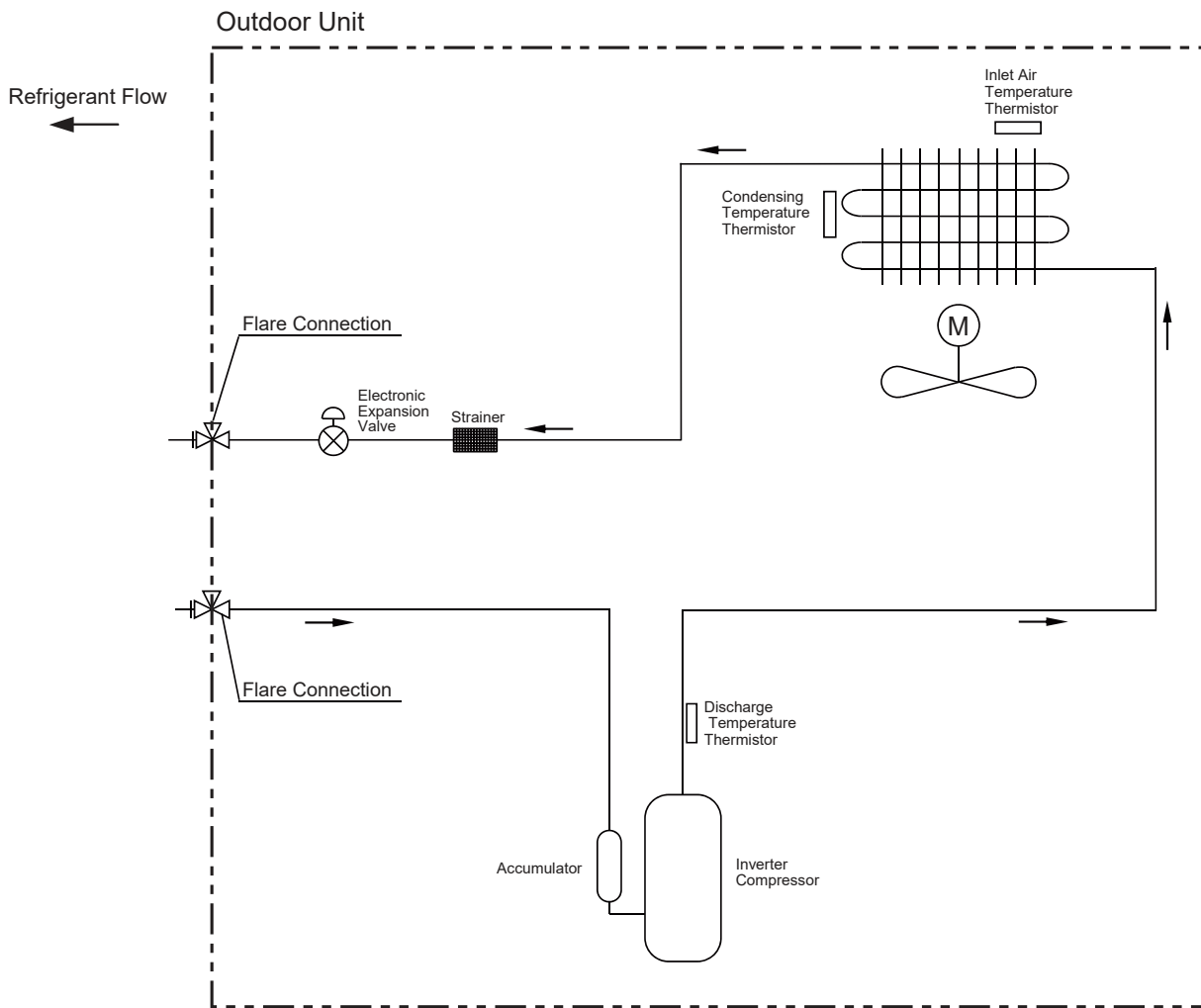
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

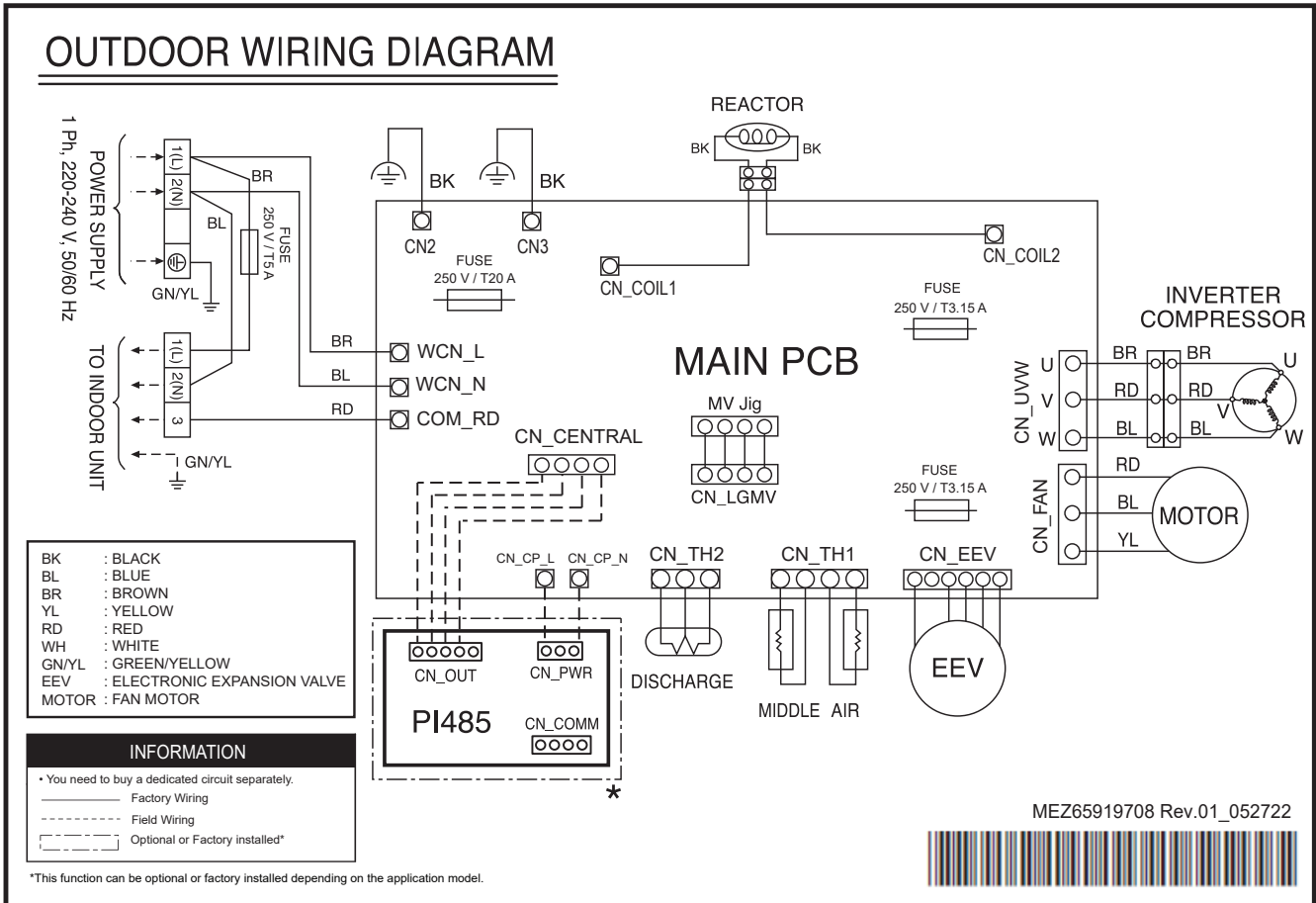
7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

7.5 Piping Diagrams



7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

7.6 Wiring Diagrams



**7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]****7.7 Capacity Tables****7.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.96	3.94	0.91	5.15	4.99	1.14	6.05	5.80	1.33	6.74	6.20	1.45	6.97	6.16	1.47	7.43	6.08	1.50	7.95	6.01	1.51
25	3.96	3.94	1.08	5.15	4.99	1.35	6.05	5.80	1.56	6.74	6.20	1.72	6.97	6.16	1.74	7.43	6.08	1.77	7.95	6.01	1.78
32	3.96	3.94	1.31	5.15	4.99	1.64	6.05	5.80	1.90	6.74	6.20	2.08	6.97	6.16	2.10	7.43	6.08	2.15	7.95	6.01	2.16
35	3.96	3.94	1.40	5.15	4.99	1.76	6.05	5.80	2.04	6.74	6.20	2.24	6.97	6.16	2.26	7.43	6.08	2.31	7.95	6.01	2.32
40	3.96	3.94	1.25	5.15	4.99	1.57	6.05	5.80	1.82	5.95	5.57	2.00	6.15	5.53	2.02	6.56	5.44	2.06	7.02	5.36	2.07
43	3.96	3.94	1.16	5.15	4.99	1.45	5.37	5.17	1.69	5.47	5.18	1.85	5.66	5.13	1.87	6.03	5.04	1.90	6.46	4.96	1.92
46	3.96	3.94	1.07	4.80	4.73	1.35	4.90	4.81	1.56	5.00	4.78	1.70	5.17	4.74	1.72	5.51	4.65	1.75	5.90	4.56	1.76
48	3.96	3.94	0.99	4.67	4.64	1.25	4.76	4.72	1.45	4.86	4.68	1.64	4.99	4.61	1.65	5.26	4.46	1.68	5.58	4.33	1.69
50	3.96	3.94	0.92	4.53	4.51	1.16	4.62	4.60	1.34	4.72	4.58	1.57	4.82	4.48	1.59	5.02	4.28	1.62	5.26	4.10	1.62

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]****7.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

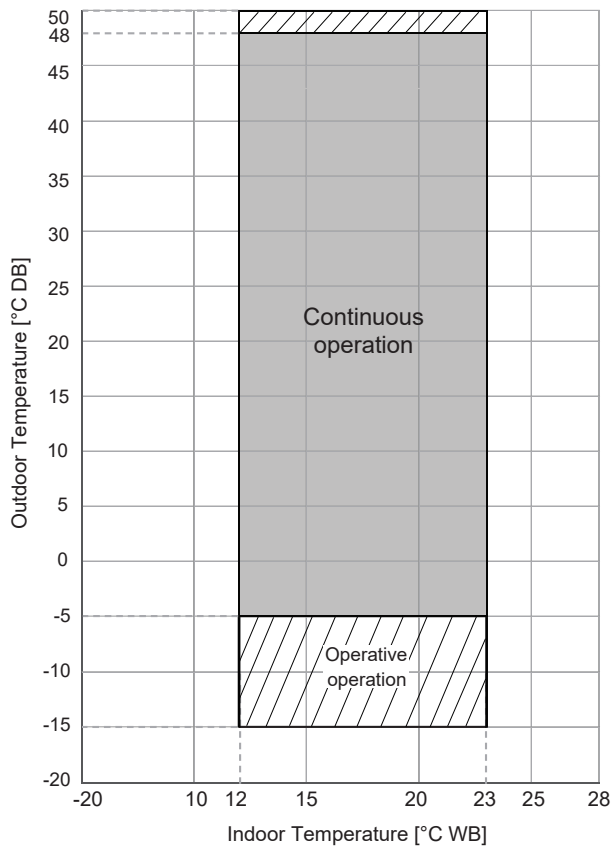
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

7.9 Operation Limits

7.9.1 Cooling



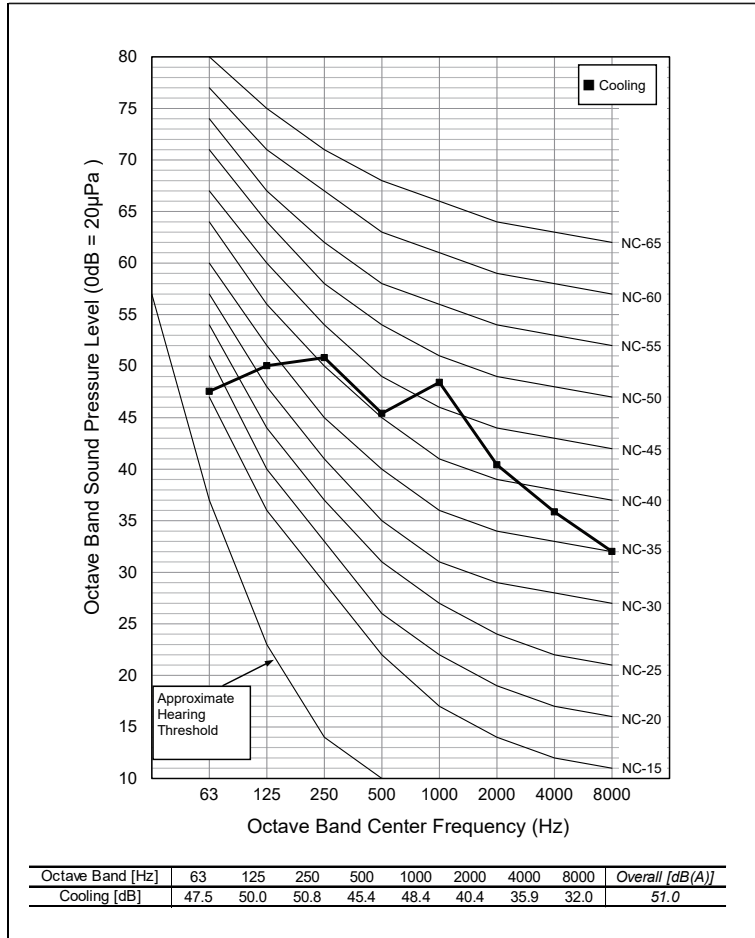
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

7. ZUUQ18GA0 [ZUAB1] + ZTNQ24GNLE0 [ZTNQ24GNLE0]

7.10 Sound Levels

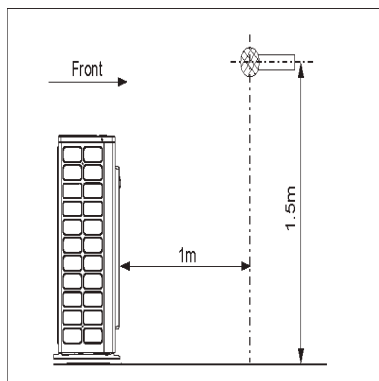
7.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	51 / -

**Note**

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

## 8.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	5.27
		Btu/h	18,000
	Min ~ Max	kW	1.58~6.01
		Btu/h	5,400~20,500
	Sensible Heat (Rated)	kW	4.38
		Btu/h	14,947
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~1.62~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.26
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 7.40/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	11.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.37
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	20
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	51 / -
Measurement Standard (Pressure Level)	-	-	-
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	13.1
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	9.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U18A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DAT156MAD x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	400 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 24 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.41
Dimensions	Net(W x H x D)	mm	770 x 545 x 288
	Shipping(W x H x D)	mm	- x - x -
Weight	Net	kg	30.9
	Shipping	kg	33.2
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.98
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]****8.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]****8.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

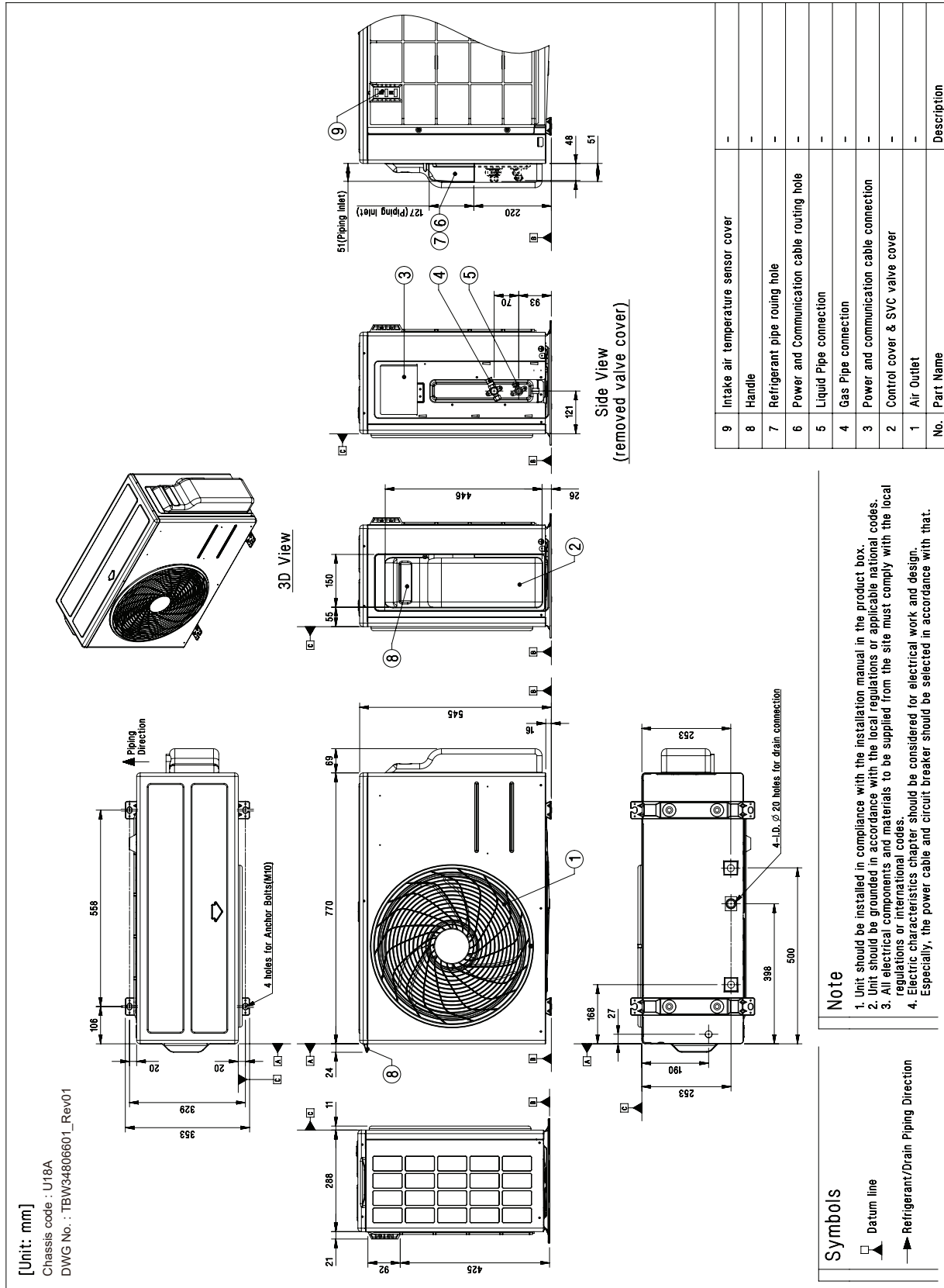
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.4 Dimensions

8.4.1 Product



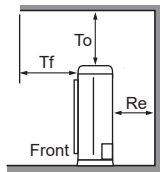
8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.4.2 Install Space

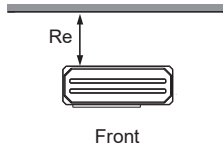
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

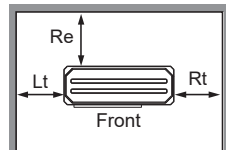


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

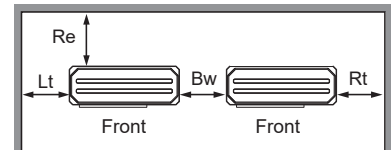


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



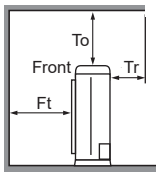
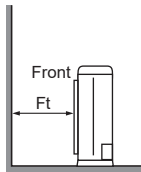
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



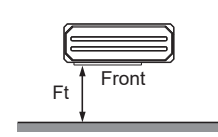
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

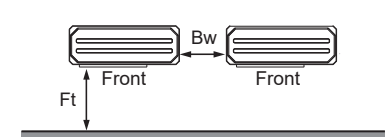
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

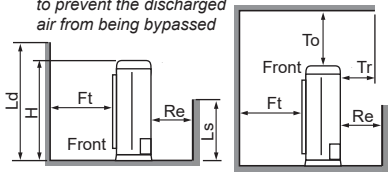


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

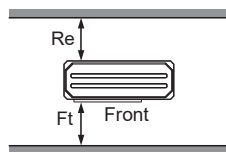
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

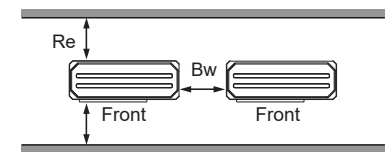
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

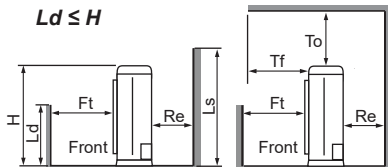


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



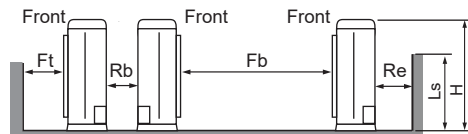
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

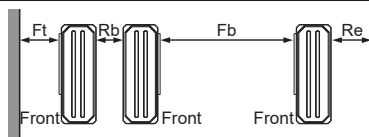
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

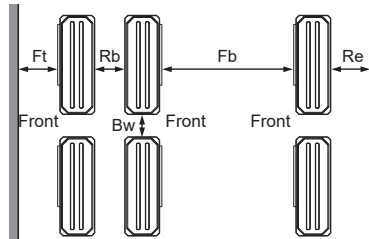


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

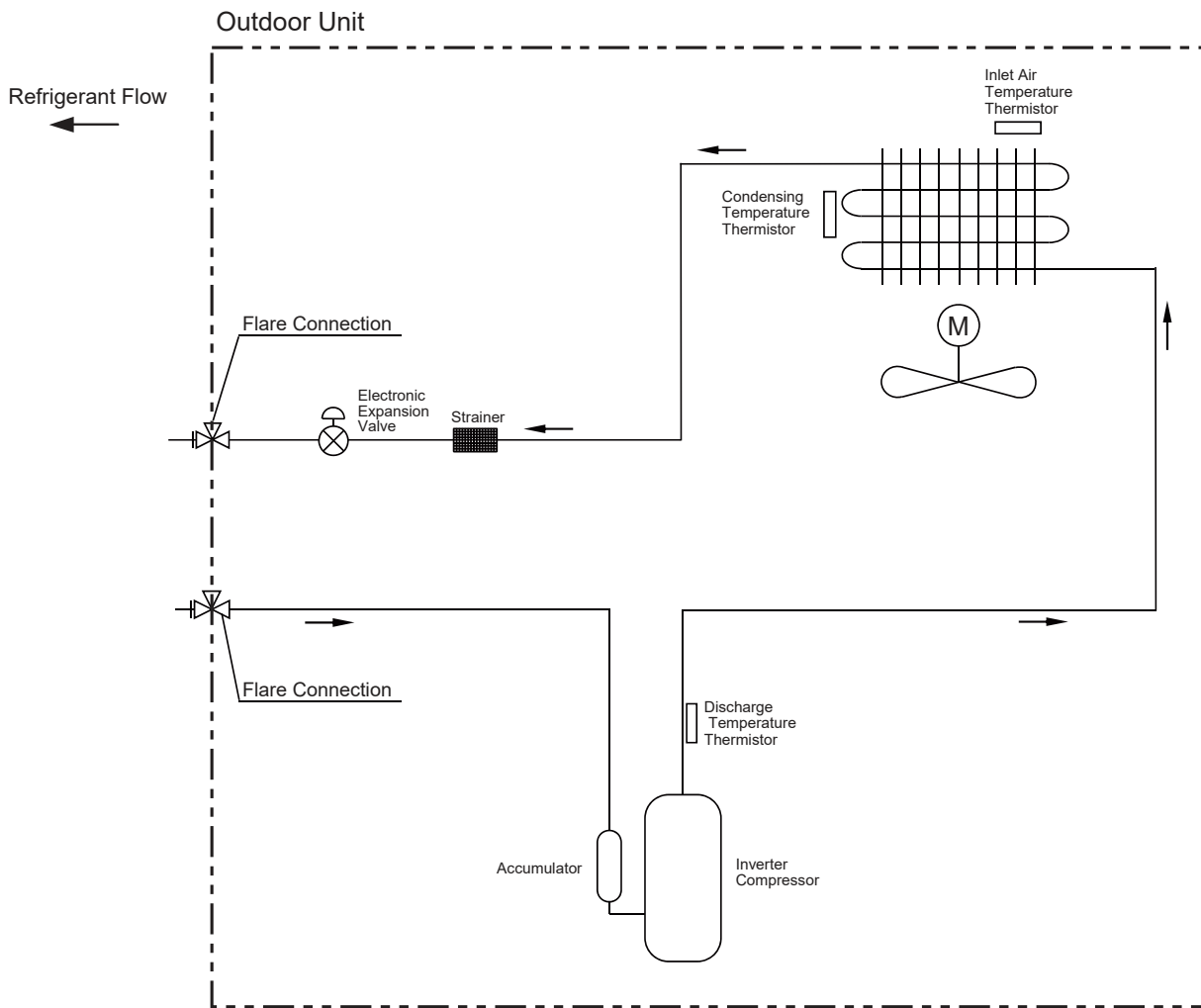
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

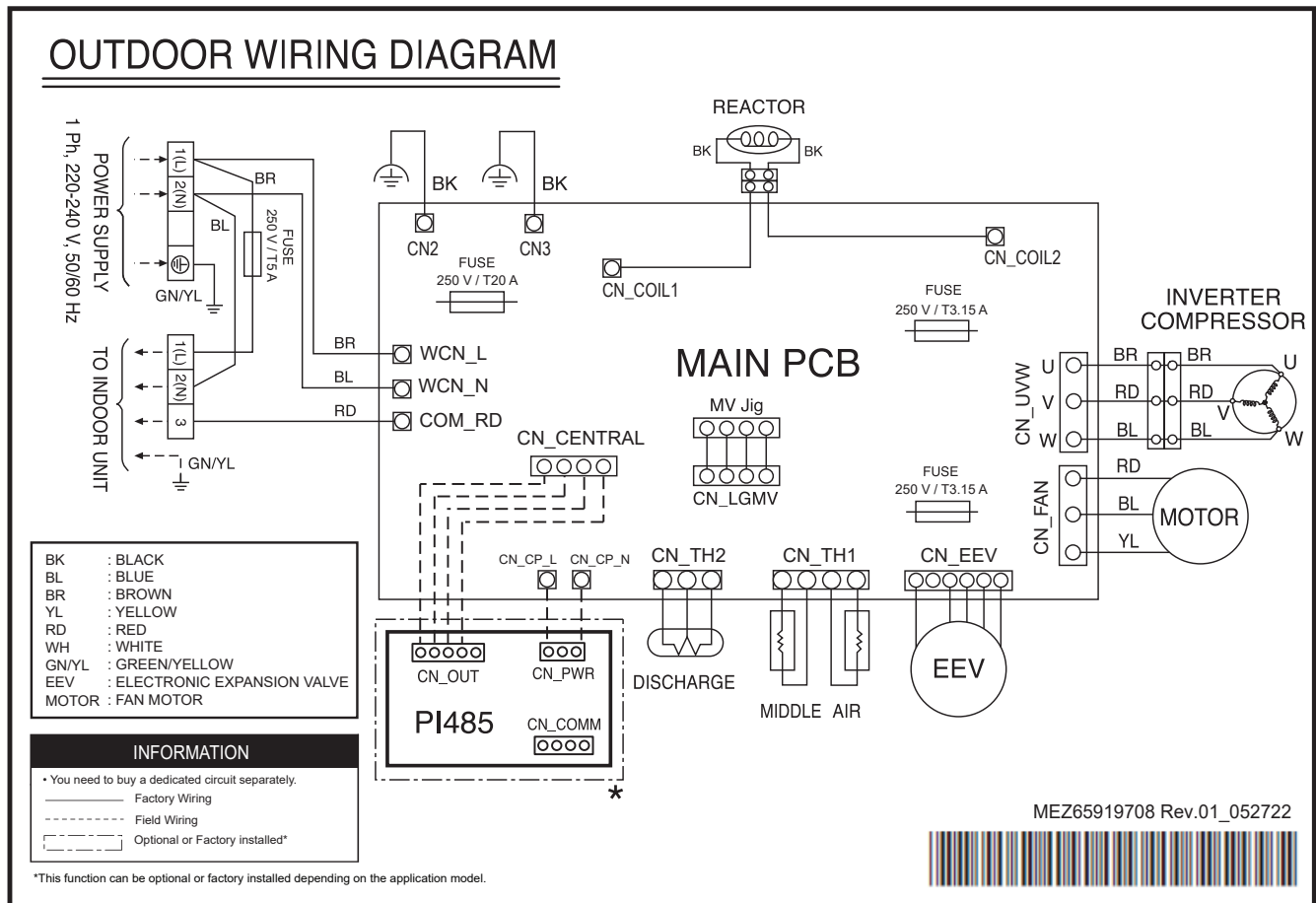
8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.5 Piping Diagrams



8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.6 Wiring Diagrams





## 8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

## 8.7 Capacity Tables

## 8.7.1 Cooling

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.09	2.95	0.66	4.02	3.52	0.83	4.73	4.09	0.96	5.27	4.38	1.05	5.45	4.35	1.06	5.81	4.30	1.08	6.22	4.24	1.09
25	3.09	2.95	0.78	4.02	3.52	0.98	4.73	4.09	1.13	5.27	4.38	1.24	5.45	4.35	1.25	5.81	4.30	1.28	6.22	4.24	1.29
32	3.09	2.95	0.94	4.02	3.52	1.19	4.73	4.09	1.37	5.27	4.38	1.51	5.45	4.35	1.52	5.81	4.30	1.55	6.22	4.24	1.56
35	3.09	2.95	1.02	4.02	3.52	1.27	4.73	4.09	1.48	5.27	4.38	1.62	5.45	4.35	1.64	5.81	4.30	1.67	6.22	4.24	1.68
40	3.09	2.95	1.08	4.02	3.52	1.35	4.73	4.09	1.56	5.27	4.38	1.72	5.45	4.35	1.74	5.81	4.30	1.77	6.22	4.24	1.78
43	3.09	2.95	1.11	4.02	3.52	1.40	4.73	4.09	1.62	5.27	4.38	1.77	5.45	4.35	1.79	5.81	4.30	1.83	6.22	4.24	1.84
46	3.09	2.95	1.15	4.02	3.52	1.44	4.73	4.09	1.67	5.27	4.38	1.83	5.45	4.35	1.85	5.81	4.30	1.89	6.22	4.24	1.90
48	3.09	2.95	1.19	4.02	3.52	1.49	4.73	4.09	1.73	5.06	4.24	1.77	5.20	4.19	1.79	5.48	4.08	1.82	5.81	3.99	1.83
50	3.09	2.95	1.23	4.02	3.52	1.54	4.73	4.09	1.67	4.85	4.09	1.70	4.95	4.01	1.72	5.16	3.86	1.75	5.41	3.73	1.76

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]****8.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

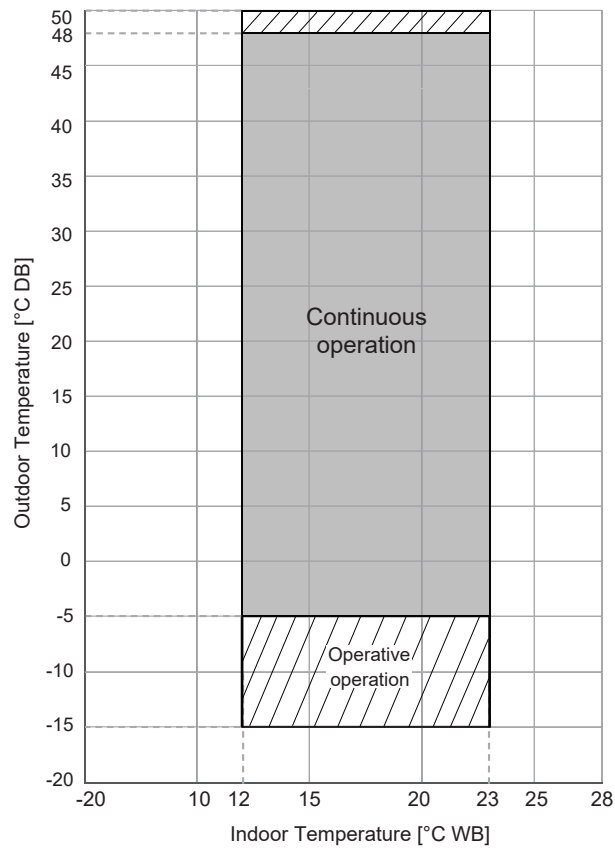
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.9 Operation Limits

8.9.1 Cooling



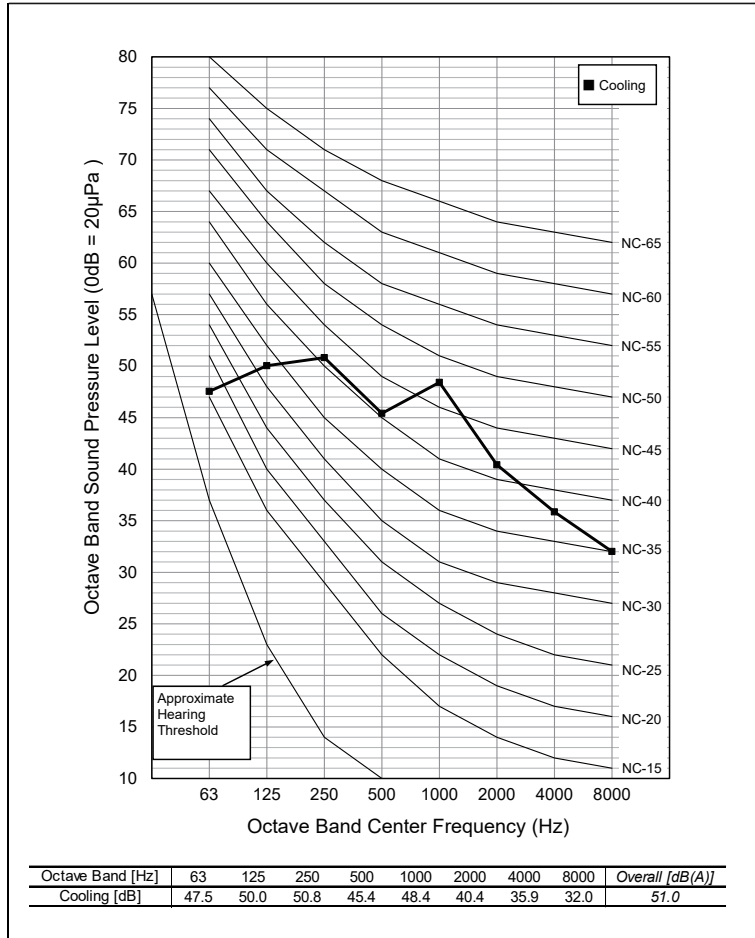
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

8. ZUUQ18GA0 [ZUAB1] + ZBNQ18GM1A0 [ZBNQ18GM1A0]

8.10 Sound Levels

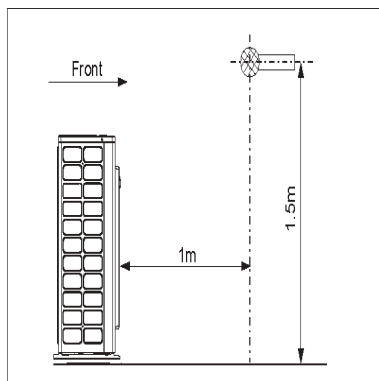
8.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	51 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

## 9.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	5.27
		Btu/h	18,000
	Min ~ Max	kW	2.05~5.70
		Btu/h	7,000~19,460
	Sensible Heat (Rated)	kW	3.92
		Btu/h	13,378
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~1.64~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.22
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 7.50/
Running Current(Heating)	Min/Rated/Max	A	- / -/
Running Current	Maximum	A	11.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.01
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	15
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 30 / 5
Maximum Height Difference	IDU - ODU(Max)	m	20
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	51 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	12.1
	Maximum Fuse Amperes (MFA)	A	15
	Comp_Rated Load Amperes (Max)	A	9.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.25
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U18A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	43.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DAT156MAD x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	400 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 24 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.41
Dimensions	Net(W x H x D)	mm	770 x 545 x 288
	Shipping(W x H x D)	mm	- x - x -
Weight	Net	kg	30.9
	Shipping	kg	33.2
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	0.98
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ6.35 (1/4)
	Gas	mm(inch)	Φ12.7 (1/2)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]****9.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	X
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	X
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

## 9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

### 9.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

#### Note

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.





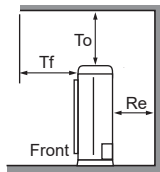
9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

9.4.2 Install Space

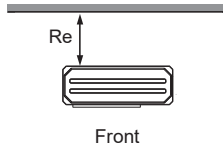
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

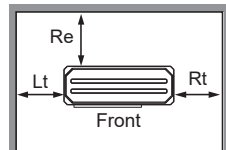


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

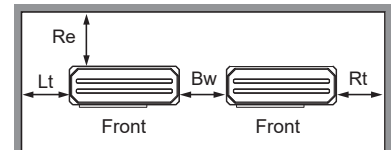


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



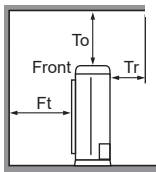
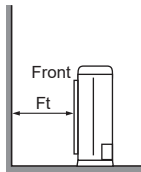
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



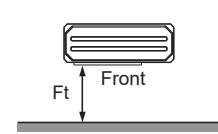
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

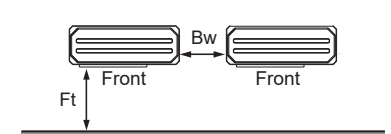
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

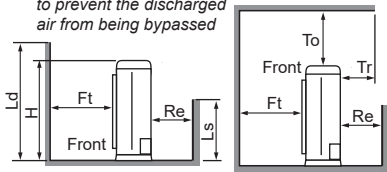


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

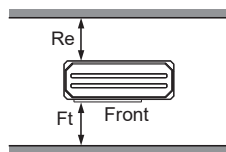
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

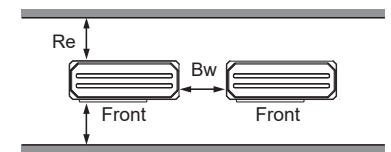
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

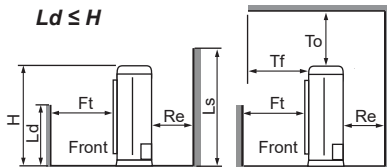


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)

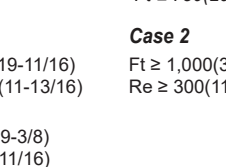


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

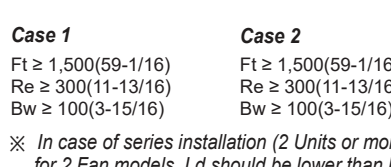
Ld ≤ H



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)



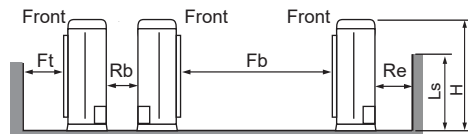
**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)



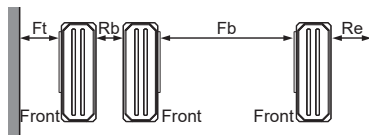
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

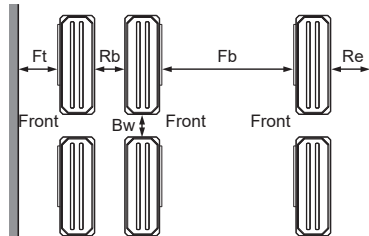
Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



**1 Column**  
Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



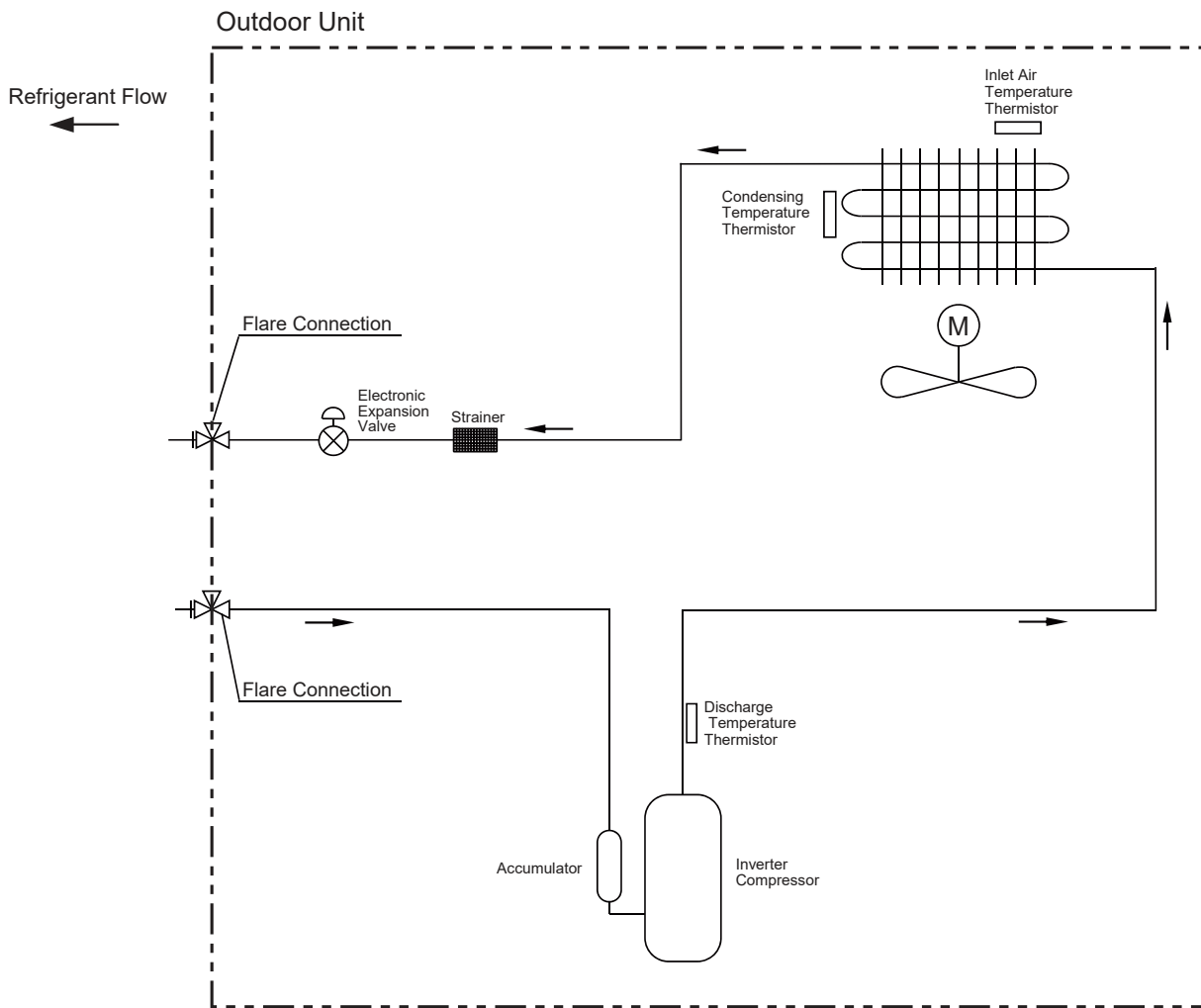
**Multiple Columns**  
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

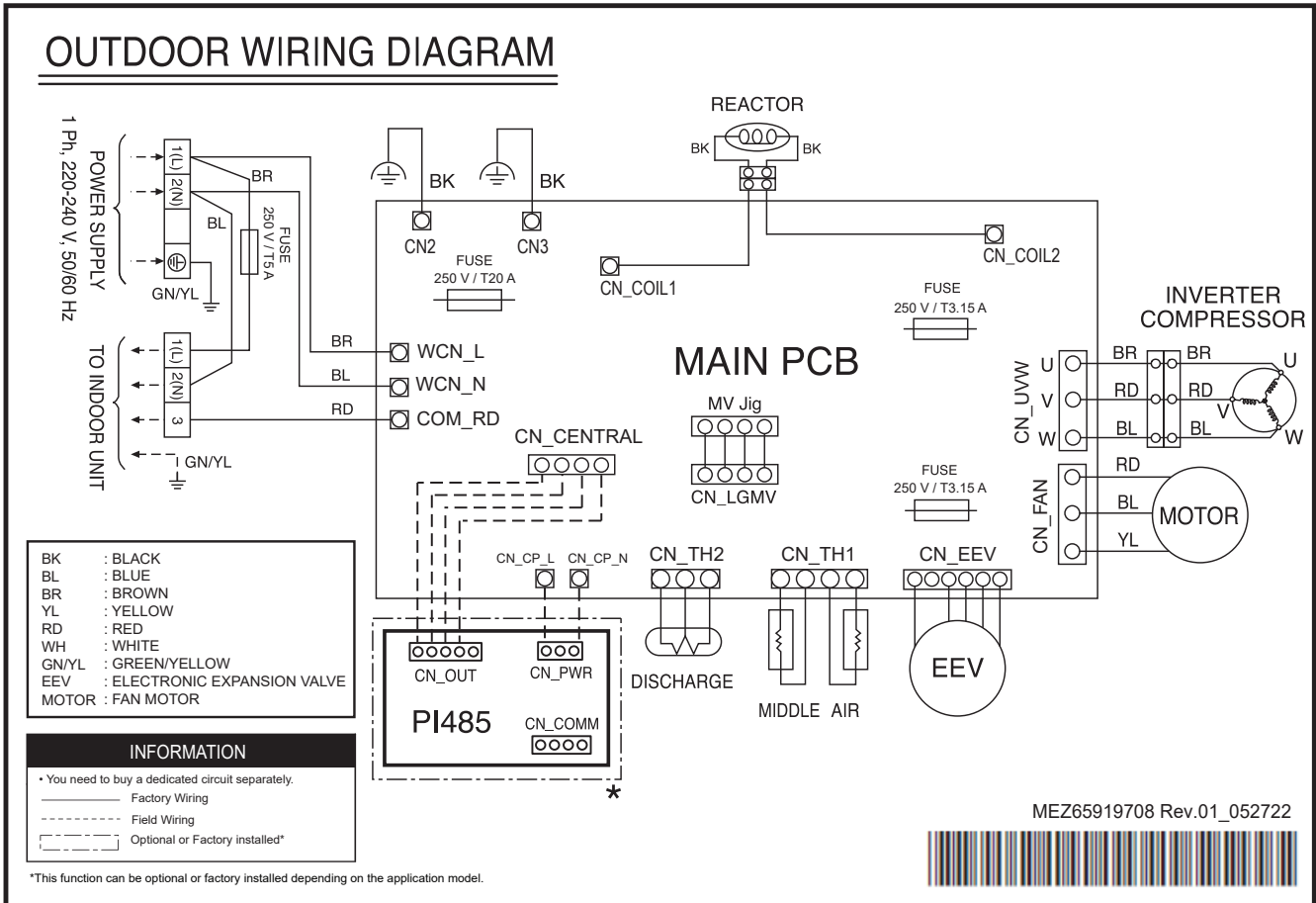
9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

9.5 Piping Diagrams



9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

9.6 Wiring Diagrams



## 9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

### 9.7 Capacity Tables

#### 9.7.1 Cooling

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.09	2.64	0.67	4.02	3.15	0.84	4.73	3.66	0.97	5.27	3.92	1.07	5.45	3.90	1.08	5.81	3.85	1.10	6.22	3.80	1.10
25	3.09	2.64	0.79	4.02	3.15	0.99	4.73	3.66	1.15	5.27	3.92	1.26	5.45	3.90	1.27	5.81	3.85	1.29	6.22	3.80	1.30
32	3.09	2.64	0.96	4.02	3.15	1.20	4.73	3.66	1.39	5.27	3.92	1.53	5.45	3.90	1.54	5.81	3.85	1.57	6.22	3.80	1.58
35	3.09	2.64	1.03	4.02	3.15	1.29	4.73	3.66	1.50	5.27	3.92	1.64	5.45	3.90	1.66	5.81	3.85	1.69	6.22	3.80	1.70
40	3.09	2.64	1.09	4.02	3.15	1.37	4.73	3.66	1.58	5.27	3.92	1.74	5.45	3.90	1.76	5.81	3.85	1.79	6.22	3.80	1.80
43	3.09	2.64	1.13	4.02	3.15	1.41	4.73	3.66	1.64	5.27	3.92	1.80	5.45	3.90	1.82	5.81	3.85	1.85	6.22	3.80	1.86
46	3.09	2.64	1.16	4.02	3.15	1.46	4.73	3.66	1.69	5.27	3.92	1.85	5.45	3.90	1.87	5.81	3.85	1.91	6.22	3.80	1.92
48	3.09	2.64	1.20	4.02	3.15	1.51	4.73	3.66	1.75	5.06	3.79	1.79	5.20	3.74	1.81	5.48	3.65	1.84	5.81	3.57	1.85
50	3.09	2.64	1.24	4.02	3.15	1.56	4.73	3.66	1.69	4.85	3.66	1.72	4.95	3.59	1.74	5.16	3.46	1.77	5.41	3.33	1.78

#### Note

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]****9.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	-	-	-	-

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

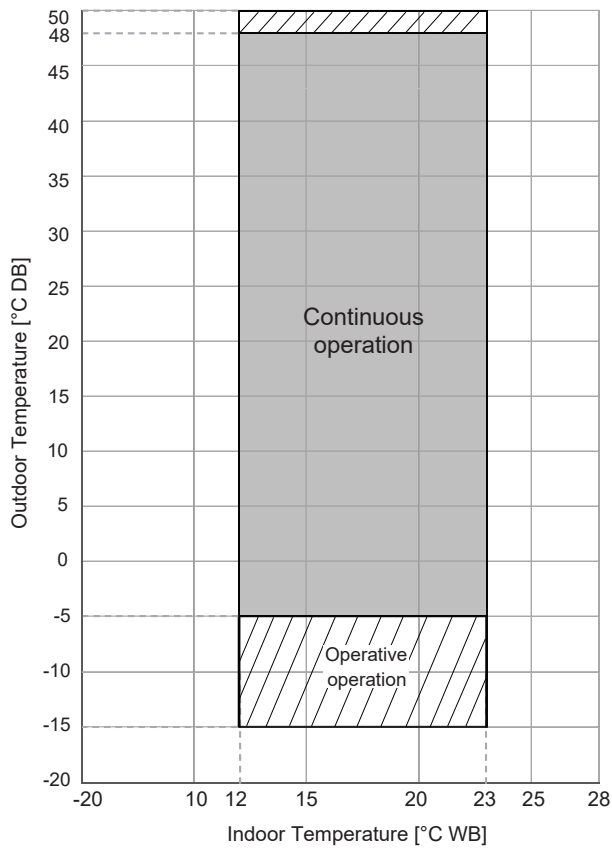
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

9.9 Operation Limits

9.9.1 Cooling



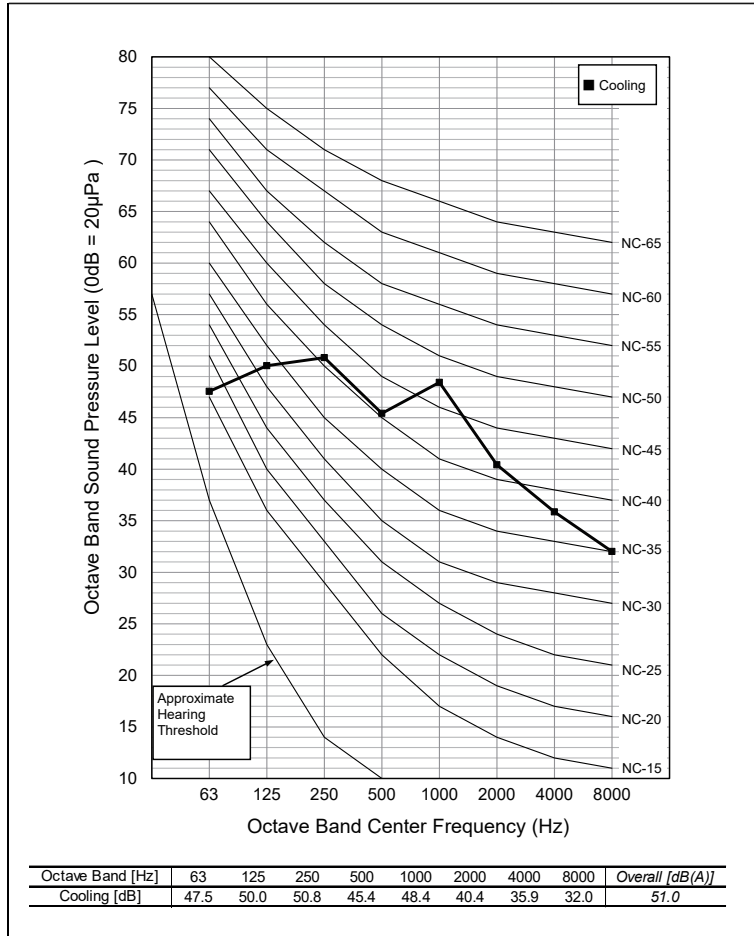
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

9. ZUUQ18GA0 [ZUAB1] + ZTNQ18GTLA0 [ZTNQ18GTLA0]

9.10 Sound Levels

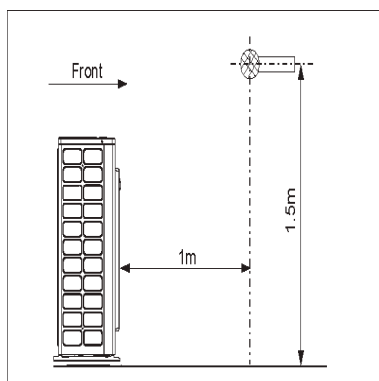
9.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	51 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

## 10.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	7.03
		Btu/h	24000
	Min ~ Max	kW	2.11 ~ 7.91
		Btu/h	7200 ~ 27000
	Sensible Heat (Rated)	kW	5.952
		Btu/h	20321
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 1.97 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.57
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 9.0 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.53
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	17.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]****10.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

## 10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

## 10.3 Accessory Compatibility List

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

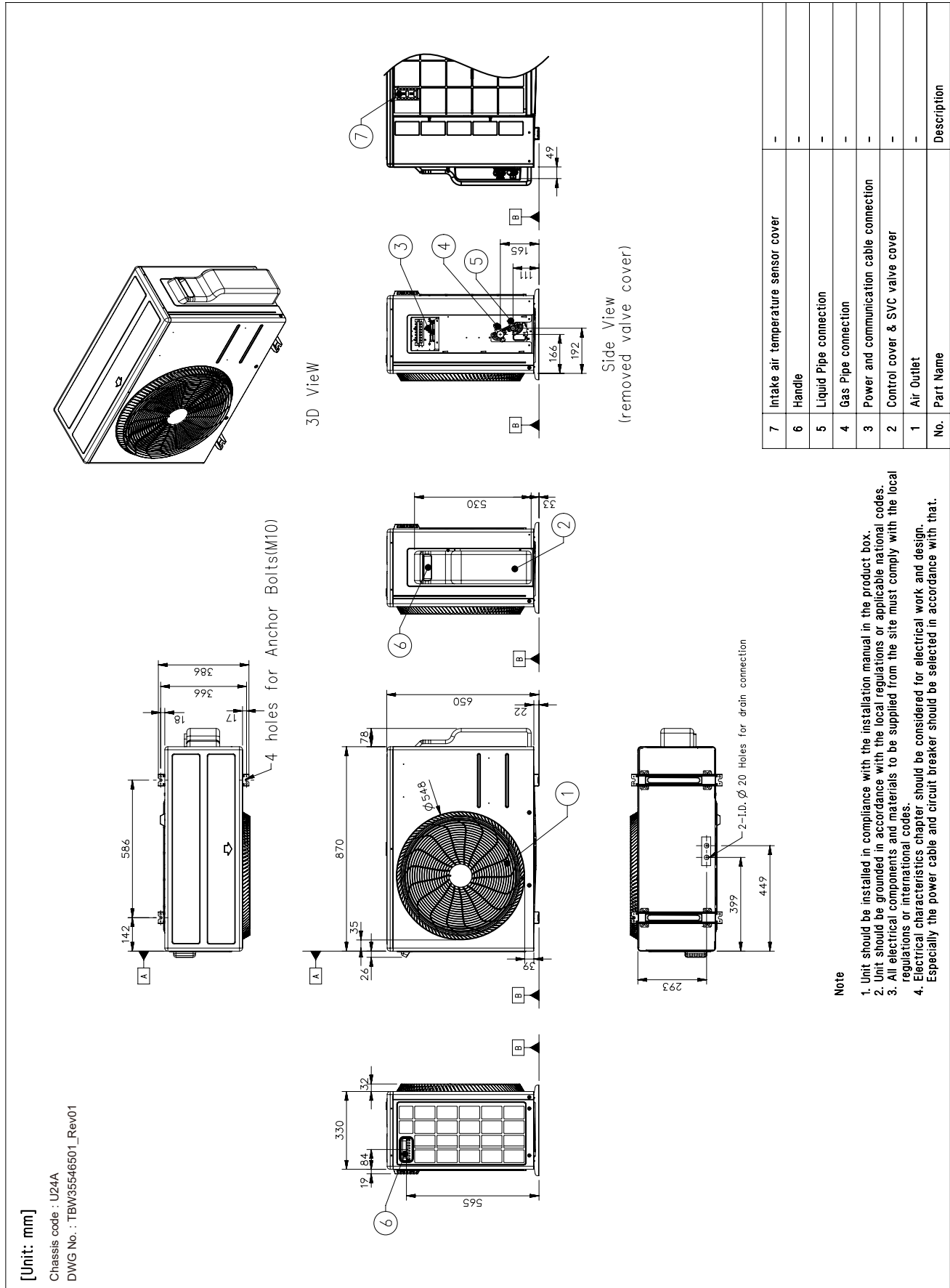
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

10.4 Dimensions

10.4.1 Product



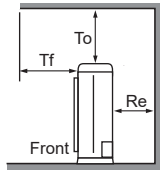
# 10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

## 10.4.2 Install Space

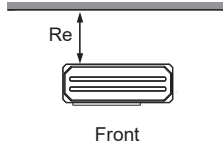
For Side Discharge (capacity < 28.0 kW)

### Obstacle on the Suction side

[Unit : mm(inch)]

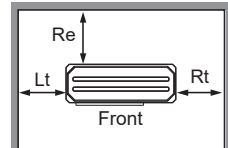


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

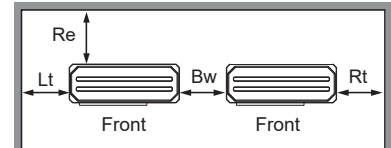


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



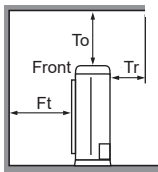
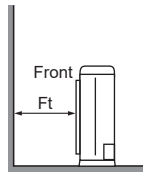
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



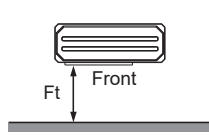
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

### Obstacle on the Discharge side

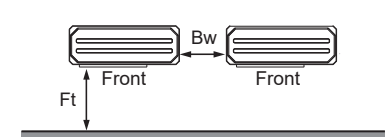
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

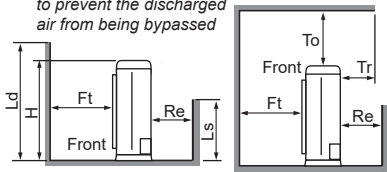


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

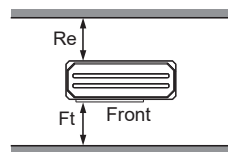
### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

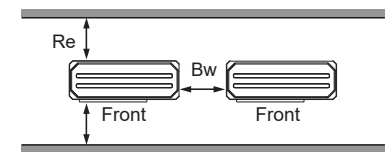
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

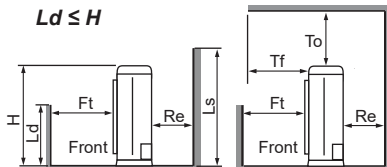


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



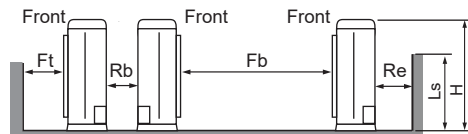
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

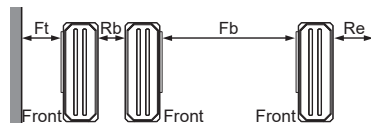
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

### Collective/Continuous Installation (Multiple Columns)

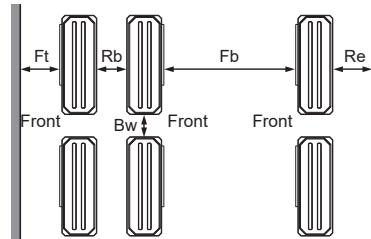


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



#### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



#### Multiple Columns

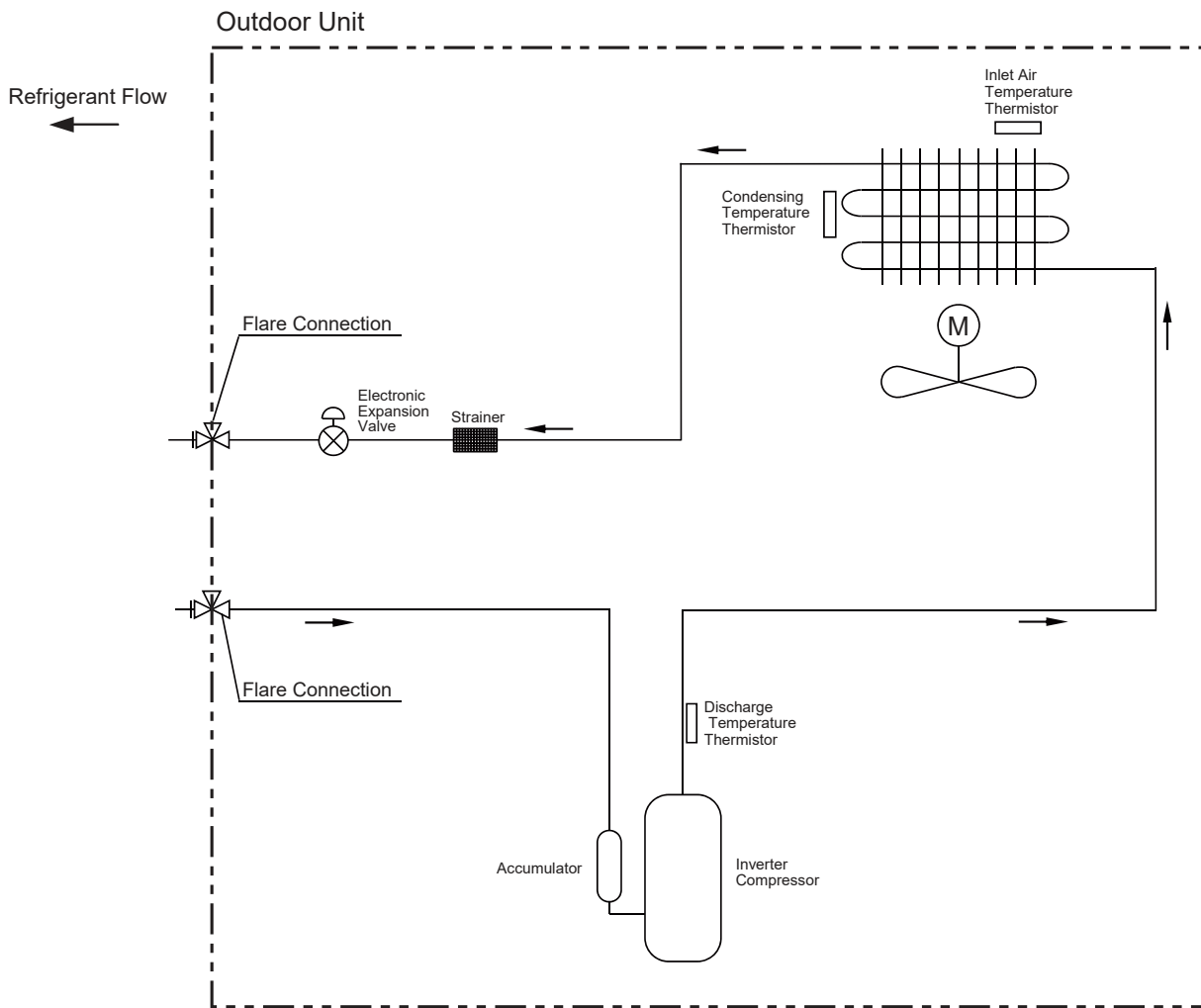
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

#### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

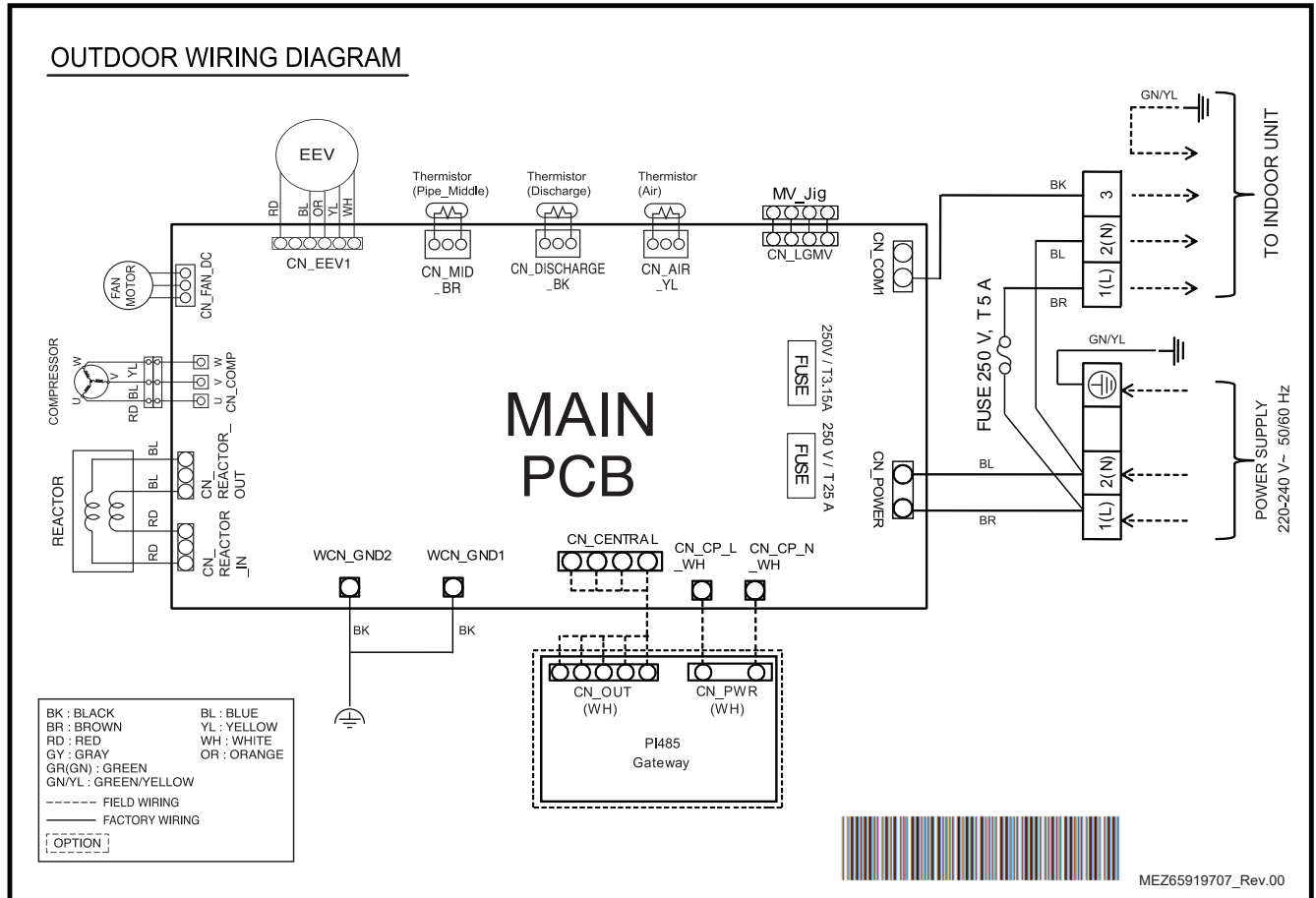
10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

10.5 Piping Diagrams



10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

10.6 Wiring Diagrams





**10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]****10.7 Capacity Tables****10.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	4.13	4.01	0.80	5.37	4.79	1.01	6.31	5.56	1.17	7.03	5.95	1.28	7.27	5.91	1.29	7.75	5.84	1.32	8.29	5.76	1.33
25	4.13	4.01	0.95	5.37	4.79	1.19	6.31	5.56	1.38	7.03	5.95	1.51	7.27	5.91	1.53	7.75	5.84	1.56	8.29	5.76	1.56
32	4.13	4.01	1.15	5.37	4.79	1.44	6.31	5.56	1.67	7.03	5.95	1.83	7.27	5.91	1.85	7.75	5.84	1.89	8.29	5.76	1.90
35	4.13	4.01	1.23	5.37	4.79	1.55	6.31	5.56	1.80	7.03	5.95	1.97	7.27	5.91	1.99	7.75	5.84	2.03	8.29	5.76	2.04
40	4.13	4.01	1.31	5.37	4.79	1.64	6.31	5.56	1.90	7.03	5.95	2.09	7.27	5.91	2.11	7.75	5.84	2.15	8.29	5.76	2.16
43	4.13	4.01	1.35	5.37	4.79	1.70	6.31	5.56	1.97	7.03	5.95	2.16	7.27	5.91	2.18	7.75	5.84	2.22	8.29	5.76	2.23
46	4.13	4.01	1.40	5.37	4.79	1.75	6.31	5.56	2.03	7.03	5.95	2.23	7.27	5.91	2.25	7.75	5.84	2.29	8.29	5.76	2.31
48	4.13	4.01	1.44	5.37	4.79	1.81	6.31	5.56	2.10	6.85	5.85	2.15	7.04	5.78	2.17	7.42	5.63	2.21	7.87	5.49	2.22
50	4.13	4.01	1.49	5.37	4.79	1.87	6.31	5.56	2.03	6.68	5.74	2.07	6.82	5.63	2.09	7.10	5.41	2.13	7.44	5.22	2.14

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]****10.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

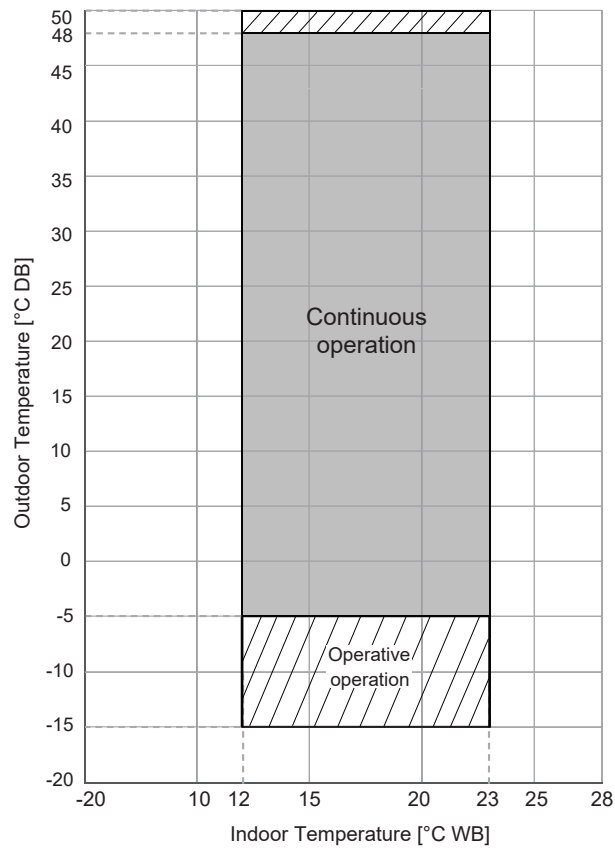
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

10.9 Operation Limits

10.9.1 Cooling



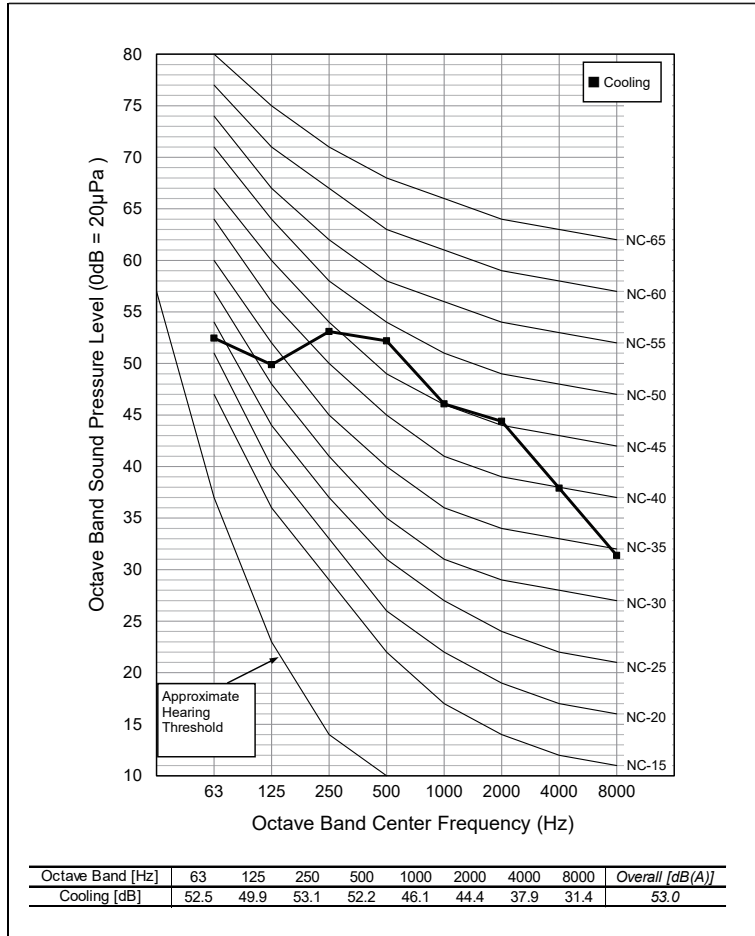
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

10. ZUUQ24GA0 [ZUAC1] + ZBNQ24GM1A0 [ZBNQ24GM1A0]

10.10 Sound Levels

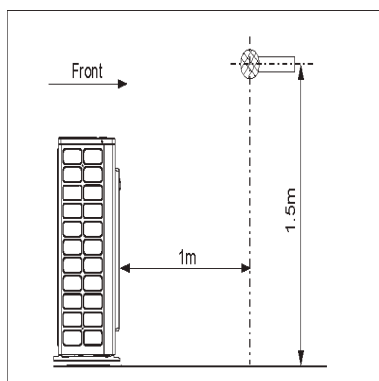
10.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

## 11.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	7.03
		Btu/h	24000
	Min ~ Max	kW	2.11 ~ 7.91
		Btu/h	7200 ~ 27000
	Sensible Heat (Rated)	kW	4.921
		Btu/h	16800
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 2.22 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.17
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 10.1 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.25
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]****11.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]****11.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

11.4 Dimensions

11.4.1 Product

**[Unit: mm]**  
 Chassis code : U24A  
 DWG No. : TBW35546501\_Rev01

3D View

Side View  
(removed valve cover)

**Note**

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit should be grounded in accordance with the local regulations or applicable national codes.
3. All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.
4. Electrical characteristics chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

No.	Part Name	Description
7	Intake air temperature sensor cover	-
6	Handle	-
5	Liquid Pipe connection	-
4	Gas Pipe connection	-
3	Power and communication cable connection	-
2	Control cover & SVC valve cover	-
1	Air Outlet	-

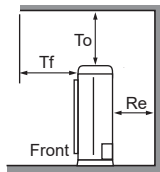
# 11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

## 11.4.2 Install Space

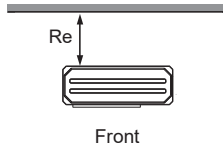
For Side Discharge (capacity < 28.0 kW)

### Obstacle on the Suction side

[Unit : mm(inch)]

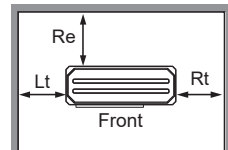


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

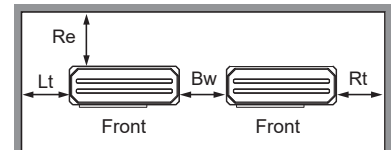


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



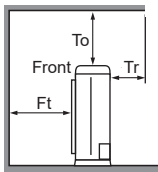
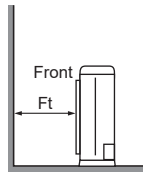
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



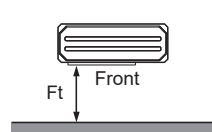
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

### Obstacle on the Discharge side

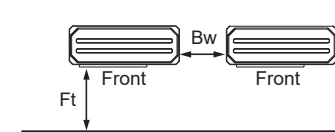
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

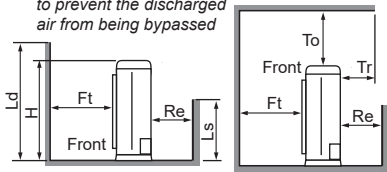


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

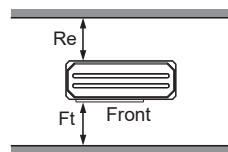
### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

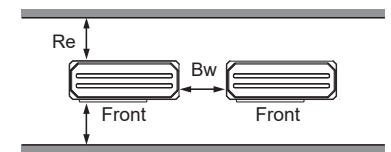
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

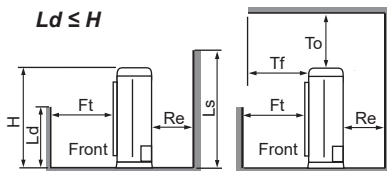


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



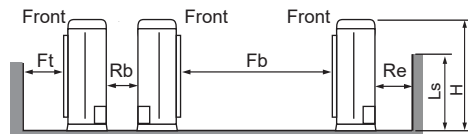
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

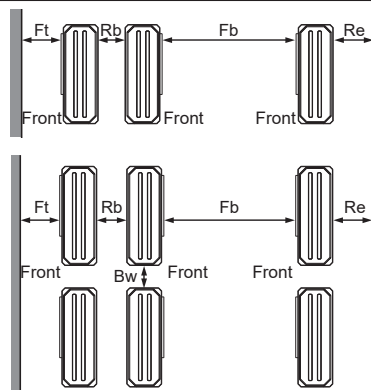
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

### Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



#### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

#### Multiple Columns

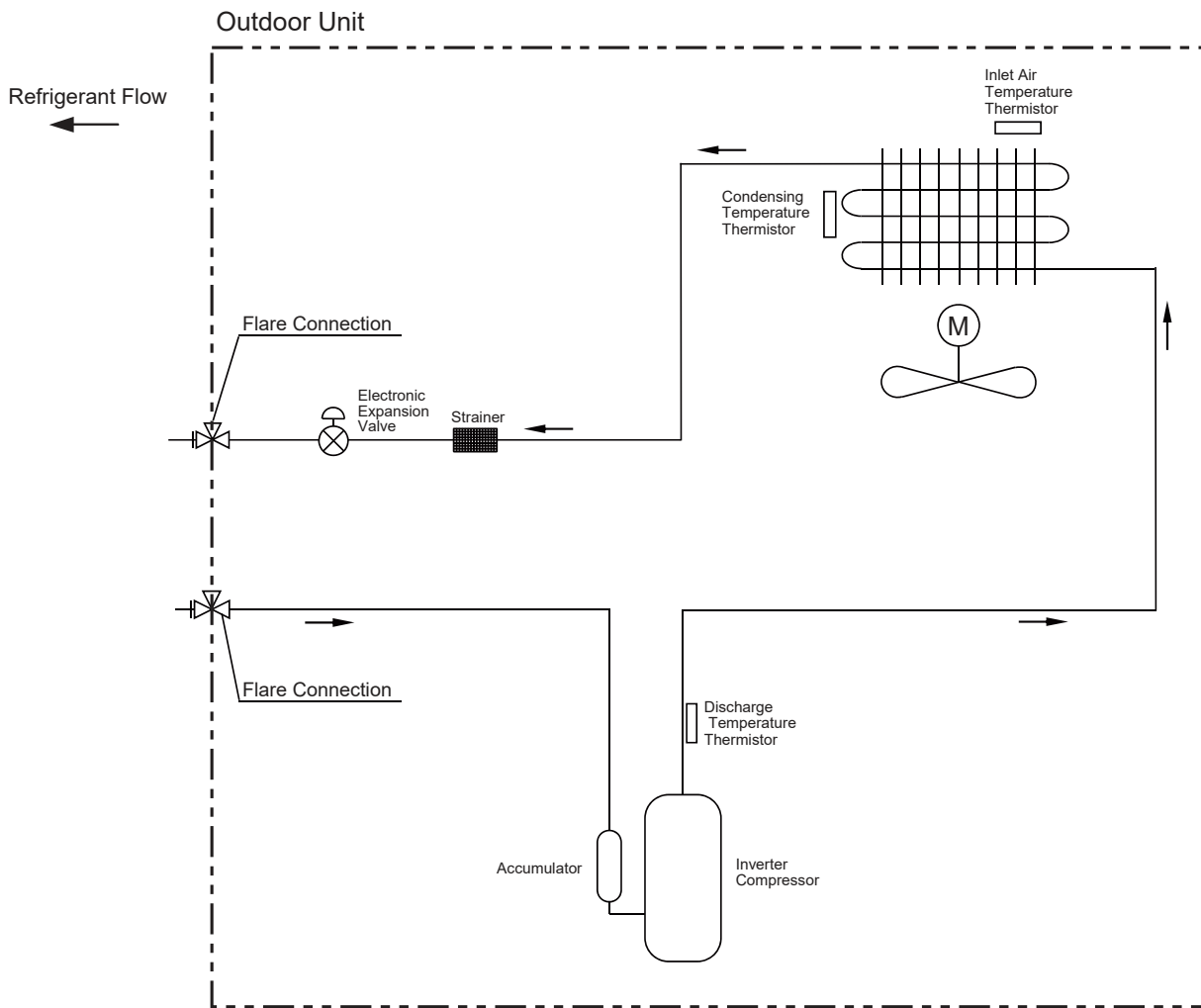
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

#### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

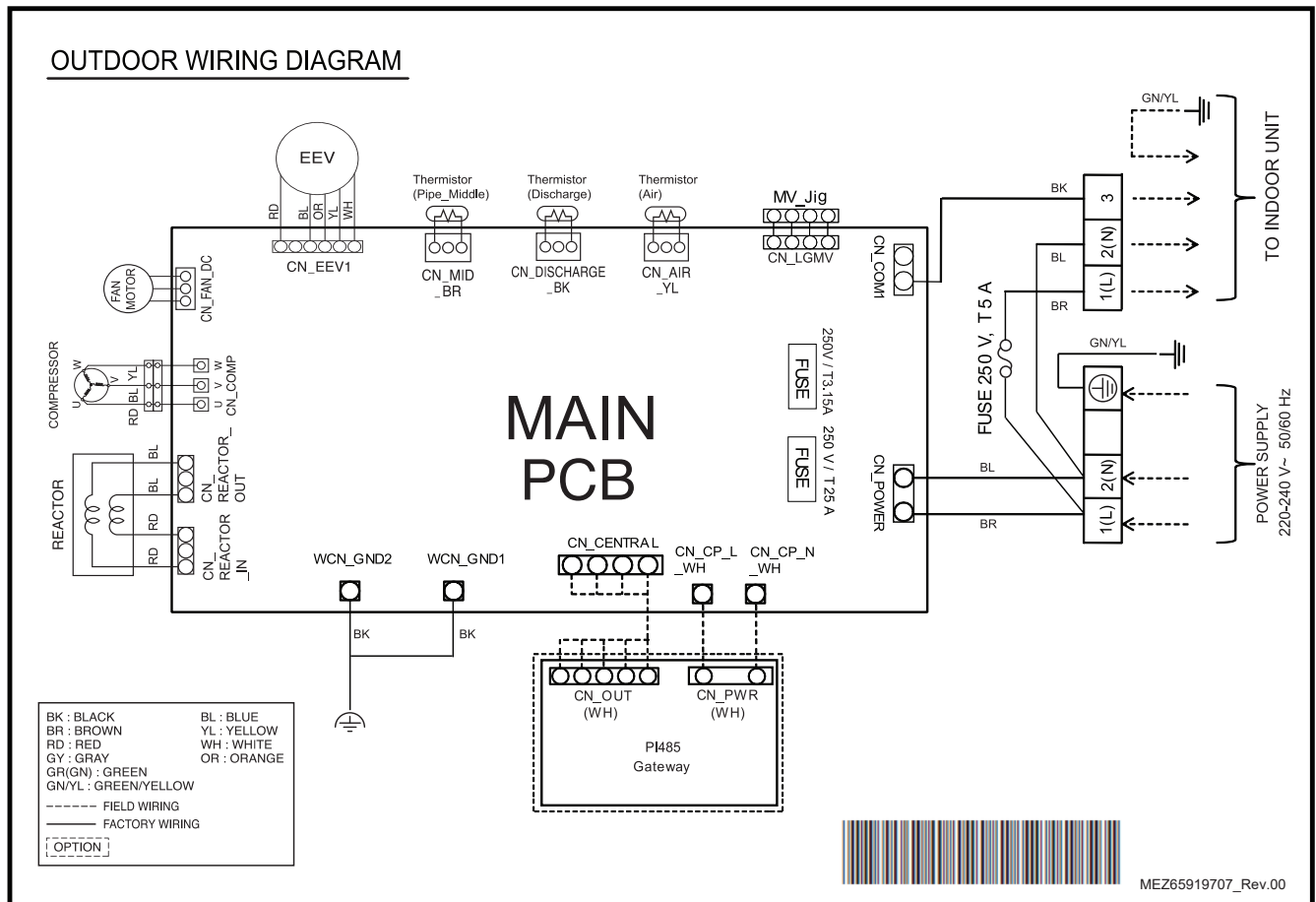
11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

11.5 Piping Diagrams



11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

11.6 Wiring Diagrams



**11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]****11.7 Capacity Tables****11.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	4.13	3.32	0.90	5.37	3.96	1.13	6.31	4.60	1.31	7.03	4.92	1.44	7.27	4.89	1.46	7.75	4.83	1.49	8.29	4.77	1.49
25	4.13	3.32	1.07	5.37	3.96	1.34	6.31	4.60	1.55	7.03	4.92	1.70	7.27	4.89	1.72	7.75	4.83	1.75	8.29	4.77	1.76
32	4.13	3.32	1.29	5.37	3.96	1.62	6.31	4.60	1.88	7.03	4.92	2.06	7.27	4.89	2.08	7.75	4.83	2.13	8.29	4.77	2.14
35	4.13	3.32	1.39	5.37	3.96	1.75	6.31	4.60	2.02	7.03	4.92	2.22	7.27	4.89	2.24	7.75	4.83	2.29	8.29	4.77	2.30
40	4.13	3.32	1.47	5.37	3.96	1.85	6.31	4.60	2.14	7.03	4.92	2.35	7.27	4.89	2.37	7.75	4.83	2.42	8.29	4.77	2.44
43	4.13	3.32	1.52	5.37	3.96	1.91	6.31	4.60	2.22	7.03	4.92	2.43	7.27	4.89	2.45	7.75	4.83	2.50	8.29	4.77	2.52
46	4.13	3.32	1.57	5.37	3.96	1.98	6.31	4.60	2.29	7.03	4.92	2.51	7.27	4.89	2.53	7.75	4.83	2.58	8.29	4.77	2.60
48	4.13	3.32	1.63	5.37	3.96	2.04	6.31	4.60	2.37	6.85	4.83	2.42	7.04	4.77	2.44	7.42	4.65	2.49	7.87	4.54	2.51
50	4.13	3.32	1.68	5.37	3.96	2.11	6.31	4.60	2.28	6.68	4.75	2.33	6.82	4.66	2.35	7.10	4.48	2.40	7.44	4.31	2.42

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]****11.8 Capacity Correction Factor**

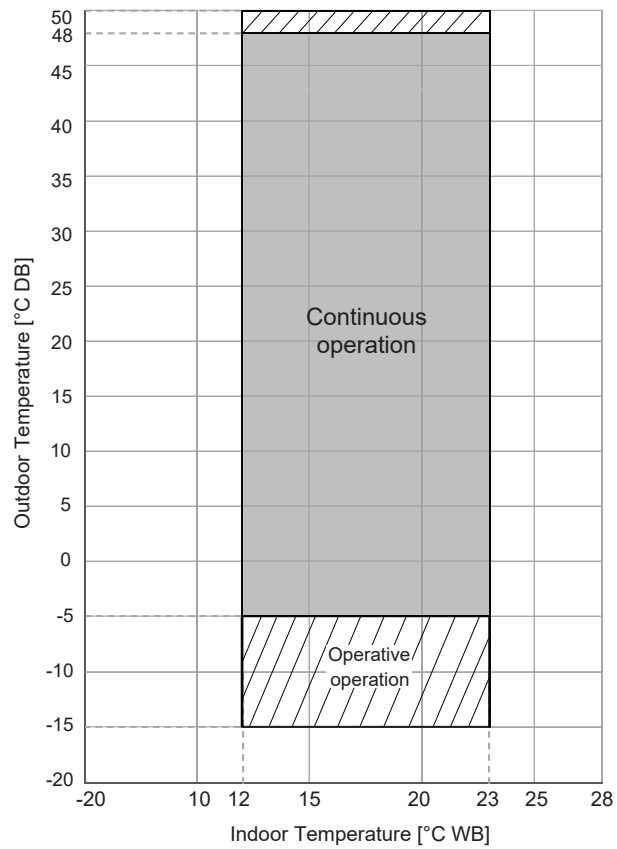
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

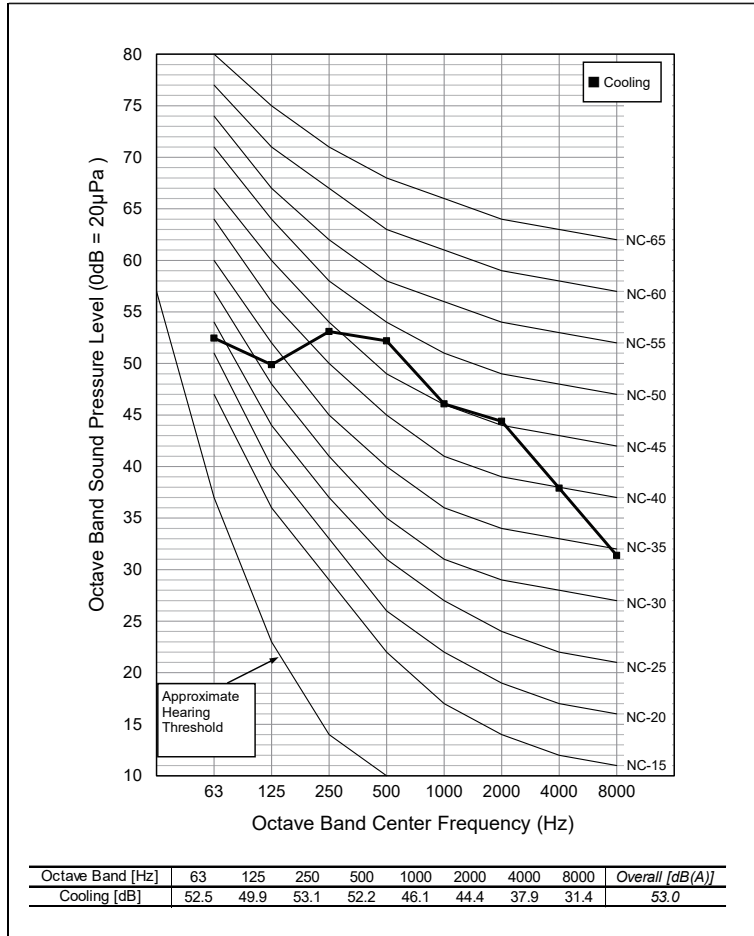
**11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]****11.9 Operation Limits****11.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

11. ZUUQ24GA0 [ZUAC1] + ZPNQ24GS1A0 [ZPNQ24GS1A0]

11.10 Sound Levels

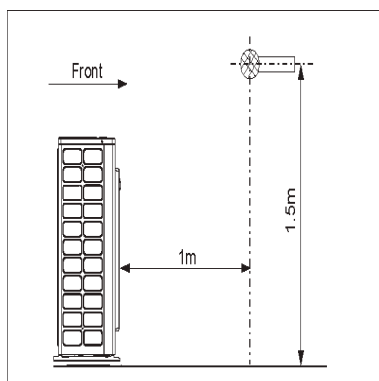
11.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

## 12.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	6.45
		Btu/h	22000
	Min ~ Max	kW	1.98 ~ 7.6
		Btu/h	6760 ~ 25940
	Sensible Heat (Rated)	kW	4.515
		Btu/h	15400
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 2.19 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	2.94
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 10.0 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.5
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]****12.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]****12.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

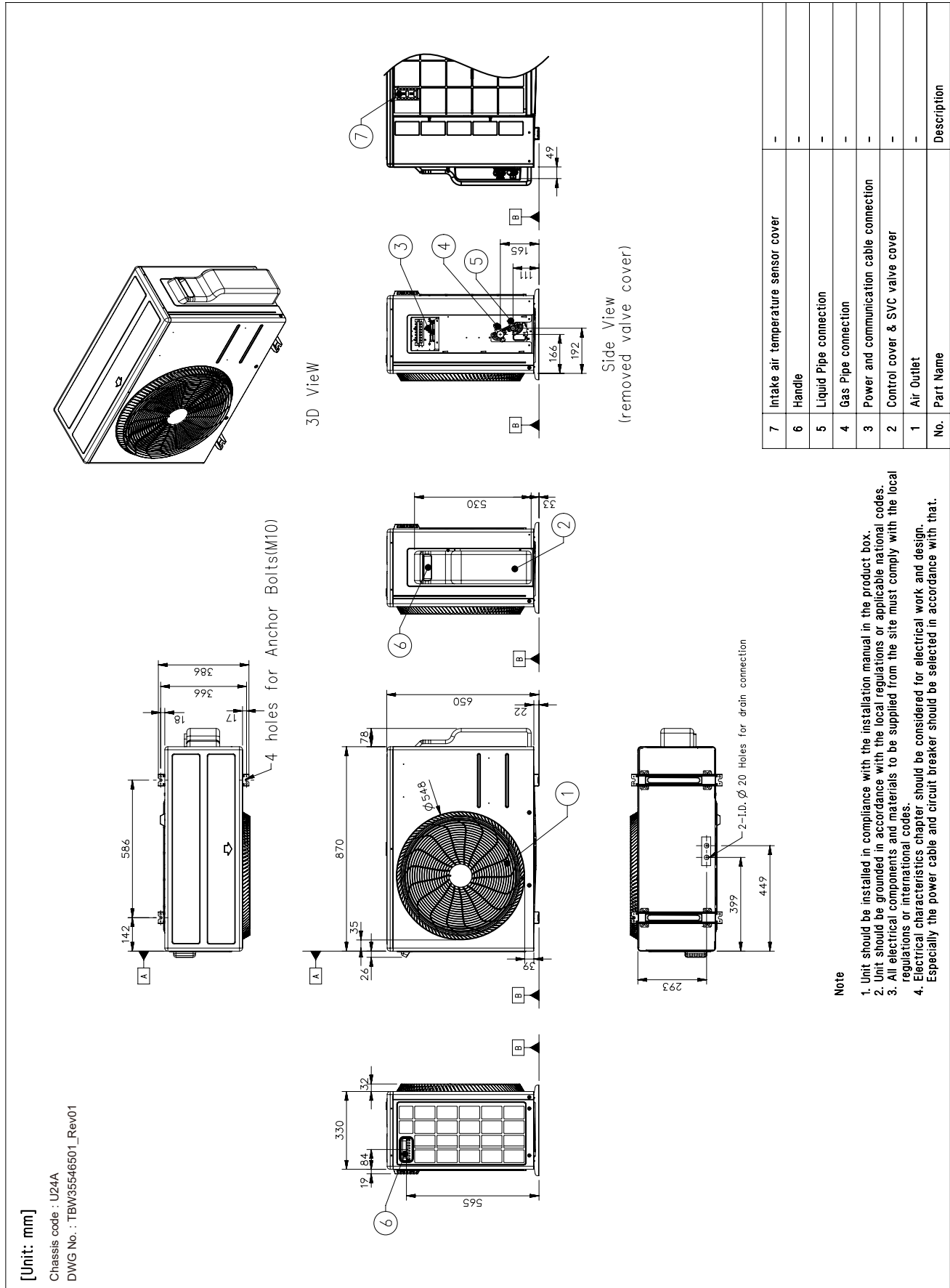
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

12.4 Dimensions

12.4.1 Product

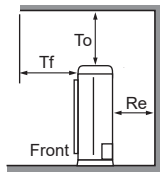


## 12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

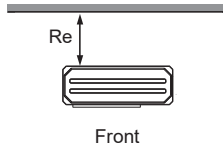
### 12.4.2 Install Space

For Side Discharge (capacity < 28.0 kW)

#### Obstacle on the Suction side

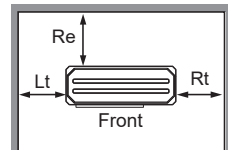


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

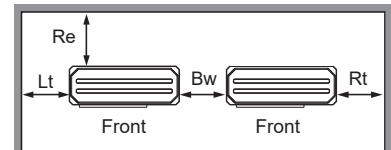


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



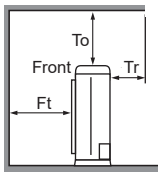
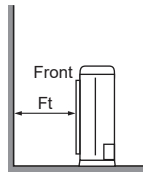
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



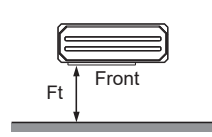
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

[Unit : mm(inch)]

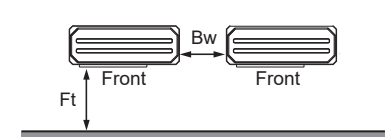
#### Obstacle on the Discharge side



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)



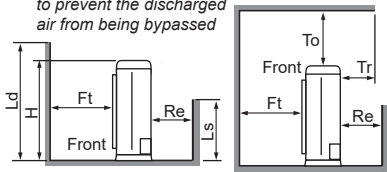
**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.

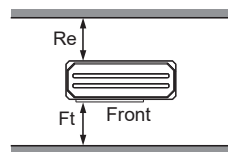
#### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

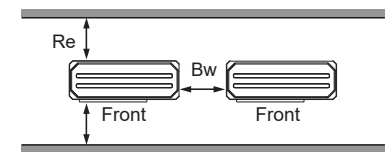
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

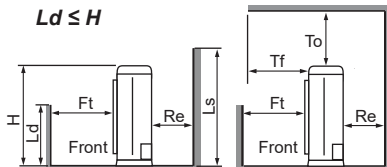


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



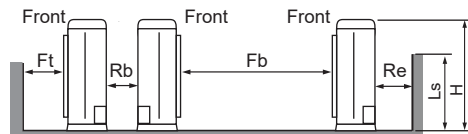
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

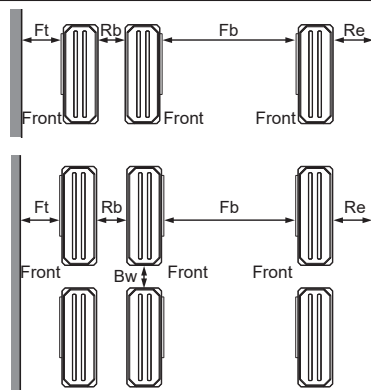
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

#### Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



##### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

##### Multiple Columns

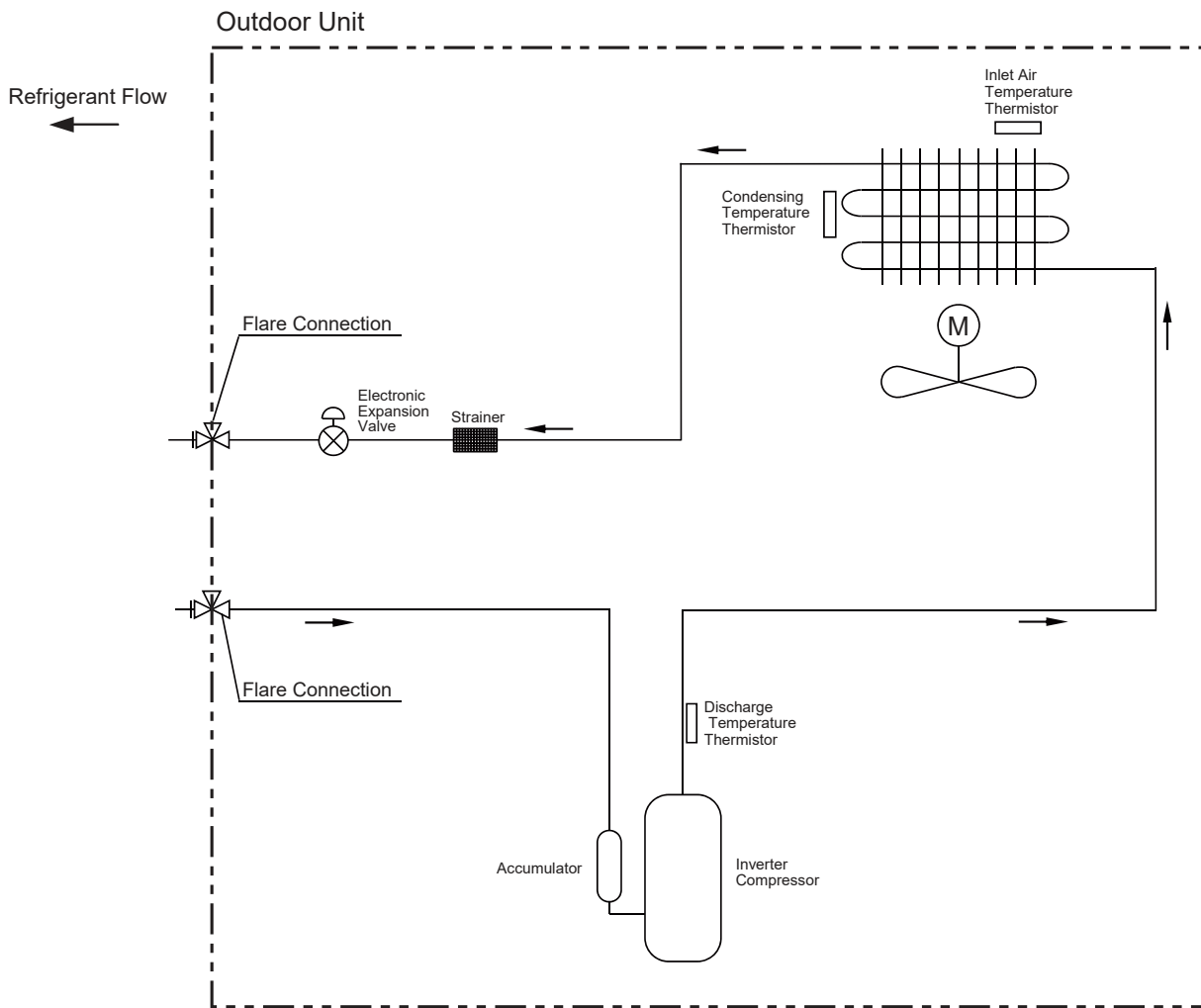
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

#### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

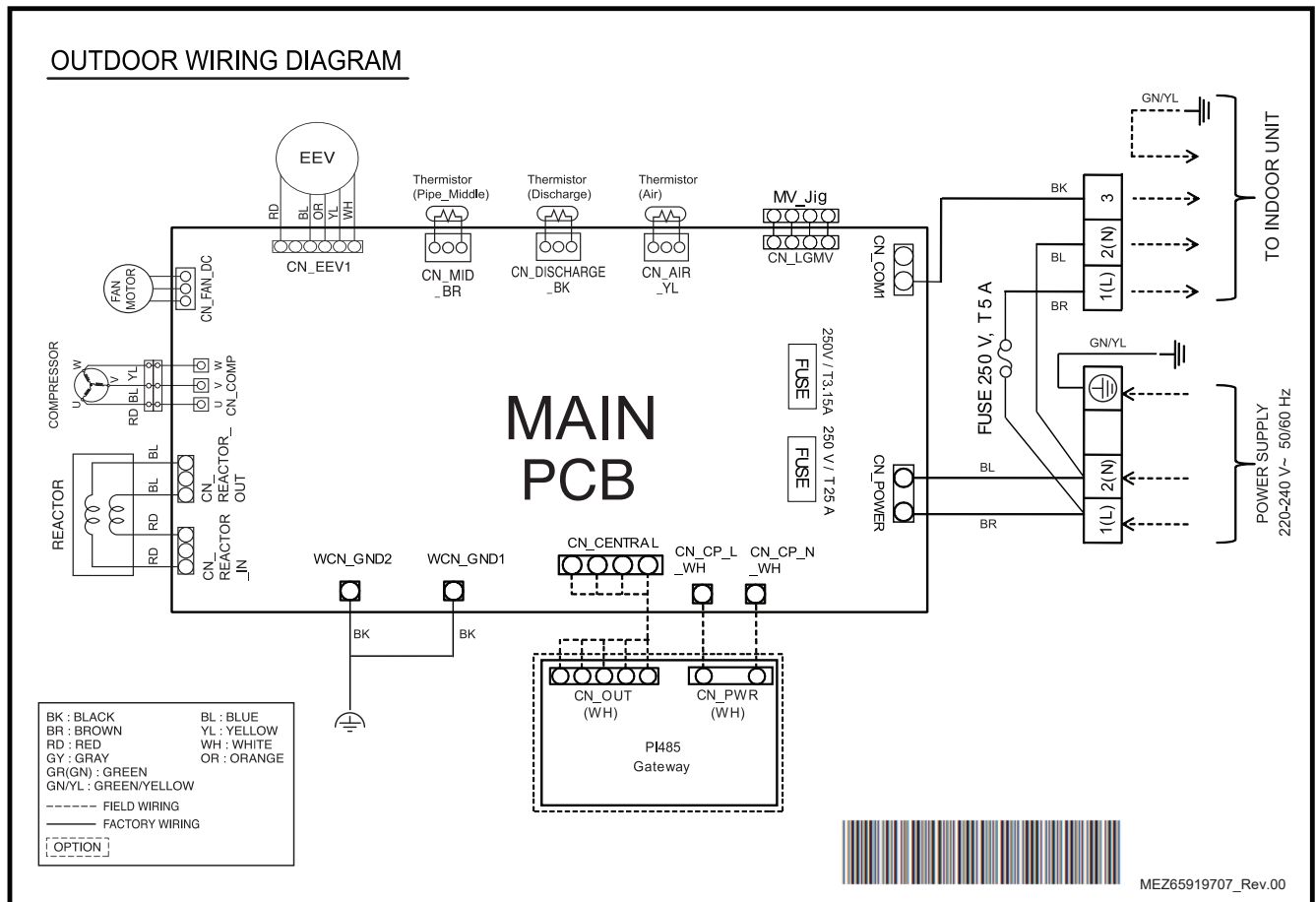
12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

12.5 Piping Diagrams



12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

12.6 Wiring Diagrams





**12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]****12.7 Capacity Tables****12.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	3.79	3.04	0.89	4.93	3.63	1.12	5.79	4.22	1.30	6.45	4.52	1.42	6.67	4.49	1.44	7.11	4.43	1.47	7.61	4.37	1.47
25	3.79	3.04	1.05	4.93	3.63	1.32	5.79	4.22	1.53	6.45	4.52	1.68	6.67	4.49	1.70	7.11	4.43	1.73	7.61	4.37	1.74
32	3.79	3.04	1.28	4.93	3.63	1.60	5.79	4.22	1.86	6.45	4.52	2.04	6.67	4.49	2.06	7.11	4.43	2.10	7.61	4.37	2.11
35	3.79	3.04	1.37	4.93	3.63	1.72	5.79	4.22	2.00	6.45	4.52	2.19	6.67	4.49	2.21	7.11	4.43	2.26	7.61	4.37	2.27
40	3.79	3.04	1.45	4.93	3.63	1.83	5.79	4.22	2.11	6.45	4.52	2.32	6.67	4.49	2.34	7.11	4.43	2.39	7.61	4.37	2.40
43	3.79	3.04	1.50	4.93	3.63	1.89	5.79	4.22	2.19	6.45	4.52	2.40	6.67	4.49	2.42	7.11	4.43	2.47	7.61	4.37	2.48
46	3.79	3.04	1.55	4.93	3.63	1.95	5.79	4.22	2.26	6.45	4.52	2.47	6.67	4.49	2.50	7.11	4.43	2.55	7.61	4.37	2.56
48	3.79	3.04	1.60	4.93	3.63	2.01	5.79	4.22	2.33	6.29	4.44	2.39	6.46	4.38	2.41	6.81	4.27	2.46	7.22	4.17	2.47
50	3.79	3.04	1.66	4.93	3.63	2.08	5.79	4.22	2.25	6.13	4.35	2.30	6.26	4.27	2.32	6.51	4.11	2.37	6.82	3.96	2.38

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table.  
Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]****12.8 Capacity Correction Factor**

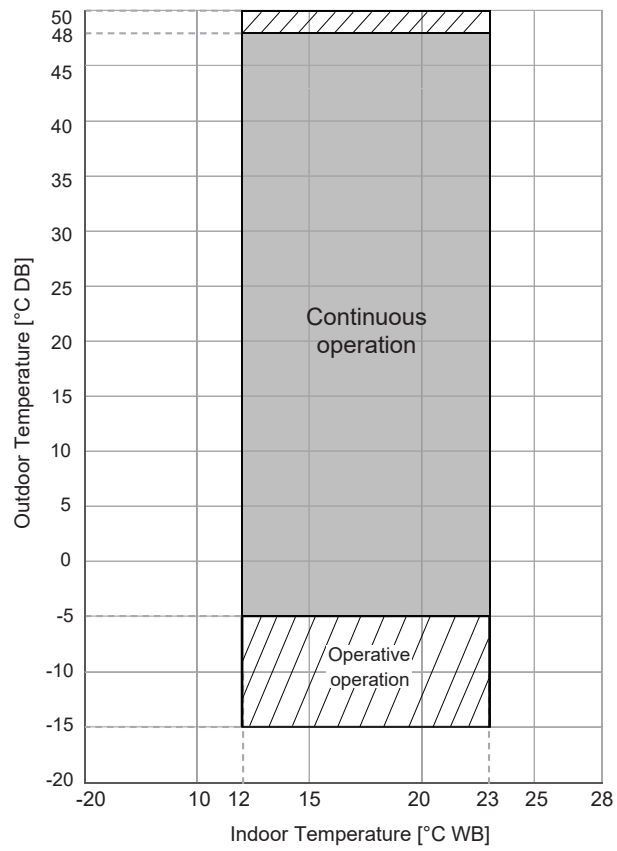
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

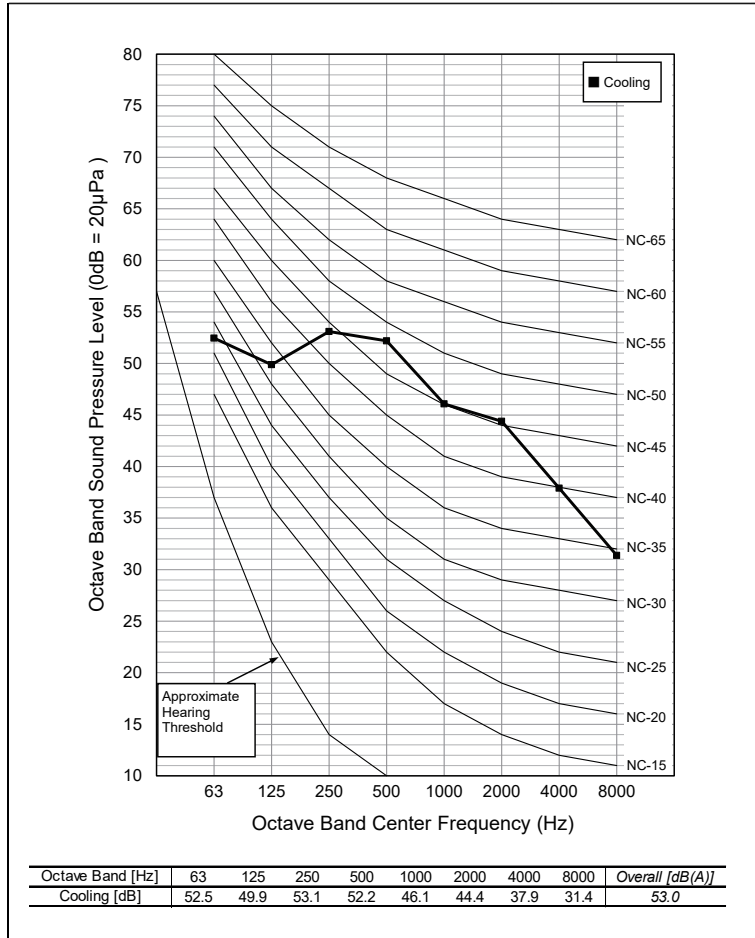
**12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]****12.9 Operation Limits****12.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

12. ZUUQ24GA0 [ZUAC1] + ZTNQ24GTLA0 [ZTNQ24GTLA0]

12.10 Sound Levels

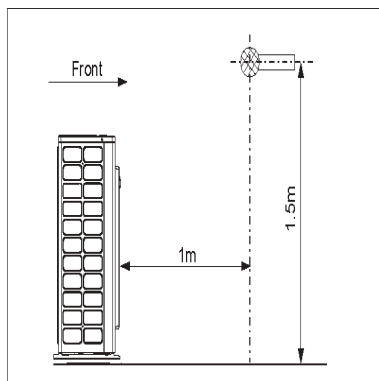
12.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

## 13.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.10
		Btu/h	10,800~37,900
	Sensible Heat (Rated)	kW	9.24
		Btu/h	31,558
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.72~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.84
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 16.90/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.92
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.2
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]****13.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]****13.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

13.4 Dimensions

13.4.1 Product

**[Unit: mm]**  
 Chassis code : U24A  
 DWG No. : TBW35546501\_Rev01

**3D View**

4 holes for Anchor Bolts(M10)

Side View (removed valve cover)

2-I.D.  $\phi$  20 Holes for drain connection

No.	Part Name	Description
7	Intake air temperature sensor cover	-
6	Handle	-
5	Liquid Pipe connection	-
4	Gas Pipe connection	-
3	Power and communication cable connection	-
2	Control cover & SVC valve cover	-
1	Air Outlet	-

**Note**

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit should be grounded in accordance with the local regulations or applicable national codes.
3. All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.
4. Electrical characteristics chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

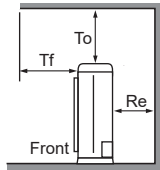
13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

13.4.2 Install Space

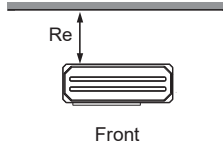
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

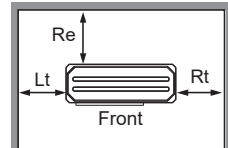


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

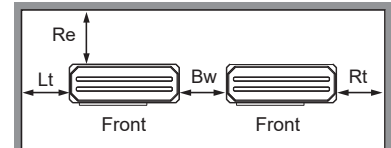


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



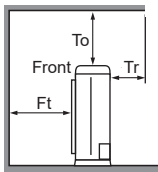
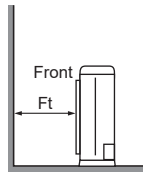
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



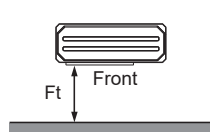
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

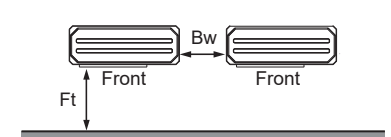
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

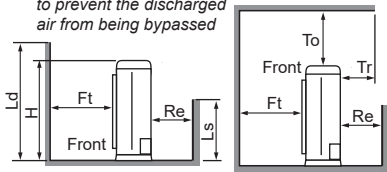


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

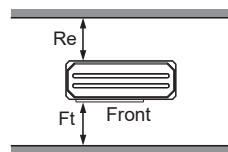
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

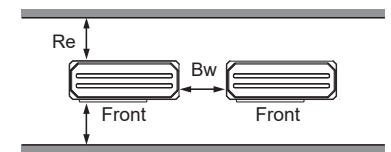
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

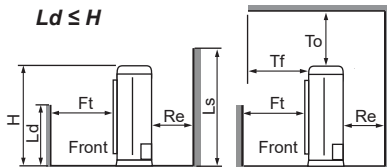


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



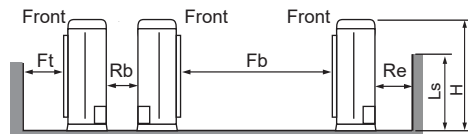
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

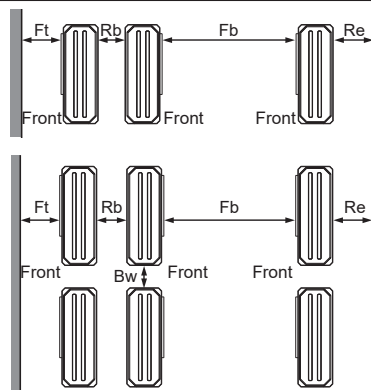
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

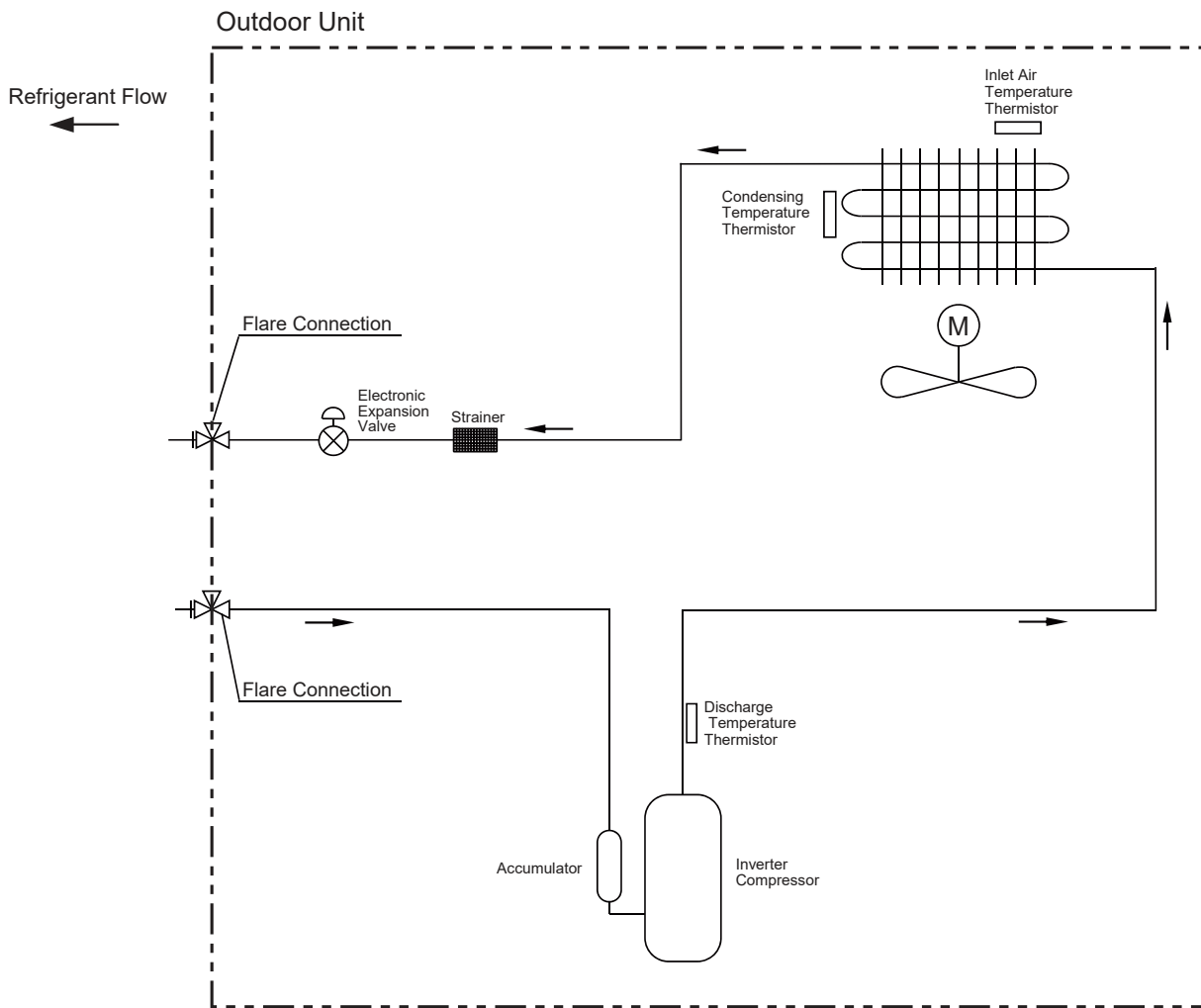
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

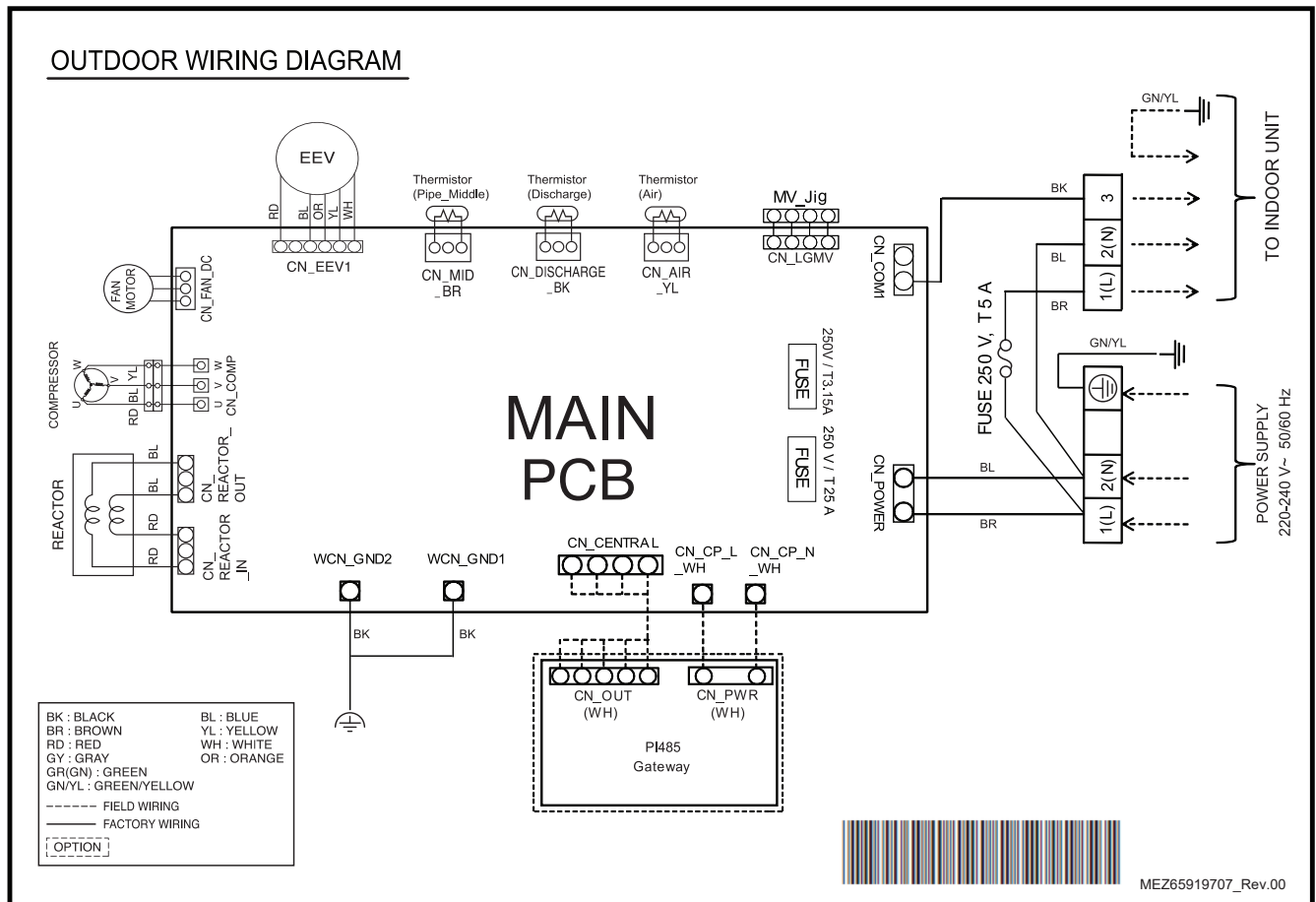
13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

13.5 Piping Diagrams



13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

13.6 Wiring Diagrams



**13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]****13.7 Capacity Tables****13.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	6.16	1.51	8.05	7.43	1.90	9.46	8.64	2.20	10.54	9.24	2.42	10.90	9.18	2.44	11.62	9.07	2.49	12.43	8.95	2.50
25	6.19	6.16	1.79	8.05	7.43	2.24	9.46	8.64	2.60	10.54	9.24	2.85	10.90	9.18	2.88	11.62	9.07	2.94	12.43	8.95	2.95
32	6.19	6.16	2.17	8.05	7.43	2.72	9.46	8.64	3.15	10.54	9.24	3.46	10.90	9.18	3.49	11.62	9.07	3.56	12.43	8.95	3.58
35	6.19	6.16	2.33	8.05	7.43	2.93	9.46	8.64	3.39	10.54	9.24	3.72	10.90	9.18	3.76	11.62	9.07	3.83	12.43	8.95	3.85
40	6.19	6.16	2.18	8.05	7.43	2.74	9.46	8.64	3.18	9.58	8.54	3.48	9.91	8.48	3.52	10.56	8.35	3.59	11.30	8.22	3.61
43	6.19	6.16	2.09	8.05	7.43	2.63	8.83	8.11	3.05	9.01	8.11	3.34	9.32	8.04	3.37	9.93	7.91	3.44	10.63	7.77	3.46
46	6.19	6.16	2.01	8.05	7.43	2.52	8.26	7.59	2.92	8.43	7.68	3.20	8.72	7.61	3.23	9.29	7.47	3.30	9.95	7.33	3.31
48	6.19	6.16	1.93	7.69	7.18	2.42	7.85	7.29	2.80	8.01	7.35	3.09	8.24	7.24	3.12	8.69	7.02	3.18	9.22	6.82	3.20
50	6.19	6.16	1.85	7.29	6.88	2.32	7.44	6.99	2.69	7.59	7.02	2.98	7.76	6.87	3.01	8.09	6.57	3.07	8.48	6.30	3.08

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]****13.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

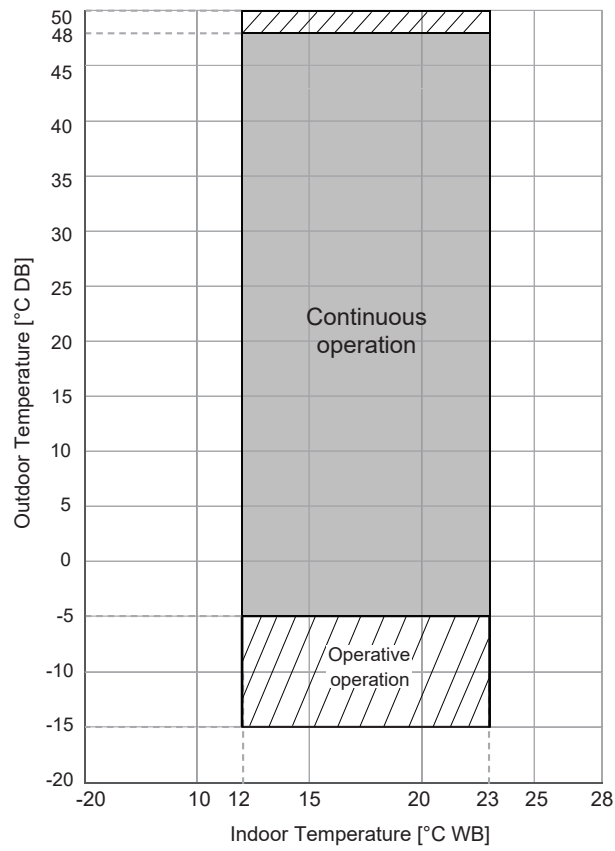
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]**

**13.9 Operation Limits**

**13.9.1 Cooling**



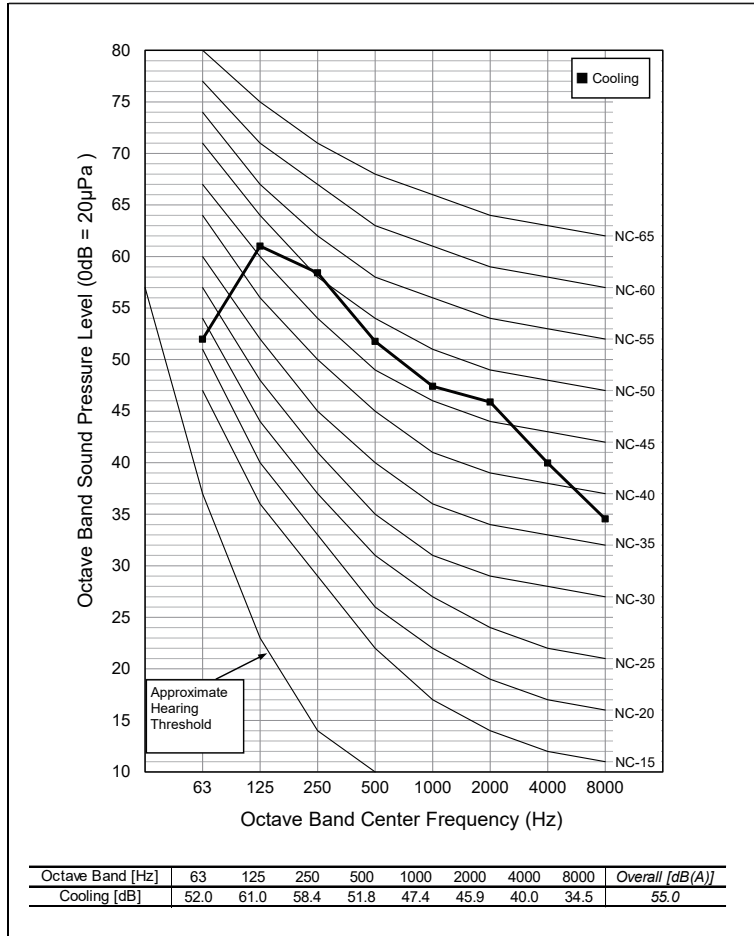
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

13. ZUUQ24GA0 [ZUAC1] + ZTNQ36GNLE0 [ZTNQ36GNLE0]

13.10 Sound Levels

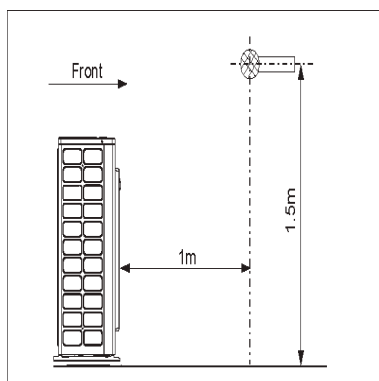
13.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

## 14.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	9.37
		Btu/h	32000
	Min ~ Max	kW	4.4 ~ 9.87
		Btu/h	15000 ~ 33700
	Sensible Heat (Rated)	kW	8.527
		Btu/h	29120
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 3.05 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.07
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 13.9 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.23
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.2
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]****14.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]****14.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

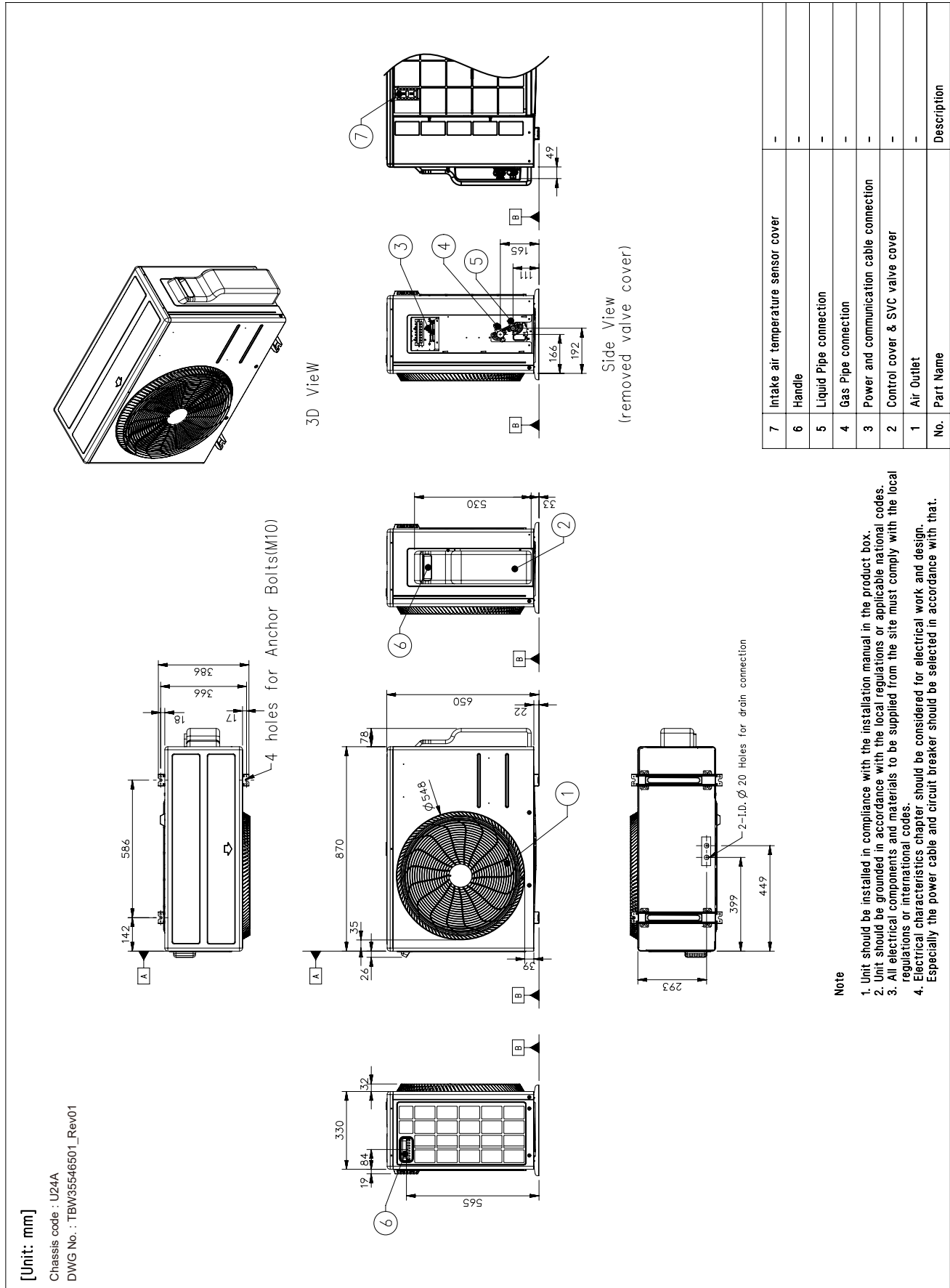
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

14.4 Dimensions

14.4.1 Product



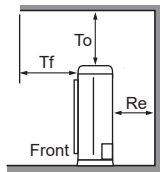
# 14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

## 14.4.2 Install Space

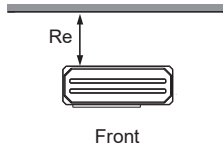
For Side Discharge (capacity < 28.0 kW)

### Obstacle on the Suction side

[Unit : mm(inch)]

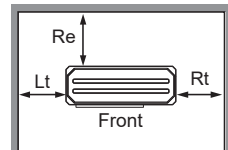


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

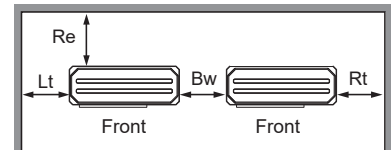


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



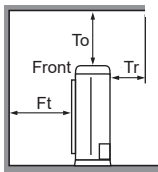
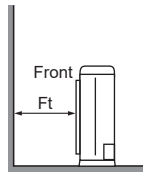
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



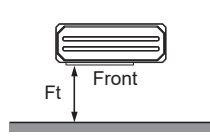
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

### Obstacle on the Discharge side

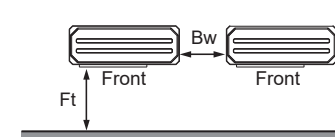
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

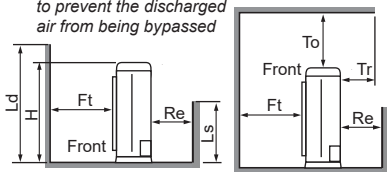


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

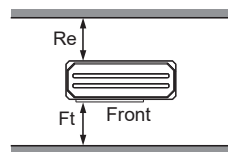
### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

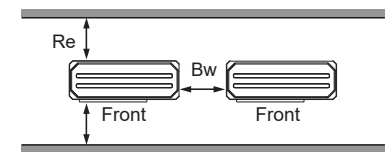
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

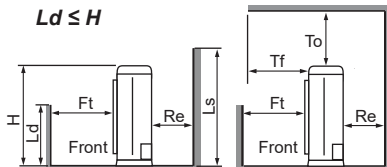


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



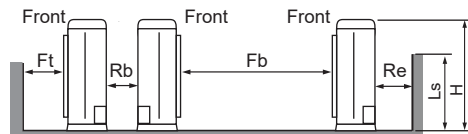
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

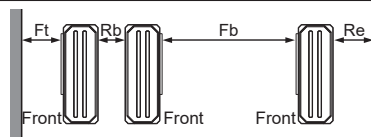
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

### Collective/Continuous Installation (Multiple Columns)

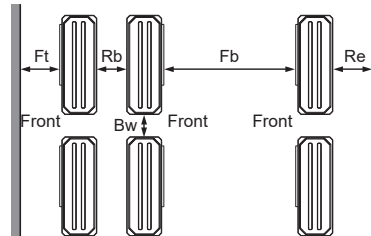


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



#### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



#### Multiple Columns

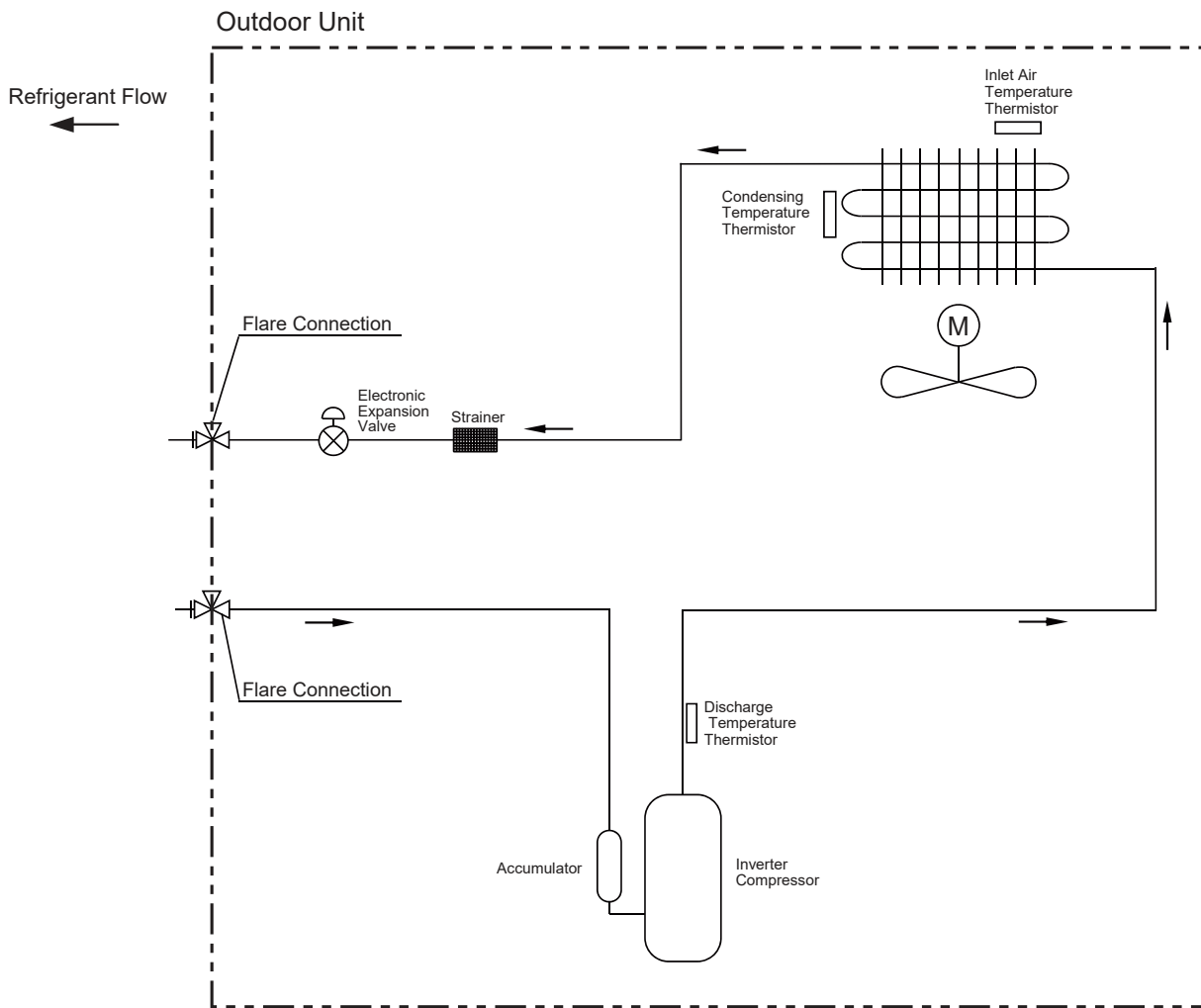
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

#### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

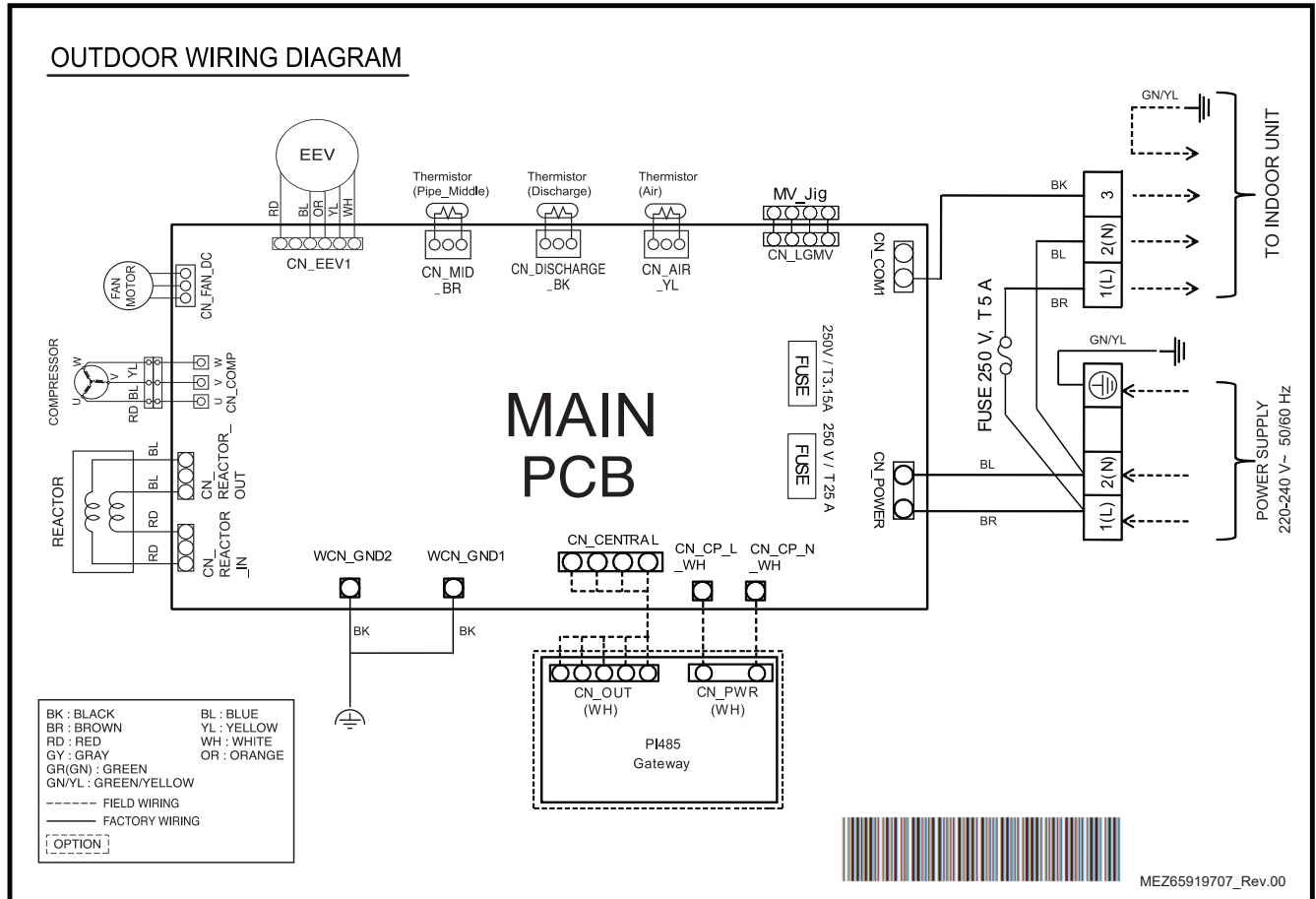
14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

14.5 Piping Diagrams



14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

14.6 Wiring Diagrams





**14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]****14.7 Capacity Tables****14.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	5.50	5.47	1.24	7.16	6.86	1.56	8.41	7.97	1.81	9.37	8.53	1.98	9.69	8.48	2.00	10.33	8.37	2.04	11.05	8.26	2.05
25	5.50	5.47	1.47	7.16	6.86	1.84	8.41	7.97	2.13	9.37	8.53	2.34	9.69	8.48	2.36	10.33	8.37	2.41	11.05	8.26	2.42
32	5.50	5.47	1.78	7.16	6.86	2.23	8.41	7.97	2.59	9.37	8.53	2.84	9.69	8.48	2.87	10.33	8.37	2.92	11.05	8.26	2.94
35	5.50	5.47	1.91	7.16	6.86	2.40	8.41	7.97	2.78	9.37	8.53	3.05	9.69	8.48	3.08	10.33	8.37	3.14	11.05	8.26	3.16
40	5.50	5.47	2.05	7.16	6.86	2.57	8.41	7.97	2.98	9.37	8.53	3.26	9.69	8.48	3.29	10.33	8.37	3.36	11.05	8.26	3.38
43	5.50	5.47	2.13	7.16	6.86	2.67	8.41	7.97	3.09	8.67	7.97	3.39	8.96	7.91	3.42	9.55	7.80	3.49	10.23	7.69	3.51
46	5.50	5.47	2.21	7.16	6.86	2.77	7.81	7.44	2.93	7.96	7.41	2.99	8.23	7.35	3.02	8.78	7.23	3.08	9.40	7.11	3.10
48	5.50	5.47	2.30	7.16	6.86	2.75	7.81	7.44	2.81	7.82	7.33	2.87	8.04	7.22	2.90	8.47	7.01	2.95	8.97	6.82	2.97
50	5.50	5.47	2.39	7.16	6.86	2.64	7.53	7.18	2.69	7.68	7.25	2.75	7.84	7.10	2.78	8.16	6.80	2.83	8.55	6.53	2.84

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]****14.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

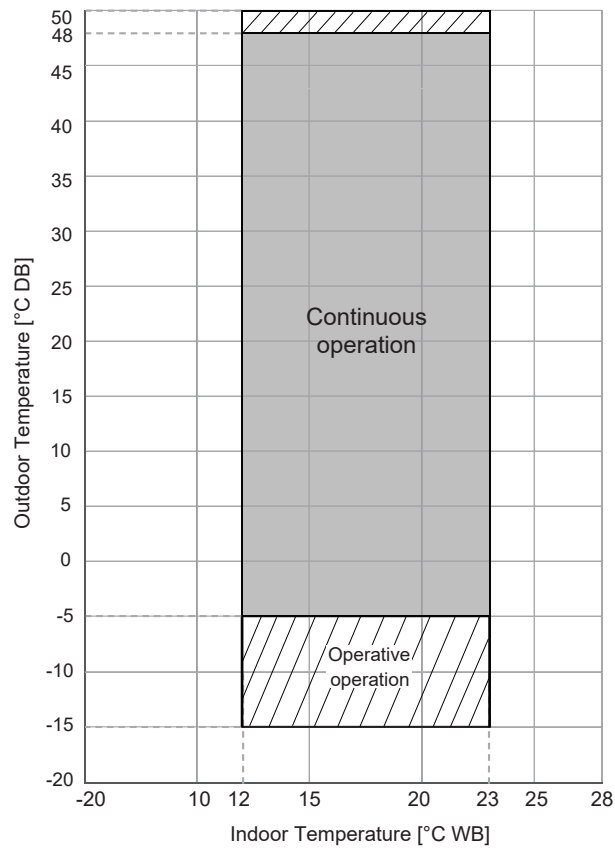
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

14.9 Operation Limits

14.9.1 Cooling



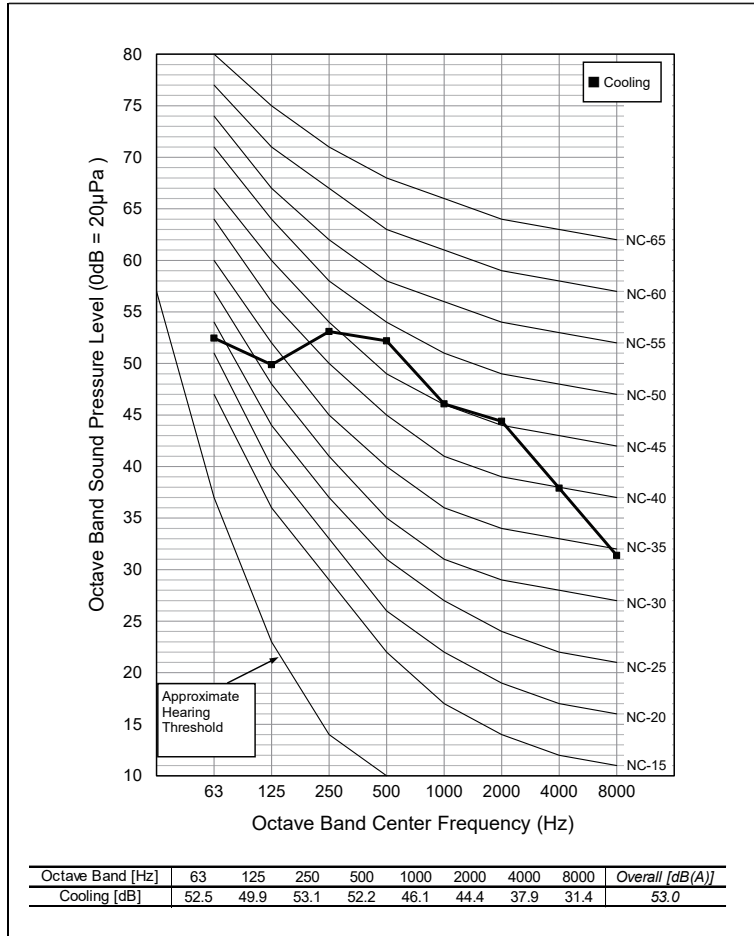
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

14. ZUUQ24GA0 [ZUAC1] + ZTNQ30GNLE0 [ZTNQ30GNLE0]

14.10 Sound Levels

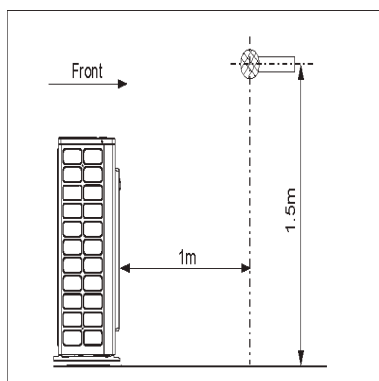
14.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

## 15.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	7.03
		Btu/h	24000
	Min ~ Max	kW	2.11 ~ 7.68
		Btu/h	7200 ~ 26200
	Sensible Heat (Rated)	kW	5.876
		Btu/h	20062
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 2.11 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.33
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 9.6 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.64
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]****15.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]****15.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

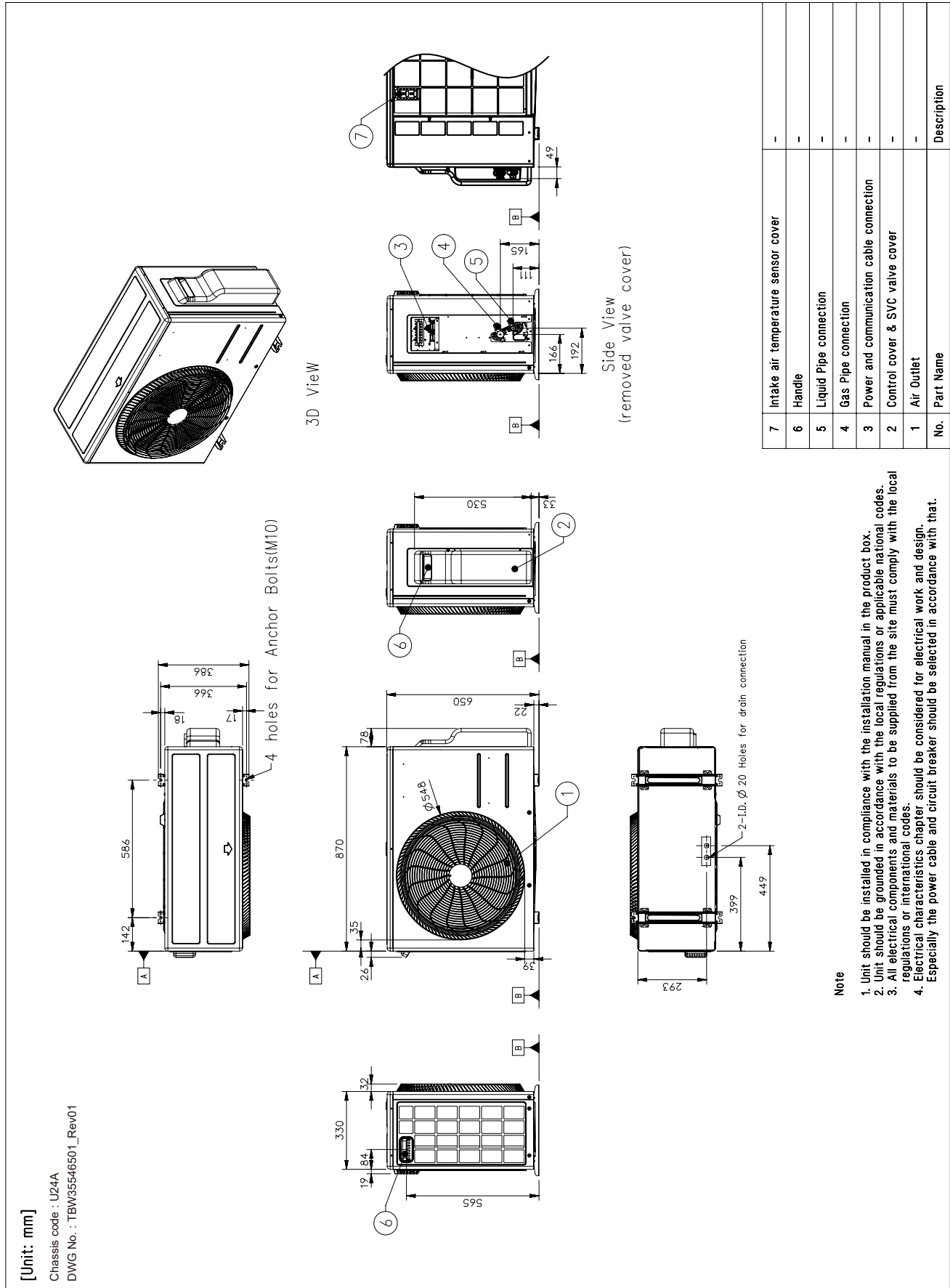
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.4 Dimensions

15.4.1 Product



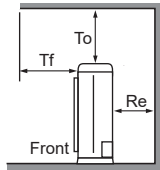
15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.4.2 Install Space

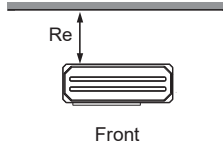
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

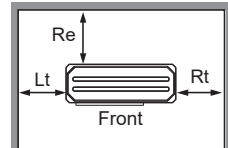


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

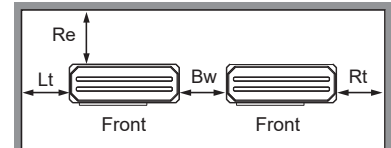


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



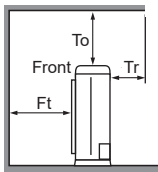
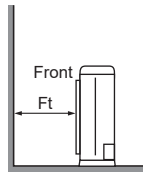
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



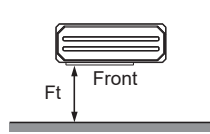
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

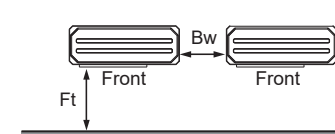
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

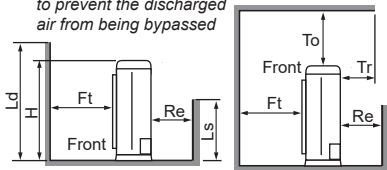


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

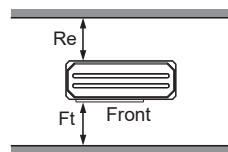
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

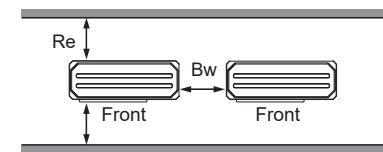
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

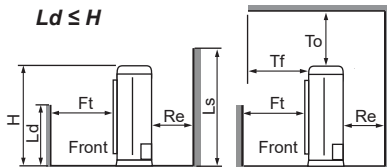


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



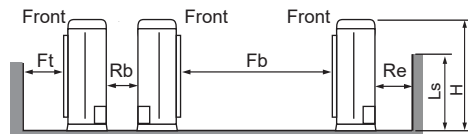
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

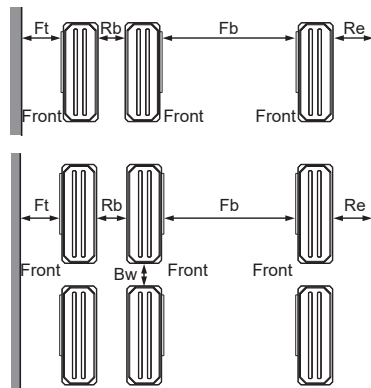
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

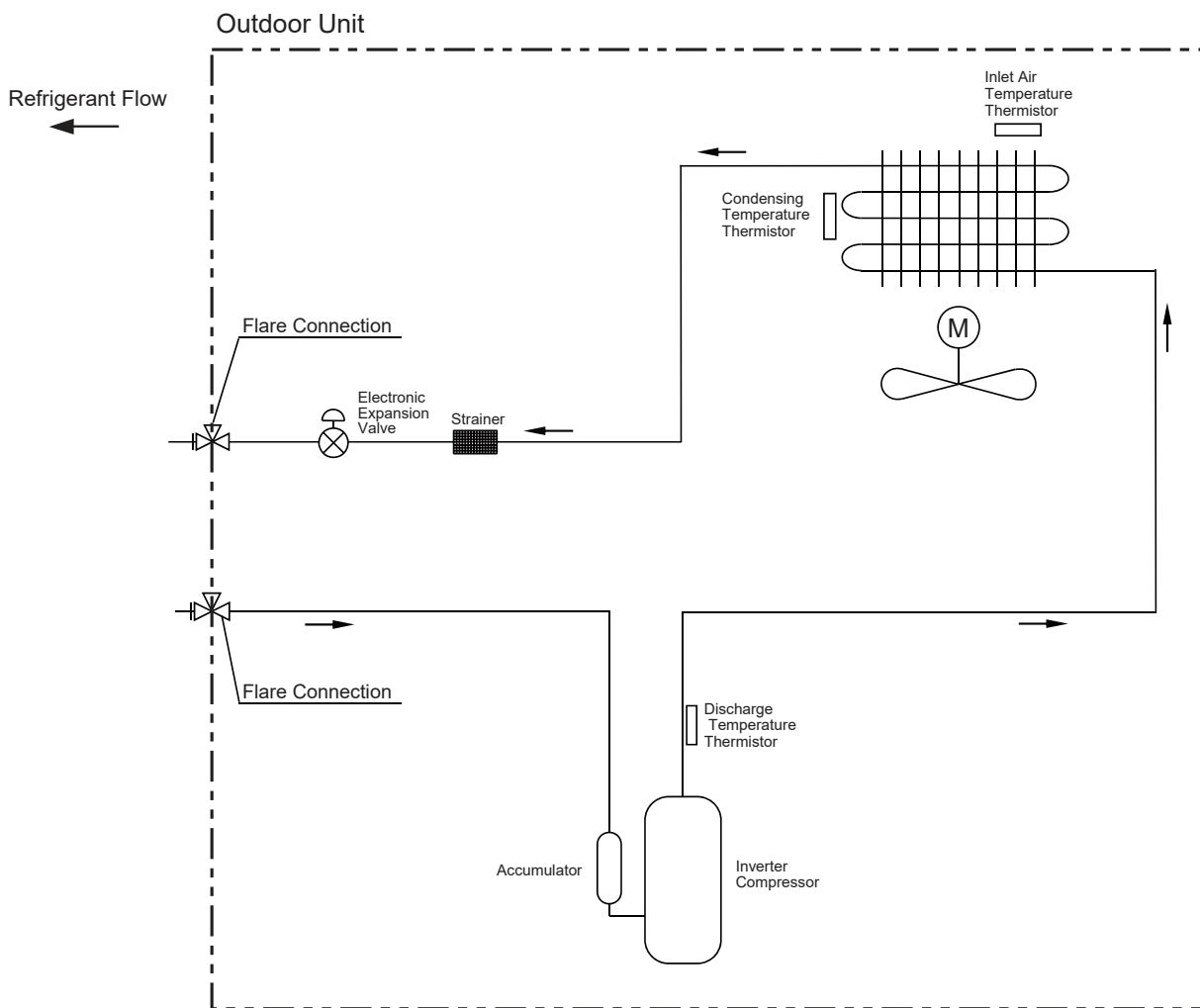
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

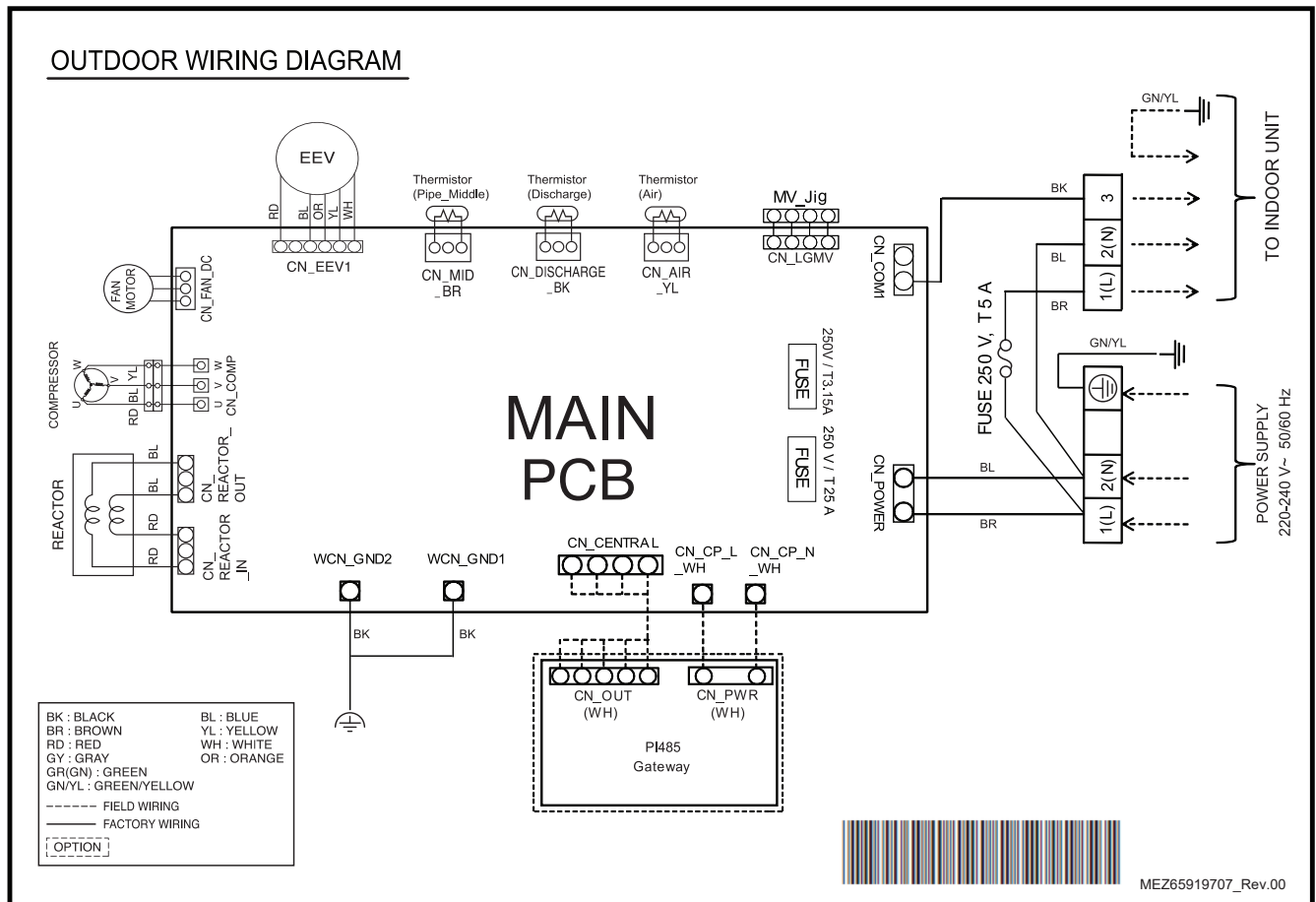
15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.5 Piping Diagrams



15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.6 Wiring Diagrams



**15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]****15.7 Capacity Tables****15.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	4.13	3.96	0.86	5.37	4.73	1.08	6.31	5.50	1.25	7.03	5.88	1.37	7.27	5.84	1.38	7.75	5.77	1.41	8.29	5.70	1.42
25	4.13	3.96	1.01	5.37	4.73	1.27	6.31	5.50	1.47	7.03	5.88	1.62	7.27	5.84	1.64	7.75	5.77	1.67	8.29	5.70	1.68
32	4.13	3.96	1.23	5.37	4.73	1.54	6.31	5.50	1.79	7.03	5.88	1.96	7.27	5.84	1.98	7.75	5.77	2.02	8.29	5.70	2.03
35	4.13	3.96	1.32	5.37	4.73	1.66	6.31	5.50	1.92	7.03	5.88	2.11	7.27	5.84	2.13	7.75	5.77	2.17	8.29	5.70	2.19
40	4.13	3.96	1.40	5.37	4.73	1.76	6.31	5.50	2.04	7.03	5.88	2.23	7.27	5.84	2.25	7.75	5.77	2.30	8.29	5.70	2.32
43	4.13	3.96	1.45	5.37	4.73	1.82	6.31	5.50	2.11	7.03	5.88	2.31	7.27	5.84	2.33	7.75	5.77	2.38	8.29	5.70	2.39
46	4.13	3.96	1.50	5.37	4.73	1.88	6.31	5.50	2.18	7.03	5.88	2.38	7.27	5.84	2.41	7.75	5.77	2.46	8.29	5.70	2.47
48	4.13	3.96	1.55	5.37	4.73	1.94	6.31	5.50	2.25	6.85	5.78	2.30	7.04	5.71	2.32	7.42	5.56	2.37	7.87	5.43	2.38
50	4.13	3.96	1.60	5.37	4.73	2.01	6.31	5.50	2.17	6.68	5.67	2.22	6.82	5.56	2.24	7.10	5.35	2.28	7.44	5.15	2.30

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table.  
Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]****15.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

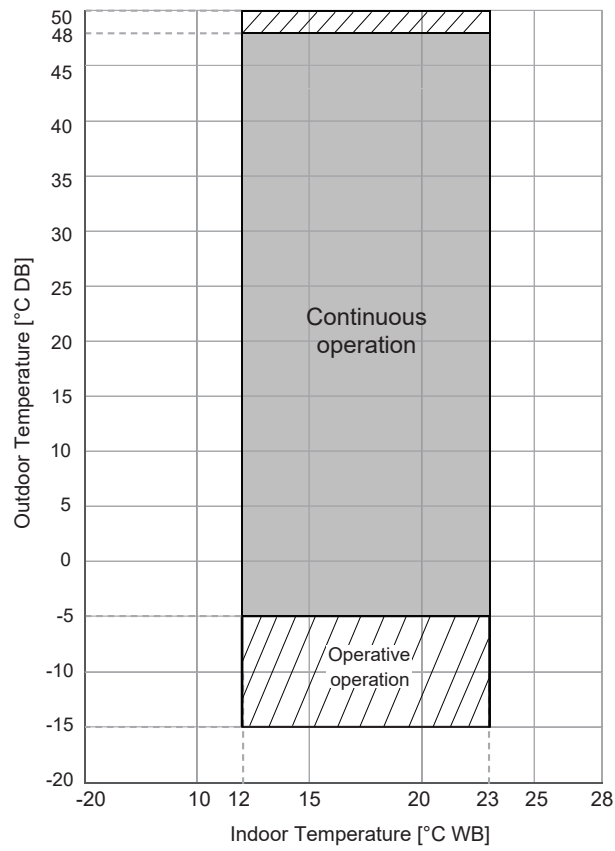
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.9 Operation Limits

15.9.1 Cooling



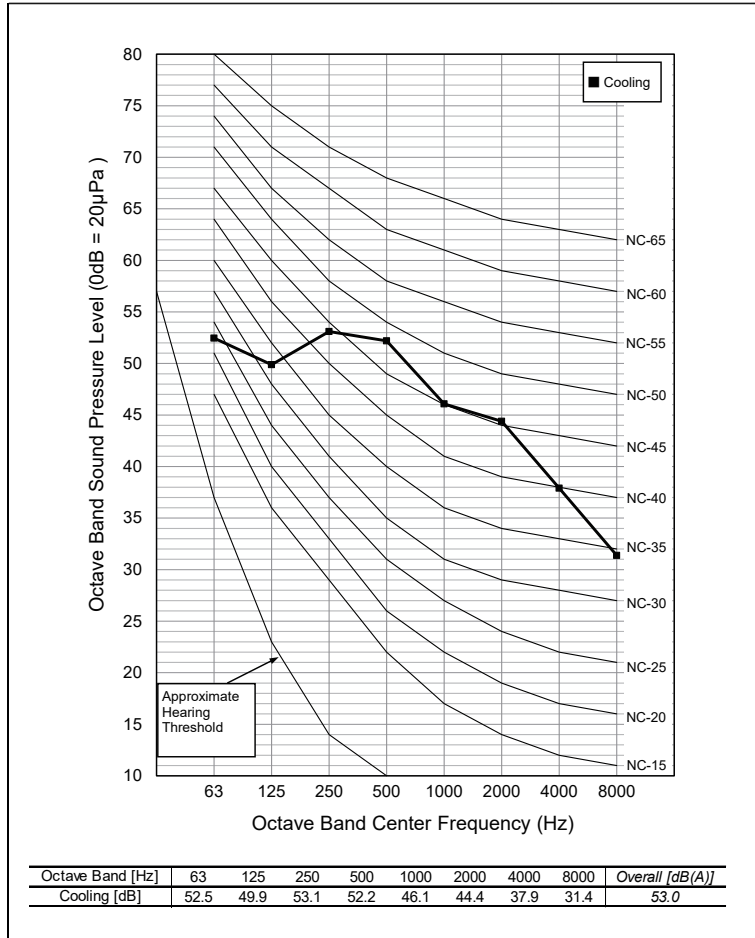
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

15. ZUUQ24GA0 [ZUAC1] + ZTNQ24GPLA0 [ZTNQ24GPLA0]

15.10 Sound Levels

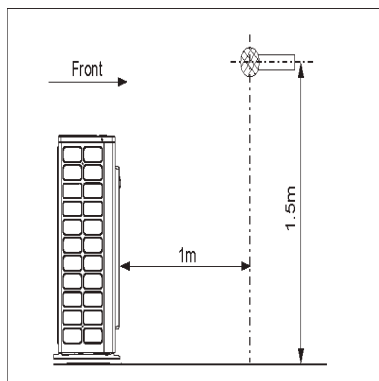
15.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

## 16.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	7.03
		Btu/h	24000
	Min ~ Max	kW	1.9 ~ 7.91
		Btu/h	6480 ~ 27000
	Sensible Heat (Rated)	kW	5.47
		Btu/h	18674
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 2.07 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	3.4
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 9.4 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.25
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.4
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]****16.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]****16.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

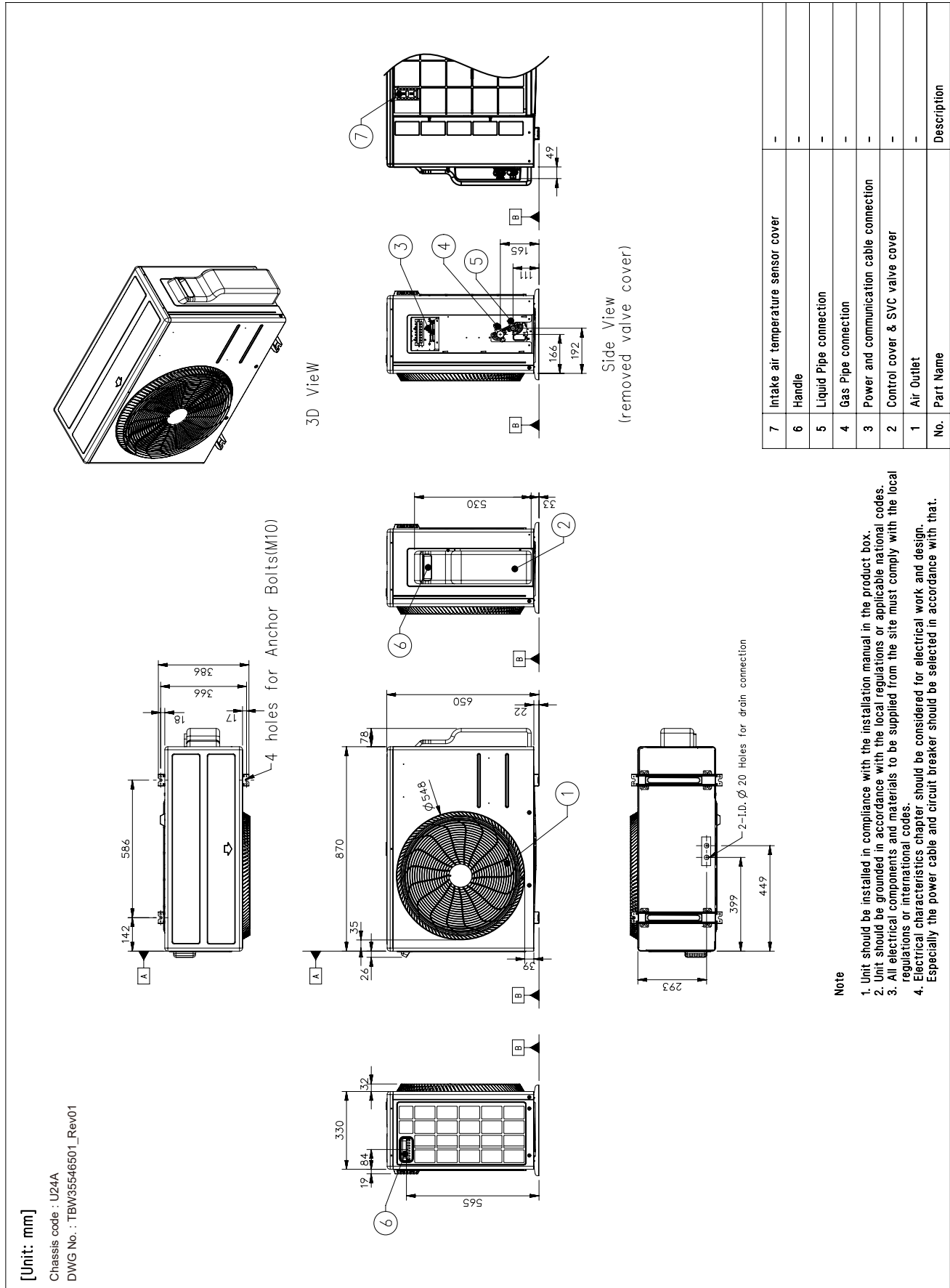
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

16.4 Dimensions

16.4.1 Product



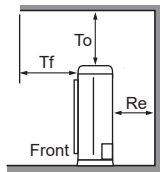
16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

16.4.2 Install Space

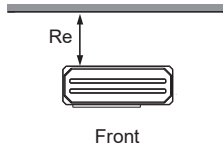
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

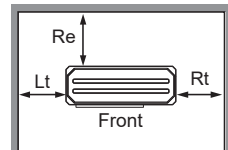


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

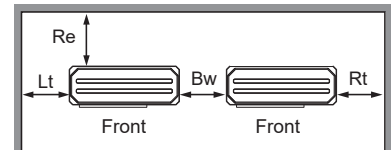


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



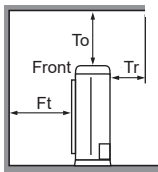
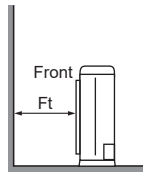
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



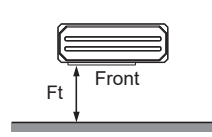
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

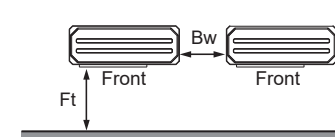
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

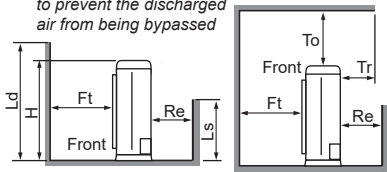


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

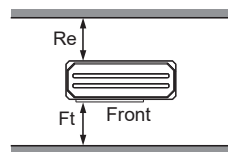
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

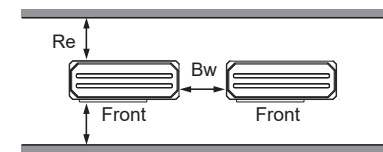
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

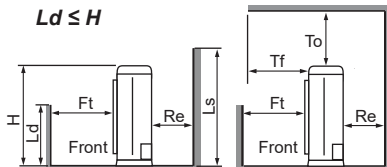


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



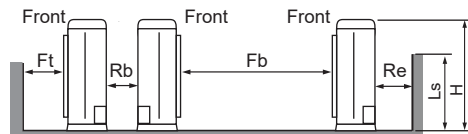
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

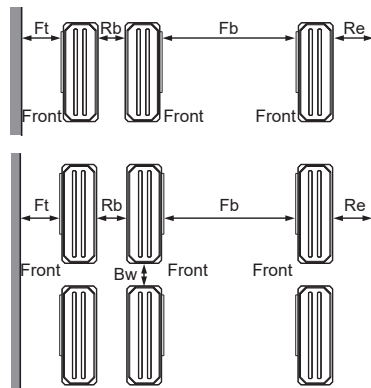
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

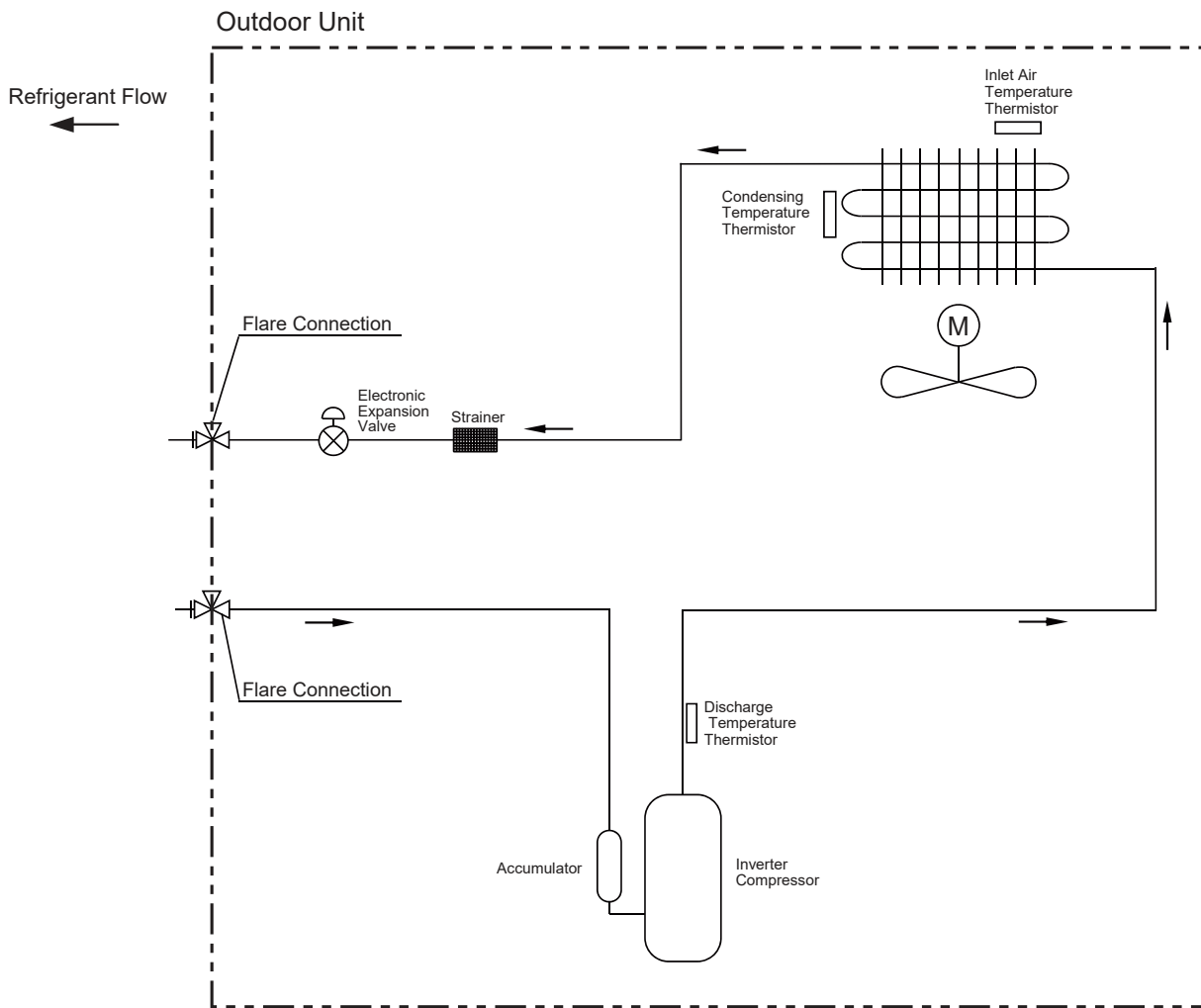
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

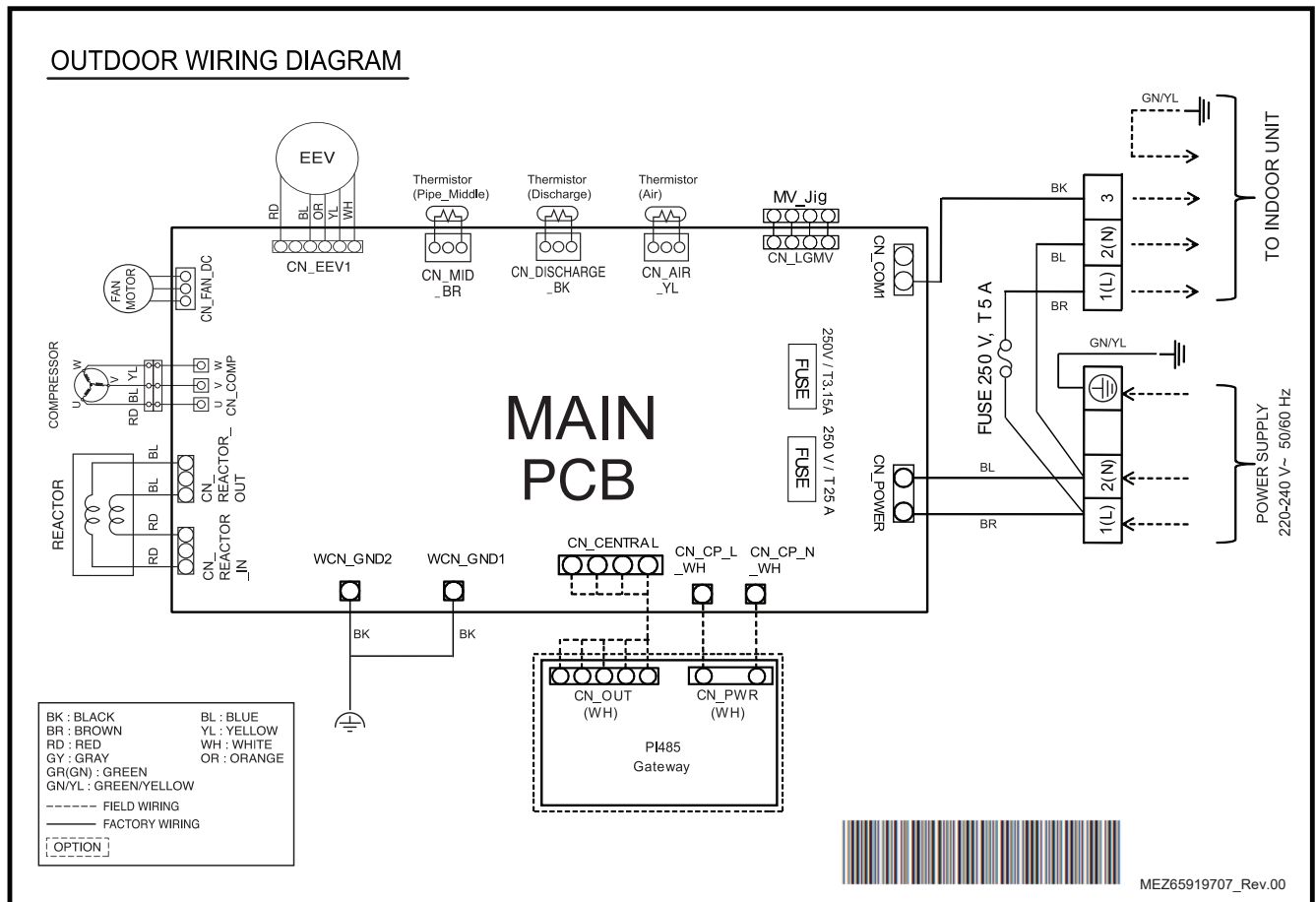
16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

16.5 Piping Diagrams



16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

16.6 Wiring Diagrams





**16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]****16.7 Capacity Tables****16.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	4.13	3.69	0.84	5.37	4.40	1.06	6.31	5.11	1.23	7.03	5.47	1.34	7.27	5.44	1.35	7.75	5.37	1.38	8.29	5.30	1.39
25	4.13	3.69	0.99	5.37	4.40	1.25	6.31	5.11	1.45	7.03	5.47	1.59	7.27	5.44	1.60	7.75	5.37	1.63	8.29	5.30	1.64
32	4.13	3.69	1.21	5.37	4.40	1.51	6.31	5.11	1.75	7.03	5.47	1.92	7.27	5.44	1.94	7.75	5.37	1.98	8.29	5.30	1.99
35	4.13	3.69	1.30	5.37	4.40	1.63	6.31	5.11	1.89	7.03	5.47	2.07	7.27	5.44	2.09	7.75	5.37	2.13	8.29	5.30	2.14
40	4.13	3.69	1.37	5.37	4.40	1.73	6.31	5.11	2.00	7.03	5.47	2.19	7.27	5.44	2.21	7.75	5.37	2.26	8.29	5.30	2.27
43	4.13	3.69	1.42	5.37	4.40	1.78	6.31	5.11	2.07	7.03	5.47	2.27	7.27	5.44	2.29	7.75	5.37	2.33	8.29	5.30	2.35
46	4.13	3.69	1.47	5.37	4.40	1.84	6.31	5.11	2.13	7.03	5.47	2.34	7.27	5.44	2.36	7.75	5.37	2.41	8.29	5.30	2.42
48	4.13	3.69	1.52	5.37	4.40	1.90	6.31	5.11	2.21	6.85	5.37	2.26	7.04	5.30	2.28	7.42	5.17	2.32	7.87	5.05	2.34
50	4.13	3.69	1.57	5.37	4.40	1.97	6.31	5.11	2.13	6.68	5.28	2.17	6.82	5.18	2.19	7.10	4.97	2.24	7.44	4.79	2.25

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]****16.8 Capacity Correction Factor**

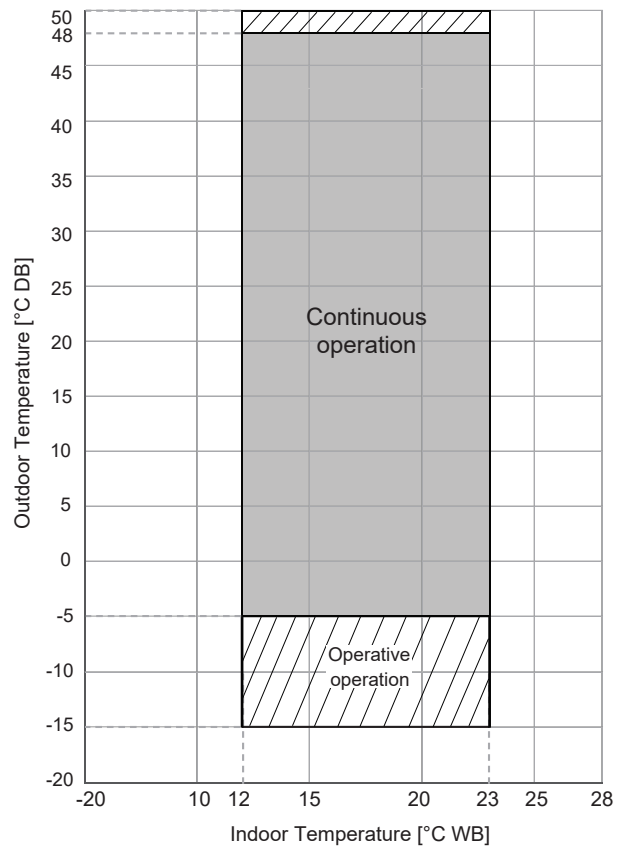
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

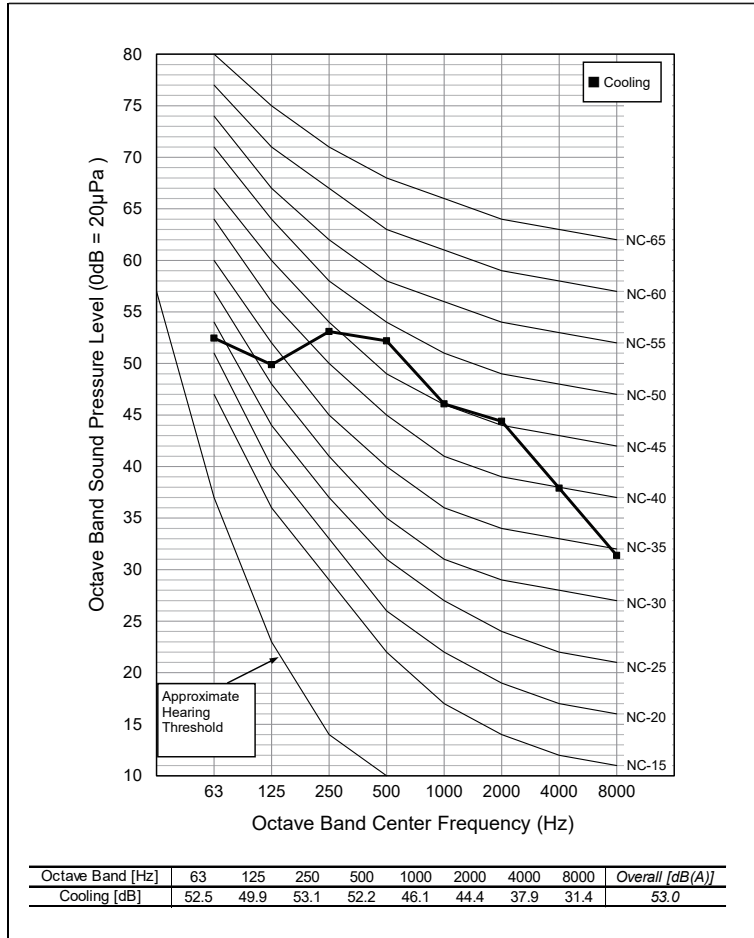
**16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]****16.9 Operation Limits****16.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

16. ZUUQ24GA0 [ZUAC1] + ZBNQ24GL3A0 [ZBNQ24GL3A0]

16.10 Sound Levels

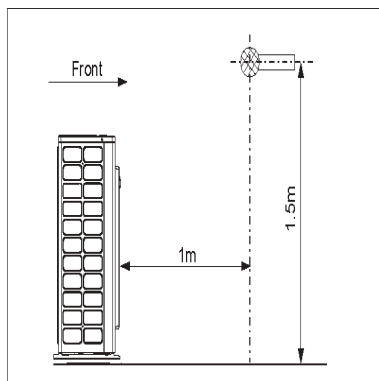
16.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

## 17.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.10
		Btu/h	10,800~37,900
	Sensible Heat (Rated)	kW	9.01
		Btu/h	30,766
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.70~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.85
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 16.80/
Running Current(Heating)	Min/Rated/Max	A	- / -/
Running Current	Maximum	A	19.00
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.2
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.6
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Power factor could vary less than ±1% according to the operating conditions.
- Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
- This product contains Fluorinated greenhouse gases.
- Voltage supplied to the unit terminals should be within the minimum and maximum range.
- Maximum allowable voltage unbalance between phase is 2%.
- MSC means the Max. current during the starting of compressor.
- MSC and RLA are measured as the compressor only test condition.
- OFM and IFM are measured as the outdoor unit test condition.
- Select the wire size based on MCA.
- MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
  - Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]****17.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]****17.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

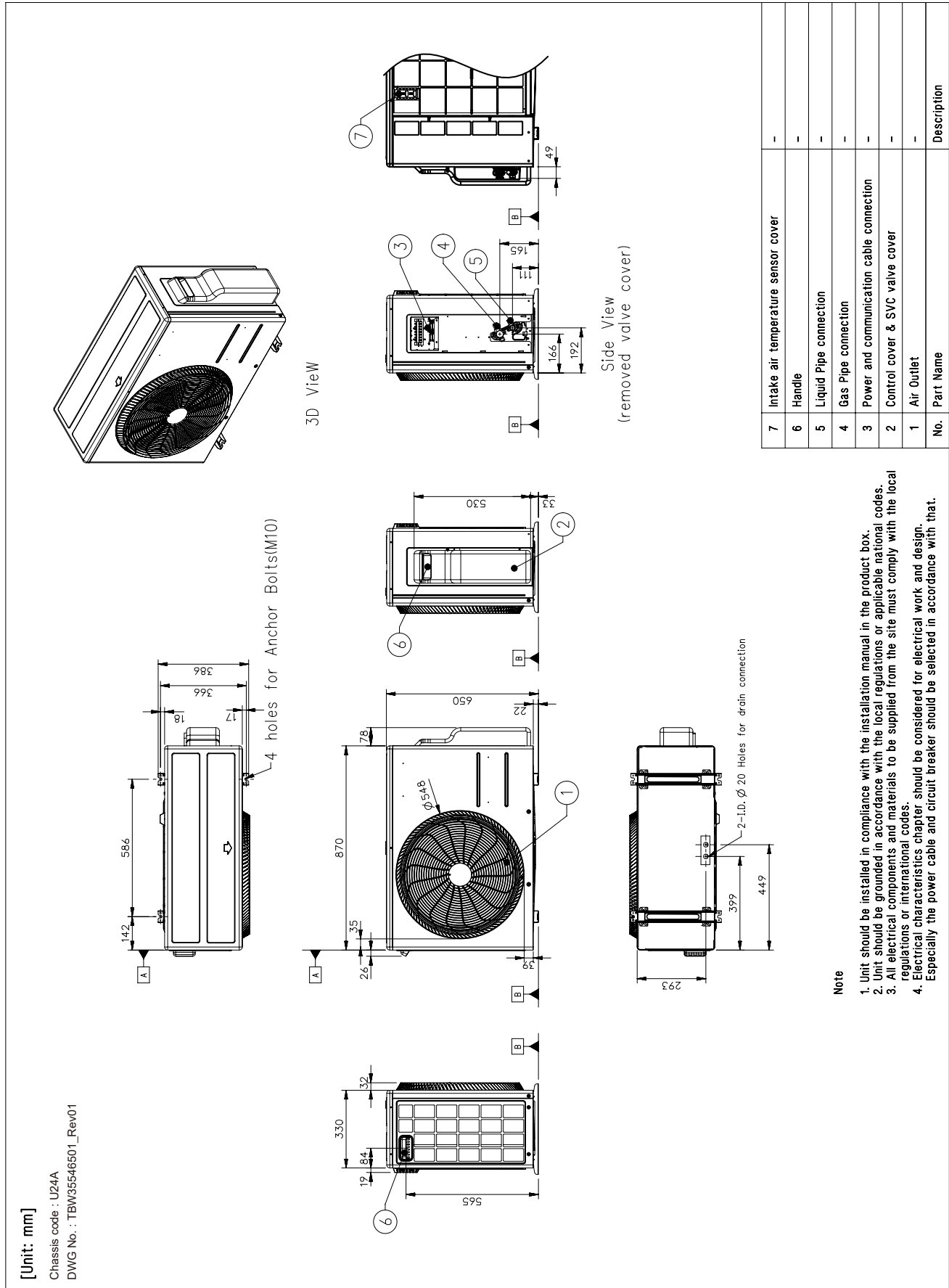
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.4 Dimensions

17.4.1 Product



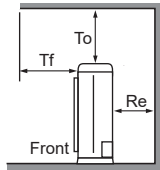
17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.4.2 Install Space

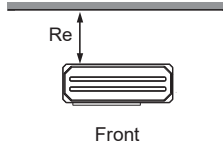
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

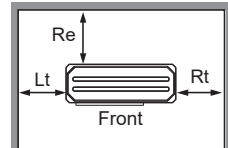


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

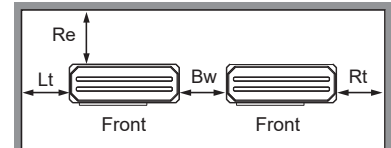


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



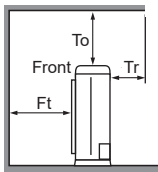
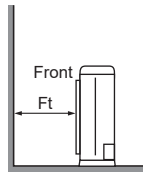
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



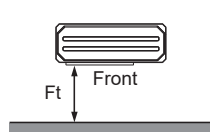
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

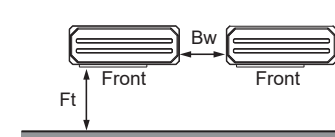
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

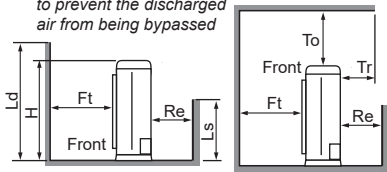


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

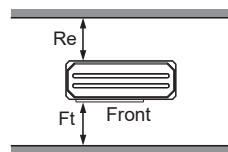
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

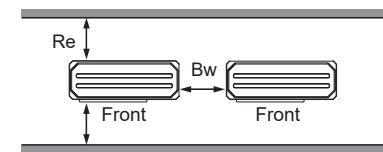
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

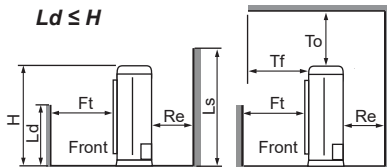


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



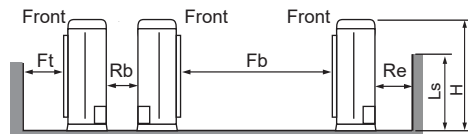
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

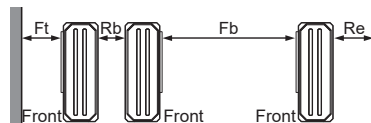
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

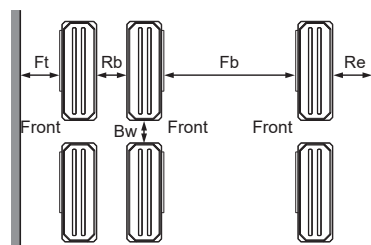


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

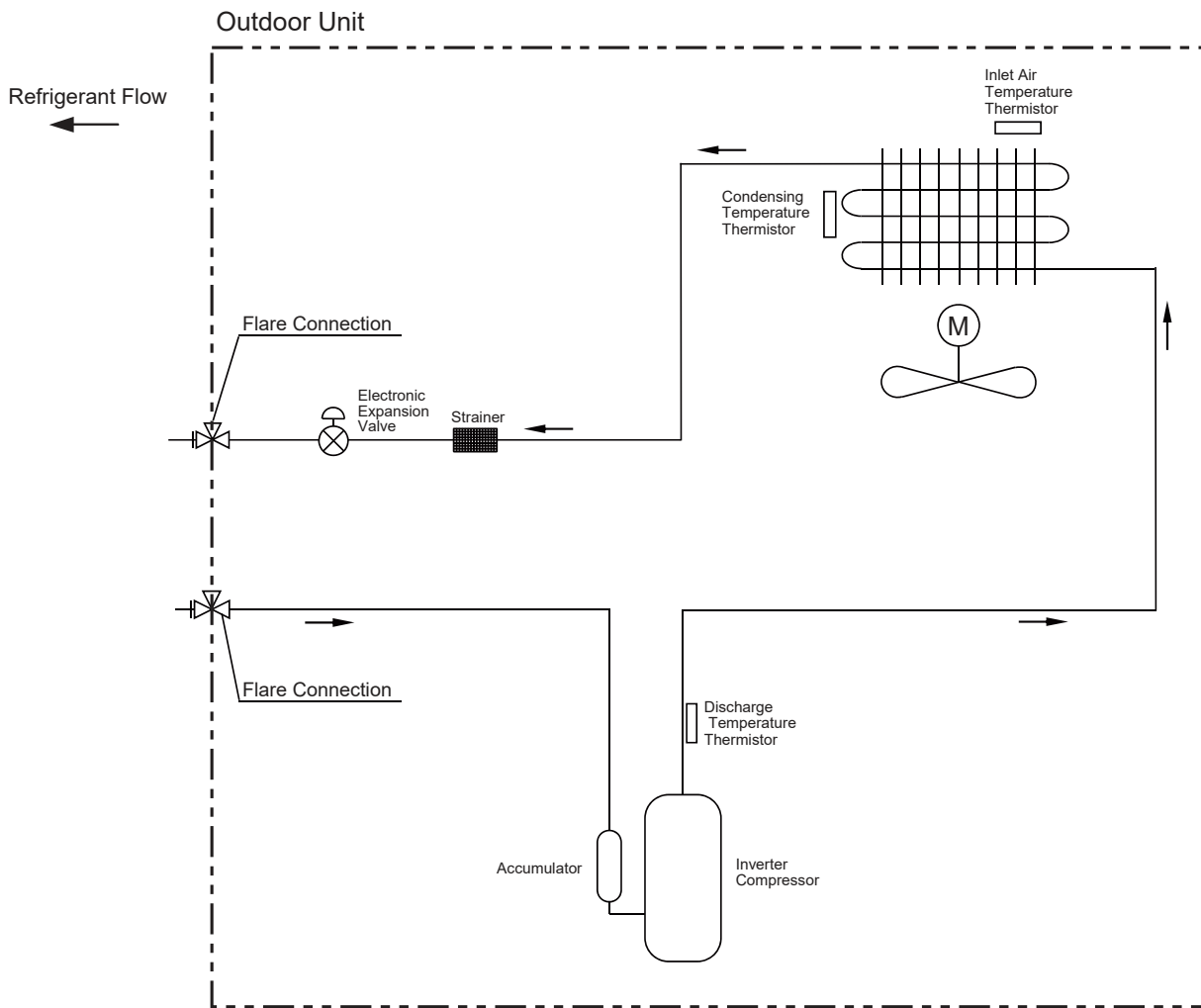
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

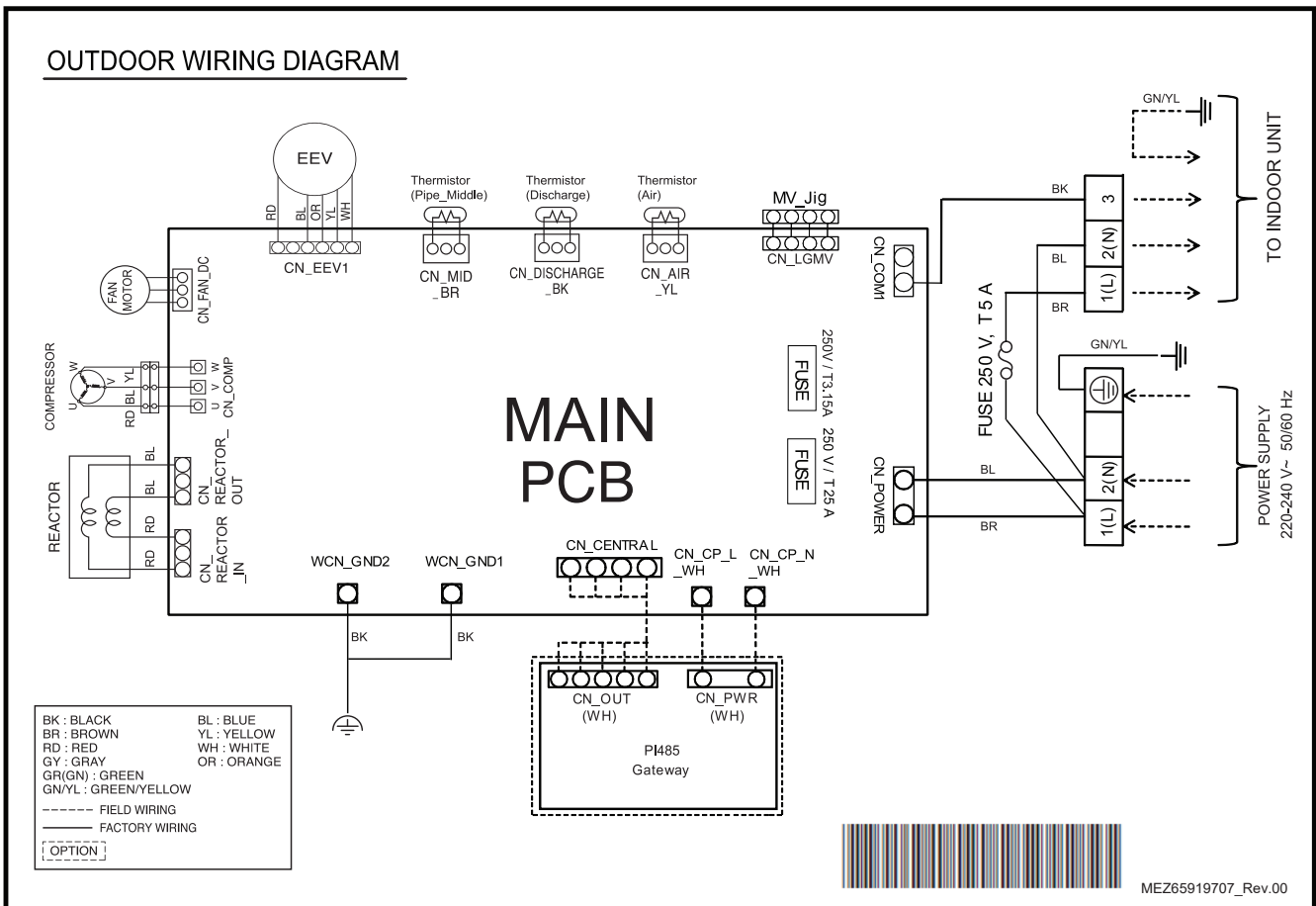
17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.5 Piping Diagrams



17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.6 Wiring Diagrams



**17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]****17.7 Capacity Tables****17.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	6.07	1.51	8.05	7.25	1.89	9.46	8.42	2.19	10.54	9.01	2.40	10.90	8.95	2.43	11.62	8.84	2.48	12.43	8.73	2.49
25	6.19	6.07	1.78	8.05	7.25	2.23	9.46	8.42	2.58	10.54	9.01	2.84	10.90	8.95	2.87	11.62	8.84	2.92	12.43	8.73	2.94
32	6.19	6.07	2.16	8.05	7.25	2.71	9.46	8.42	3.14	10.54	9.01	3.44	10.90	8.95	3.47	11.62	8.84	3.54	12.43	8.73	3.56
35	6.19	6.07	2.32	8.05	7.25	2.91	9.46	8.42	3.37	10.54	9.01	3.70	10.90	8.95	3.74	11.62	8.84	3.81	12.43	8.73	3.83
40	6.19	6.07	2.17	8.05	7.25	2.73	9.46	8.42	3.16	9.58	8.33	3.46	9.91	8.27	3.50	10.56	8.14	3.57	11.30	8.01	3.59
43	6.19	6.07	2.08	8.05	7.25	2.62	8.83	7.91	3.03	9.01	7.91	3.32	9.32	7.84	3.35	9.93	7.71	3.42	10.63	7.58	3.44
46	6.19	6.07	2.00	8.05	7.25	2.51	8.26	7.40	2.91	8.43	7.49	3.18	8.72	7.42	3.21	9.29	7.28	3.28	9.95	7.14	3.30
48	6.19	6.07	1.92	7.69	7.00	2.41	7.85	7.11	2.79	8.01	7.17	3.07	8.24	7.06	3.10	8.69	6.85	3.16	9.22	6.65	3.18
50	6.19	6.07	1.84	7.29	6.71	2.31	7.44	6.81	2.67	7.59	6.84	2.96	7.76	6.70	2.99	8.09	6.41	3.05	8.48	6.15	3.07

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]****17.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

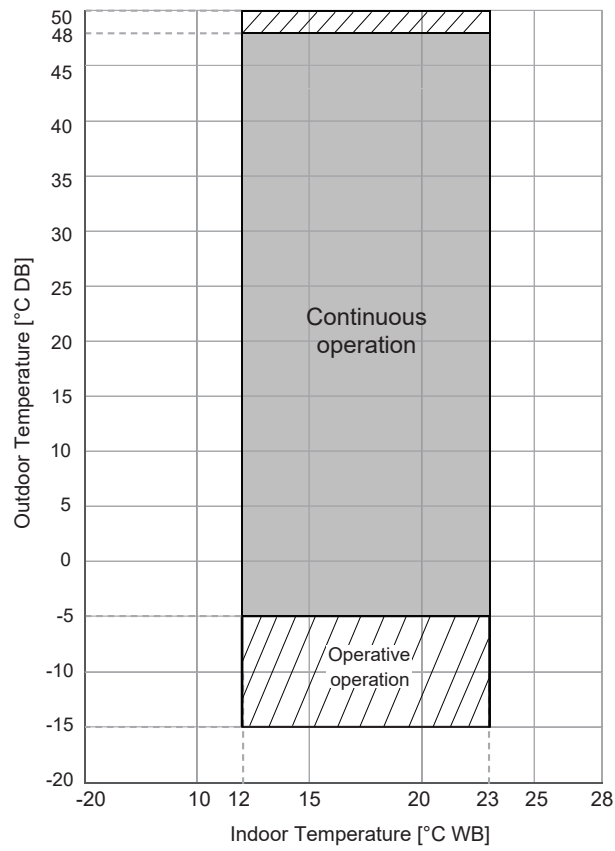
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.9 Operation Limits

17.9.1 Cooling



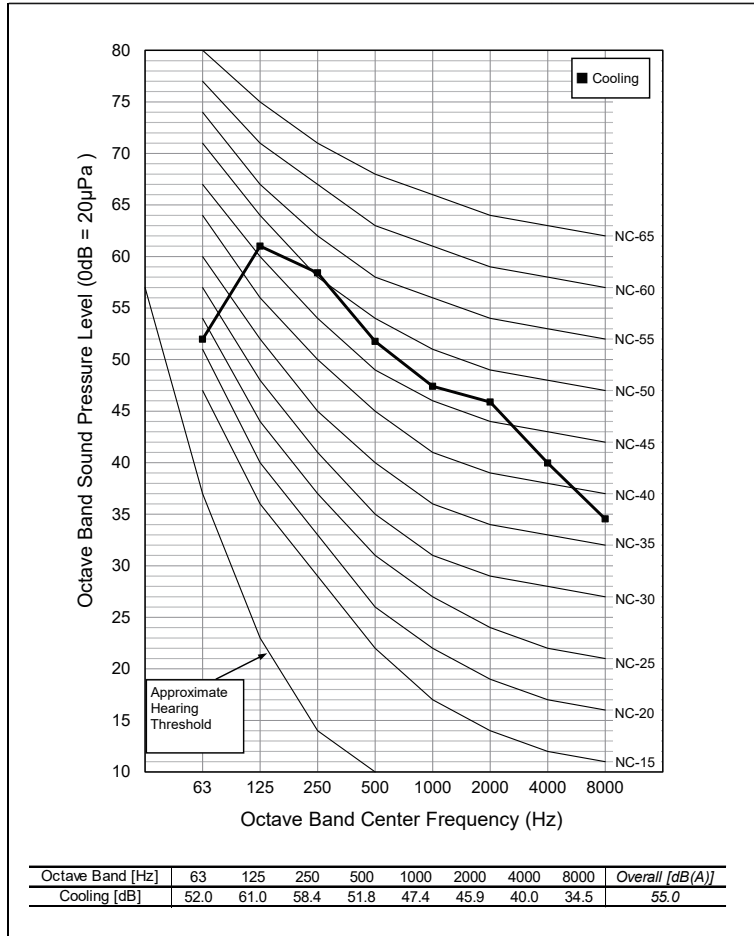
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

17. ZUUQ24GA0 [ZUAC1] + ZPNQ36GT3E0 [ZPNQ36GT3E0]

17.10 Sound Levels

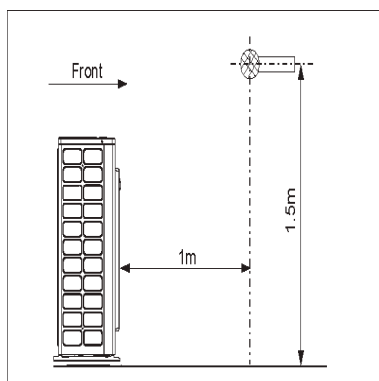
17.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

## 18.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	8.79
		Btu/h	30000
	Min ~ Max	kW	2.46 ~ 9.26
		Btu/h	8400 ~ 31600
	Sensible Heat (Rated)	kW	6.623
		Btu/h	22605
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	- ~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	- ~ 2.95 ~
Power Input(Heating)	Min ~ Rated ~ Max	kW	- ~ - ~
Efficiency	EER	W/W	2.98
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 13.4 /
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	19
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	3.0
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	30
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	53 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.2
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.4
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U24A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	50 x 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	85.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DKT208MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	1,500 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	670 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 x 28 x 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.55
Dimensions	Net(W x H x D)	mm	870 x 650 x 330
	Shipping(W x H x D)	mm	1046 x 713 x 461
Weight	Net	kg	41.5
	Shipping	kg	46.1
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.25
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]****18.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]****18.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

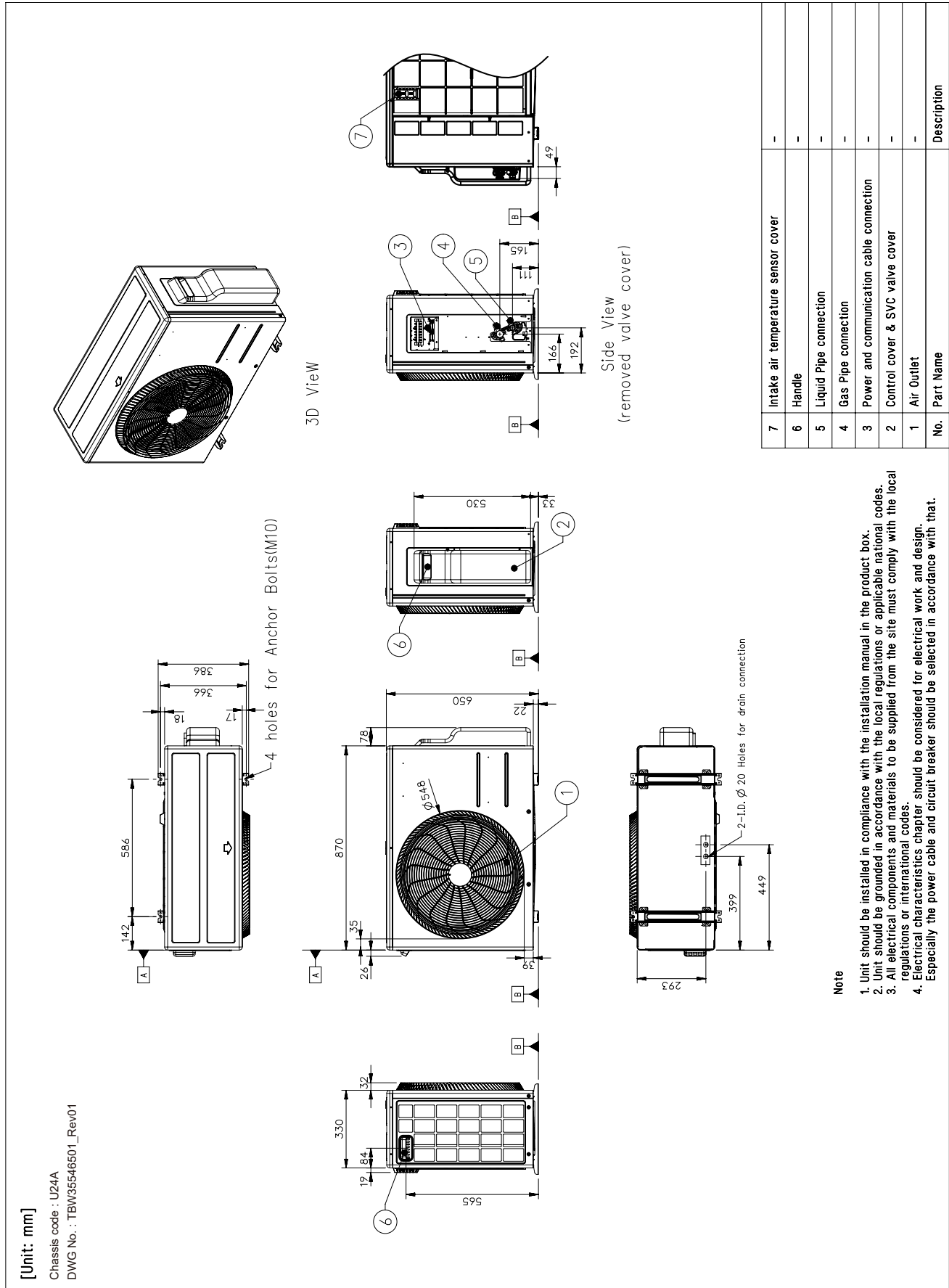
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

18.4 Dimensions

18.4.1 Product



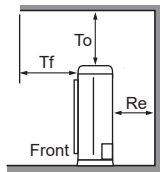
18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

18.4.2 Install Space

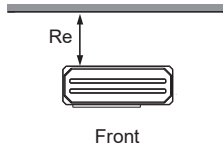
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

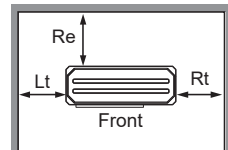


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

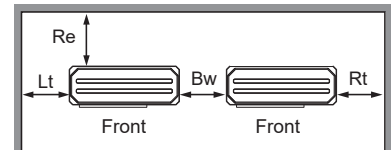


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



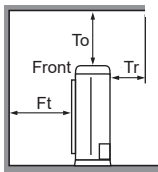
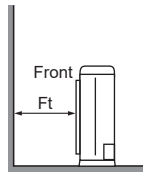
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



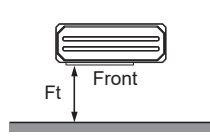
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

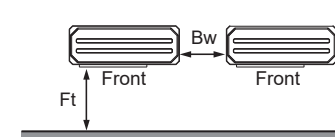
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

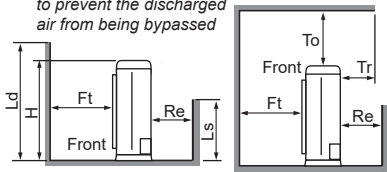


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

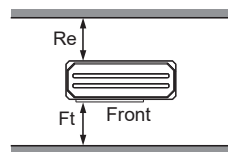
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

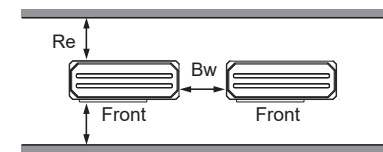
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

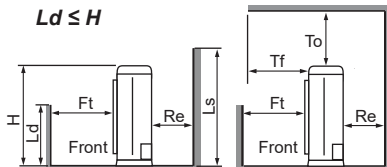


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



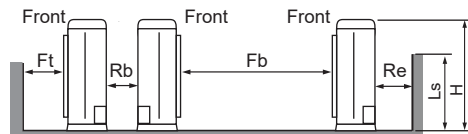
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

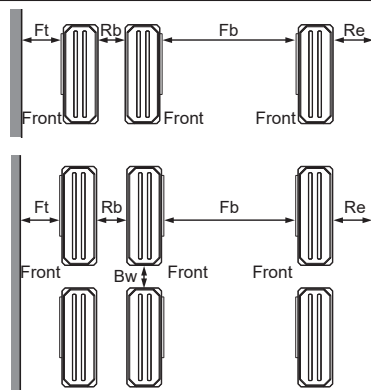
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

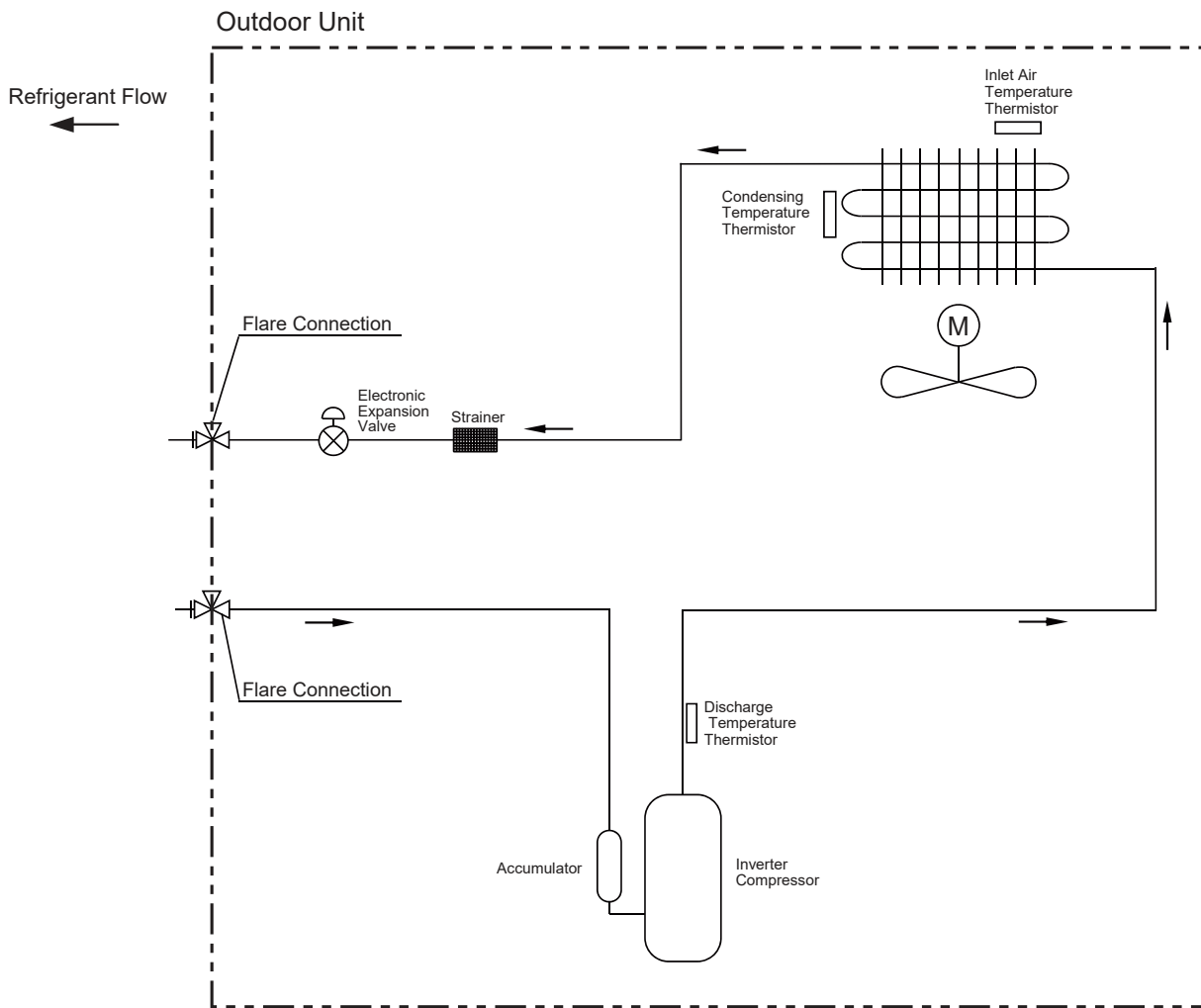
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

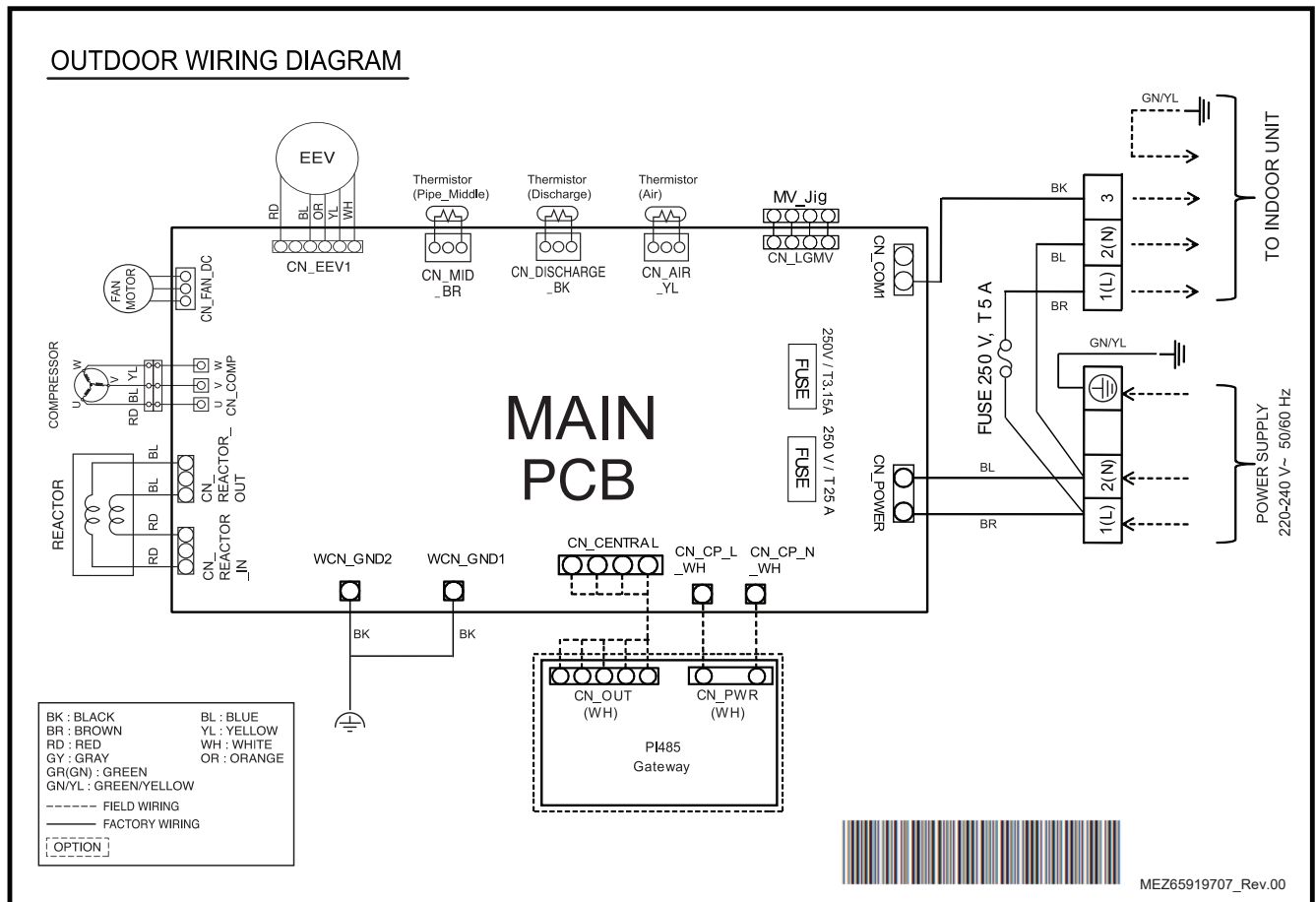
18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

18.5 Piping Diagrams



18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

18.6 Wiring Diagrams





**18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]****18.7 Capacity Tables****18.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	5.16	4.46	1.20	6.71	5.33	1.51	7.89	6.19	1.75	8.79	6.62	1.92	9.09	6.58	1.94	9.69	6.50	1.98	10.37	6.41	1.99
25	5.16	4.46	1.42	6.71	5.33	1.78	7.89	6.19	2.06	8.79	6.62	2.26	9.09	6.58	2.28	9.69	6.50	2.33	10.37	6.41	2.34
32	5.16	4.46	1.72	6.71	5.33	2.16	7.89	6.19	2.50	8.79	6.62	2.75	9.09	6.58	2.78	9.69	6.50	2.83	10.37	6.41	2.84
35	5.16	4.46	1.85	6.71	5.33	2.32	7.89	6.19	2.69	8.79	6.62	2.95	9.09	6.58	2.98	9.69	6.50	3.04	10.37	6.41	3.06
40	5.16	4.46	1.98	6.71	5.33	2.49	7.89	6.19	2.88	8.79	6.62	3.16	9.09	6.58	3.19	9.69	6.50	3.25	10.37	6.41	3.27
43	5.16	4.46	2.06	6.71	5.33	2.58	7.89	6.19	2.99	8.13	6.19	3.28	8.41	6.15	3.31	8.96	6.06	3.38	9.59	5.97	3.40
46	5.16	4.46	2.14	6.71	5.33	2.68	7.32	5.78	2.84	7.47	5.75	2.89	7.72	5.70	2.92	8.23	5.61	2.98	8.81	5.52	3.00
48	5.16	4.46	2.22	6.71	5.33	2.66	7.32	5.78	2.72	7.34	5.69	2.77	7.54	5.61	2.80	7.95	5.45	2.86	8.42	5.30	2.87
50	5.16	4.46	2.31	6.71	5.33	2.55	7.06	5.58	2.60	7.21	5.63	2.66	7.36	5.51	2.69	7.66	5.28	2.74	8.02	5.07	2.75

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]****18.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.6	98.8	98.0	97.2	96.4	95.6	94.8	94.0	93.2

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

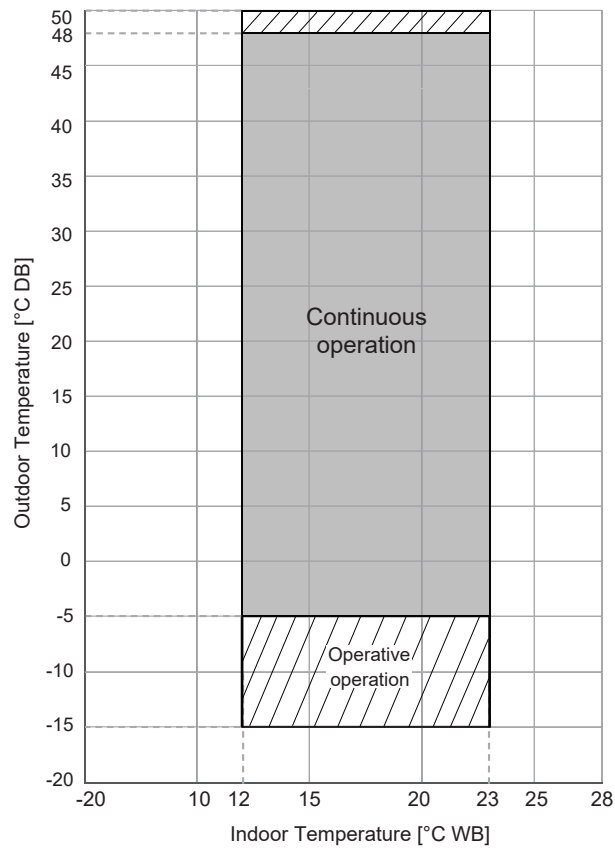
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]**

**18.9 Operation Limits**

**18.9.1 Cooling**



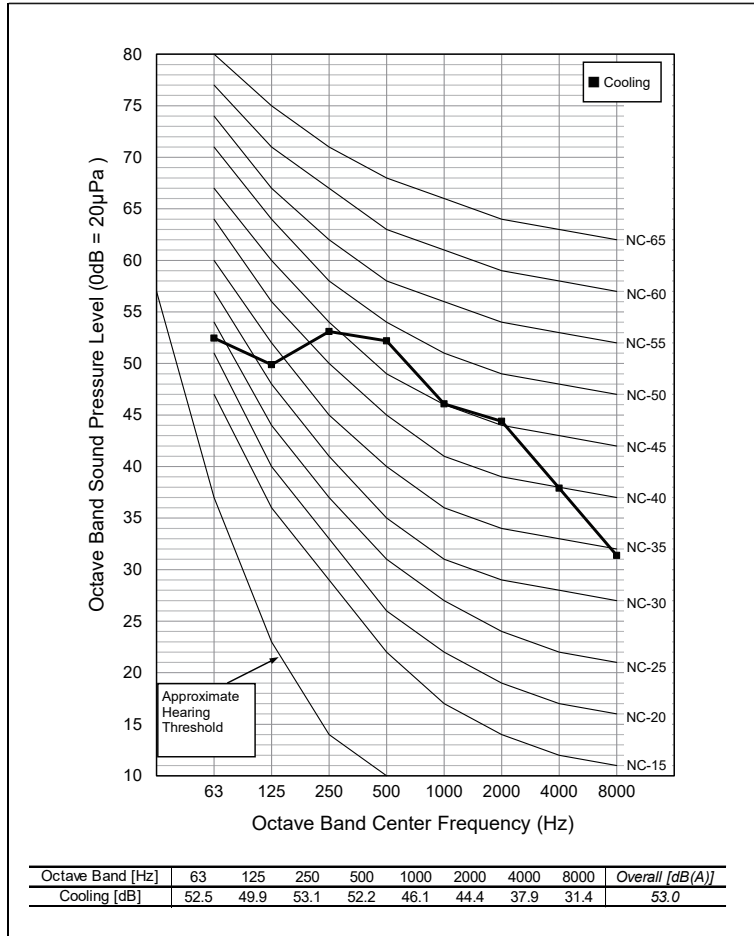
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

18. ZUUQ24GA0 [ZUAC1] + ZPNQ30GR5E0 [ZPNQ30GR5E0]

18.10 Sound Levels

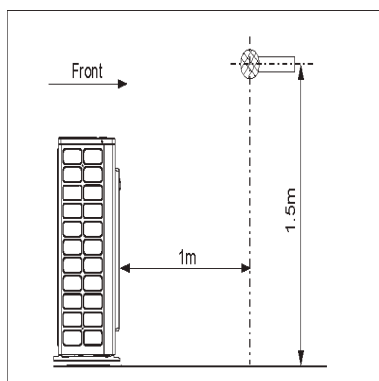
18.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	53 / -

**Note**

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

## 19.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.80~11.71
		Btu/h	12,980~40,000
	Sensible Heat (Rated)	kW	9.09
		Btu/h	31,054
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.09~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.41
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 14.10/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.13
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	24.2
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]****19.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]****19.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

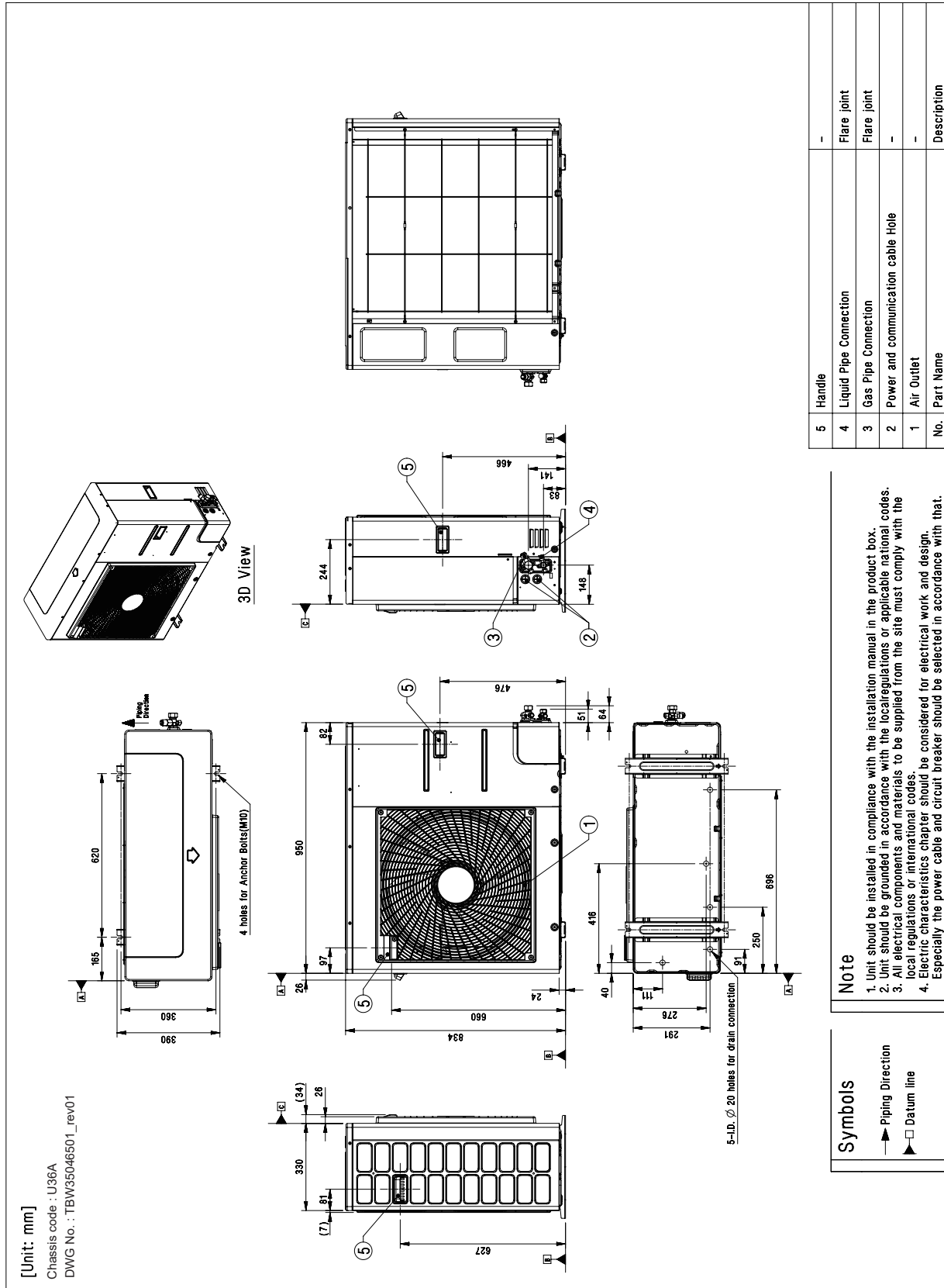
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

19.4 Dimensions

19.4.1 Product



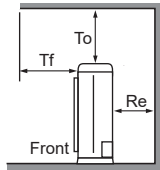
19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

19.4.2 Install Space

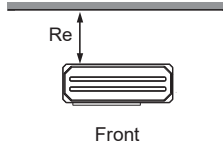
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

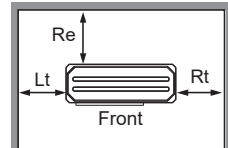


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

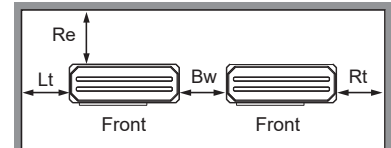


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



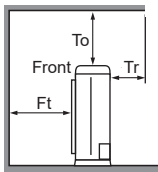
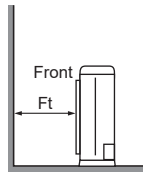
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



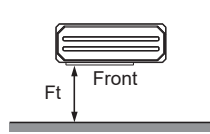
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

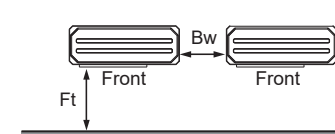
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

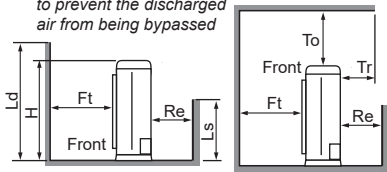


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

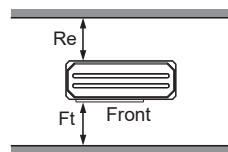
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

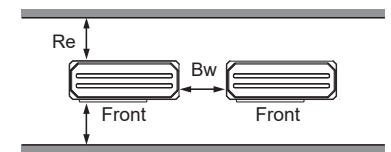
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

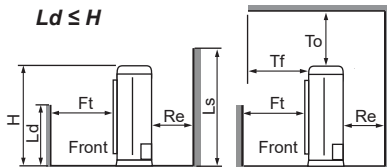


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



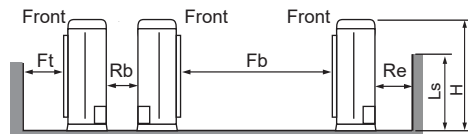
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

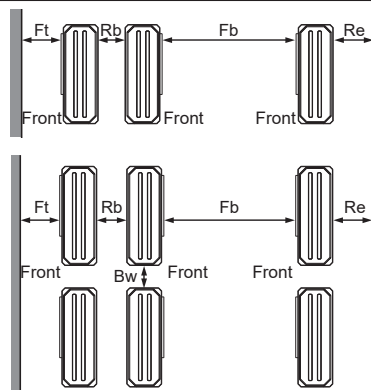
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

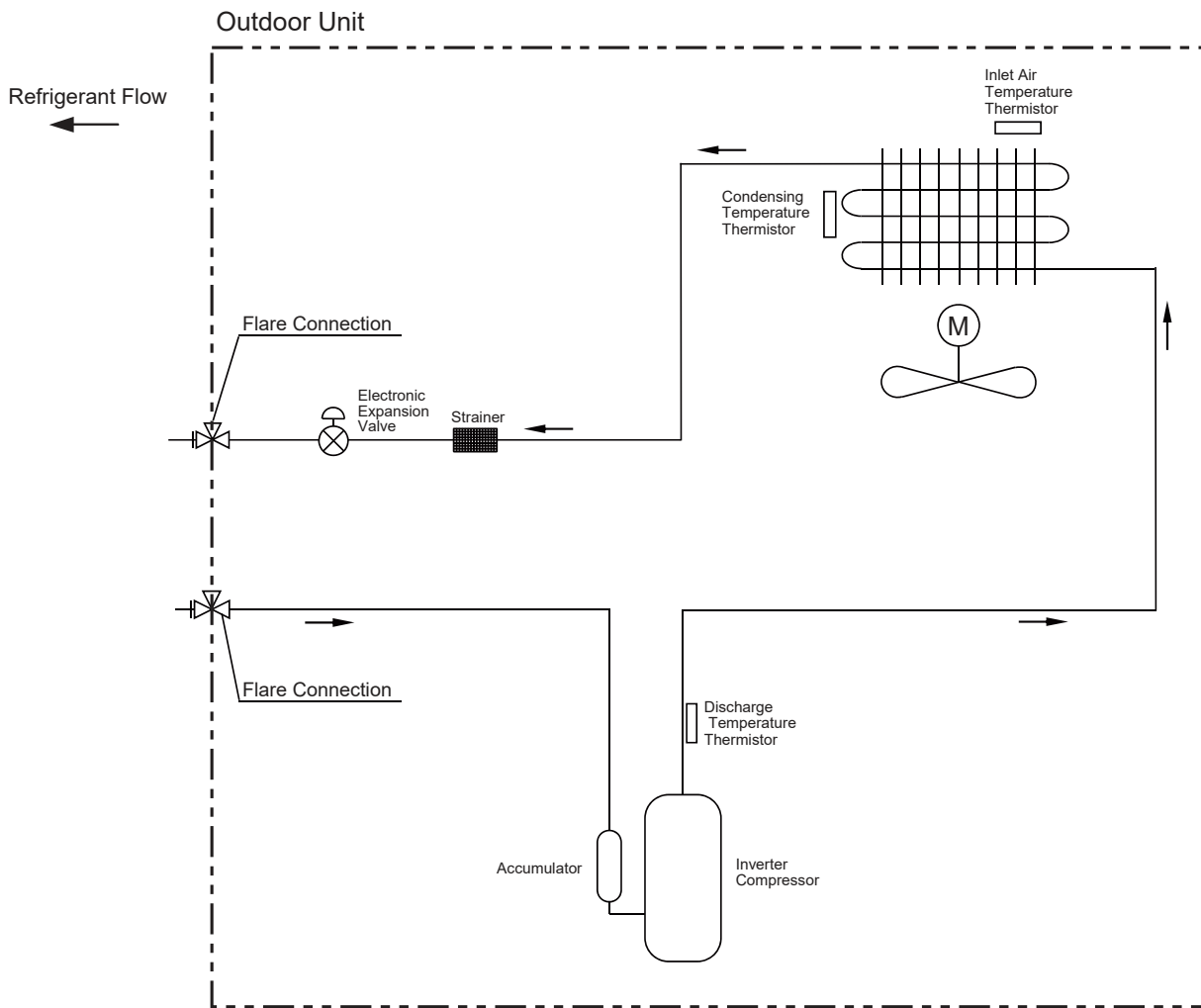
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

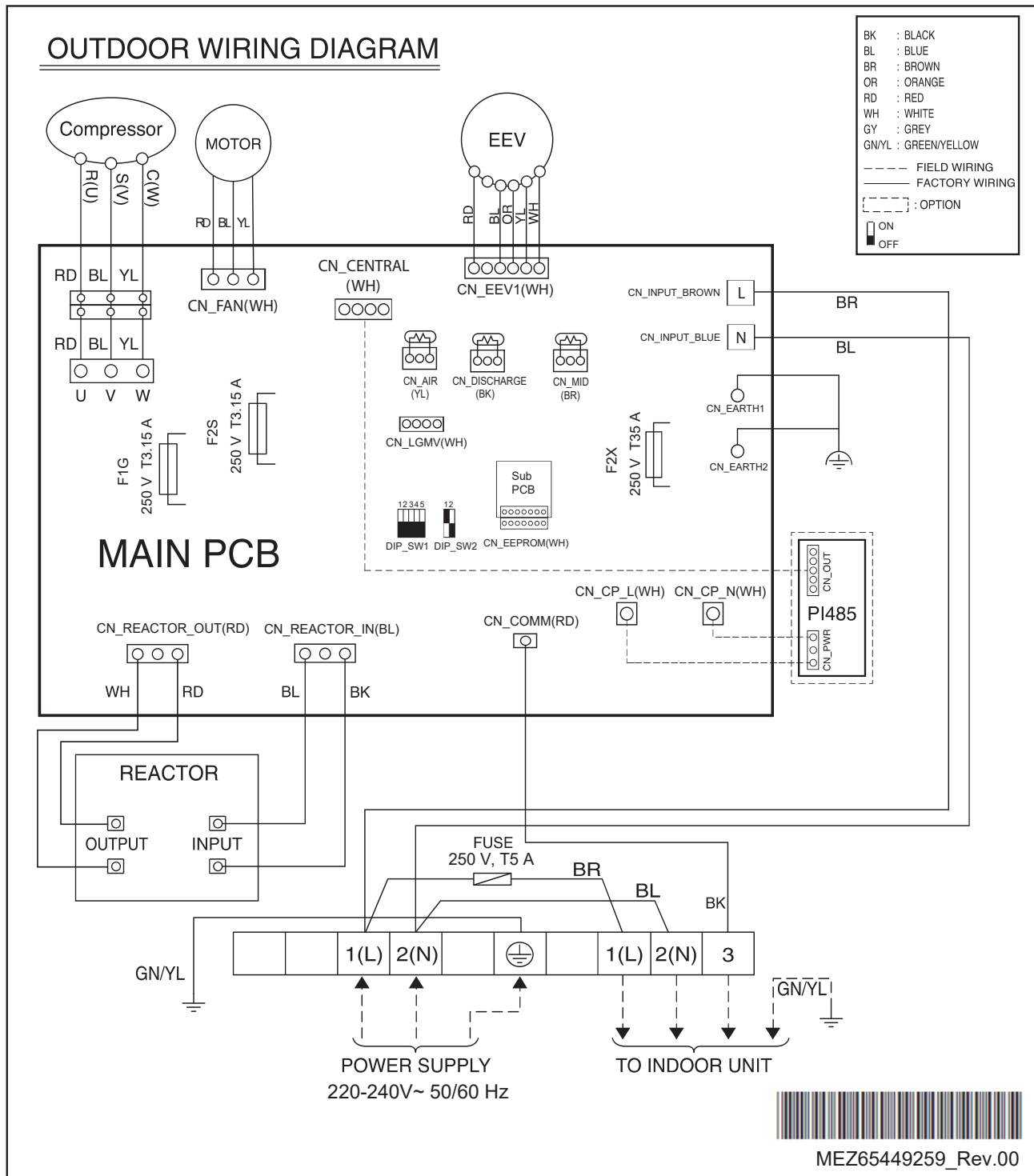
19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

19.5 Piping Diagrams



19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

19.6 Wiring Diagrams



**19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]****19.7 Capacity Tables****19.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	6.13	1.26	8.05	7.31	1.58	9.46	8.50	1.83	10.54	9.09	2.01	10.90	9.03	2.03	11.62	8.92	2.07	12.43	8.81	2.08
25	6.19	6.13	1.48	8.05	7.31	1.86	9.46	8.50	2.16	10.54	9.09	2.37	10.90	9.03	2.39	11.62	8.92	2.44	12.43	8.81	2.45
32	6.19	6.13	1.80	8.05	7.31	2.26	9.46	8.50	2.62	10.54	9.09	2.87	10.90	9.03	2.90	11.62	8.92	2.96	12.43	8.81	2.98
35	6.19	6.13	1.94	8.05	7.31	2.43	9.46	8.50	2.82	10.54	9.09	3.09	10.90	9.03	3.12	11.62	8.92	3.18	12.43	8.81	3.20
40	6.19	6.13	2.06	8.05	7.31	2.58	9.46	8.50	2.99	10.54	9.09	3.28	10.90	9.03	3.31	11.62	8.92	3.38	12.43	8.81	3.40
43	6.19	6.13	2.13	8.05	7.31	2.67	9.46	8.50	3.10	10.54	9.09	3.40	10.90	9.03	3.43	11.62	8.92	3.50	12.43	8.81	3.52
46	6.19	6.13	2.21	8.05	7.31	2.77	9.46	8.50	3.18	9.70	8.45	3.24	10.03	8.39	3.27	10.69	8.27	3.34	11.44	8.15	3.36
48	6.19	6.13	2.28	8.05	7.31	2.87	9.24	8.38	3.13	9.43	8.29	3.20	9.69	8.18	3.23	10.22	7.96	3.29	10.83	7.75	3.31
50	6.19	6.13	2.36	8.05	7.31	2.97	8.99	8.12	3.09	9.17	8.12	3.15	9.36	7.96	3.18	9.75	7.64	3.25	10.22	7.35	3.27

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]****19.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

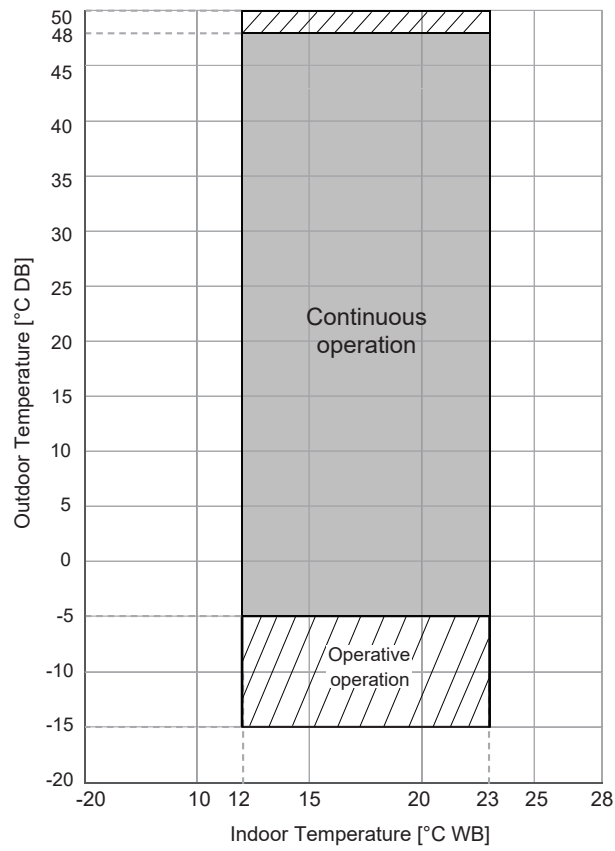
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]**

**19.9 Operation Limits**

**19.9.1 Cooling**



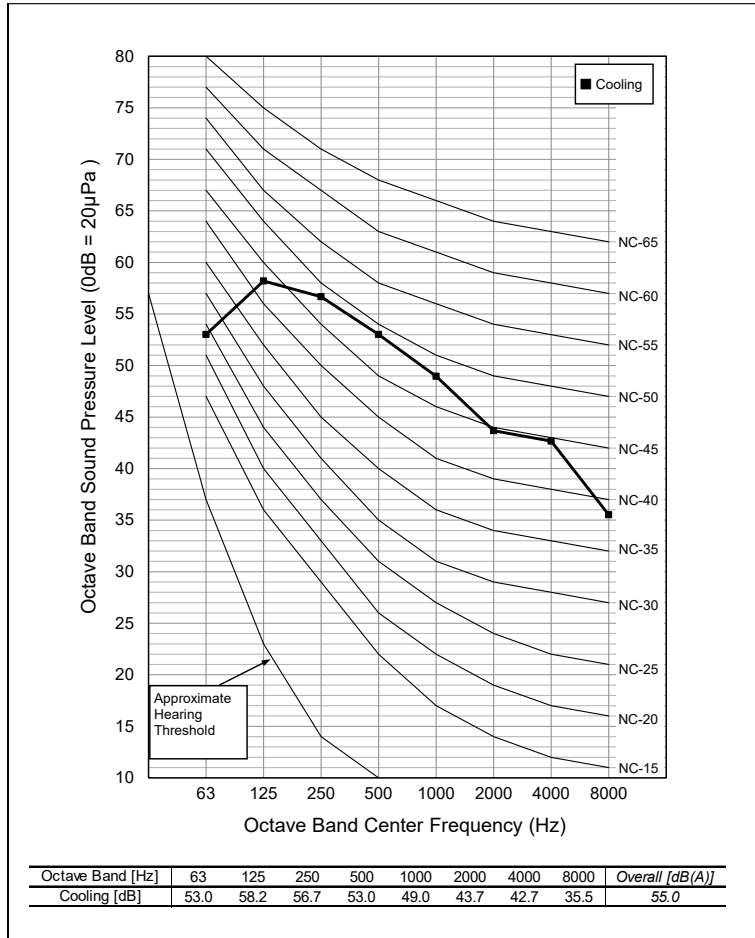
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

19. ZUUQ36GA0 [ZUAD1] + ZTNQ36GYLA0 [ZTNQ36GYLA0]

19.10 Sound Levels

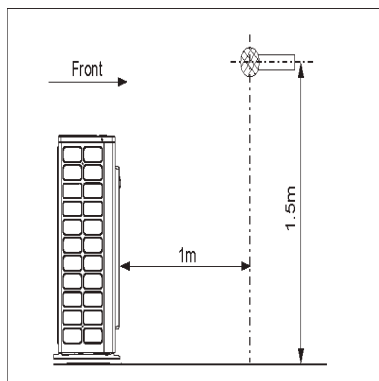
19.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

## 20.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	12.25
		Btu/h	41,850
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.30~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.17
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 19.60/
Running Current(Heating)	Min/Rated/Max	A	- / -/
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	4.4
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	25.5
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]****20.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]****20.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

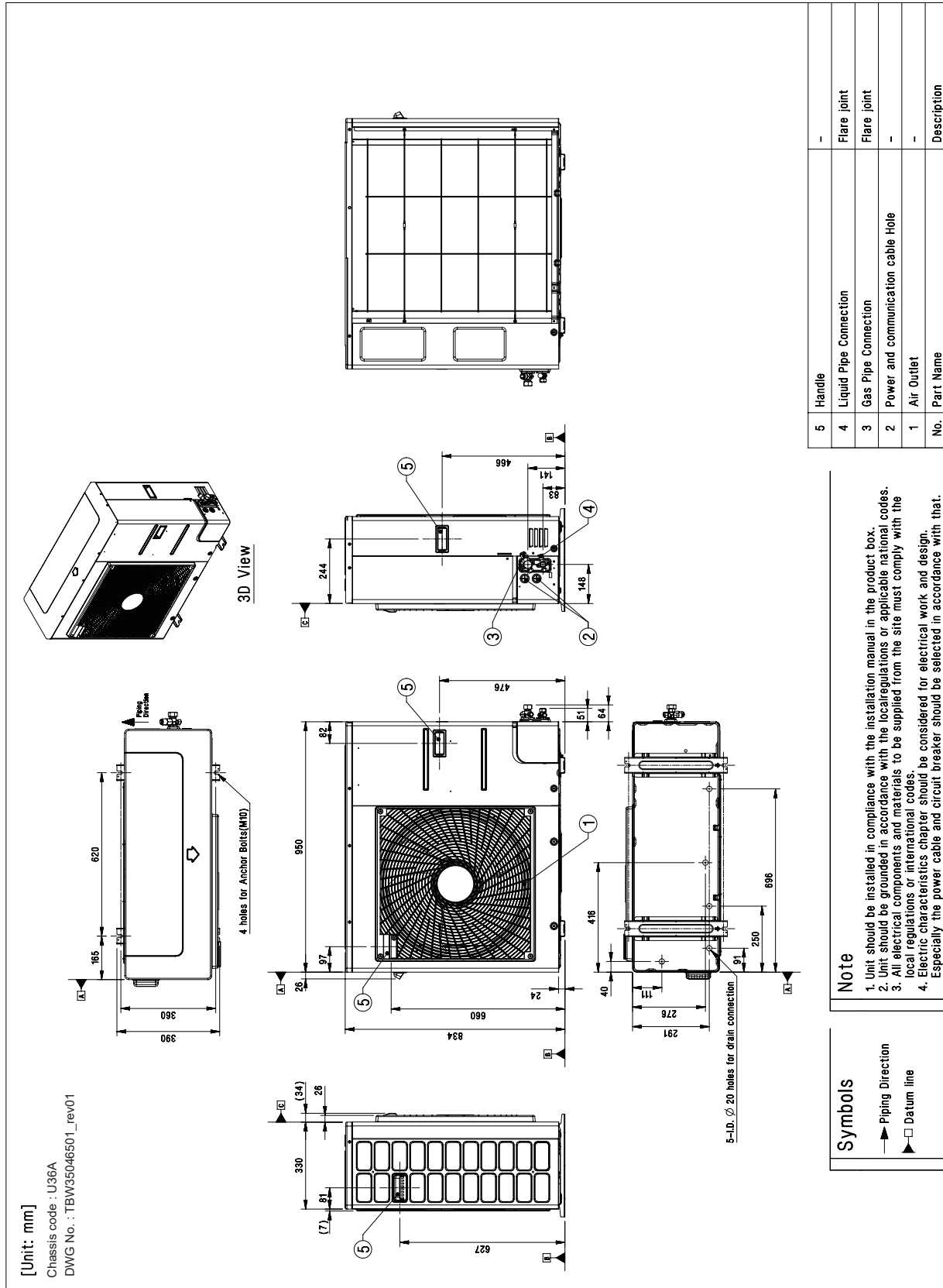
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

20.4 Dimensions

20.4.1 Product



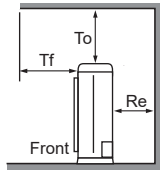
20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

20.4.2 Install Space

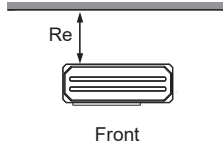
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

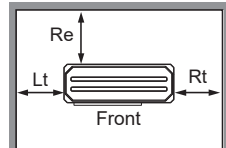


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

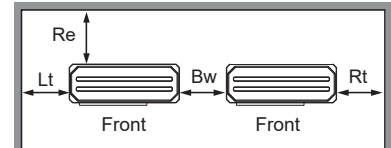


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



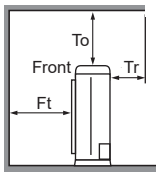
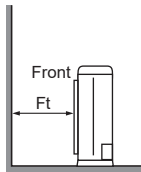
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



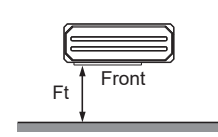
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

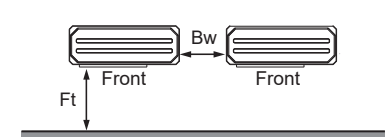
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

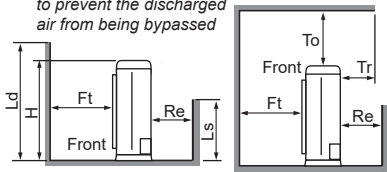


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

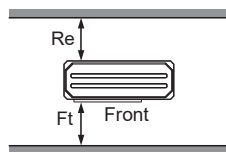
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

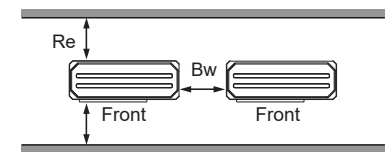
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

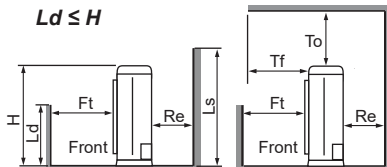


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



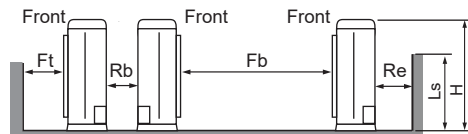
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

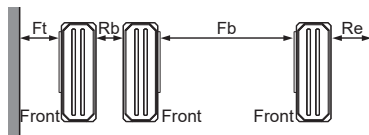
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

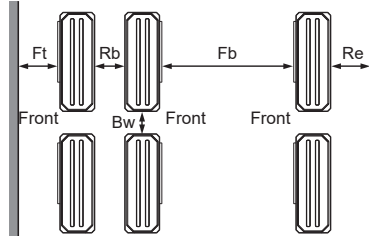


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

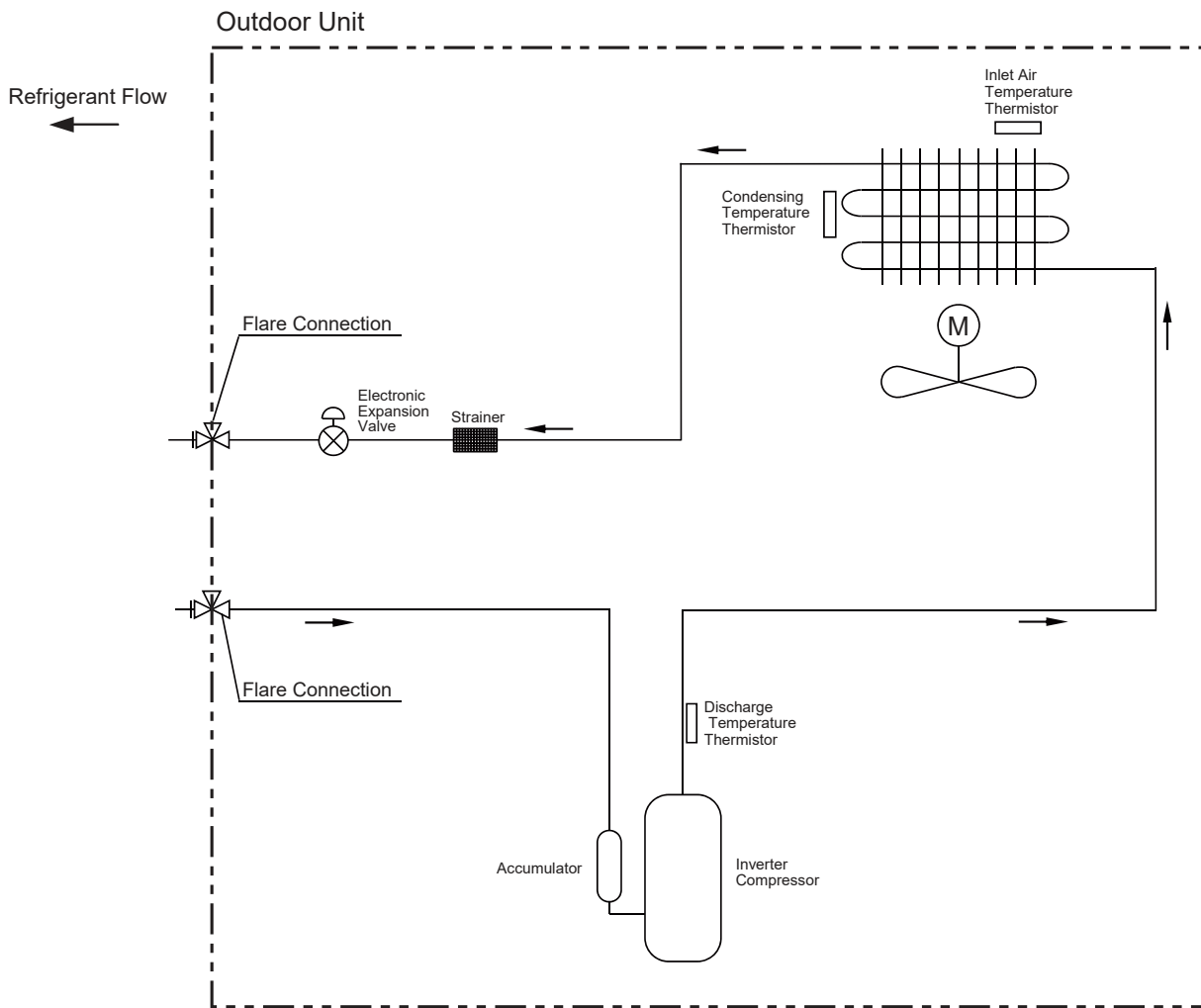
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

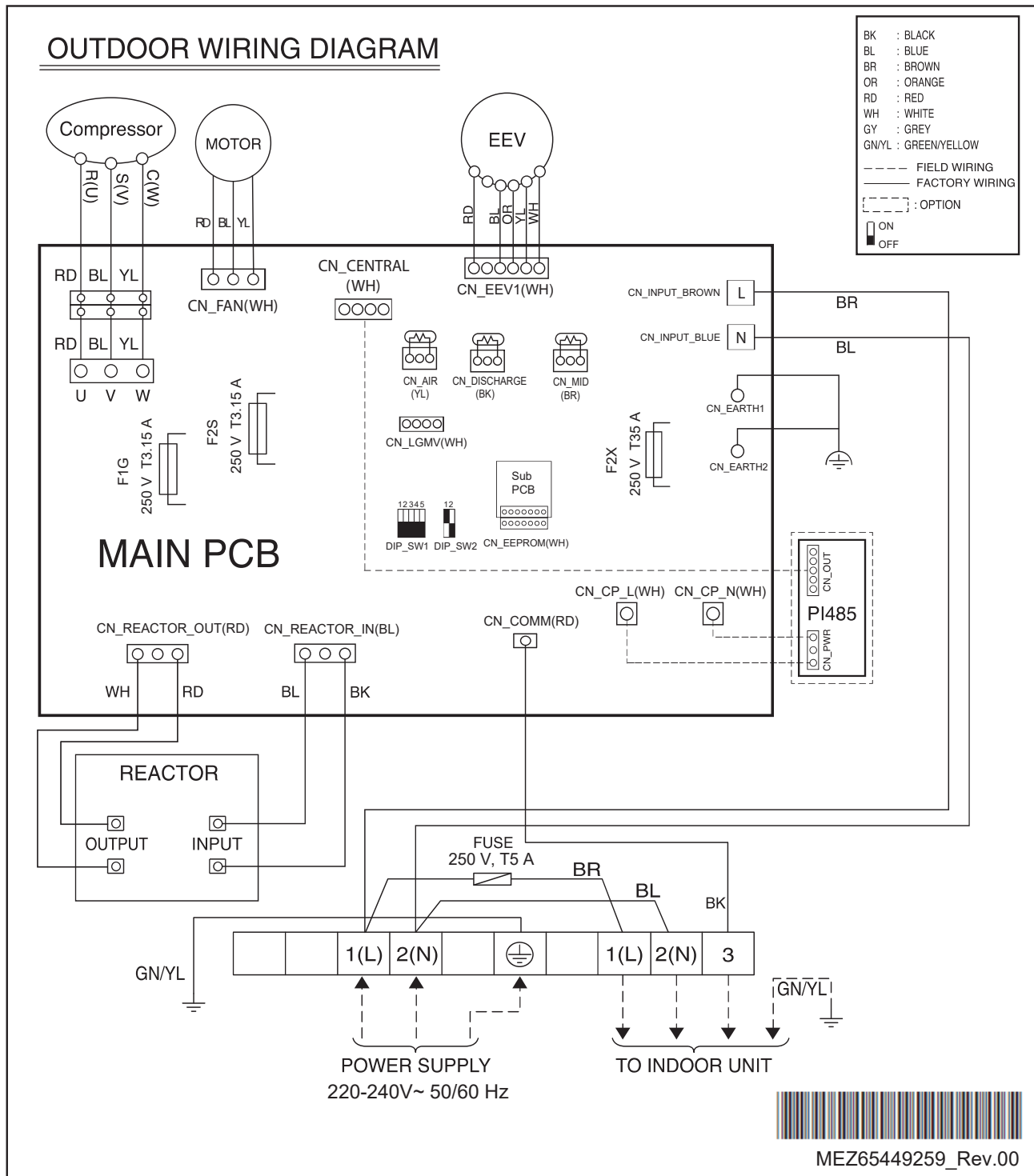
20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

20.5 Piping Diagrams



20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

20.6 Wiring Diagrams





**20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]****20.7 Capacity Tables****20.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	7.95	1.75	10.39	9.85	2.20	12.22	11.45	2.55	13.61	12.25	2.79	14.07	12.17	2.82	15.00	12.02	2.88	16.06	11.87	2.89
25	7.99	7.95	2.07	10.39	9.85	2.59	12.22	11.45	3.00	13.61	12.25	3.30	14.07	12.17	3.33	15.00	12.02	3.39	16.06	11.87	3.41
32	7.99	7.95	2.51	10.39	9.85	3.15	12.22	11.45	3.65	13.61	12.25	4.00	14.07	12.17	4.04	15.00	12.02	4.12	16.06	11.87	4.14
35	7.99	7.95	2.70	10.39	9.85	3.38	12.22	11.45	3.92	13.61	12.25	4.30	14.07	12.17	4.34	15.00	12.02	4.43	16.06	11.87	4.46
40	7.99	7.95	2.52	10.39	9.85	3.17	12.22	11.45	3.67	12.50	11.44	4.03	12.92	11.35	4.07	13.77	11.18	4.15	14.74	11.00	4.17
43	7.99	7.95	2.42	10.39	9.85	3.04	11.59	10.93	3.52	11.83	10.94	3.86	12.23	10.85	3.90	13.04	10.66	3.98	13.95	10.48	4.00
46	7.99	7.95	2.32	10.39	9.85	2.92	10.94	10.32	3.38	11.16	10.44	3.70	11.54	10.34	3.74	12.30	10.14	3.81	13.17	9.95	3.83
48	7.99	7.95	2.23	10.39	9.85	2.80	10.47	9.88	3.24	10.68	10.07	3.57	10.98	9.92	3.61	11.58	9.61	3.68	12.28	9.33	3.70
50	7.99	7.95	2.14	9.80	9.40	2.68	10.00	9.54	3.11	10.21	9.69	3.44	10.43	9.48	3.47	10.87	9.07	3.54	11.40	8.69	3.56

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table.  
Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]****20.8 Capacity Correction Factor**

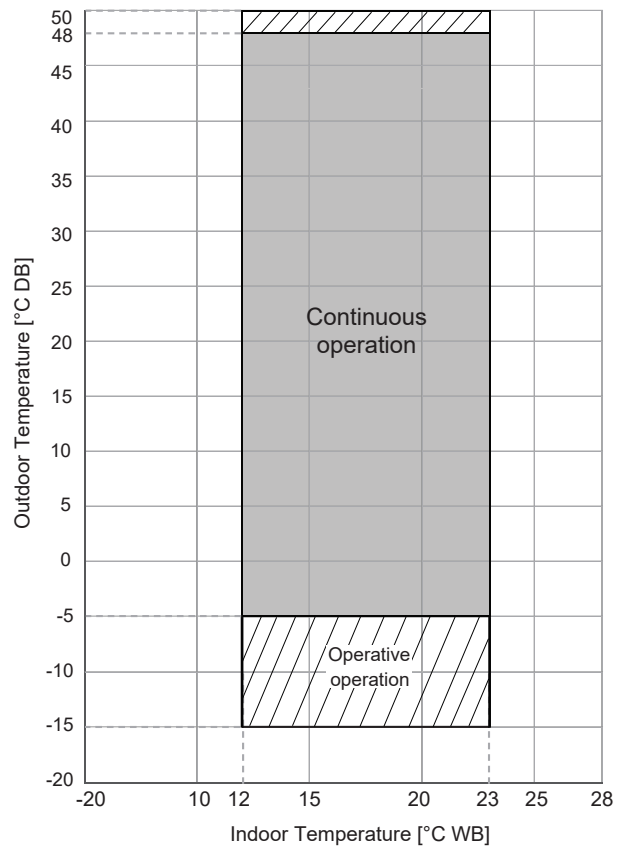
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

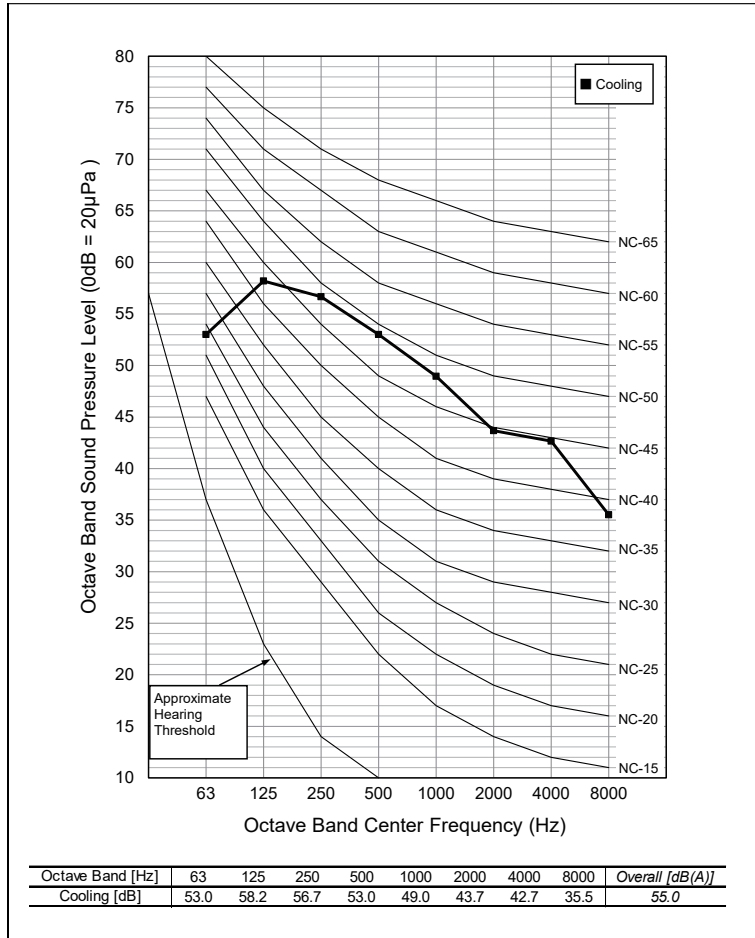
**20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]****20.9 Operation Limits****20.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

20. ZUUQ36GA0 [ZUAD1] + ZBNQ48GM3A0 [ZBNQ48GM3A0]

20.10 Sound Levels

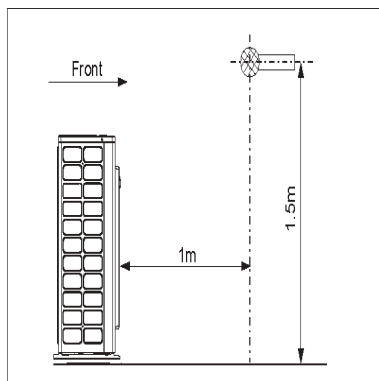
20.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

## 21.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	10.40
		Btu/h	35,526
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.63~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.94
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 21.10/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	4.72
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	24.2
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]****21.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]****21.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

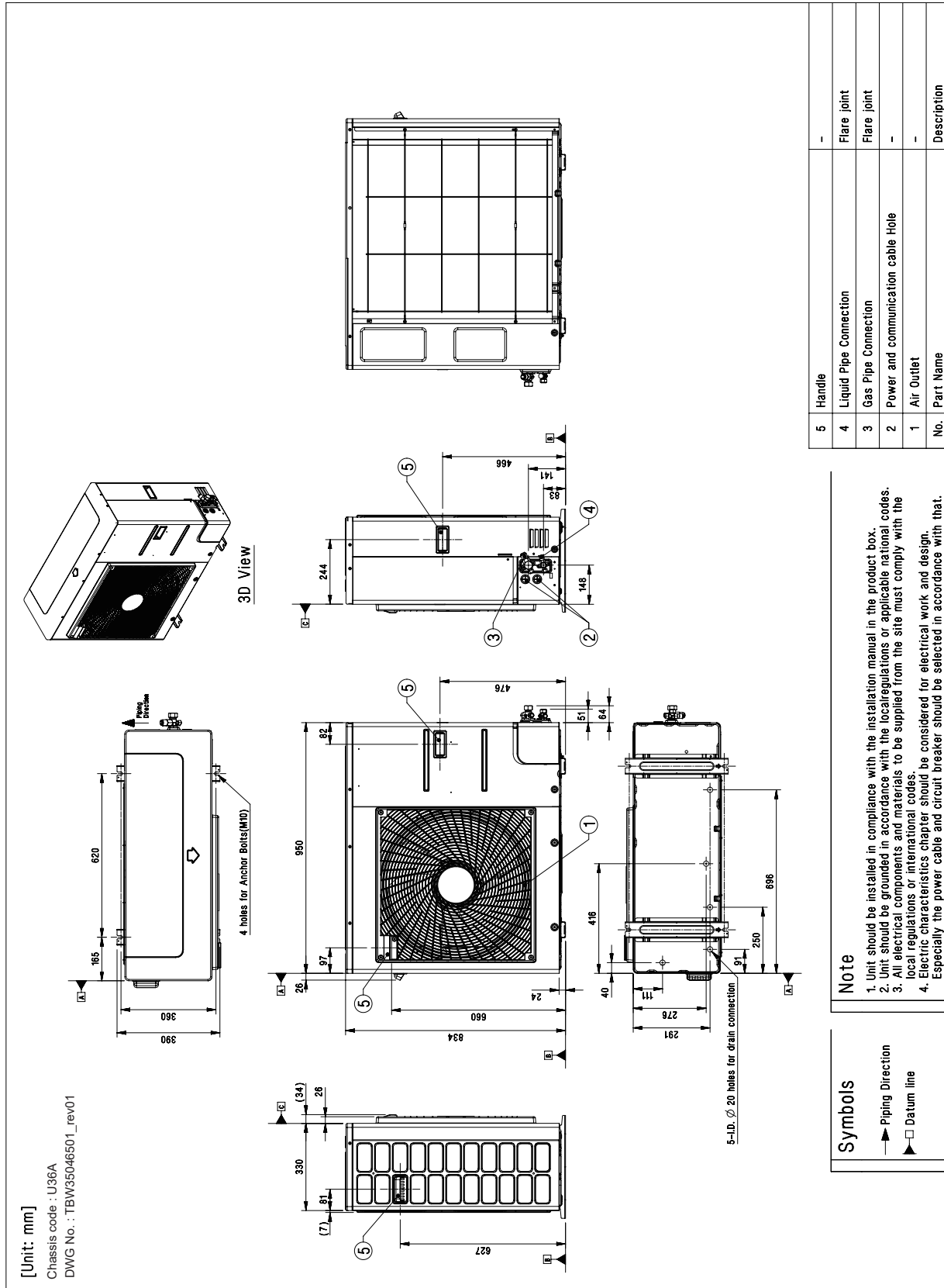
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

21.4 Dimensions

21.4.1 Product



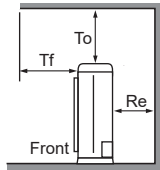
21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

21.4.2 Install Space

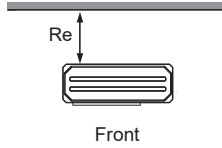
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

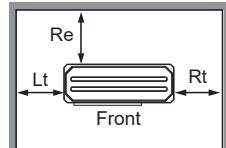


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

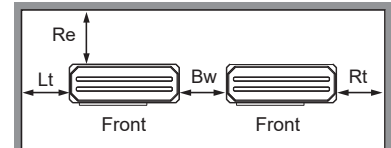


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



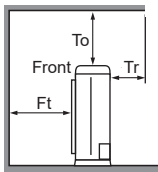
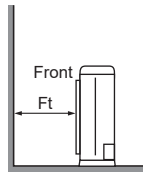
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



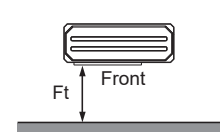
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

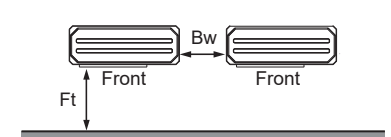
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

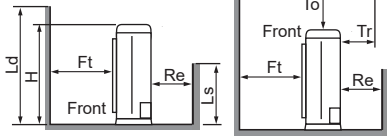


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

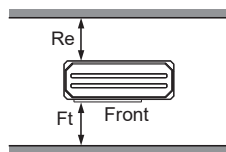
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

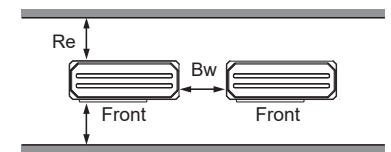
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

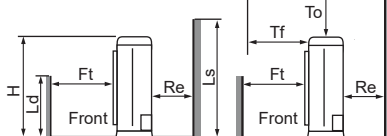


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



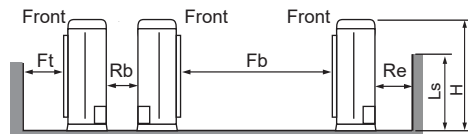
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

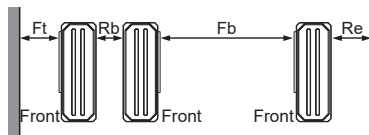
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

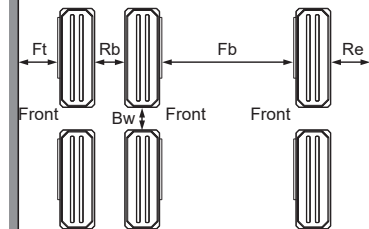


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

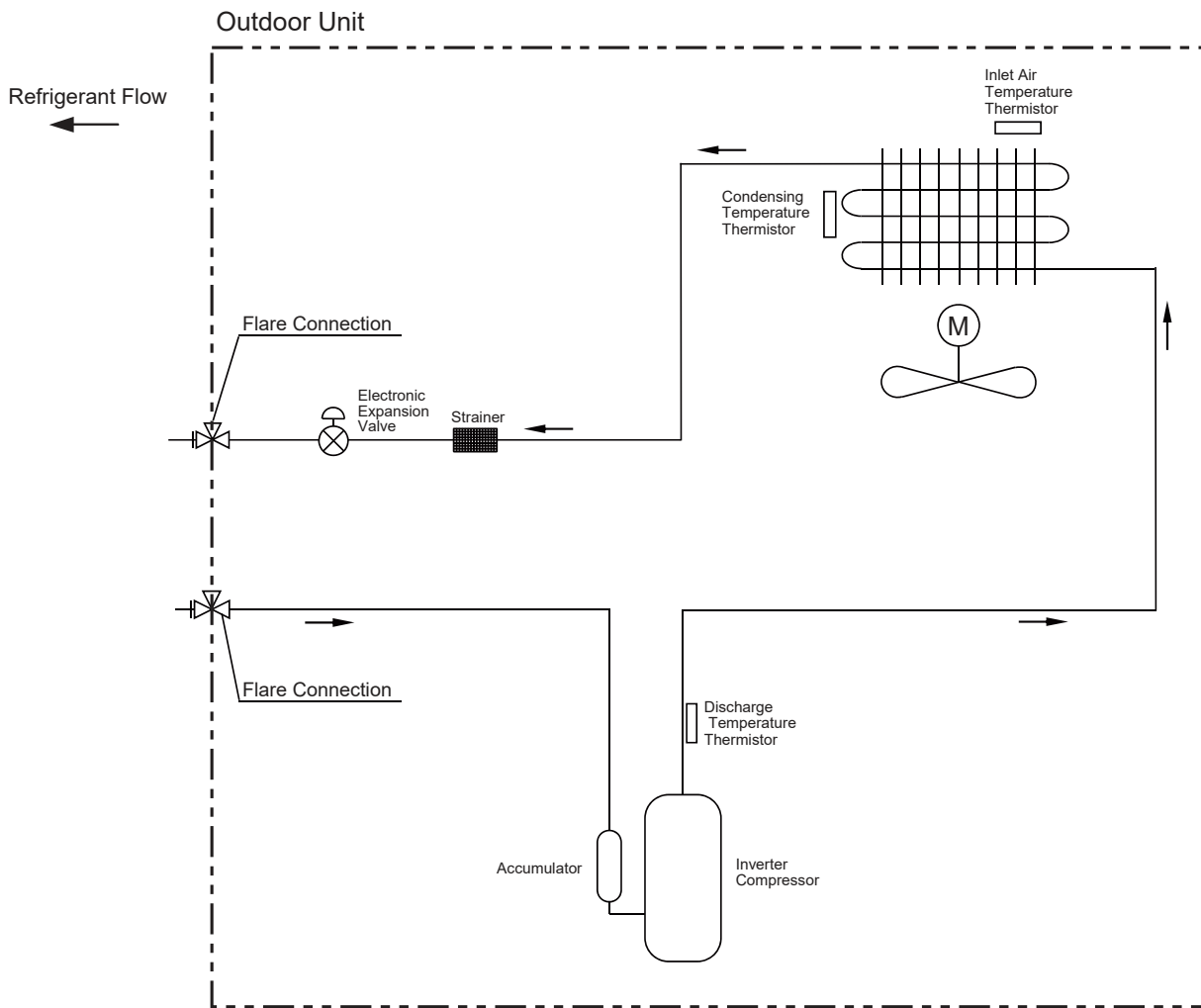
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

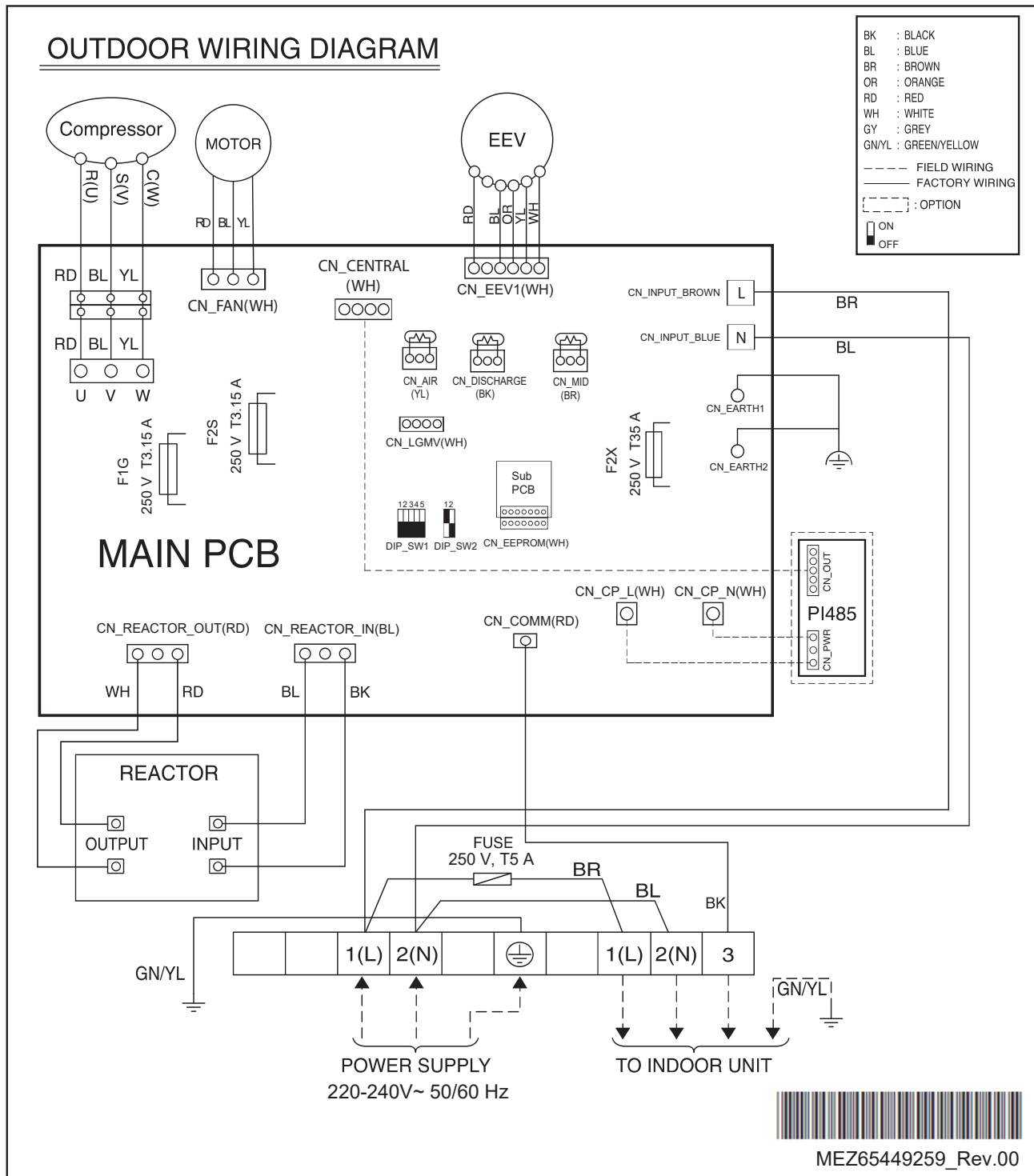
21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

21.5 Piping Diagrams



21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

21.6 Wiring Diagrams



**21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]****21.7 Capacity Tables****21.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	7.01	1.88	10.39	8.37	2.37	12.22	9.72	2.74	13.61	10.40	3.01	14.07	10.33	3.04	15.00	10.20	3.10	16.06	10.07	3.12
25	7.99	7.01	2.22	10.39	8.37	2.79	12.22	9.72	3.23	13.61	10.40	3.55	14.07	10.33	3.59	15.00	10.20	3.66	16.06	10.07	3.68
32	7.99	7.01	2.70	10.39	8.37	3.39	12.22	9.72	3.93	13.61	10.40	4.31	14.07	10.33	4.35	15.00	10.20	4.44	16.06	10.07	4.46
35	7.99	7.01	2.90	10.39	8.37	3.64	12.22	9.72	4.22	13.61	10.40	4.63	14.07	10.33	4.68	15.00	10.20	4.77	16.06	10.07	4.80
40	7.99	7.01	2.72	10.39	8.37	3.41	12.22	9.72	3.95	12.50	9.71	4.34	12.92	9.64	4.38	13.77	9.49	4.47	14.74	9.34	4.49
43	7.99	7.01	2.61	10.39	8.37	3.27	11.59	9.28	3.79	11.83	9.29	4.16	12.23	9.21	4.20	13.04	9.05	4.28	13.95	8.90	4.31
46	7.99	7.01	2.50	10.39	8.37	3.14	10.94	8.76	3.64	11.16	8.86	3.98	11.54	8.78	4.02	12.30	8.61	4.10	13.17	8.45	4.13
48	7.99	7.01	2.40	10.39	8.37	3.01	10.47	8.39	3.49	10.68	8.55	3.84	10.98	8.42	3.88	11.58	8.16	3.96	12.28	7.92	3.98
50	7.99	7.01	2.30	9.80	7.98	2.89	10.00	8.10	3.35	10.21	8.23	3.70	10.43	8.05	3.74	10.87	7.70	3.82	11.40	7.38	3.84

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]****21.8 Capacity Correction Factor**

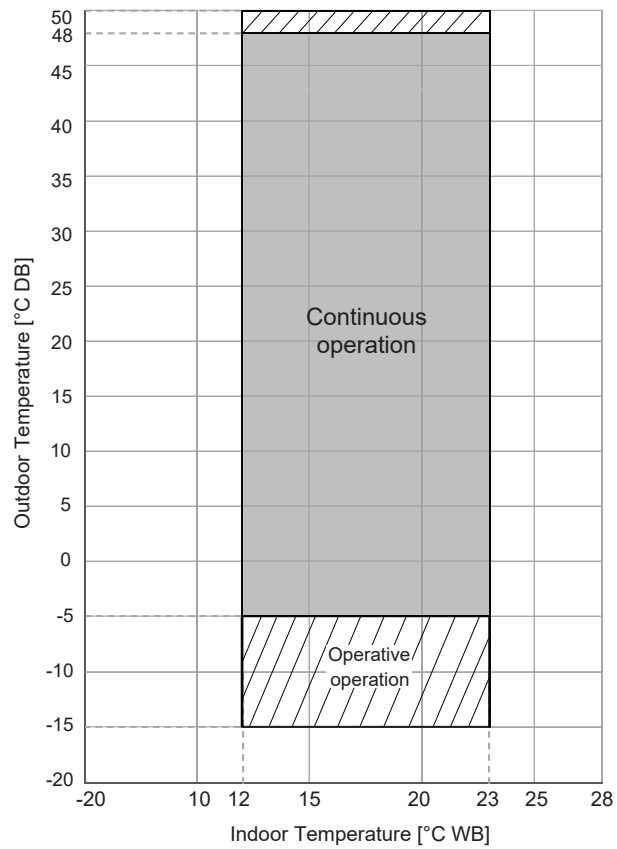
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

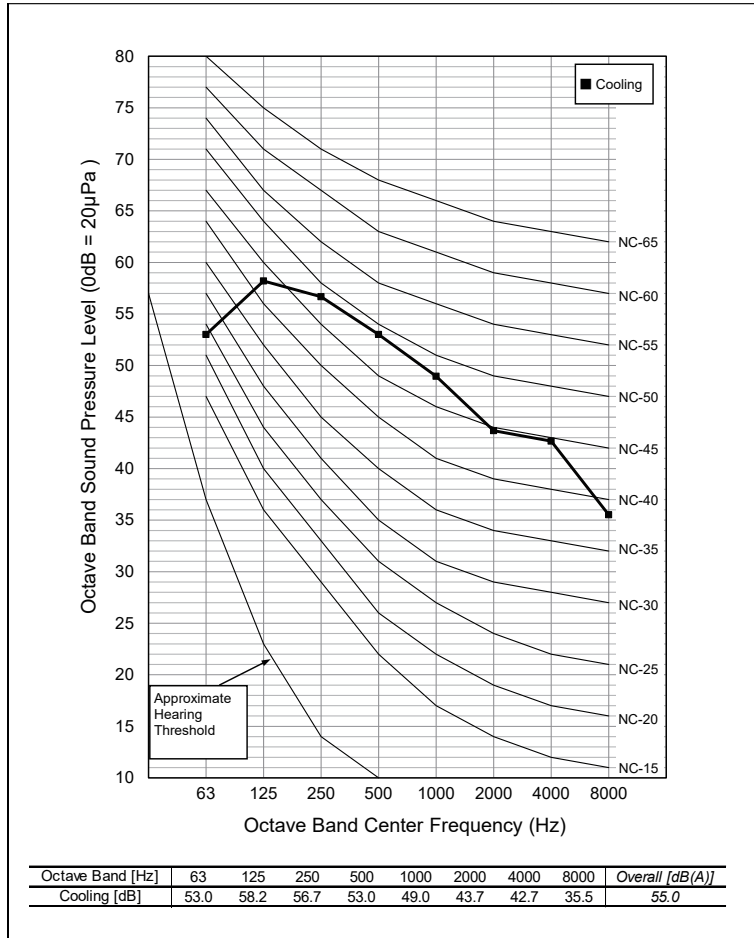
**21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]****21.9 Operation Limits****21.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

21. ZUUQ36GA0 [ZUAD1] + ZTNQ48GMLA0 [ZTNQ48GMLA0]

21.10 Sound Levels

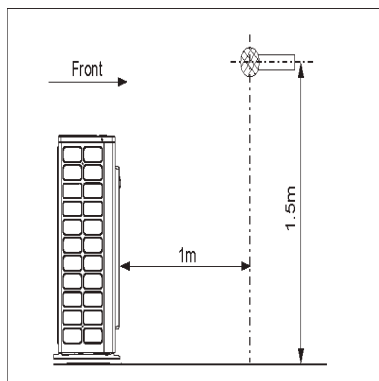
21.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

## 22.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	9.23
		Btu/h	31,507
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~2.95~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.58
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 13.40/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	1.94
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	25.5
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]****22.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]****22.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

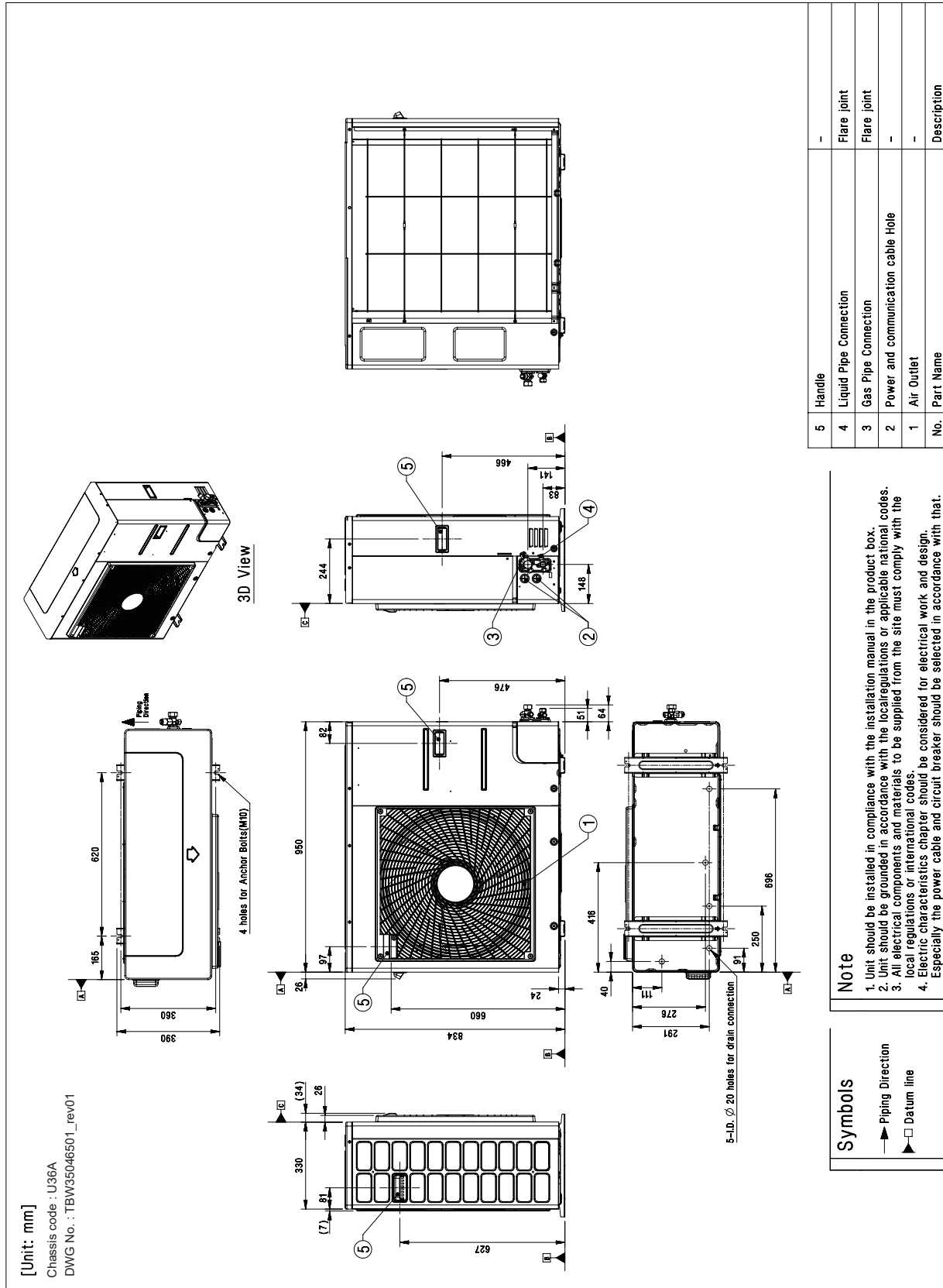
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

22.4 Dimensions

22.4.1 Product



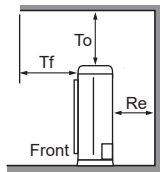
22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

22.4.2 Install Space

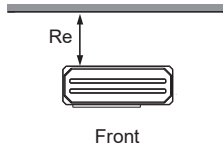
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

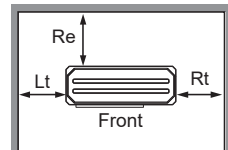


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

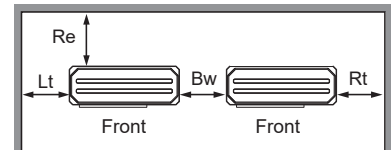


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



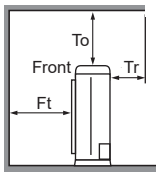
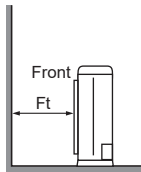
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



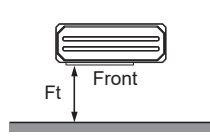
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

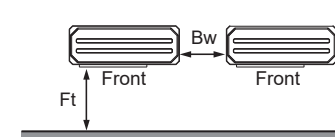
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

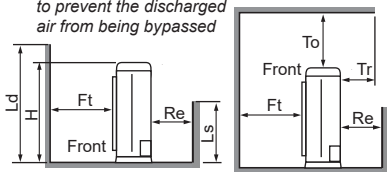


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

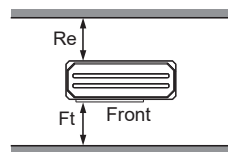
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

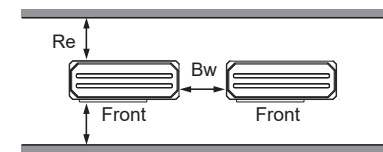
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

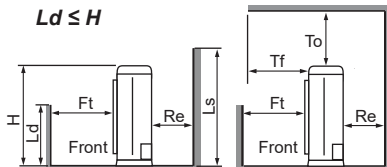


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



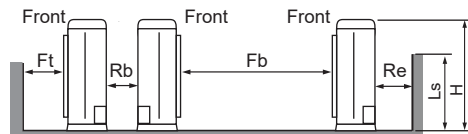
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

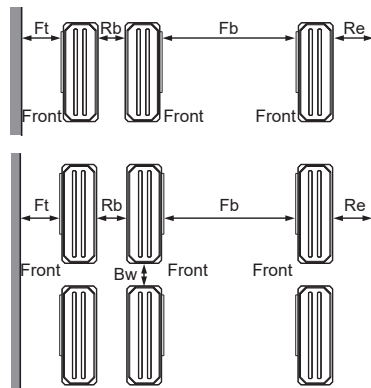
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

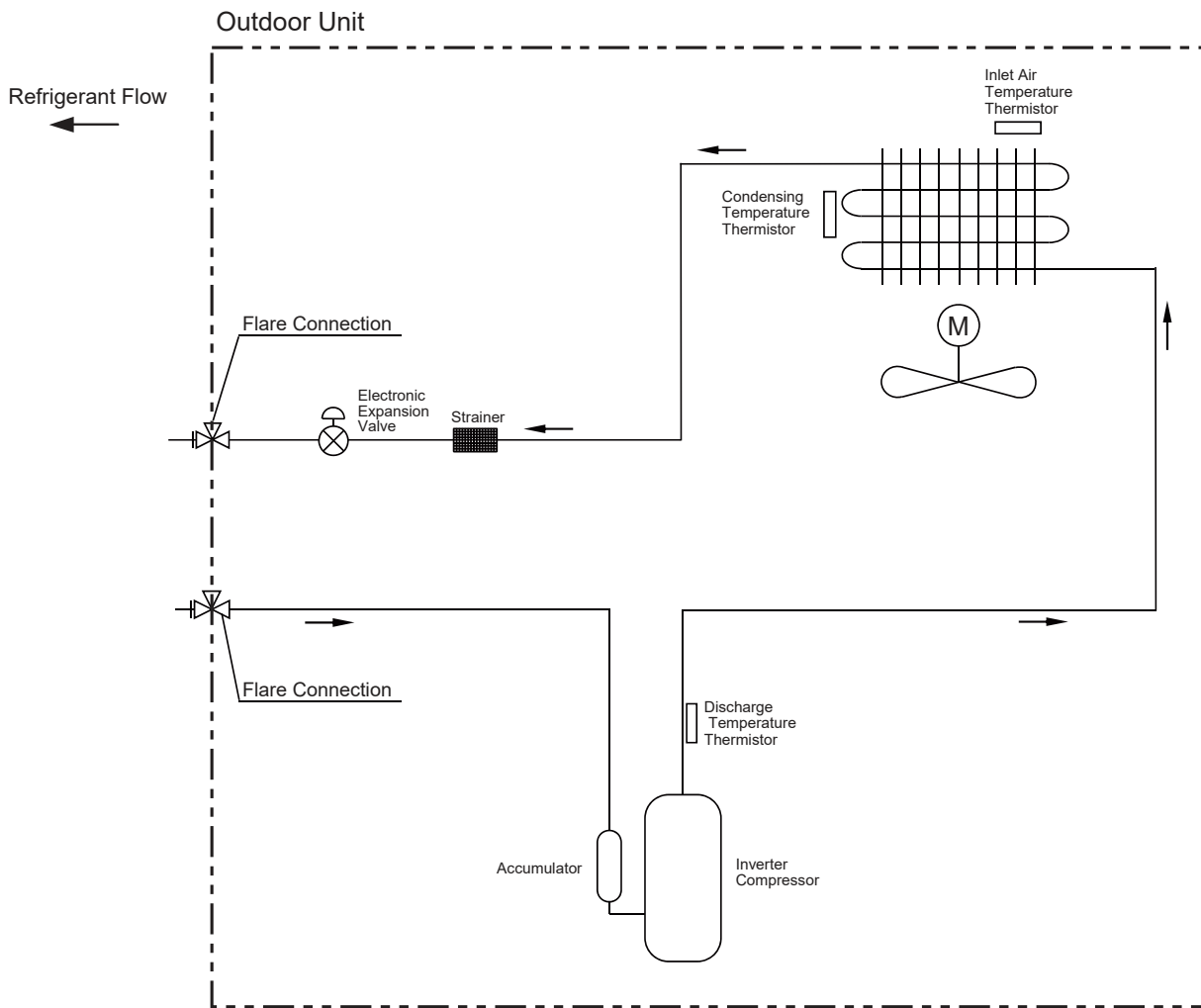
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

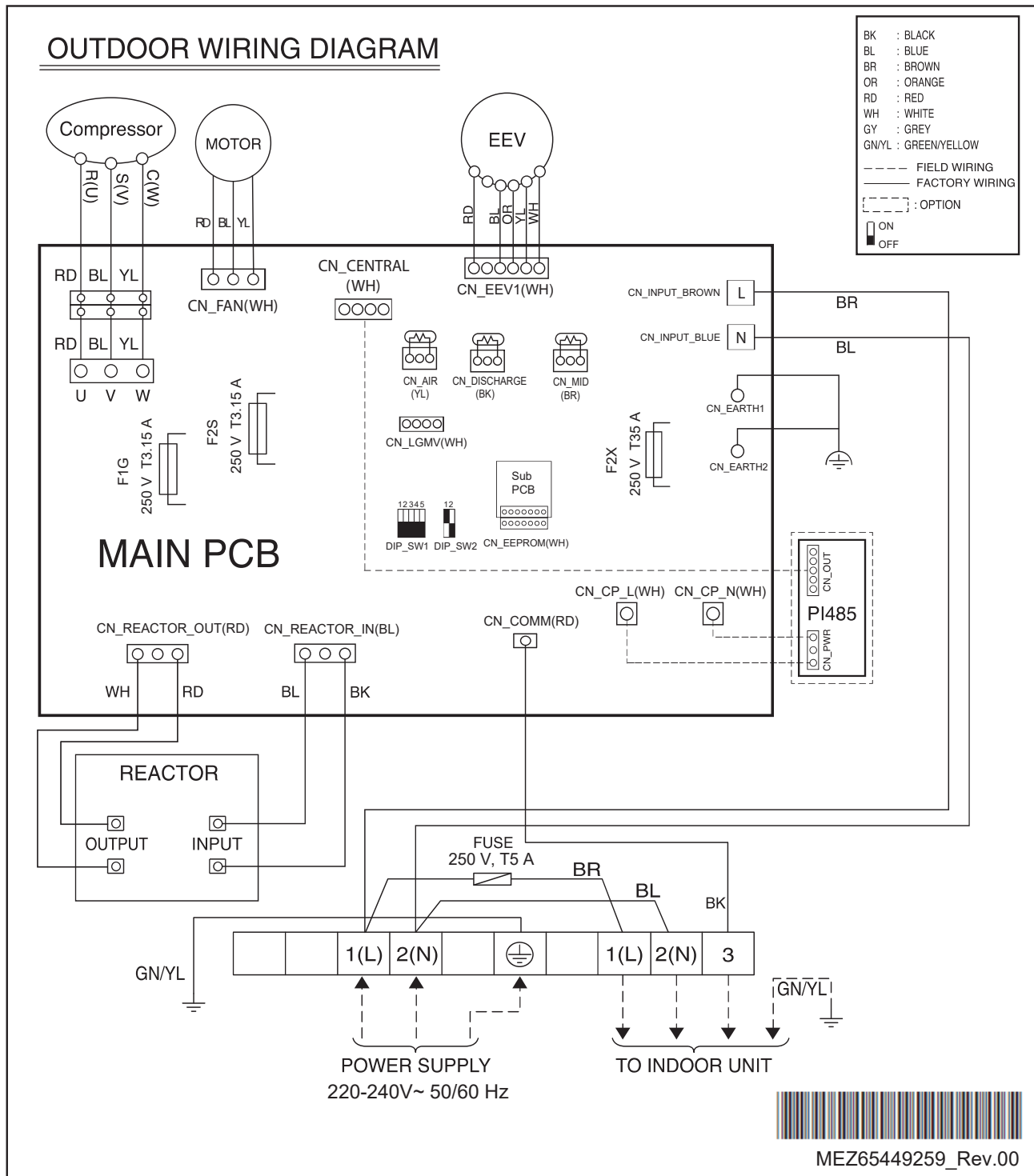
22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

22.5 Piping Diagrams



22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

22.6 Wiring Diagrams





**22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]****22.7 Capacity Tables****22.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	6.16	1.20	8.05	7.42	1.51	9.46	8.63	1.75	10.54	9.23	1.92	10.90	9.17	1.94	11.62	9.06	1.97	12.43	8.94	1.99
25	6.19	6.16	1.42	8.05	7.42	1.78	9.46	8.63	2.06	10.54	9.23	2.26	10.90	9.17	2.28	11.62	9.06	2.33	12.43	8.94	2.34
32	6.19	6.16	1.72	8.05	7.42	2.16	9.46	8.63	2.50	10.54	9.23	2.74	10.90	9.17	2.77	11.62	9.06	2.83	12.43	8.94	2.84
35	6.19	6.16	1.85	8.05	7.42	2.32	9.46	8.63	2.69	10.54	9.23	2.95	10.90	9.17	2.98	11.62	9.06	3.04	12.43	8.94	3.06
40	6.19	6.16	1.96	8.05	7.42	2.47	9.46	8.63	2.86	10.54	9.23	3.13	10.90	9.17	3.16	11.62	9.06	3.23	12.43	8.94	3.25
43	6.19	6.16	2.03	8.05	7.42	2.55	9.46	8.63	2.96	10.54	9.23	3.25	10.90	9.17	3.28	11.62	9.06	3.34	12.43	8.94	3.36
46	6.19	6.16	2.11	8.05	7.42	2.64	9.46	8.63	3.04	9.70	8.59	3.10	10.03	8.53	3.13	10.69	8.40	3.19	11.44	8.28	3.21
48	6.19	6.16	2.18	8.05	7.42	2.74	9.24	8.50	2.99	9.43	8.41	3.05	9.69	8.30	3.08	10.22	8.08	3.15	10.83	7.87	3.16
50	6.19	6.16	2.26	8.05	7.42	2.83	8.99	8.25	2.95	9.17	8.24	3.01	9.36	8.08	3.04	9.75	7.75	3.10	10.22	7.46	3.12

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]****22.8 Capacity Correction Factor**

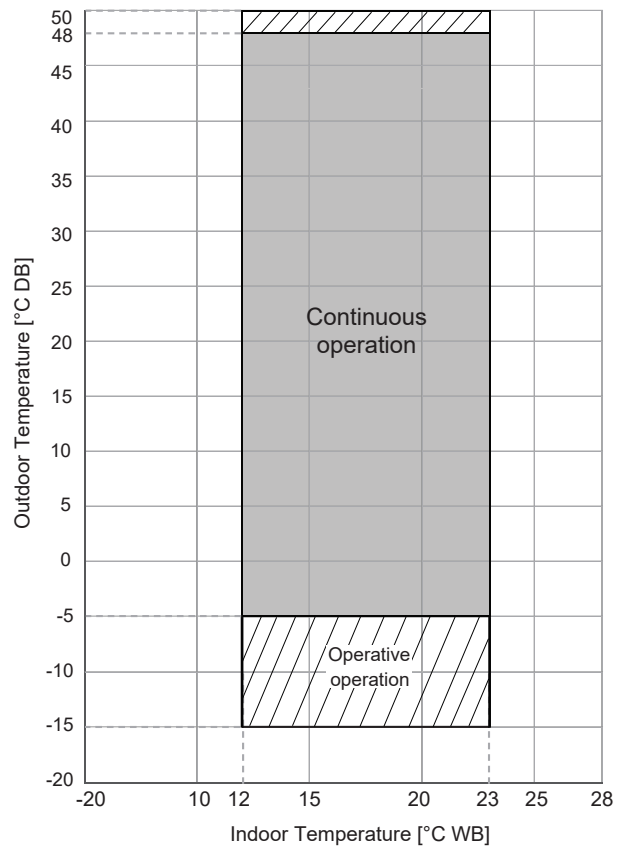
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

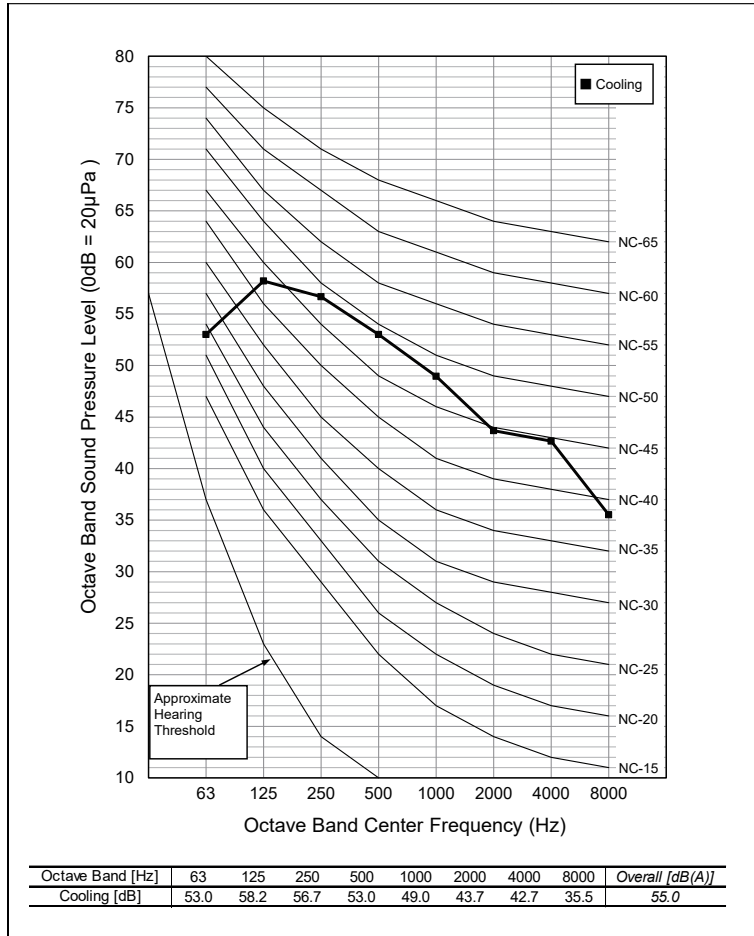
**22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]****22.9 Operation Limits****22.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

22. ZUUQ36GA0 [ZUAD1] + ZBNQ36GM3A0 [ZBNQ36GM3A0]

22.10 Sound Levels

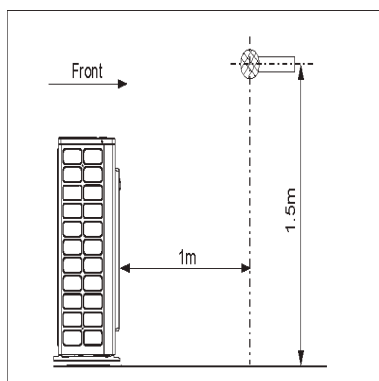
22.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

## 23.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	8.68
		Btu/h	29,632
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.20~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.30
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 14.60/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.8
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	23.8
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]****23.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]****23.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

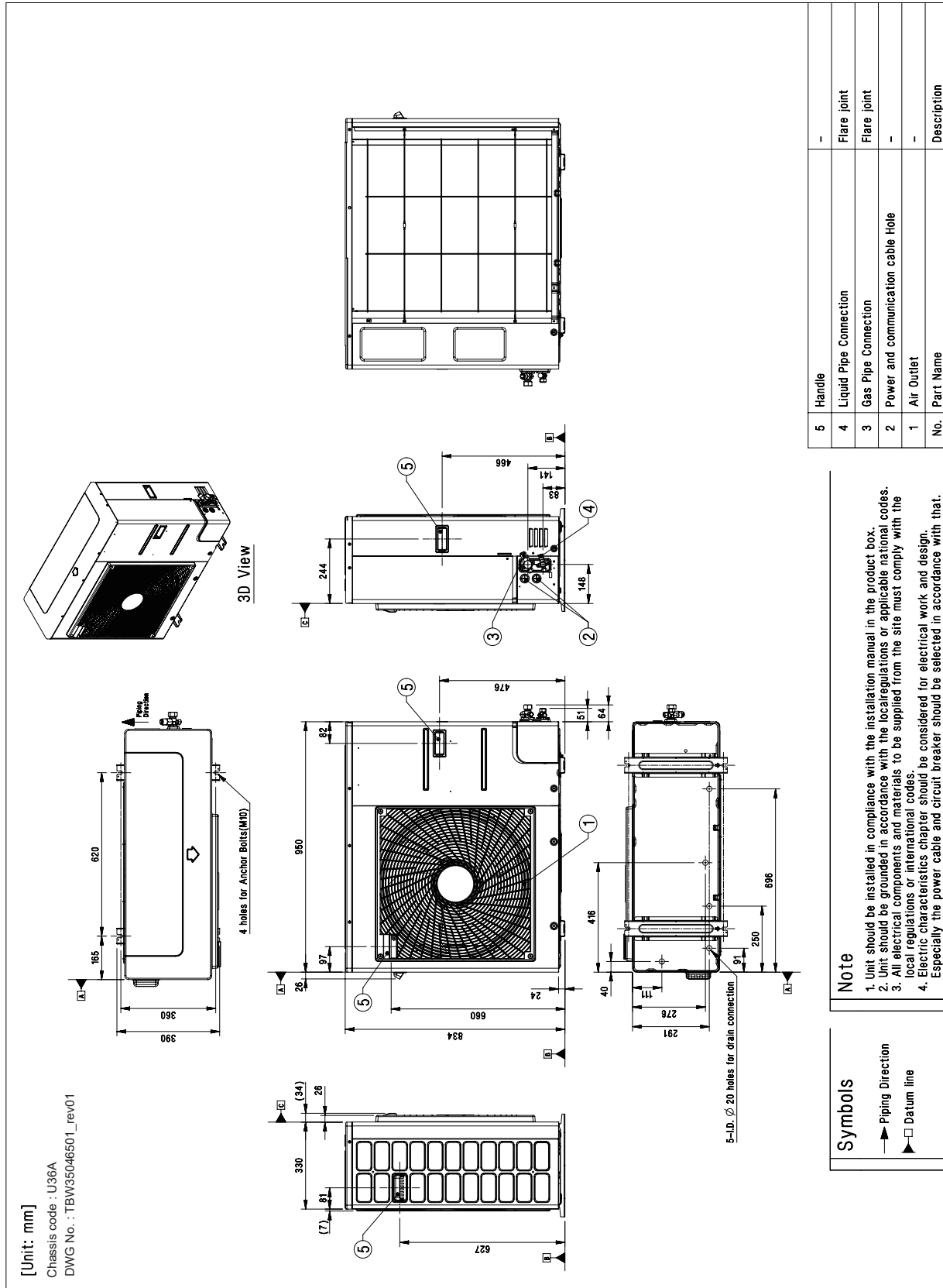
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

23.4 Dimensions

23.4.1 Product



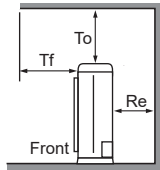
23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

23.4.2 Install Space

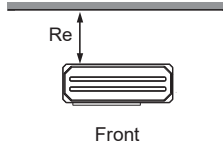
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

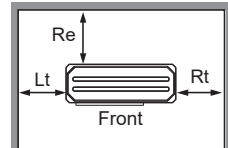


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

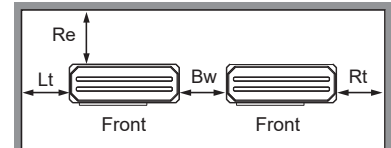


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



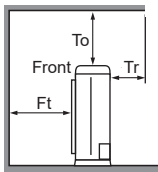
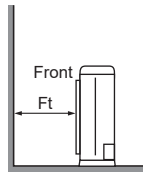
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



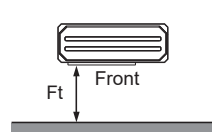
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

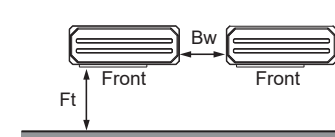
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

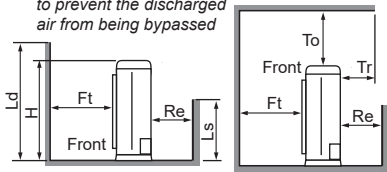


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

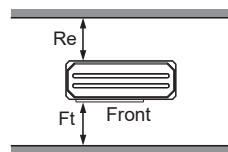
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

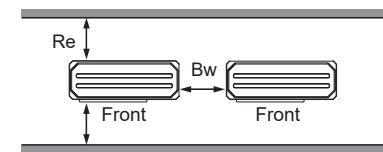
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

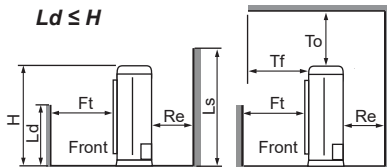


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



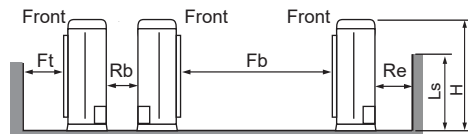
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

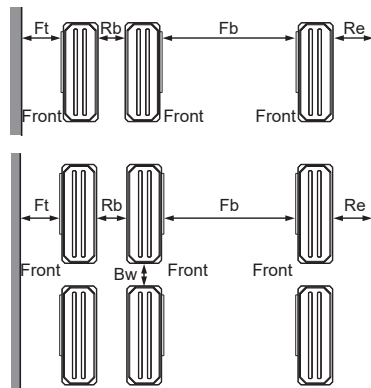
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

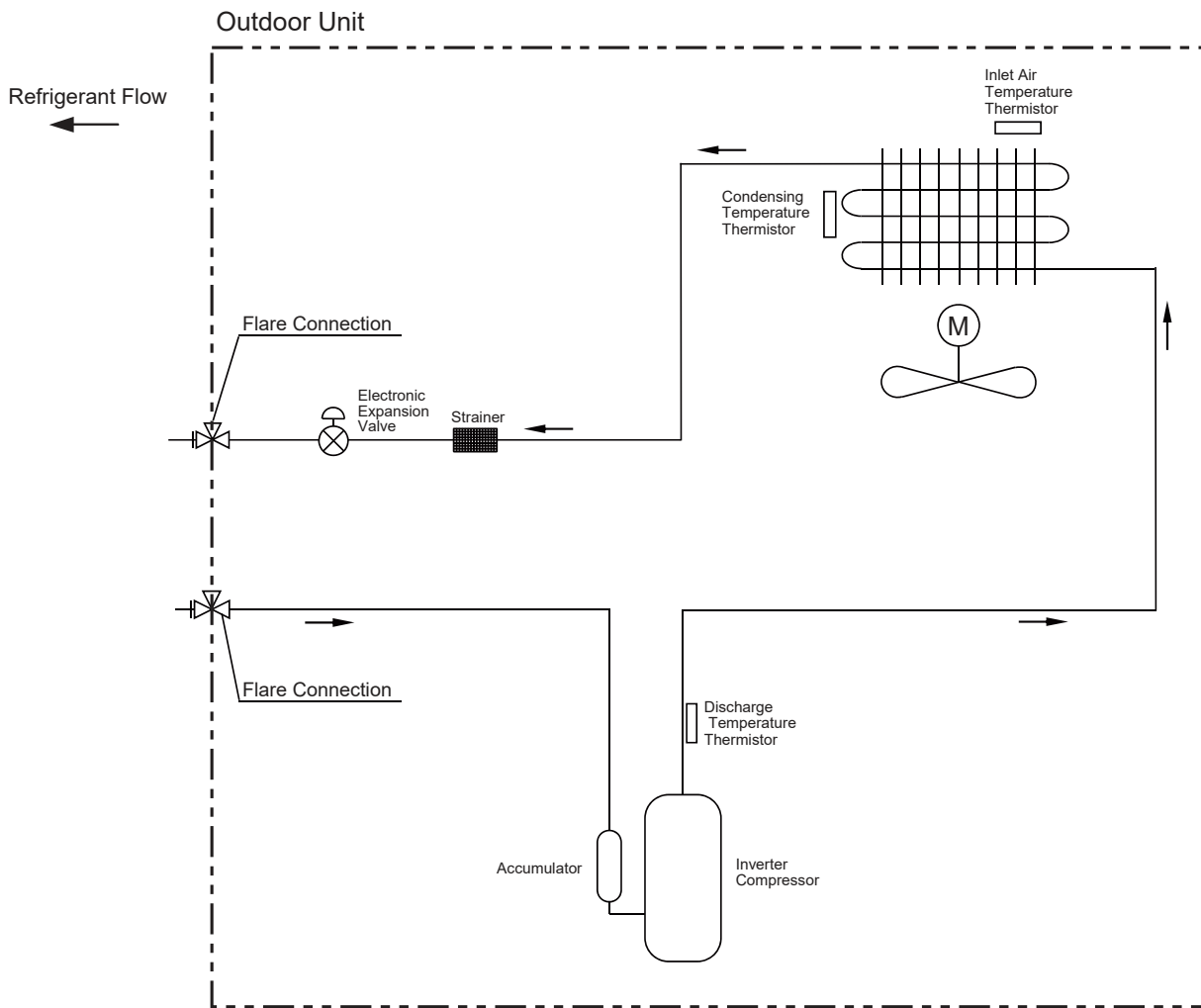
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

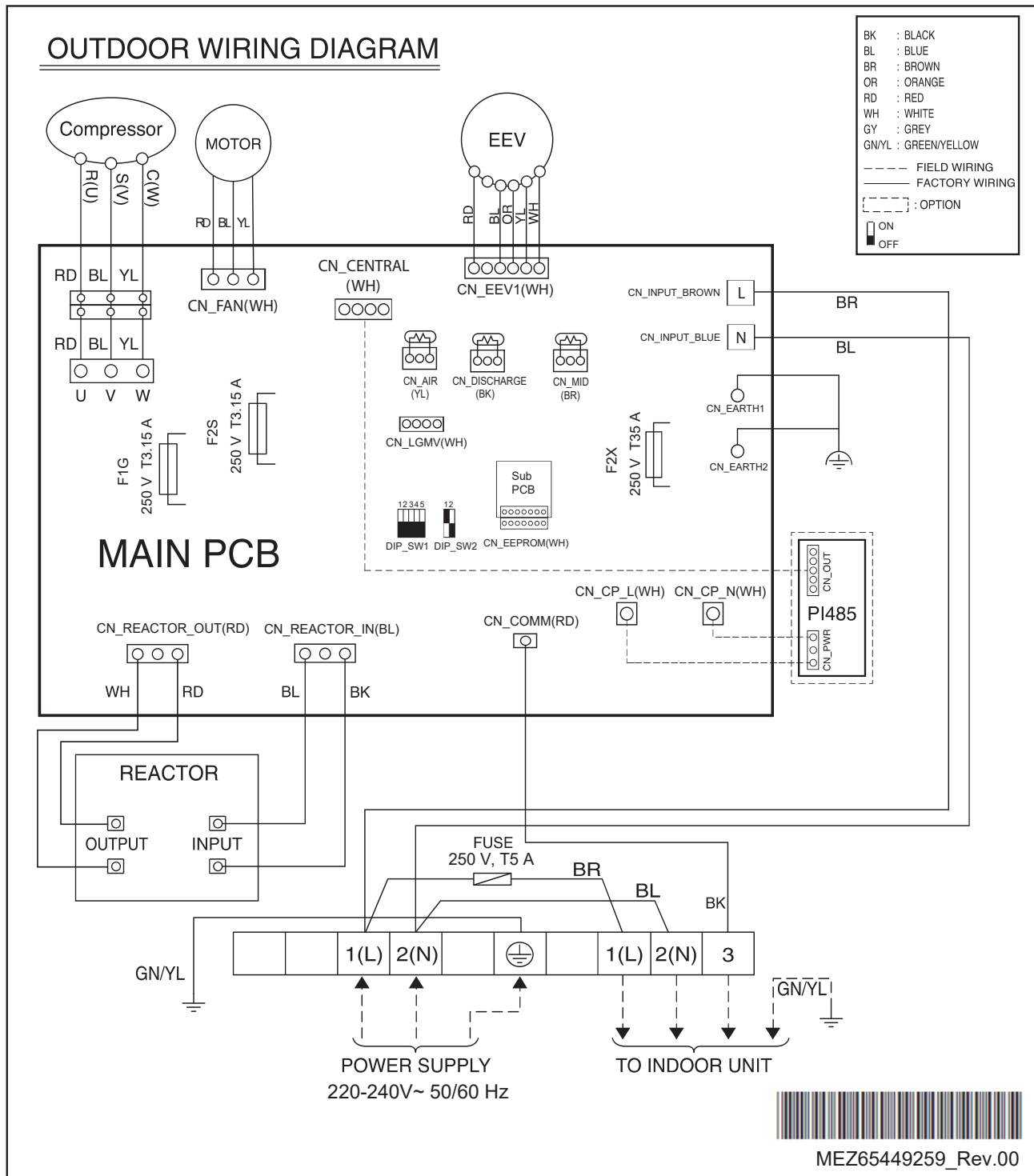
23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

23.5 Piping Diagrams



23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

23.6 Wiring Diagrams



**23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]****23.7 Capacity Tables****23.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	5.85	1.30	8.05	6.98	1.64	9.46	8.11	1.89	10.54	8.68	2.08	10.90	8.63	2.10	11.62	8.52	2.14	12.43	8.41	2.15
25	6.19	5.85	1.54	8.05	6.98	1.93	9.46	8.11	2.24	10.54	8.68	2.45	10.90	8.63	2.48	11.62	8.52	2.53	12.43	8.41	2.54
32	6.19	5.85	1.87	8.05	6.98	2.34	9.46	8.11	2.71	10.54	8.68	2.98	10.90	8.63	3.01	11.62	8.52	3.07	12.43	8.41	3.08
35	6.19	5.85	2.01	8.05	6.98	2.52	9.46	8.11	2.92	10.54	8.68	3.20	10.90	8.63	3.23	11.62	8.52	3.30	12.43	8.41	3.32
40	6.19	5.85	2.13	8.05	6.98	2.68	9.46	8.11	3.10	10.54	8.68	3.40	10.90	8.63	3.43	11.62	8.52	3.50	12.43	8.41	3.52
43	6.19	5.85	2.21	8.05	6.98	2.77	9.46	8.11	3.21	10.54	8.68	3.52	10.90	8.63	3.56	11.62	8.52	3.63	12.43	8.41	3.65
46	6.19	5.85	2.28	8.05	6.98	2.87	9.46	8.11	3.29	9.70	8.07	3.36	10.03	8.01	3.39	10.69	7.90	3.46	11.44	7.79	3.48
48	6.19	5.85	2.36	8.05	6.98	2.97	9.24	8.00	3.25	9.43	7.91	3.31	9.69	7.81	3.34	10.22	7.60	3.41	10.83	7.40	3.43
50	6.19	5.85	2.45	8.05	6.98	3.07	8.99	7.76	3.20	9.17	7.75	3.26	9.36	7.60	3.29	9.75	7.29	3.36	10.22	7.02	3.38

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]****23.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

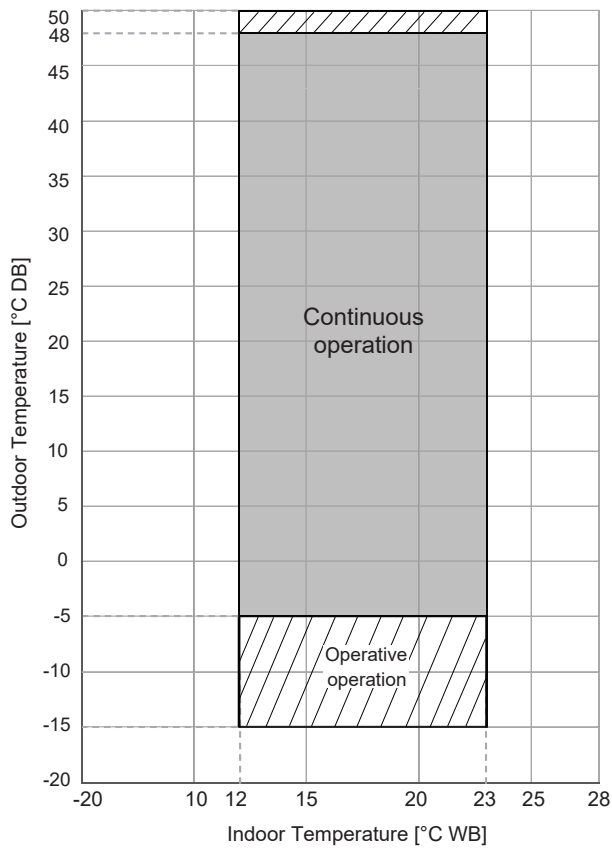
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]**

**23.9 Operation Limits**

**23.9.1 Cooling**



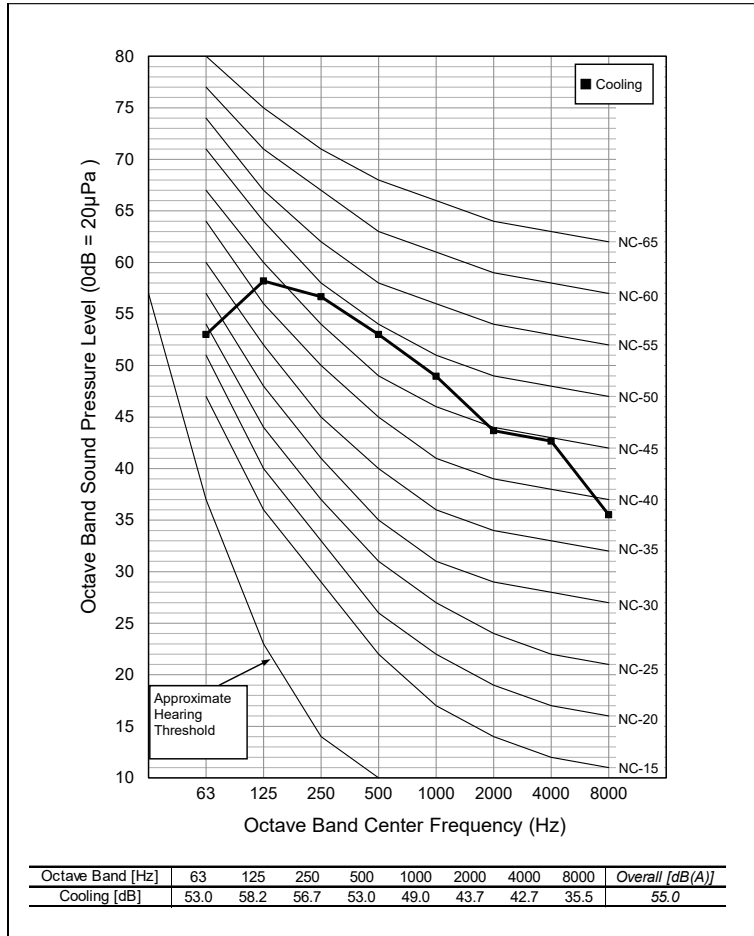
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

23. ZUUQ36GA0 [ZUAD1] + ZTNQ36GNLA0 [ZTNQ36GNLA0]

23.10 Sound Levels

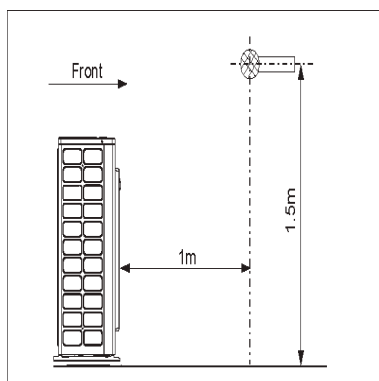
23.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

## 24.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	10.37
		Btu/h	35,438
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.81~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.83
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 21.90/
Running Current(Heating)	Min/Rated/Max	A	- / -/
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	4.79
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	24.2
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]****24.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]****24.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMD200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

24.4 Dimensions

24.4.1 Product

[Unit: mm]  
Chassis code : U36A  
DWG No. : TBW35046501\_rev01

3D View

4 holes for Anchor Bolts(M10)

5-H.D. ∅ 20 holes for drain connection

**Note**

- Unit should be installed in compliance with the installation manual in the product box.
- Unit should be grounded in accordance with the local regulations or applicable national codes.
- All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.
- Electric characteristics chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

**Symbols**

→ Piping Direction

□ Datum line

No.	Part Name	Description
5	Handle	-
4	Liquid Pipe Connection	Flare joint
3	Gas Pipe Connection	Flare joint
2	Power and communication cable Hole	-
1	Air Outlet	-

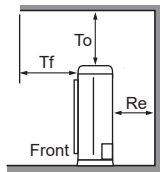
24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

24.4.2 Install Space

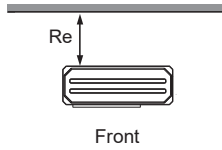
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

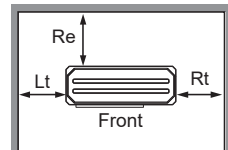


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

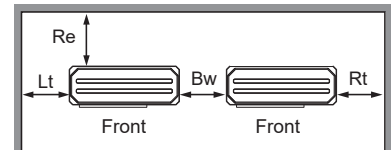


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



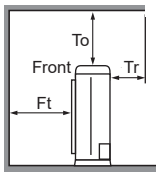
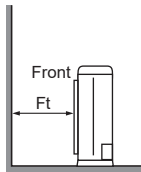
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



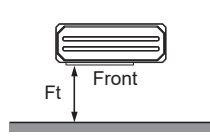
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

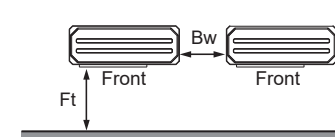
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

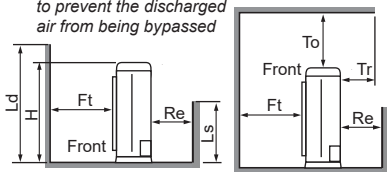


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

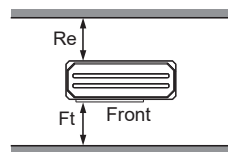
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

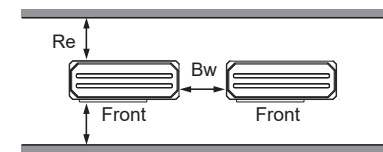
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

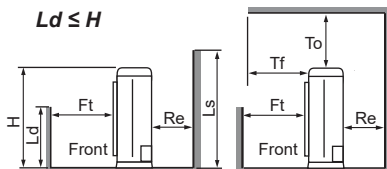


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



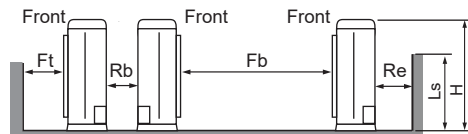
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

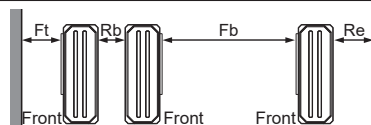
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

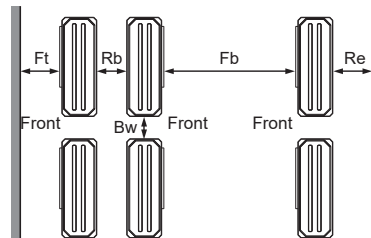


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

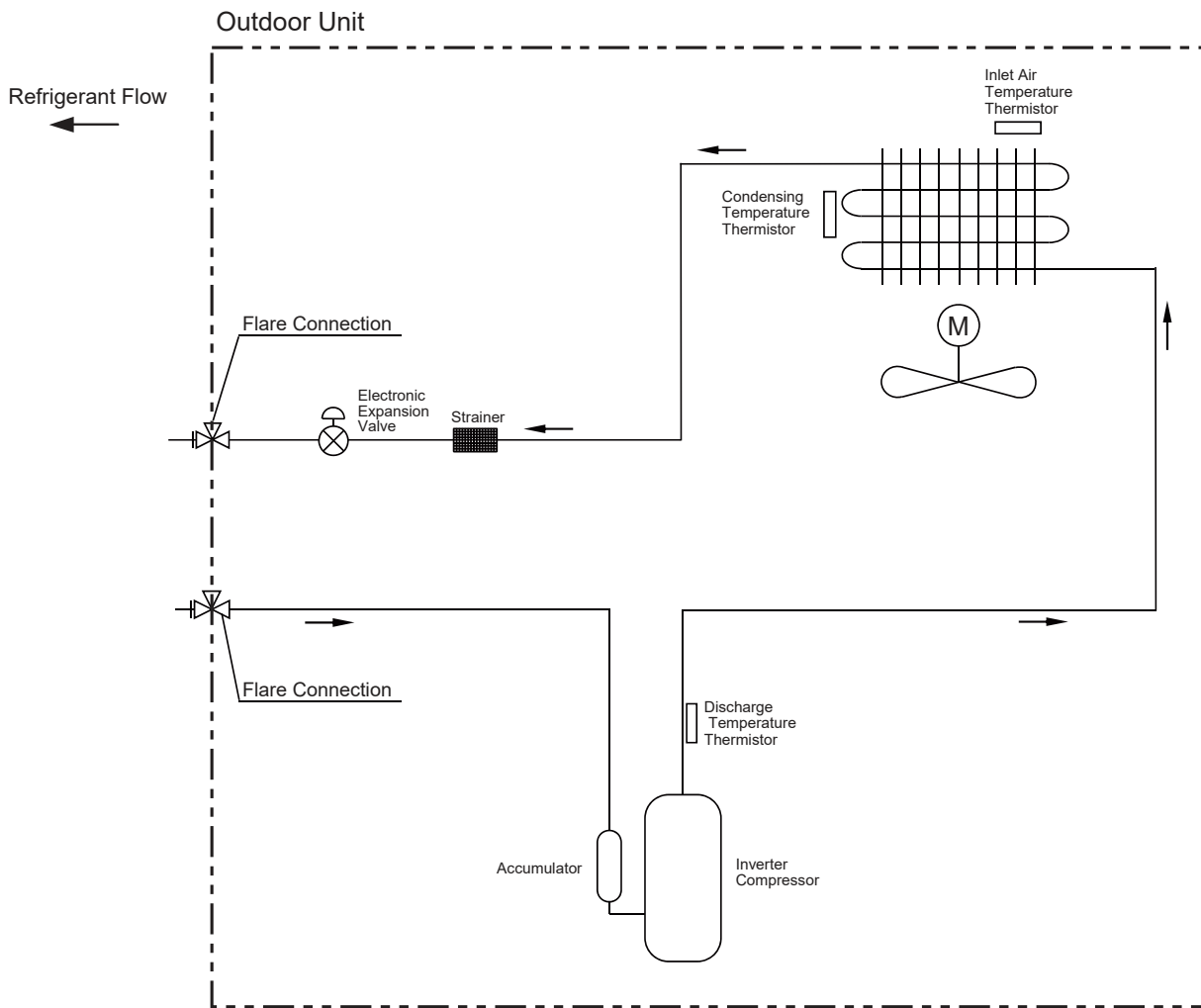
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

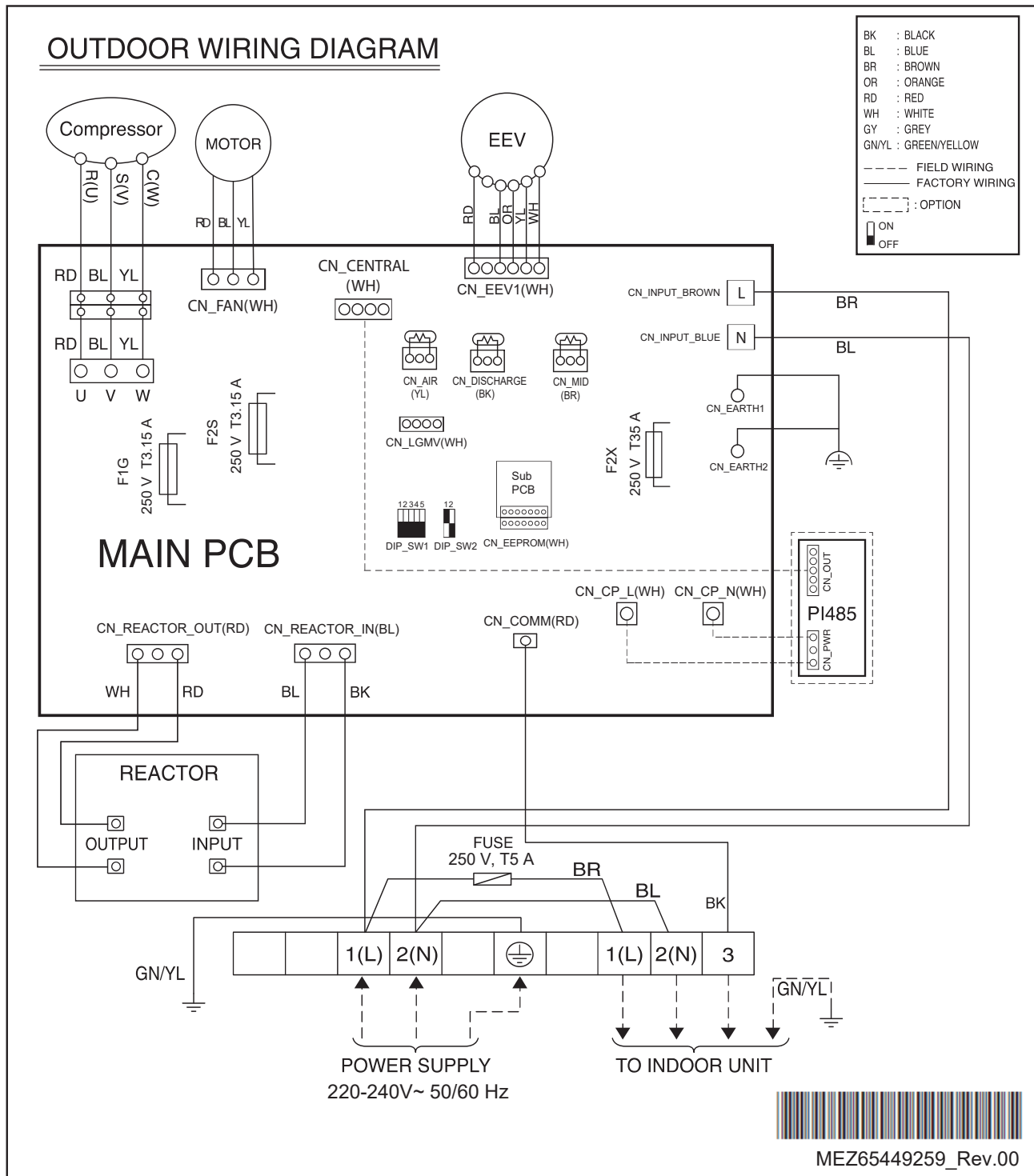
24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

24.5 Piping Diagrams



24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

24.6 Wiring Diagrams





**24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]****24.7 Capacity Tables****24.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	6.99	1.96	10.39	8.34	2.46	12.22	9.69	2.85	13.61	10.37	3.12	14.07	10.31	3.15	15.00	10.18	3.22	16.06	10.05	3.24
25	7.99	6.99	2.31	10.39	8.34	2.90	12.22	9.69	3.36	13.61	10.37	3.69	14.07	10.31	3.73	15.00	10.18	3.80	16.06	10.05	3.82
32	7.99	6.99	2.80	10.39	8.34	3.52	12.22	9.69	4.08	13.61	10.37	4.47	14.07	10.31	4.52	15.00	10.18	4.61	16.06	10.05	4.63
35	7.99	6.99	3.01	10.39	8.34	3.78	12.22	9.69	4.39	13.61	10.37	4.81	14.07	10.31	4.86	15.00	10.18	4.95	16.06	10.05	4.98
40	7.99	6.99	2.82	10.39	8.34	3.54	12.22	9.69	4.11	12.50	9.68	4.50	12.92	9.61	4.55	13.77	9.46	4.64	14.74	9.32	4.67
43	7.99	6.99	2.71	10.39	8.34	3.40	11.59	9.26	3.94	11.83	9.26	4.32	12.23	9.18	4.36	13.04	9.03	4.45	13.95	8.87	4.48
46	7.99	6.99	2.60	10.39	8.34	3.26	10.94	8.73	3.78	11.16	8.83	4.14	11.54	8.75	4.18	12.30	8.59	4.26	13.17	8.43	4.29
48	7.99	6.99	2.49	10.39	8.34	3.13	10.47	8.36	3.62	10.68	8.52	3.99	10.98	8.39	4.03	11.58	8.13	4.11	12.28	7.90	4.14
50	7.99	6.99	2.39	9.80	7.96	3.00	10.00	8.08	3.48	10.21	8.20	3.85	10.43	8.03	3.89	10.87	7.68	3.96	11.40	7.36	3.99

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]****24.8 Capacity Correction Factor**

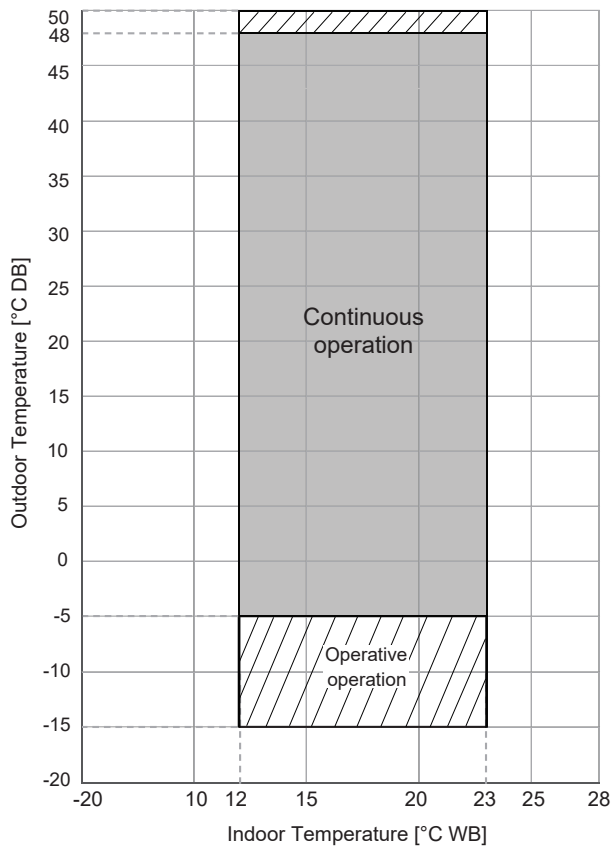
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

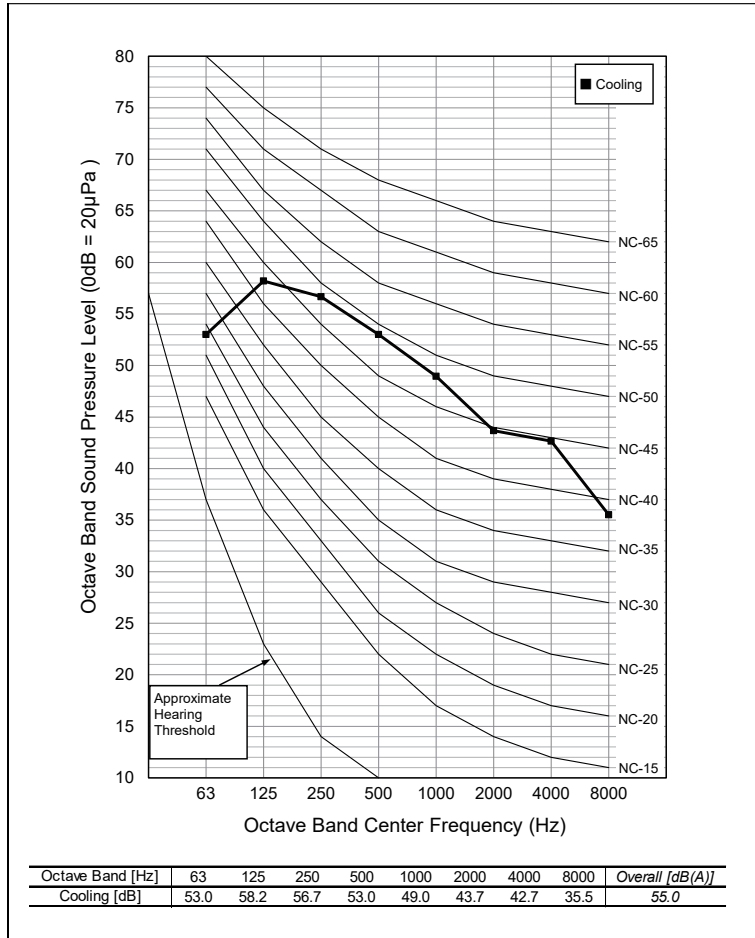
**24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]****24.9 Operation Limits****24.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

24. ZUUQ36GA0 [ZUAD1] + ZPNQ48GT3A0 [ZPNQ48GT3A0]

24.10 Sound Levels

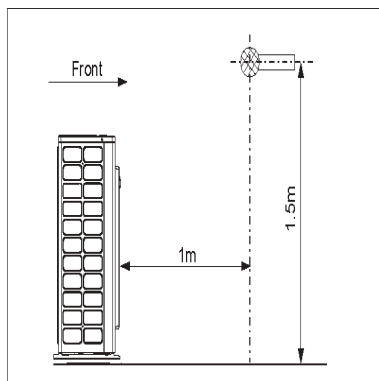
24.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

## 25.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	10.48
		Btu/h	35,805
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.75~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.87
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 21.60/
Running Current(Heating)	Min/Rated/Max	A	- / -/
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	4.58
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	24.2
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]****25.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]****25.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

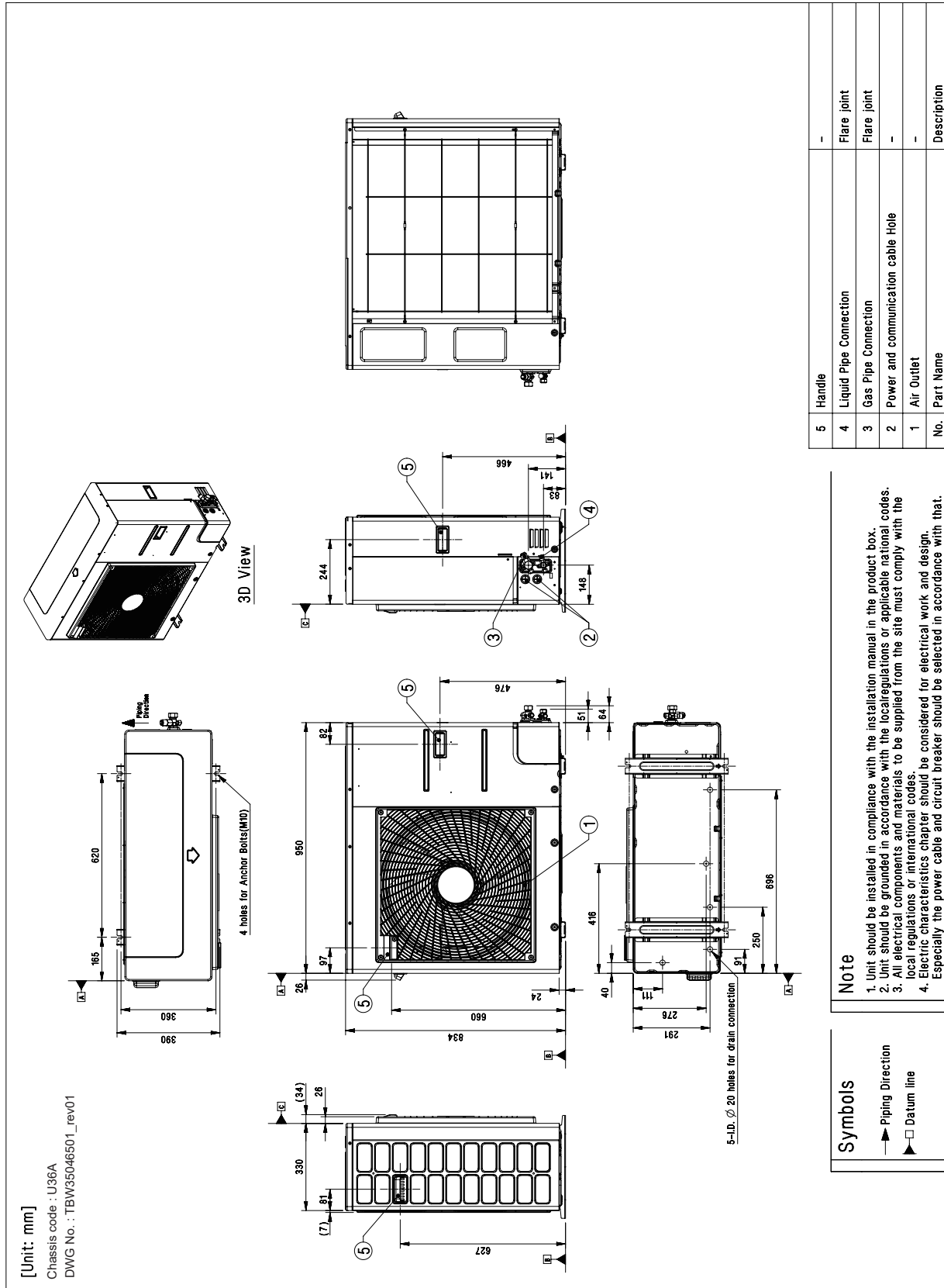
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

25.4 Dimensions

25.4.1 Product



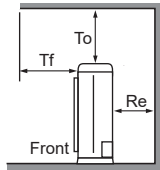
25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

25.4.2 Install Space

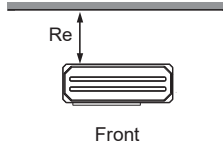
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

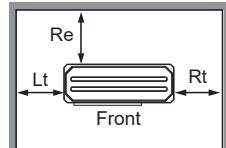


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

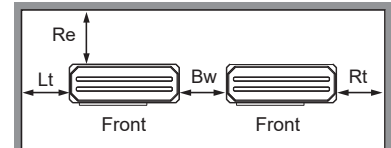


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



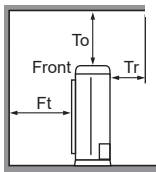
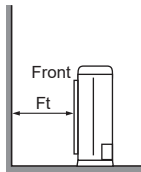
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



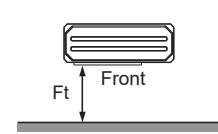
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

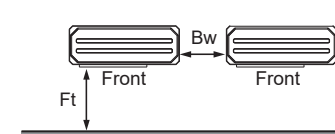
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

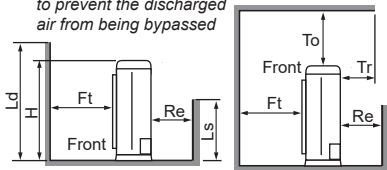


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

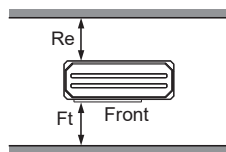
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

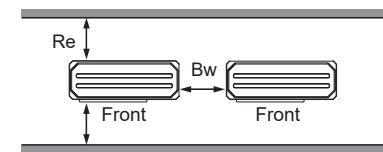
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

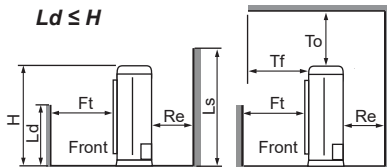


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



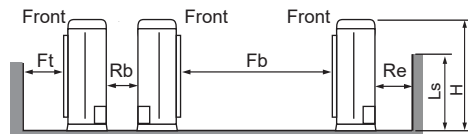
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

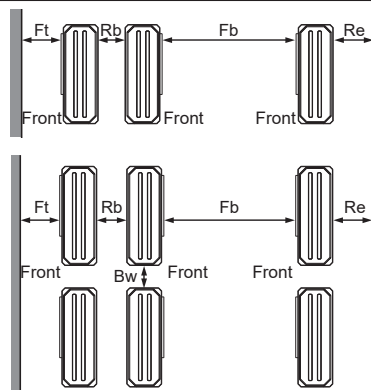
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

Multiple Columns

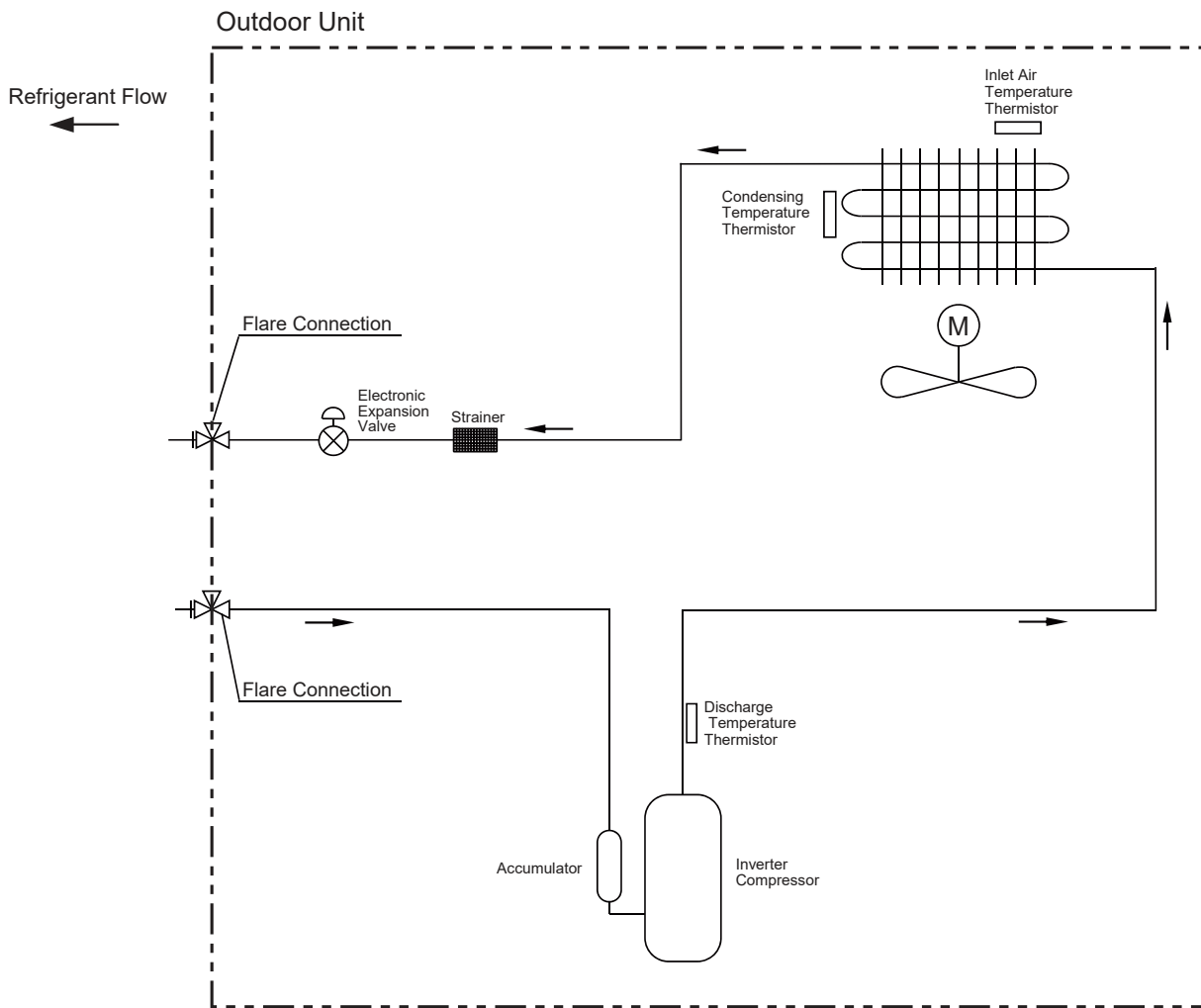
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

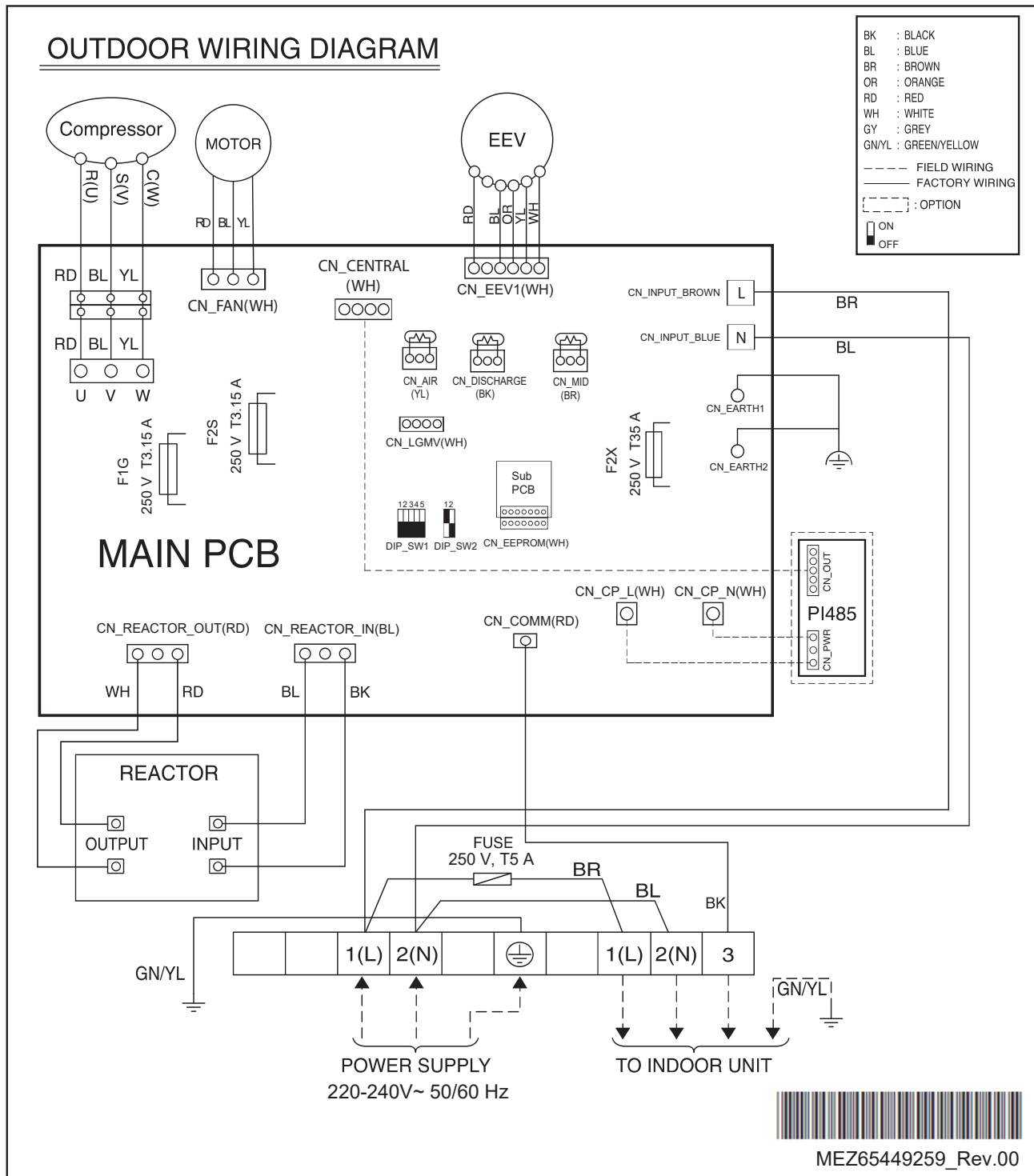
25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

25.5 Piping Diagrams



25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

25.6 Wiring Diagrams



**25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]****25.7 Capacity Tables****25.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	7.06	1.93	10.39	8.43	2.43	12.22	9.80	2.81	13.61	10.48	3.09	14.07	10.41	3.12	15.00	10.28	3.18	16.06	10.15	3.20
25	7.99	7.06	2.28	10.39	8.43	2.86	12.22	9.80	3.32	13.61	10.48	3.64	14.07	10.41	3.68	15.00	10.28	3.75	16.06	10.15	3.77
32	7.99	7.06	2.77	10.39	8.43	3.48	12.22	9.80	4.03	13.61	10.48	4.42	14.07	10.41	4.46	15.00	10.28	4.55	16.06	10.15	4.58
35	7.99	7.06	2.98	10.39	8.43	3.74	12.22	9.80	4.33	13.61	10.48	4.75	14.07	10.41	4.80	15.00	10.28	4.89	16.06	10.15	4.92
40	7.99	7.06	2.79	10.39	8.43	3.50	12.22	9.80	4.05	12.50	9.78	4.45	12.92	9.71	4.49	13.77	9.56	4.58	14.74	9.41	4.61
43	7.99	7.06	2.67	10.39	8.43	3.36	11.59	9.36	3.89	11.83	9.36	4.27	12.23	9.28	4.31	13.04	9.12	4.39	13.95	8.97	4.42
46	7.99	7.06	2.57	10.39	8.43	3.22	10.94	8.83	3.73	11.16	8.93	4.09	11.54	8.85	4.13	12.30	8.68	4.21	13.17	8.52	4.23
48	7.99	7.06	2.46	10.39	8.43	3.09	10.47	8.45	3.58	10.68	8.61	3.94	10.98	8.48	3.98	11.58	8.22	4.06	12.28	7.98	4.08
50	7.99	7.06	2.36	9.80	8.04	2.96	10.00	8.16	3.43	10.21	8.29	3.80	10.43	8.11	3.84	10.87	7.76	3.91	11.40	7.44	3.94

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]****25.8 Capacity Correction Factor**

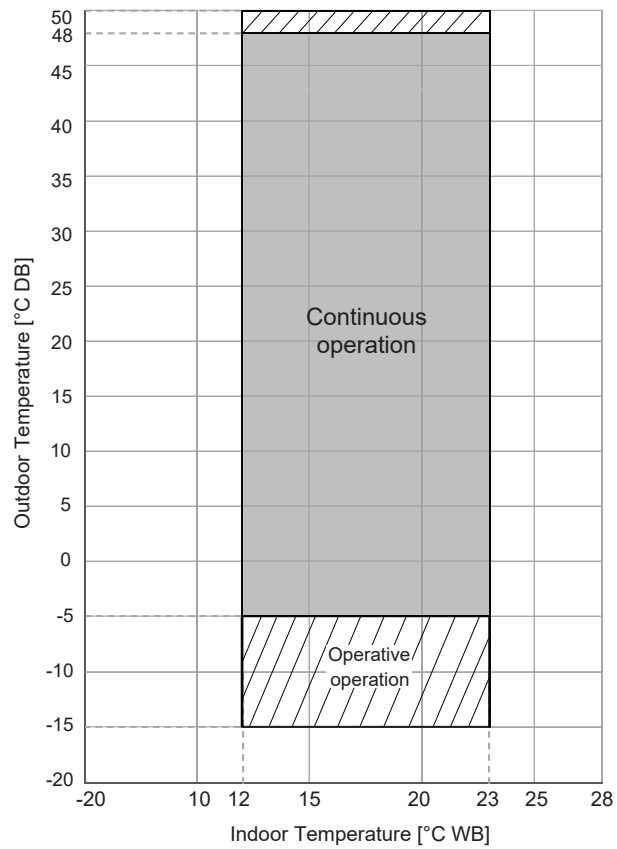
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

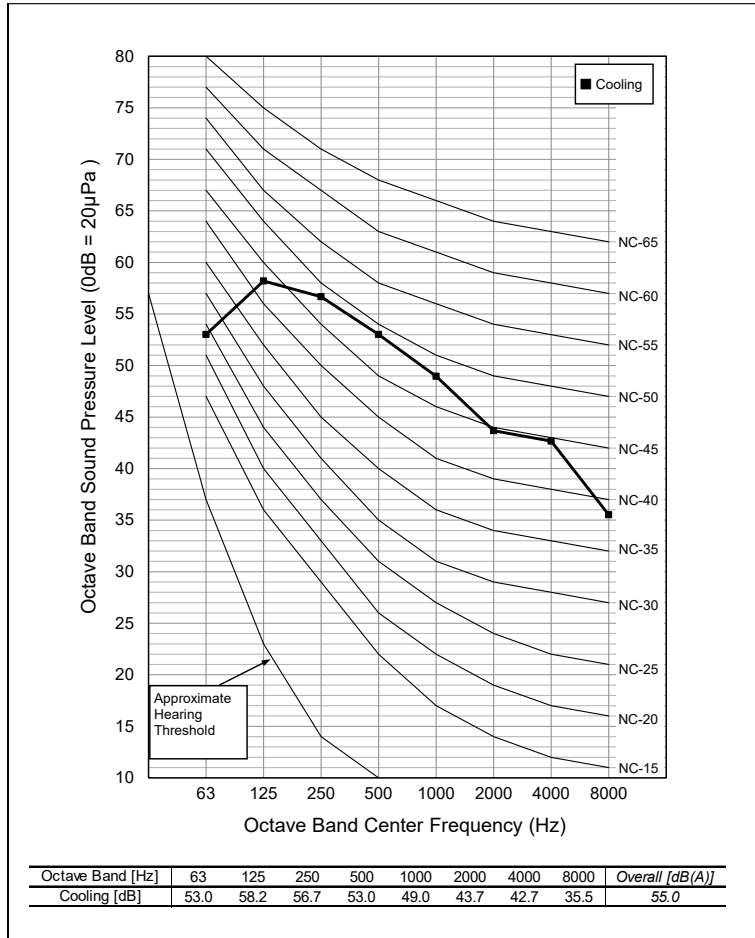
**25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]****25.9 Operation Limits****25.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

25. ZUUQ36GA0 [ZUAD1] + ZTNQ48GYLA0 [ZTNQ48GYLA0]

25.10 Sound Levels

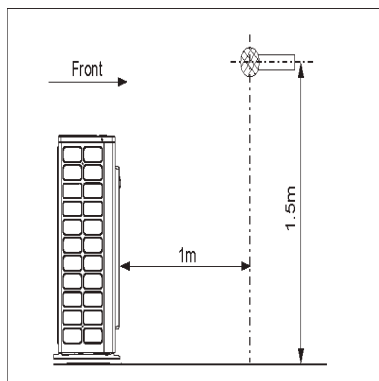
25.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

## 26.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	7.53
		Btu/h	25,711
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.51~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.01
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 16.00/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	25.10
Power Factor(Cooling/Heating)	Rated	-	0.99 / 0.99
Dehumidification Rate	-	ℓ/h	2.02
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	23.8
	Maximum Fuse Amperes (MFA)	A	30
	Comp_Rated Load Amperes (Max)	A	18.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	220-230-240, 1, 50/60
	#2	-	-
	Limit Range of Voltage	V	187~276
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 X 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 X 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	59.5
	Shipping	kg	67.4
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]****26.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	X
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]****26.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

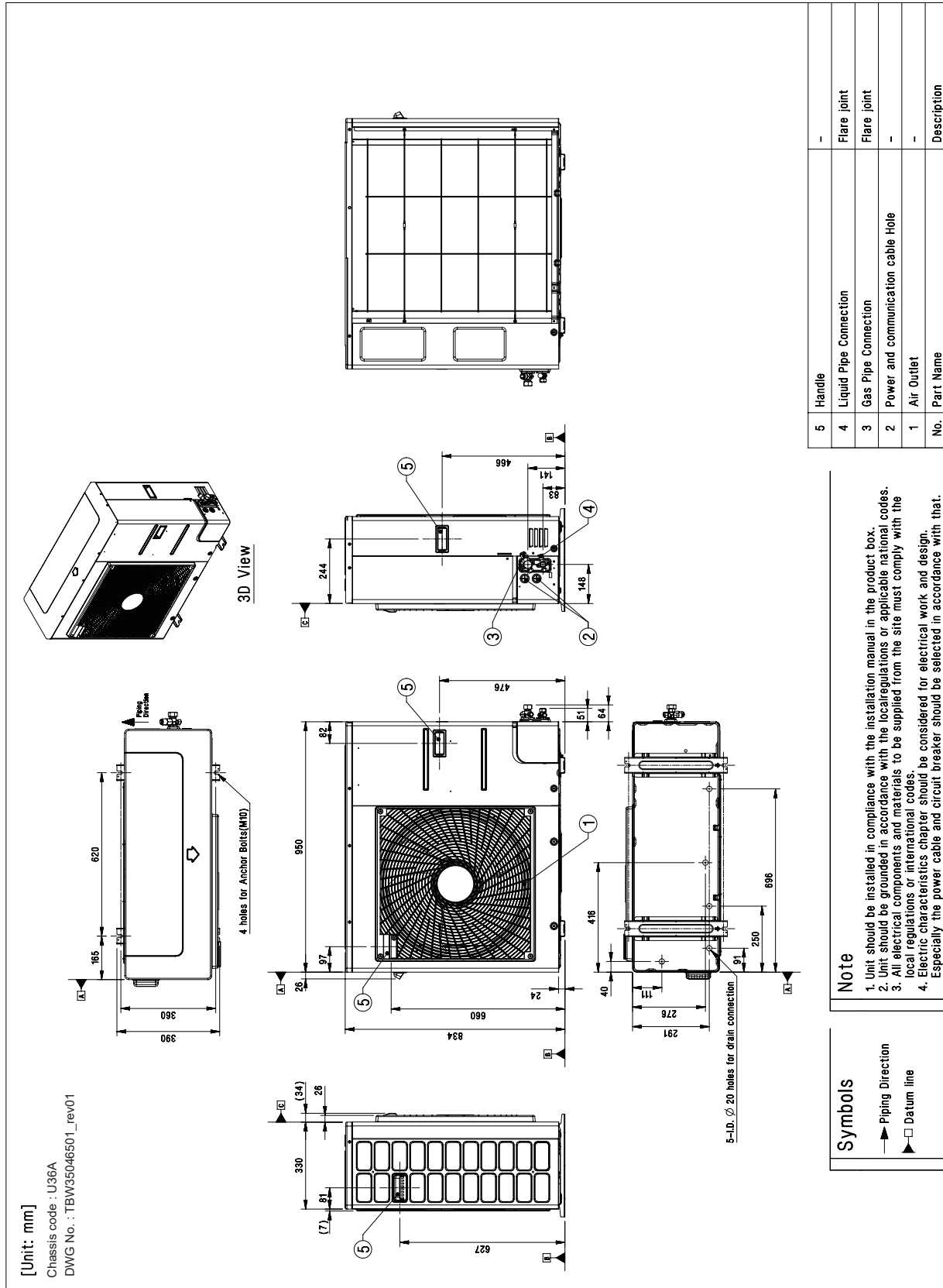
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

26.4 Dimensions

26.4.1 Product



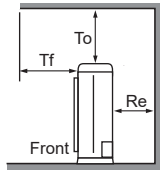
26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

26.4.2 Install Space

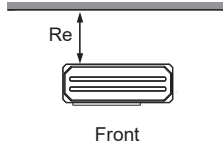
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

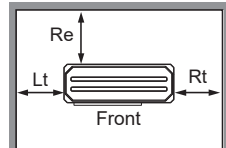


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

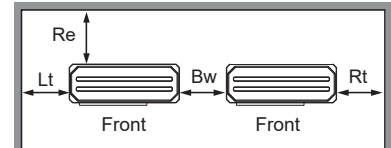


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



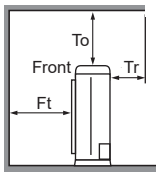
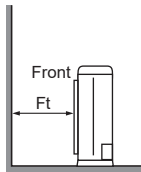
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



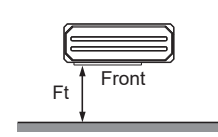
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

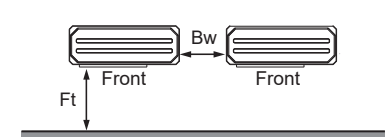
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

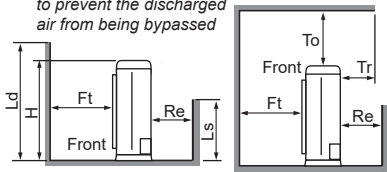


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

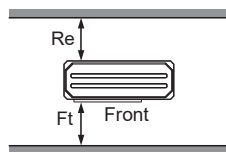
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

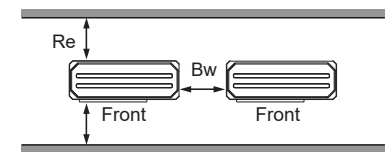
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

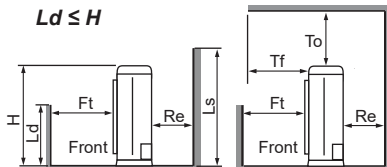


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



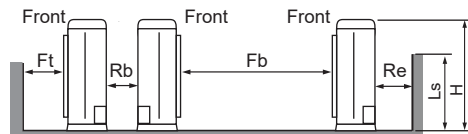
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

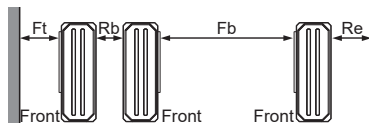
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

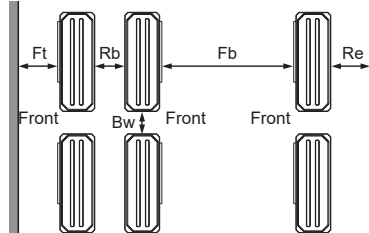


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

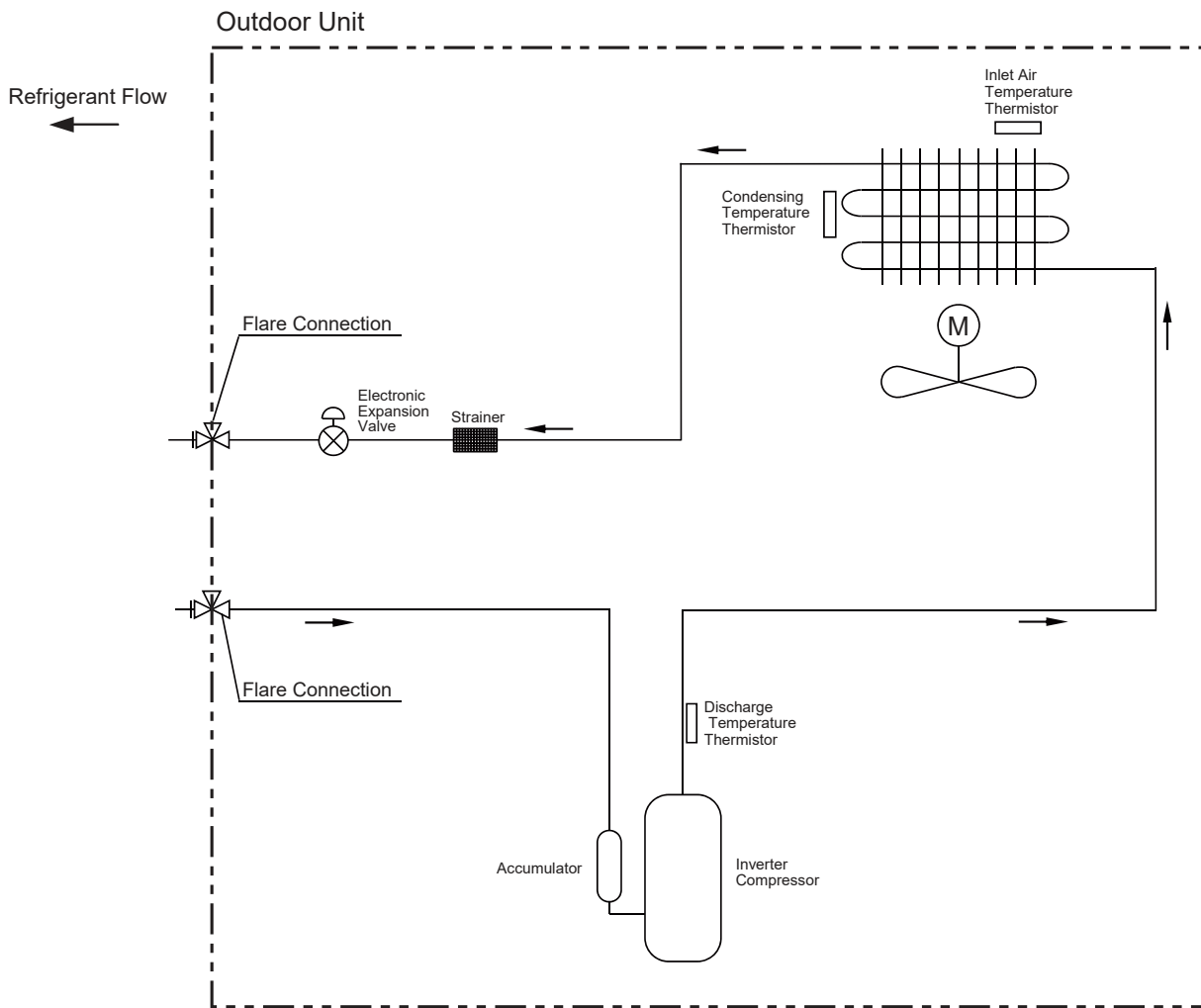
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

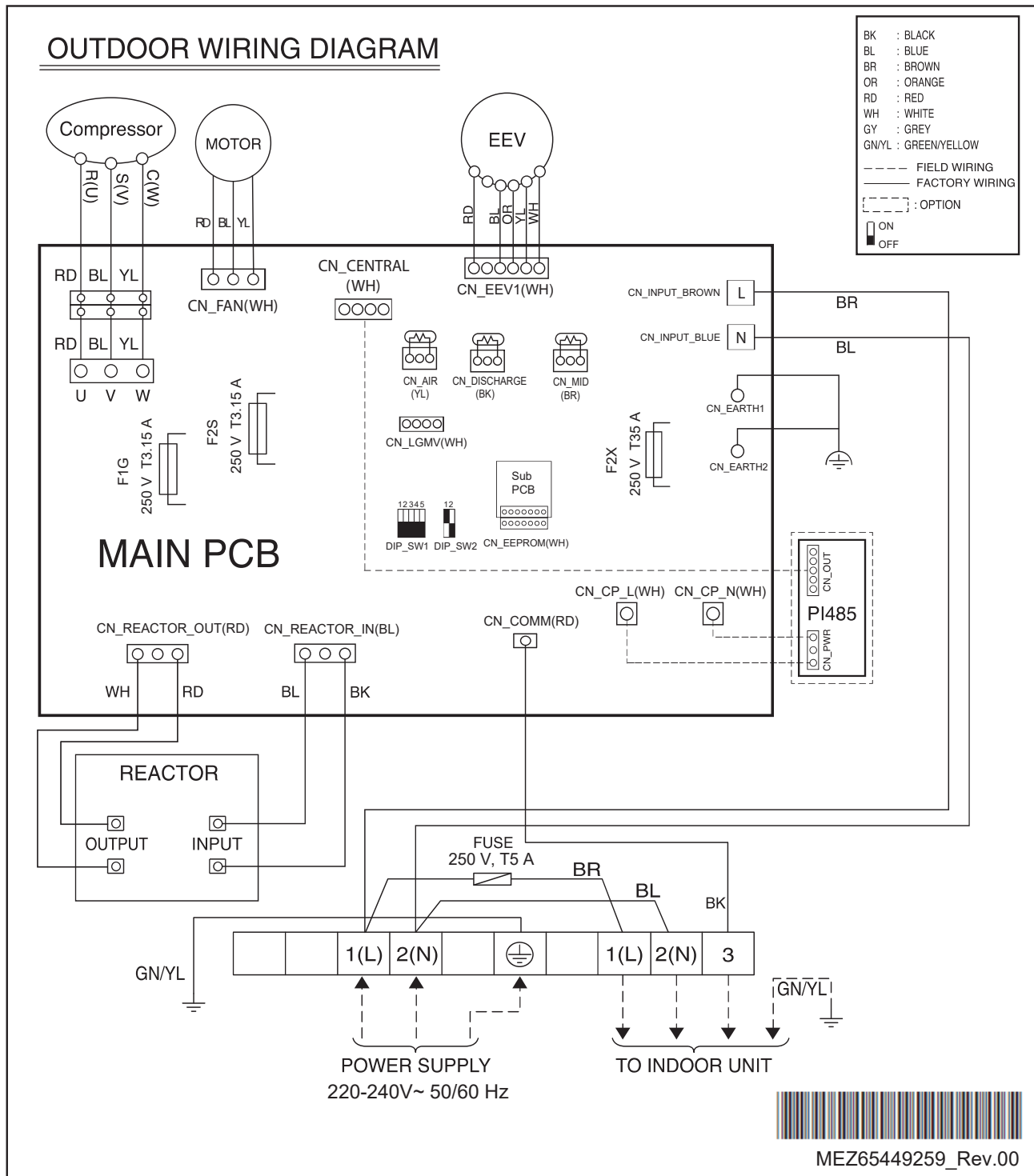
26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

26.5 Piping Diagrams



26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

26.6 Wiring Diagrams





**26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]****26.7 Capacity Tables****26.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	5.07	1.43	8.05	6.06	1.79	9.46	7.04	2.08	10.54	7.53	2.28	10.90	7.48	2.30	11.62	7.39	2.35	12.43	7.29	2.36
25	6.19	5.07	1.69	8.05	6.06	2.12	9.46	7.04	2.45	10.54	7.53	2.69	10.90	7.48	2.72	11.62	7.39	2.77	12.43	7.29	2.79
32	6.19	5.07	2.05	8.05	6.06	2.57	9.46	7.04	2.98	10.54	7.53	3.26	10.90	7.48	3.29	11.62	7.39	3.36	12.43	7.29	3.38
35	6.19	5.07	2.20	8.05	6.06	2.76	9.46	7.04	3.20	10.54	7.53	3.51	10.90	7.48	3.55	11.62	7.39	3.62	12.43	7.29	3.64
40	6.19	5.07	2.34	8.05	6.06	2.93	9.46	7.04	3.40	10.54	7.53	3.73	10.90	7.48	3.77	11.62	7.39	3.84	12.43	7.29	3.86
43	6.19	5.07	2.42	8.05	6.06	3.04	9.46	7.04	3.52	10.54	7.53	3.86	10.90	7.48	3.90	11.62	7.39	3.98	12.43	7.29	4.00
46	6.19	5.07	2.51	8.05	6.06	3.15	9.46	7.04	3.61	9.70	7.00	3.69	10.03	6.95	3.73	10.69	6.85	3.80	11.44	6.75	3.82
48	6.19	5.07	2.59	8.05	6.06	3.26	9.24	6.94	3.56	9.43	6.87	3.63	9.69	6.78	3.67	10.22	6.59	3.74	10.83	6.42	3.76
50	6.19	5.07	2.69	8.05	6.06	3.37	8.99	6.73	3.51	9.17	6.72	3.58	9.36	6.59	3.62	9.75	6.32	3.69	10.22	6.09	3.71

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]****26.8 Capacity Correction Factor**

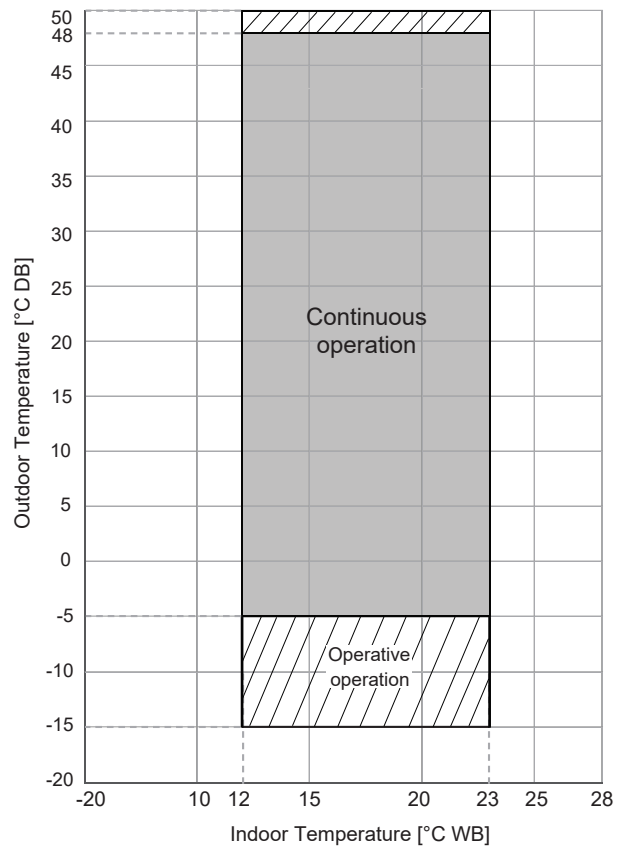
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

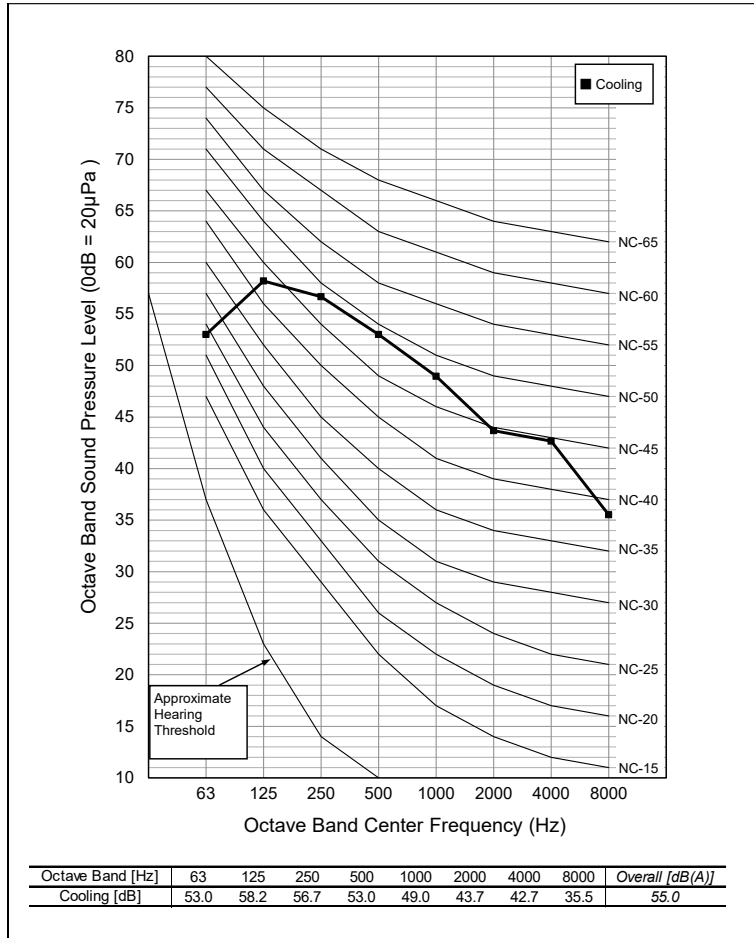
**26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]****26.9 Operation Limits****26.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

26. ZUUQ36GA0 [ZUAD1] + ZPNQ36GR5A0 [ZPNQ36GR5A0]

26.10 Sound Levels

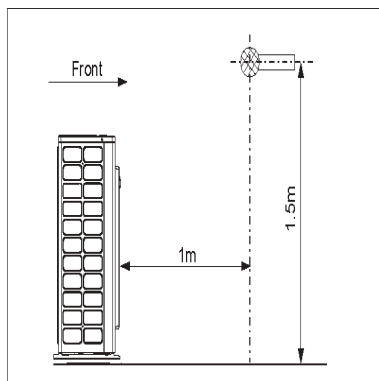
26.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

## 27.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	8.68
		Btu/h	29,632
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.20~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.30
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 4.50/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	2.8
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.3
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]****27.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]****27.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

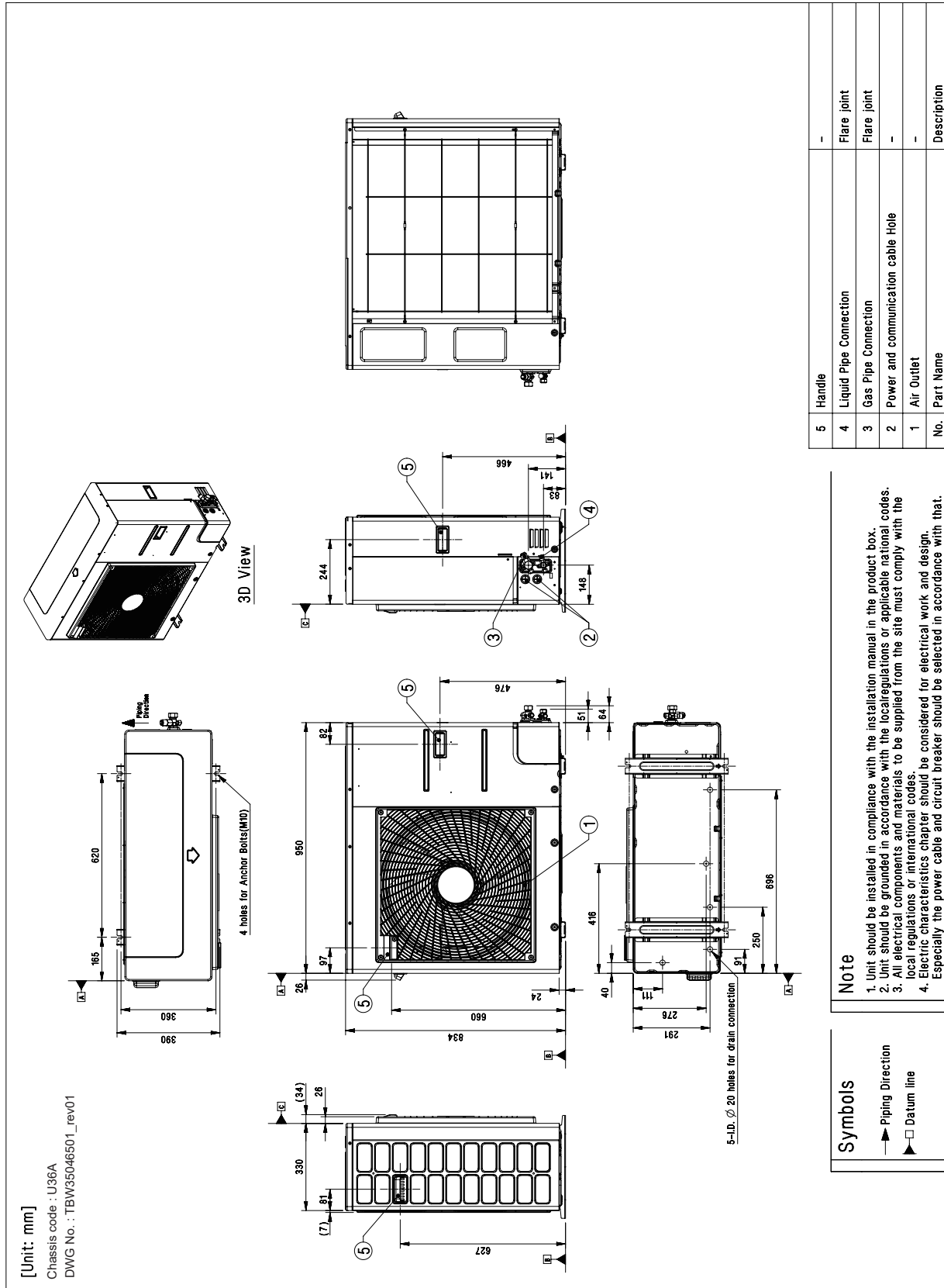
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

27.4 Dimensions

27.4.1 Product



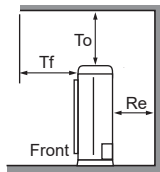
27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

27.4.2 Install Space

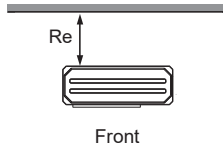
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

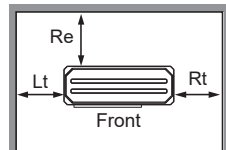


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

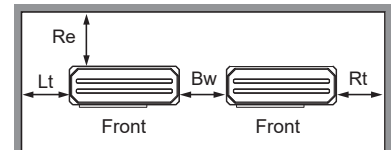


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



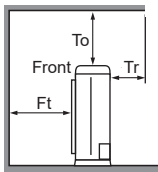
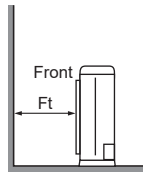
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



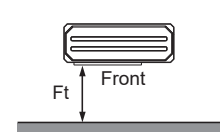
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

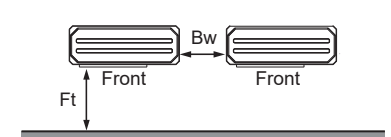
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

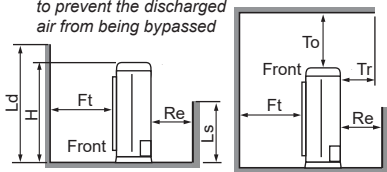


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

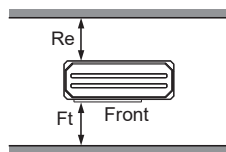
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

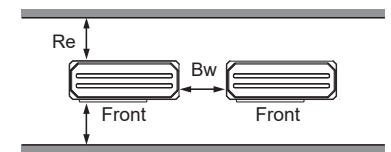
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



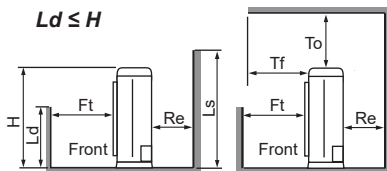
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

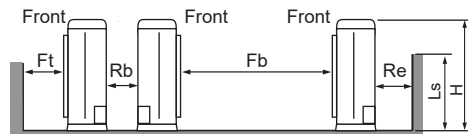


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

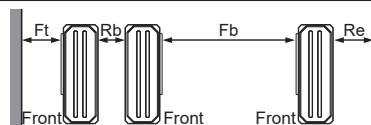
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

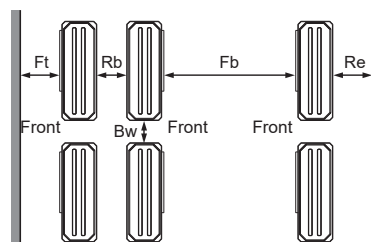
Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



**1 Column**  
Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



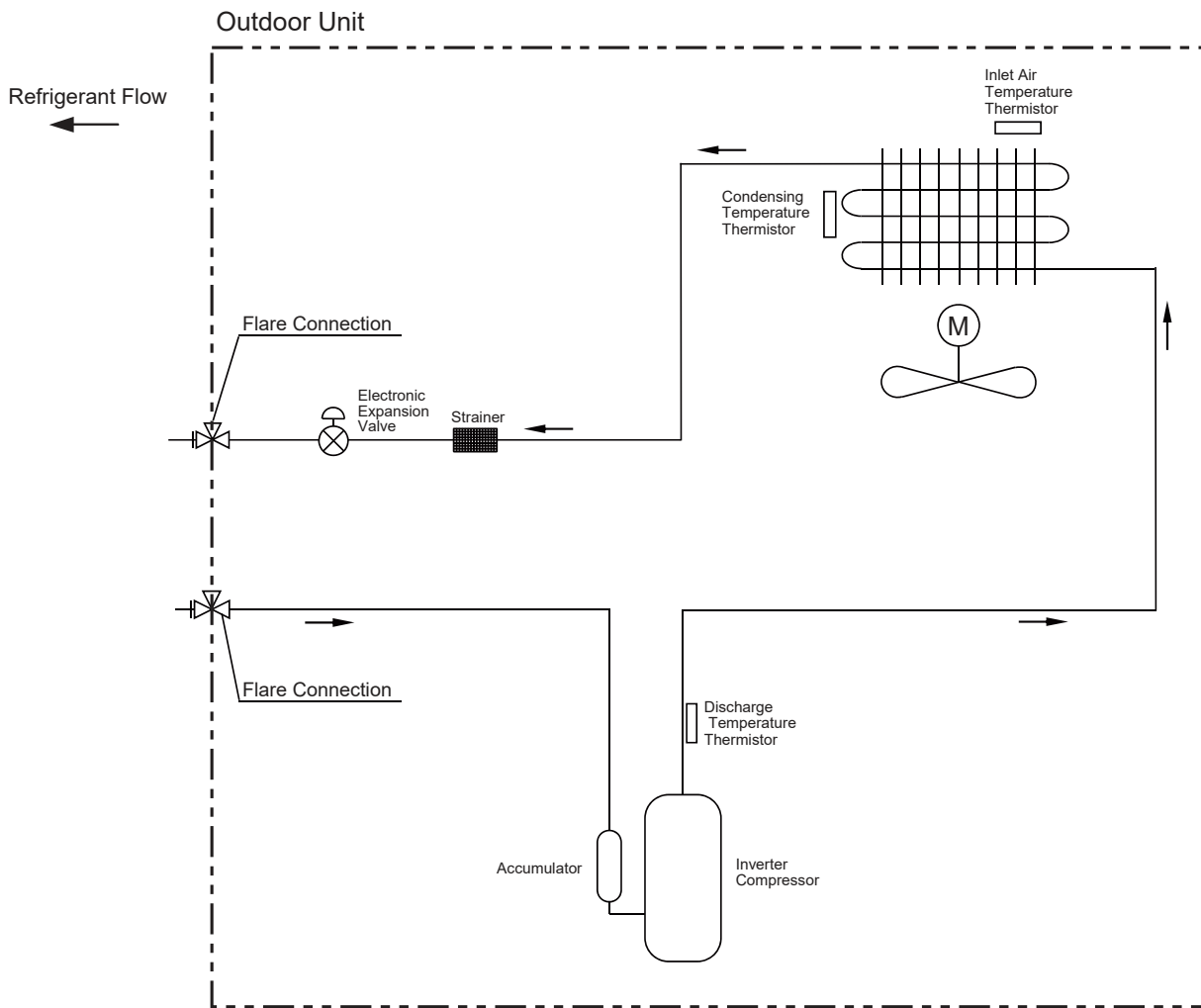
**Multiple Columns**  
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

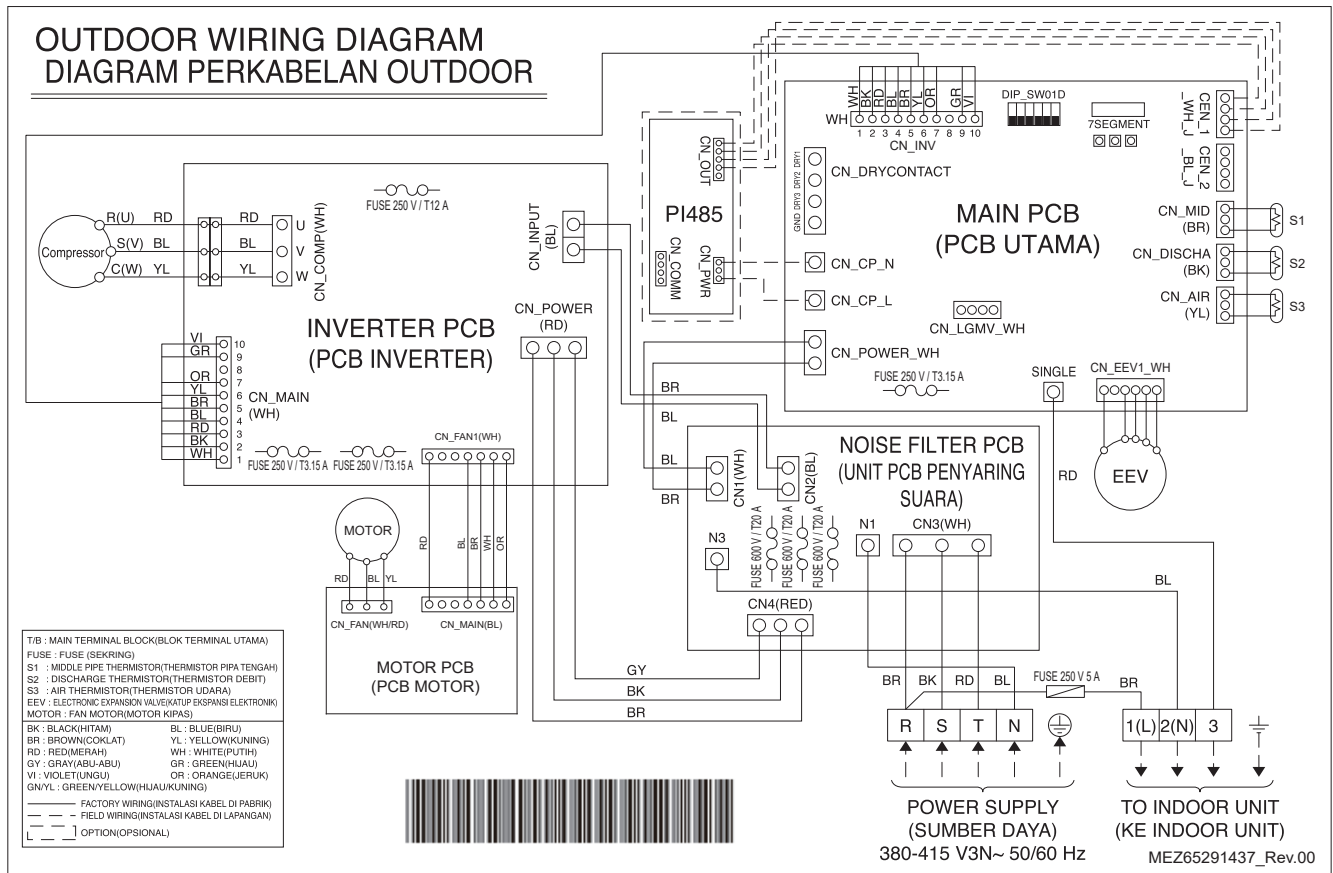
27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

27.5 Piping Diagrams



27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

27.6 Wiring Diagrams



**27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]****27.7 Capacity Tables****27.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	5.85	1.30	8.05	6.98	1.64	9.46	8.11	1.89	10.54	8.68	2.08	10.90	8.63	2.10	11.62	8.52	2.14	12.43	8.41	2.15
25	6.19	5.85	1.54	8.05	6.98	1.93	9.46	8.11	2.24	10.54	8.68	2.45	10.90	8.63	2.48	11.62	8.52	2.53	12.43	8.41	2.54
32	6.19	5.85	1.87	8.05	6.98	2.34	9.46	8.11	2.71	10.54	8.68	2.98	10.90	8.63	3.01	11.62	8.52	3.07	12.43	8.41	3.08
35	6.19	5.85	2.01	8.05	6.98	2.52	9.46	8.11	2.92	10.54	8.68	3.20	10.90	8.63	3.23	11.62	8.52	3.30	12.43	8.41	3.32
40	6.19	5.85	2.13	8.05	6.98	2.68	9.46	8.11	3.10	10.54	8.68	3.40	10.90	8.63	3.43	11.62	8.52	3.50	12.43	8.41	3.52
43	6.19	5.85	2.21	8.05	6.98	2.77	9.46	8.11	3.21	10.54	8.68	3.52	10.90	8.63	3.56	11.62	8.52	3.63	12.43	8.41	3.65
46	6.19	5.85	2.28	8.05	6.98	2.87	9.46	8.11	3.29	9.70	8.07	3.36	10.03	8.01	3.39	10.69	7.90	3.46	11.44	7.79	3.48
48	6.19	5.85	2.36	8.05	6.98	2.97	9.24	8.00	3.25	9.43	7.91	3.31	9.69	7.81	3.34	10.22	7.60	3.41	10.83	7.40	3.43
50	6.19	5.85	2.45	8.05	6.98	3.07	8.99	7.76	3.20	9.17	7.75	3.26	9.36	7.60	3.29	9.75	7.29	3.36	10.22	7.02	3.38

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]****27.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

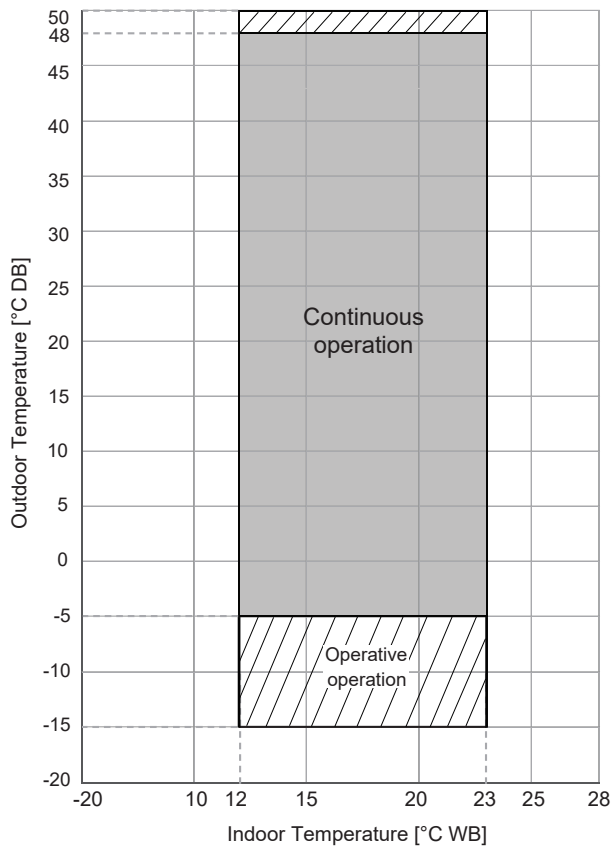
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]**

**27.9 Operation Limits**

**27.9.1 Cooling**



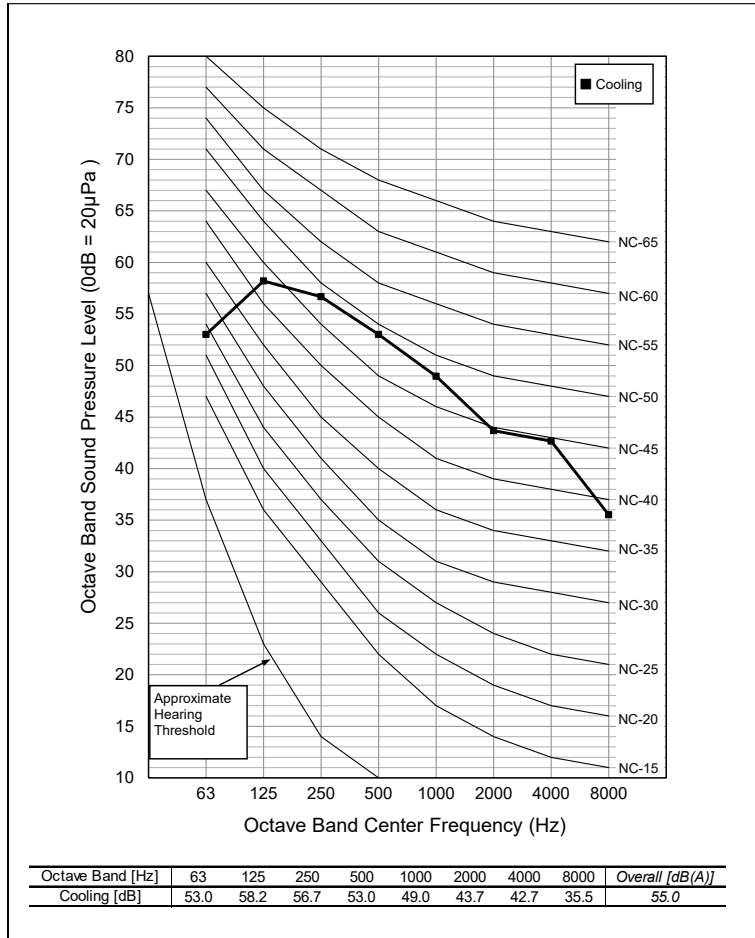
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

27. ZUUQ36LA0 [ZUAD3] + ZTNQ36LNLA0 [ZTNQ36LNLA0]

27.10 Sound Levels

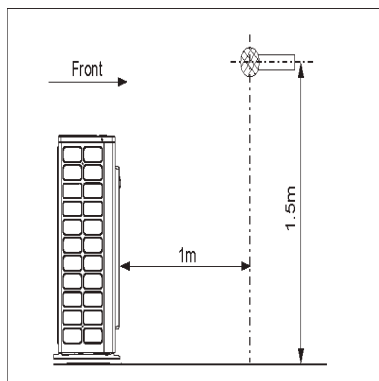
27.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.1 Specifications**

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	10.37
		Btu/h	35,438
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.81~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.83
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 6.70/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	4.79
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.7
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

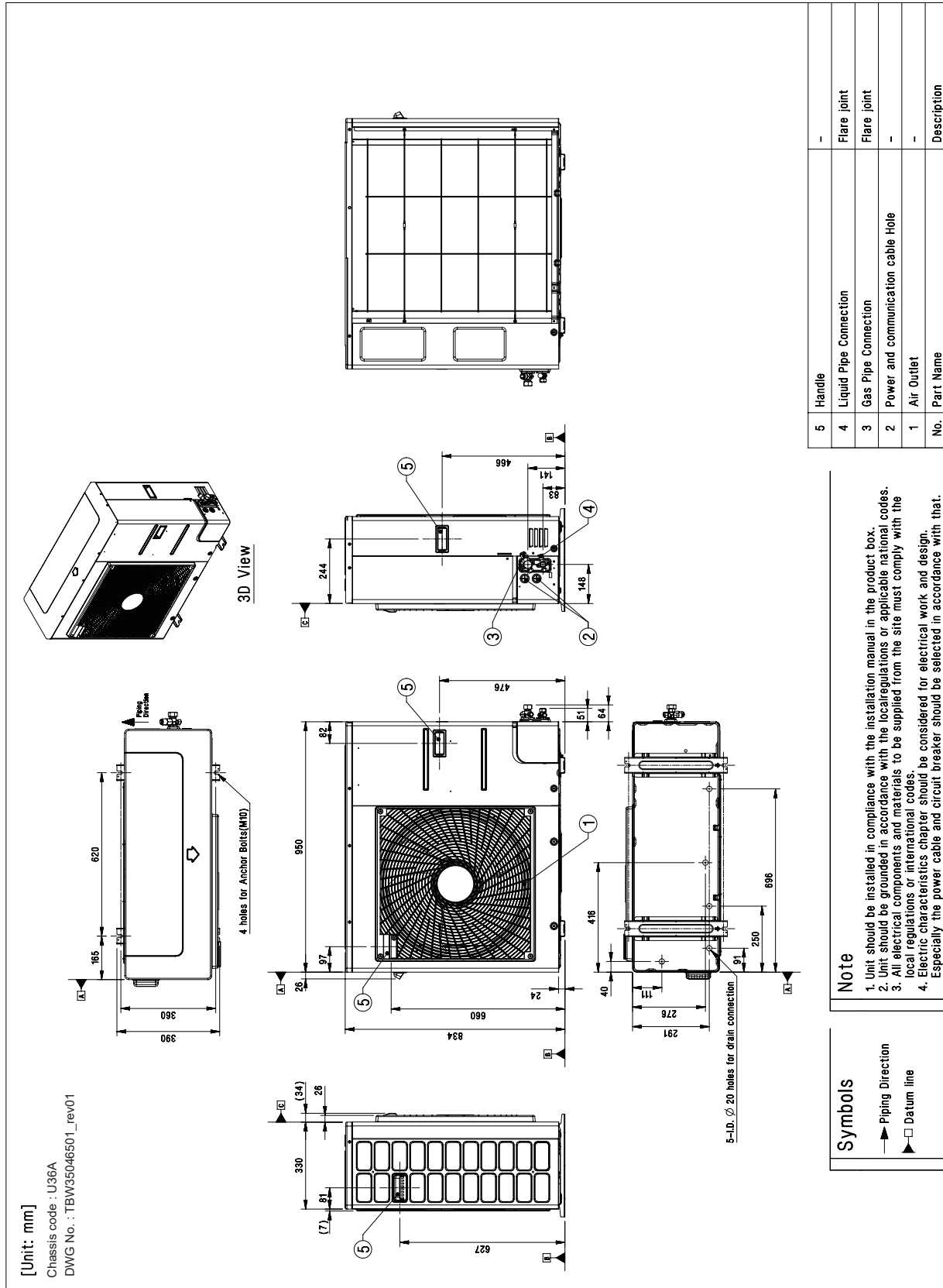
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

28.4 Dimensions

28.4.1 Product



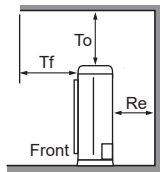
28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

28.4.2 Install Space

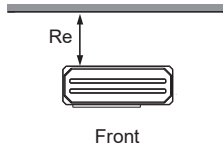
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

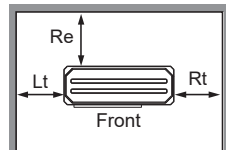


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

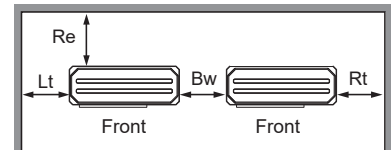


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



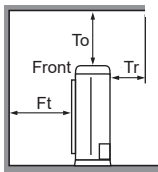
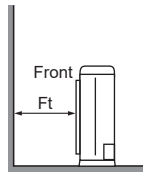
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



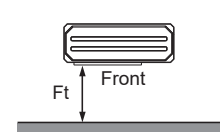
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

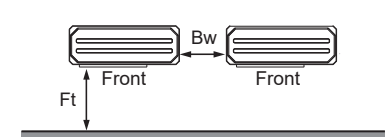
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

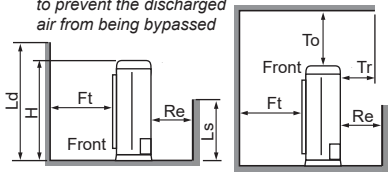


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

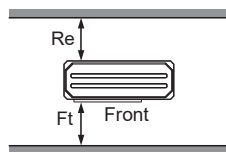
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

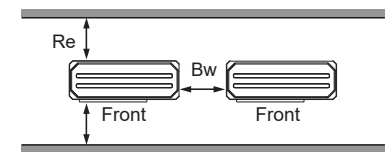
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

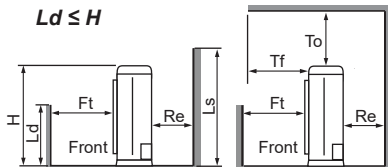


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



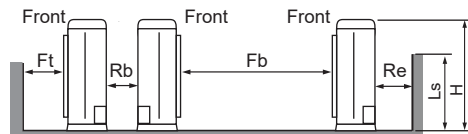
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

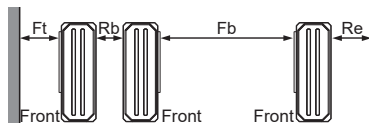
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

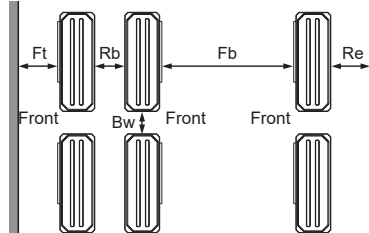


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

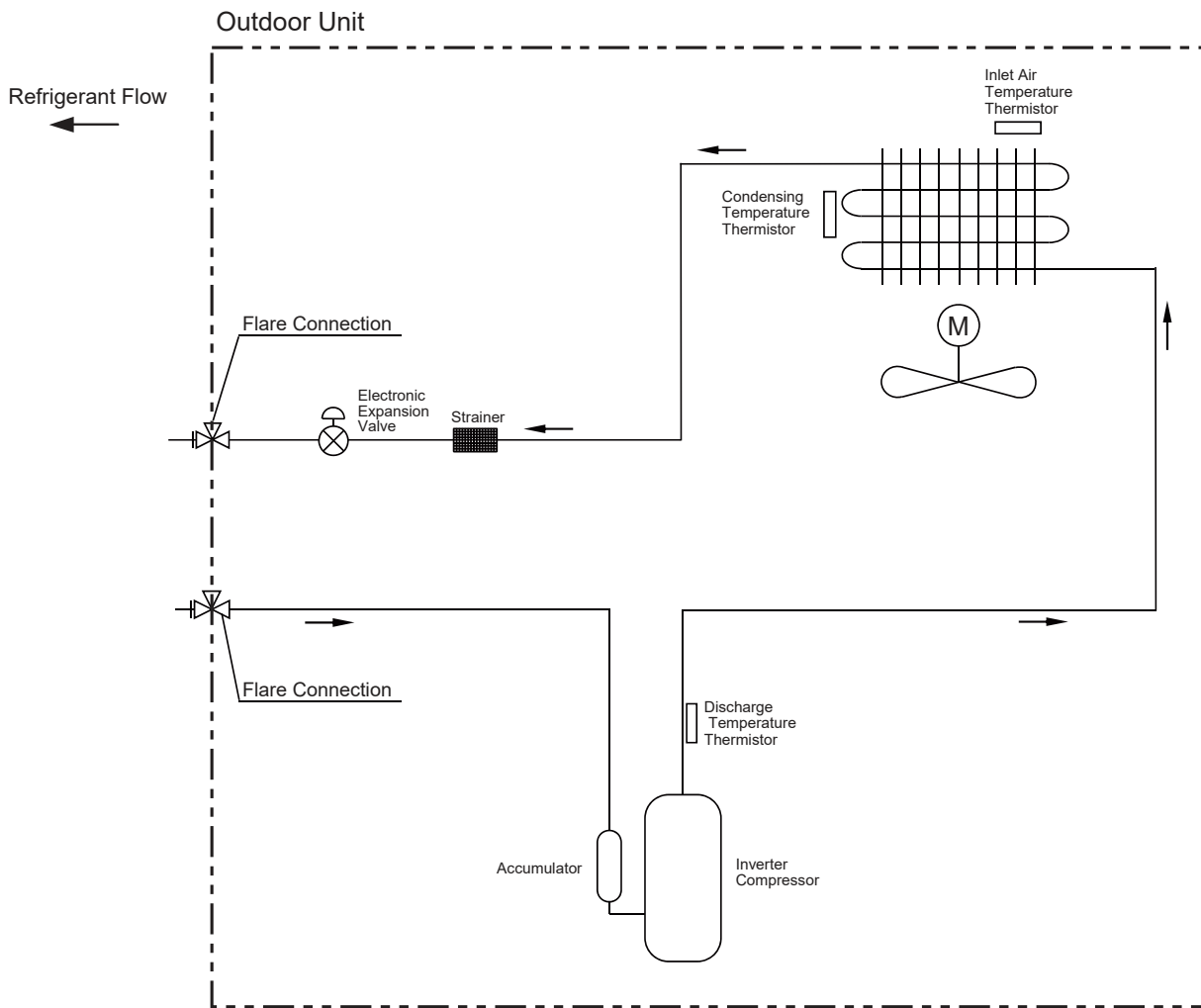
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

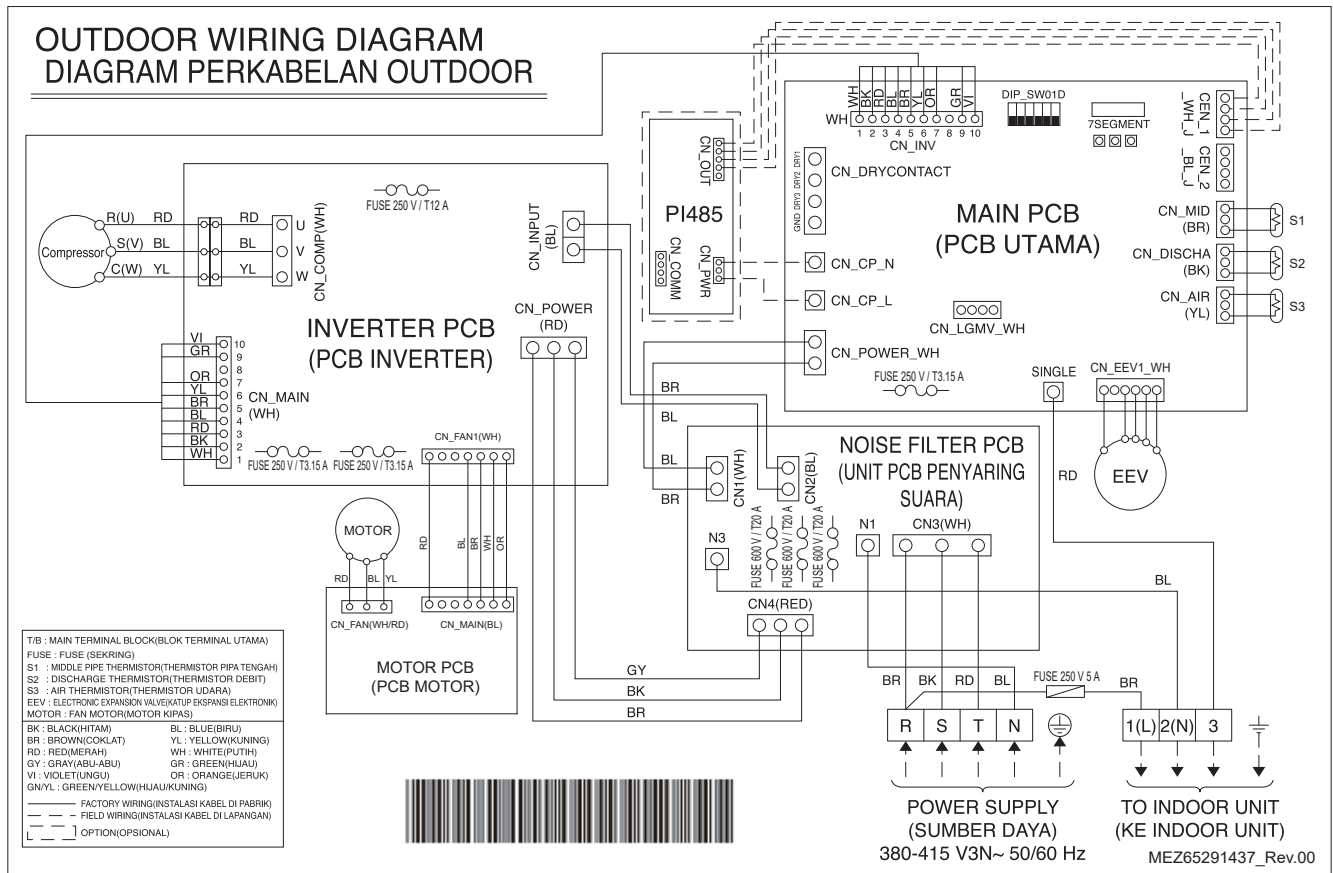
28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

28.5 Piping Diagrams



28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

28.6 Wiring Diagrams





**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.7 Capacity Tables****28.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	6.99	1.96	10.39	8.34	2.46	12.22	9.69	2.85	13.61	10.37	3.12	14.07	10.31	3.15	15.00	10.18	3.22	16.06	10.05	3.24
25	7.99	6.99	2.31	10.39	8.34	2.90	12.22	9.69	3.36	13.61	10.37	3.69	14.07	10.31	3.73	15.00	10.18	3.80	16.06	10.05	3.82
32	7.99	6.99	2.80	10.39	8.34	3.52	12.22	9.69	4.08	13.61	10.37	4.47	14.07	10.31	4.52	15.00	10.18	4.61	16.06	10.05	4.63
35	7.99	6.99	3.01	10.39	8.34	3.78	12.22	9.69	4.39	13.61	10.37	4.81	14.07	10.31	4.86	15.00	10.18	4.95	16.06	10.05	4.98
40	7.99	6.99	2.82	10.39	8.34	3.54	12.22	9.69	4.11	12.50	9.68	4.50	12.92	9.61	4.55	13.77	9.46	4.64	14.74	9.32	4.67
43	7.99	6.99	2.71	10.39	8.34	3.40	11.59	9.26	3.94	11.83	9.26	4.32	12.23	9.18	4.36	13.04	9.03	4.45	13.95	8.87	4.48
46	7.99	6.99	2.60	10.39	8.34	3.26	10.94	8.73	3.78	11.16	8.83	4.14	11.54	8.75	4.18	12.30	8.59	4.26	13.17	8.43	4.29
48	7.99	6.99	2.49	10.39	8.34	3.13	10.47	8.36	3.62	10.68	8.52	3.99	10.98	8.39	4.03	11.58	8.13	4.11	12.28	7.90	4.14
50	7.99	6.99	2.39	9.80	7.96	3.00	10.00	8.08	3.48	10.21	8.20	3.85	10.43	8.03	3.89	10.87	7.68	3.96	11.40	7.36	3.99

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.8 Capacity Correction Factor**

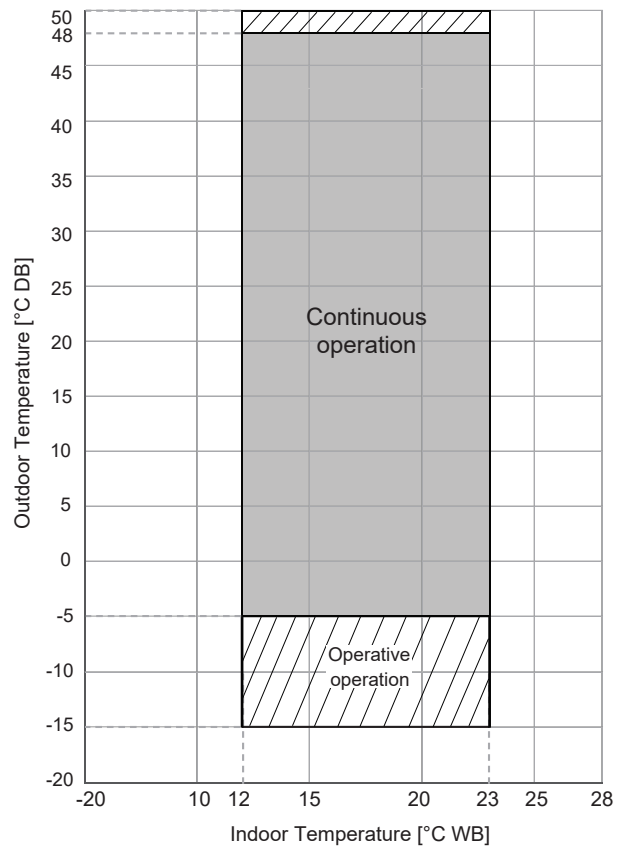
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

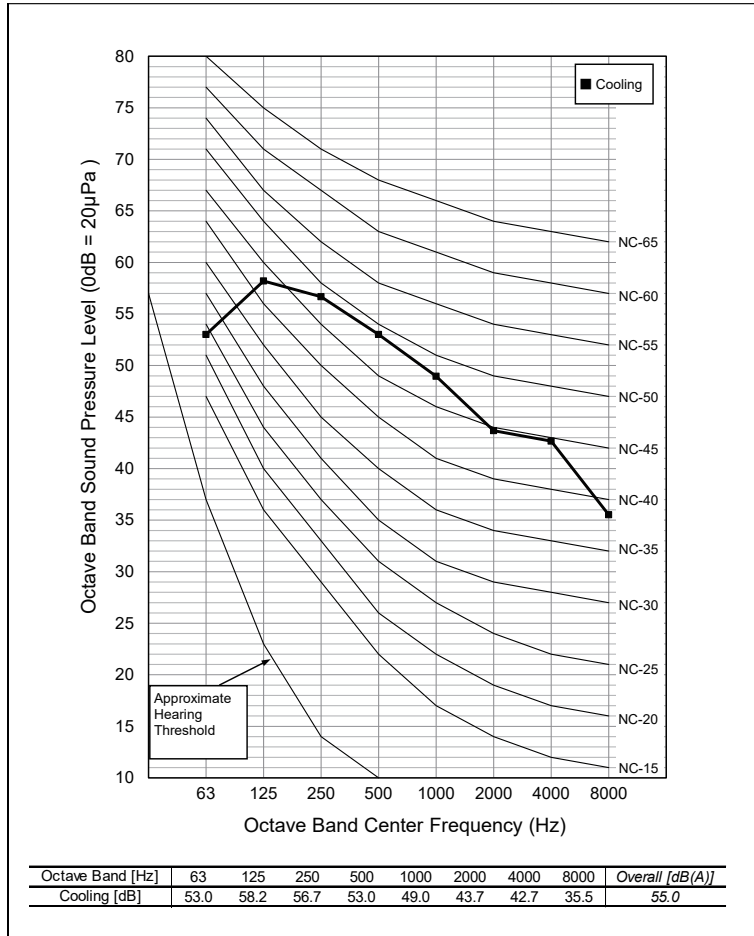
**28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]****28.9 Operation Limits****28.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

28. ZUUQ36LA0 [ZUAD3] + ZPNQ48LT3A0 [ZPNQ48LT3A0]

28.10 Sound Levels

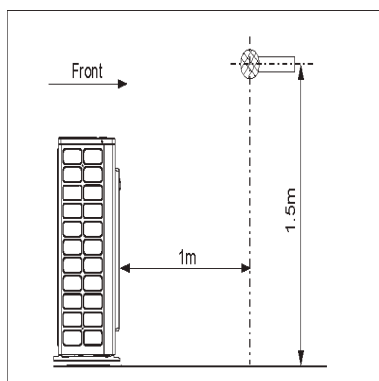
28.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

## 29.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	10.40
		Btu/h	35,526
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.63~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	2.94
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 6.50/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	4.72
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.7
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]****29.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]****29.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

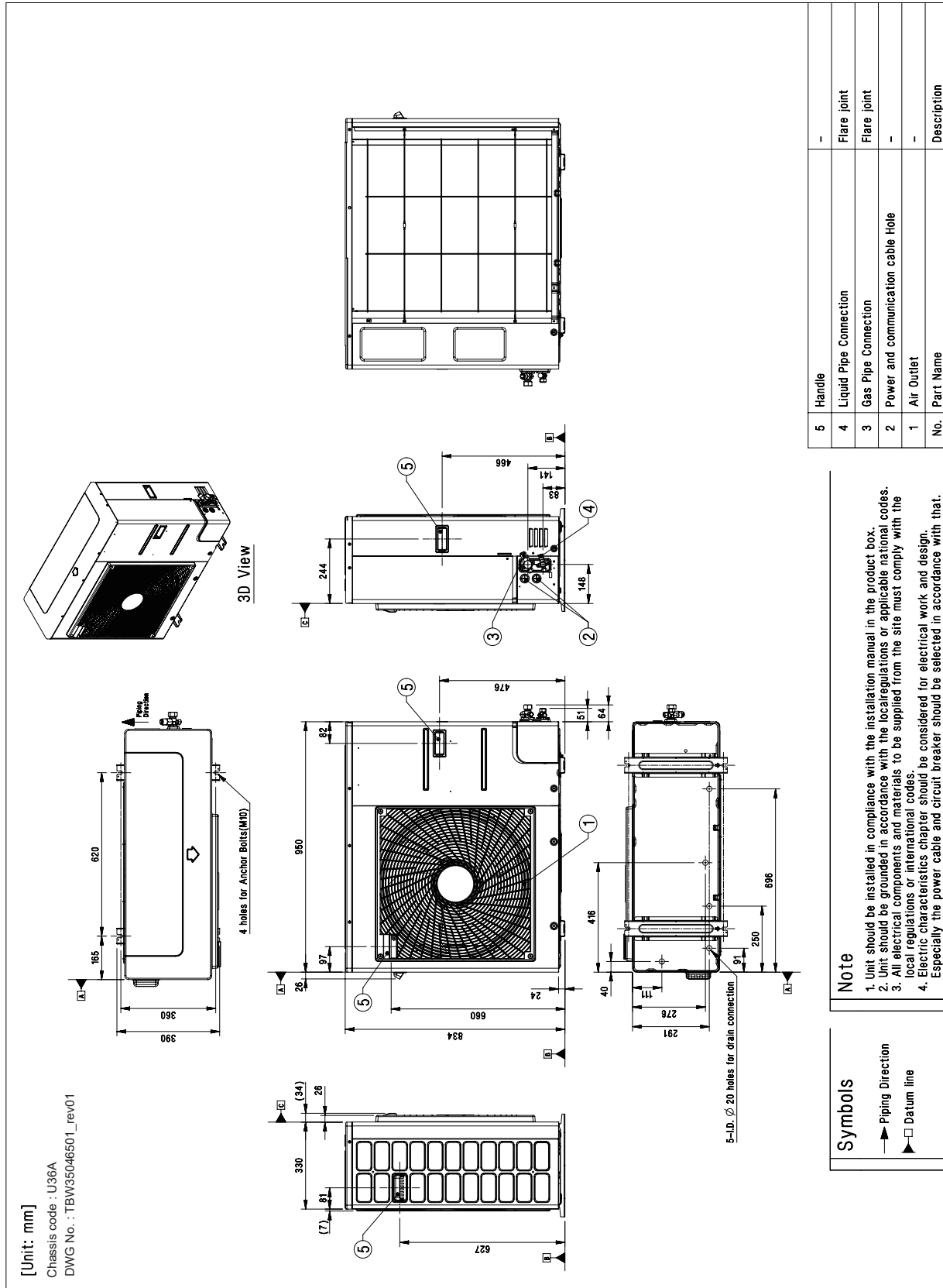
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

29.4 Dimensions

29.4.1 Product



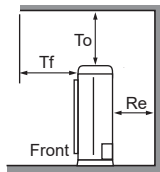
29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

29.4.2 Install Space

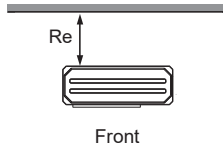
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

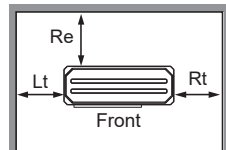


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

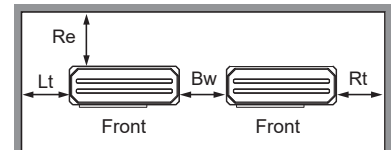


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



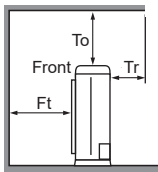
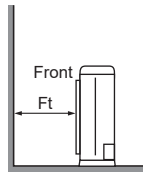
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



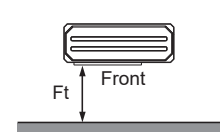
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

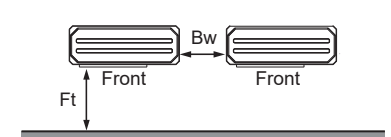
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

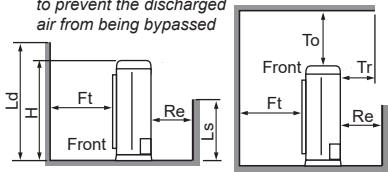


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

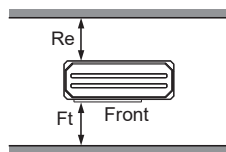
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

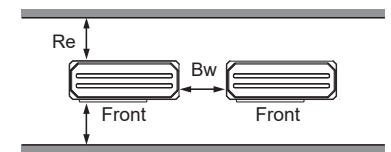
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

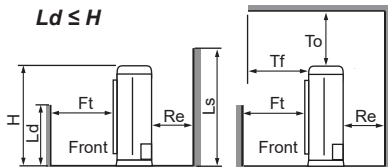


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



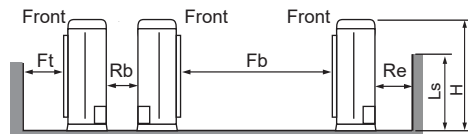
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

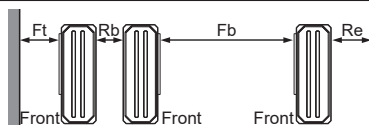
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

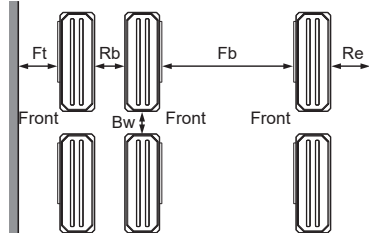


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

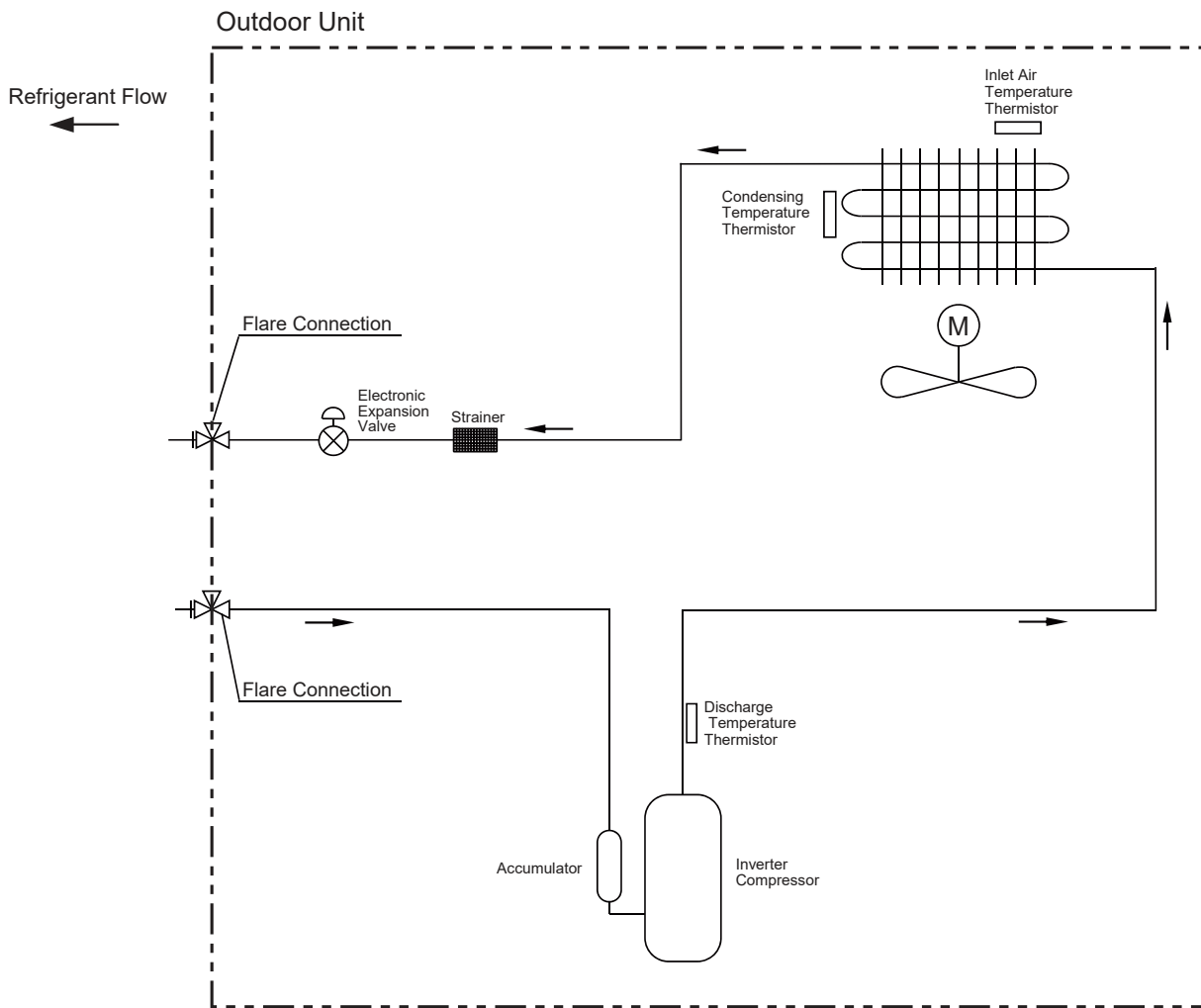
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

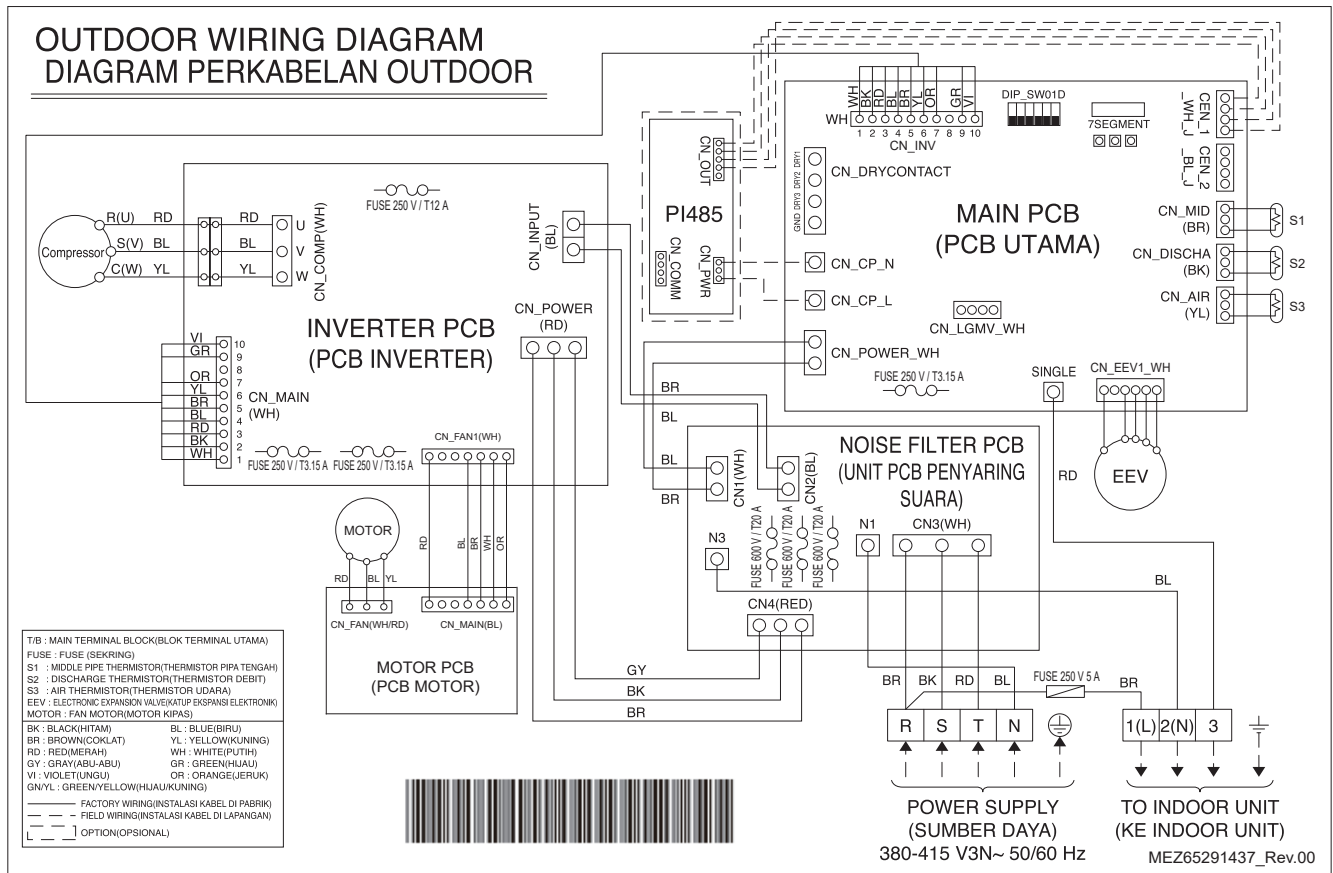
29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

29.5 Piping Diagrams



29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

29.6 Wiring Diagrams



**29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]****29.7 Capacity Tables****29.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	7.01	1.88	10.39	8.37	2.37	12.22	9.72	2.74	13.61	10.40	3.01	14.07	10.33	3.04	15.00	10.20	3.10	16.06	10.07	3.12
25	7.99	7.01	2.22	10.39	8.37	2.79	12.22	9.72	3.23	13.61	10.40	3.55	14.07	10.33	3.59	15.00	10.20	3.66	16.06	10.07	3.68
32	7.99	7.01	2.70	10.39	8.37	3.39	12.22	9.72	3.93	13.61	10.40	4.31	14.07	10.33	4.35	15.00	10.20	4.44	16.06	10.07	4.46
35	7.99	7.01	2.90	10.39	8.37	3.64	12.22	9.72	4.22	13.61	10.40	4.63	14.07	10.33	4.68	15.00	10.20	4.77	16.06	10.07	4.80
40	7.99	7.01	2.72	10.39	8.37	3.41	12.22	9.72	3.95	12.50	9.71	4.34	12.92	9.64	4.38	13.77	9.49	4.47	14.74	9.34	4.49
43	7.99	7.01	2.61	10.39	8.37	3.27	11.59	9.28	3.79	11.83	9.29	4.16	12.23	9.21	4.20	13.04	9.05	4.28	13.95	8.90	4.31
46	7.99	7.01	2.50	10.39	8.37	3.14	10.94	8.76	3.64	11.16	8.86	3.98	11.54	8.78	4.02	12.30	8.61	4.10	13.17	8.45	4.13
48	7.99	7.01	2.40	10.39	8.37	3.01	10.47	8.39	3.49	10.68	8.55	3.84	10.98	8.42	3.88	11.58	8.16	3.96	12.28	7.92	3.98
50	7.99	7.01	2.30	9.80	7.98	2.89	10.00	8.10	3.35	10.21	8.23	3.70	10.43	8.05	3.74	10.87	7.70	3.82	11.40	7.38	3.84

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]****29.8 Capacity Correction Factor**

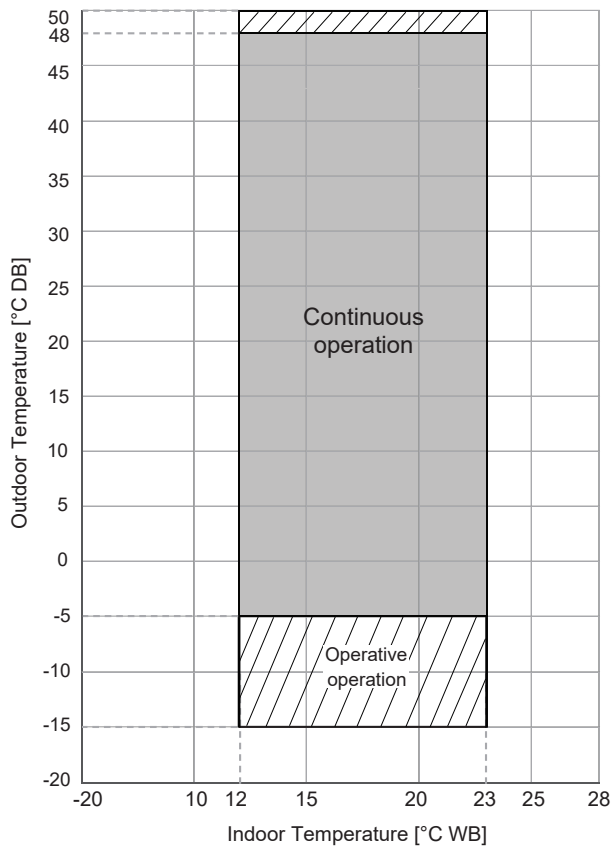
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

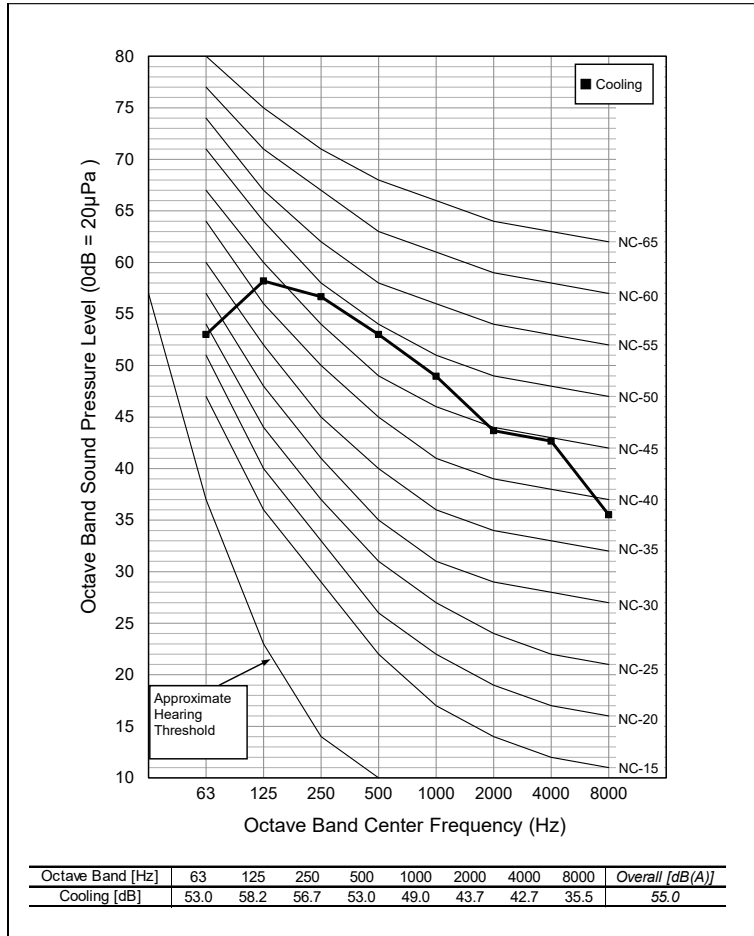
**29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]****29.9 Operation Limits****29.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

29. ZUUQ36LA0 [ZUAD3] + ZTNQ48LMLA0 [ZTNQ48LMLA0]

29.10 Sound Levels

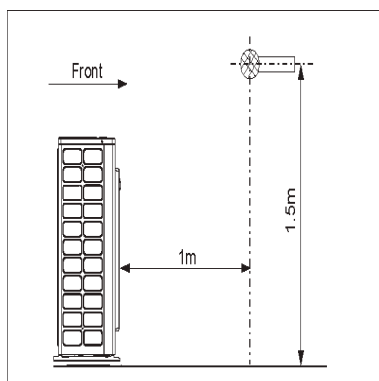
29.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

## 30.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	9.23
		Btu/h	31,507
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~2.95~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.58
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 4.10/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	1.94
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	18.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]****30.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]****30.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

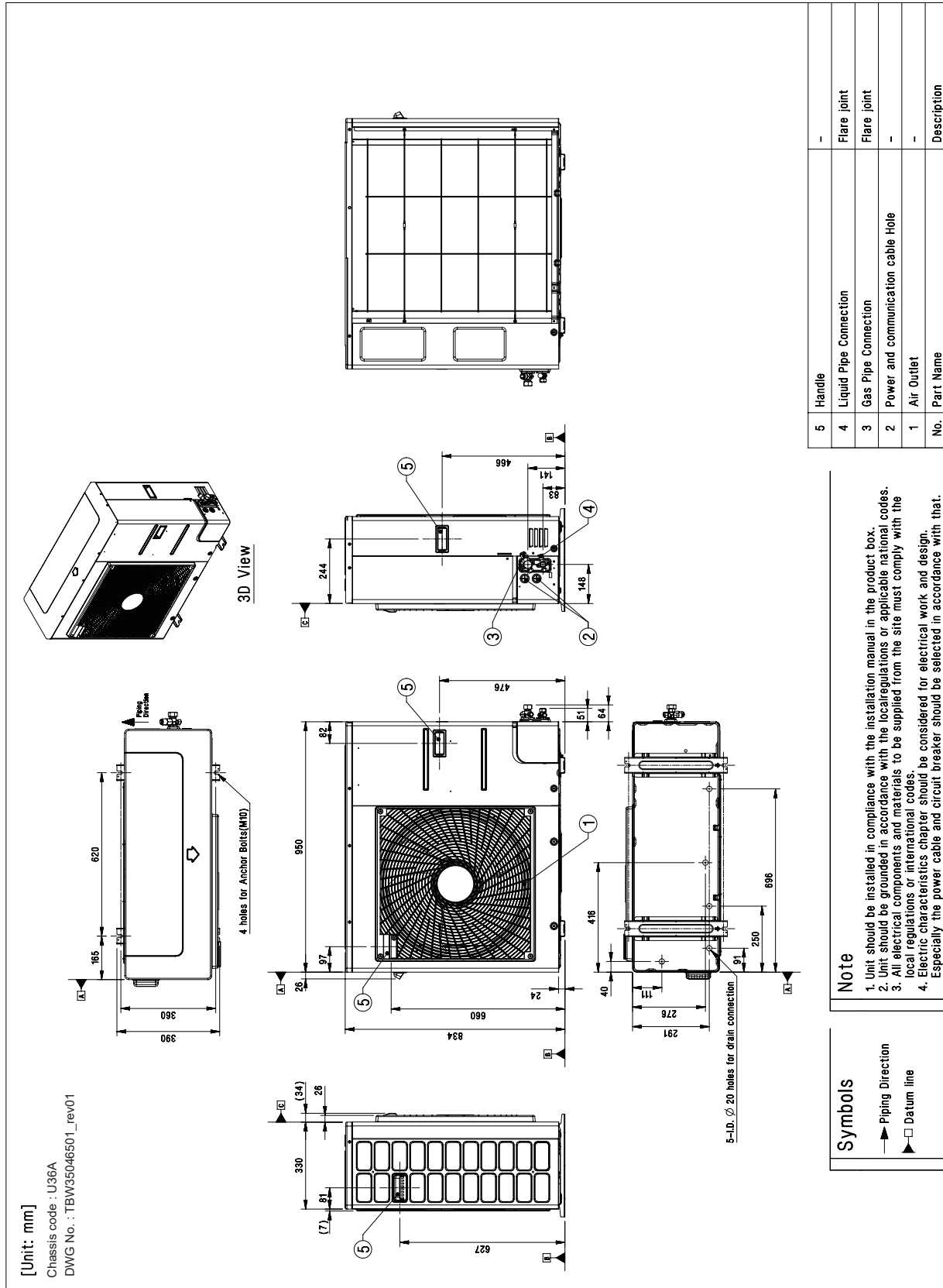
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

30.4 Dimensions

30.4.1 Product



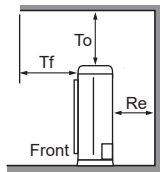
30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

30.4.2 Install Space

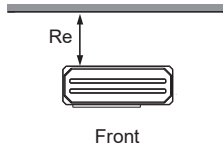
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

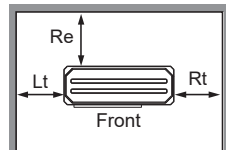


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

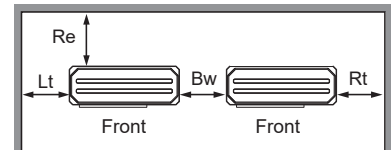


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



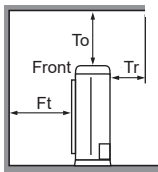
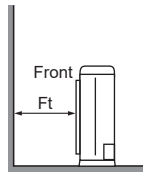
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
Rt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



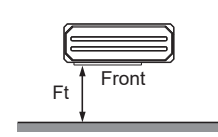
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

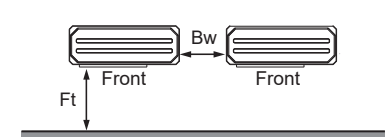
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

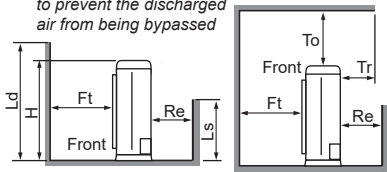


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

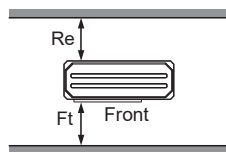
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

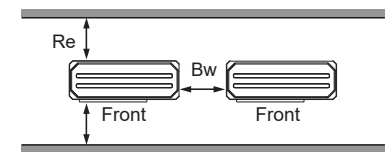
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

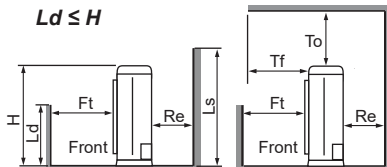


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)

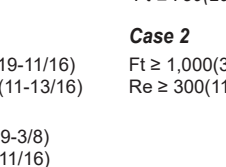


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

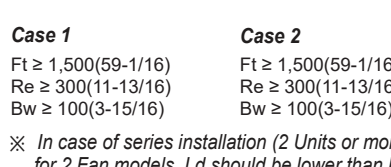
Ld ≤ H



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)



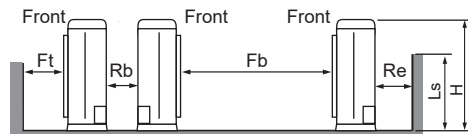
**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)



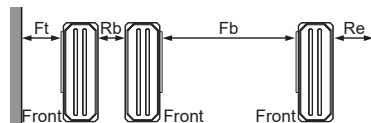
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

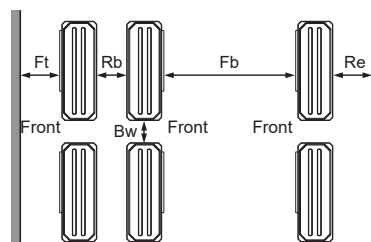


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

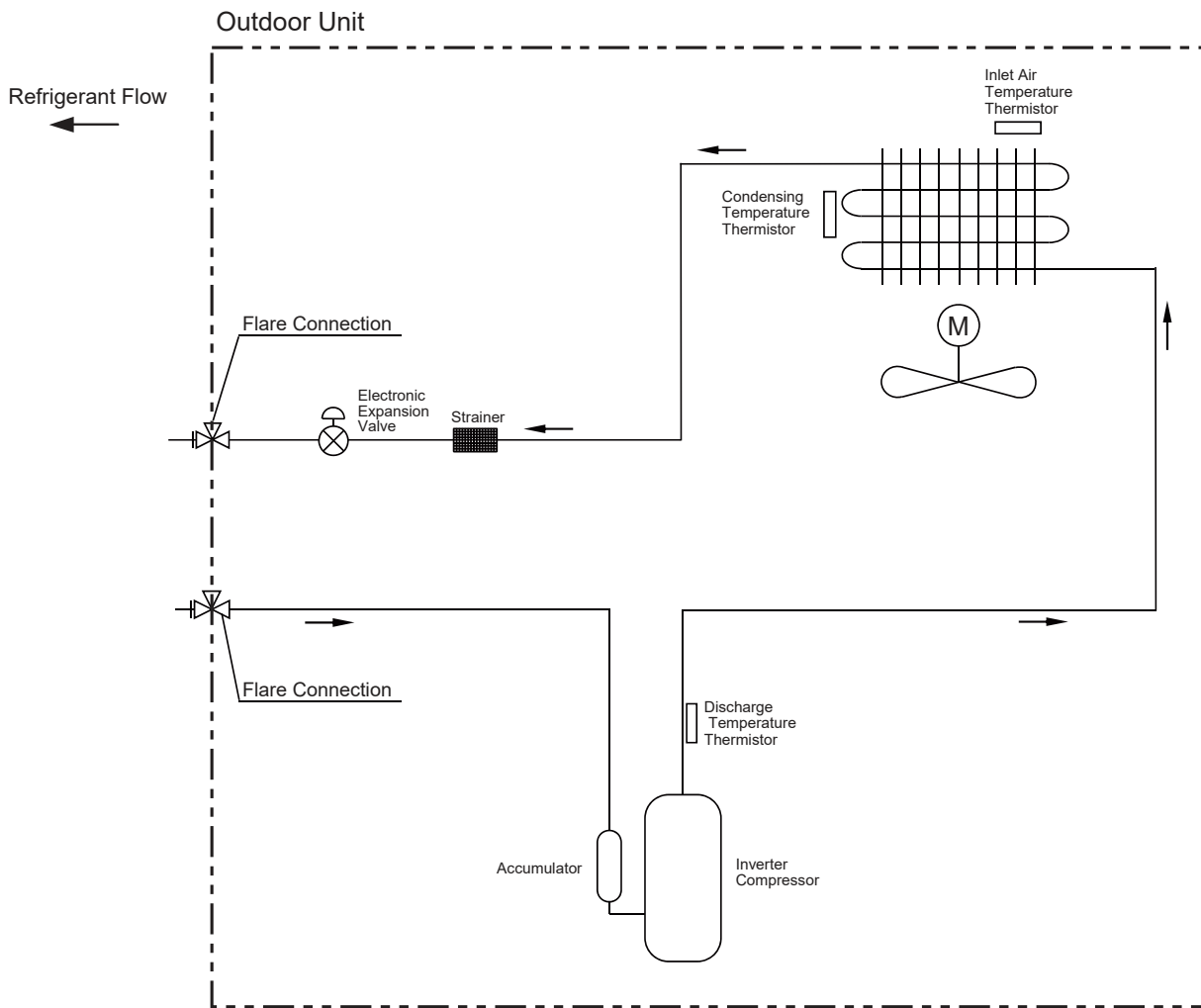
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

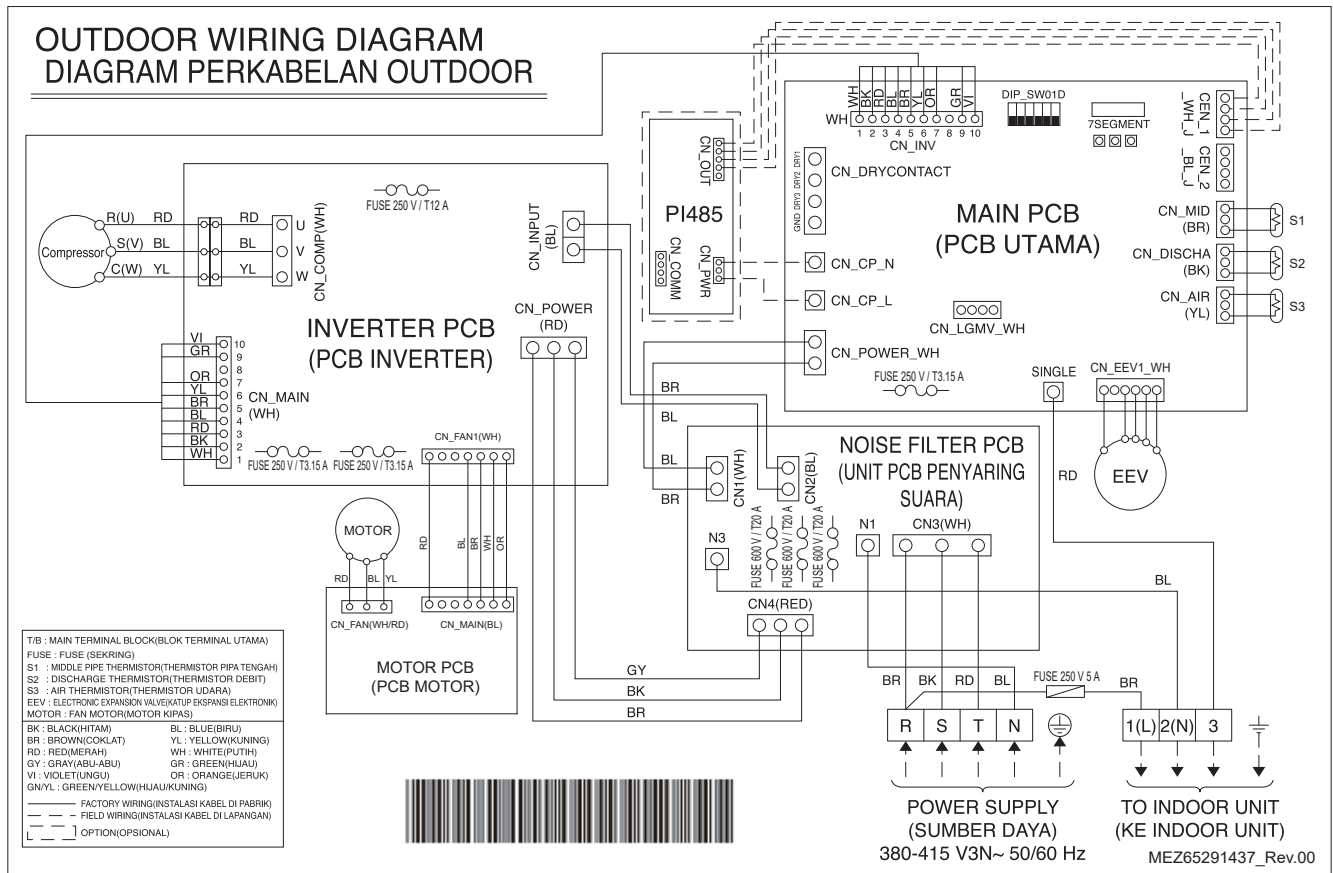
30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

30.5 Piping Diagrams



30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

30.6 Wiring Diagrams





**30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]****30.7 Capacity Tables****30.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	6.16	1.20	8.05	7.42	1.51	9.46	8.63	1.75	10.54	9.23	1.92	10.90	9.17	1.94	11.62	9.06	1.97	12.43	8.94	1.99
25	6.19	6.16	1.42	8.05	7.42	1.78	9.46	8.63	2.06	10.54	9.23	2.26	10.90	9.17	2.28	11.62	9.06	2.33	12.43	8.94	2.34
32	6.19	6.16	1.72	8.05	7.42	2.16	9.46	8.63	2.50	10.54	9.23	2.74	10.90	9.17	2.77	11.62	9.06	2.83	12.43	8.94	2.84
35	6.19	6.16	1.85	8.05	7.42	2.32	9.46	8.63	2.69	10.54	9.23	2.95	10.90	9.17	2.98	11.62	9.06	3.04	12.43	8.94	3.06
40	6.19	6.16	1.96	8.05	7.42	2.47	9.46	8.63	2.86	10.54	9.23	3.13	10.90	9.17	3.16	11.62	9.06	3.23	12.43	8.94	3.25
43	6.19	6.16	2.03	8.05	7.42	2.55	9.46	8.63	2.96	10.54	9.23	3.25	10.90	9.17	3.28	11.62	9.06	3.34	12.43	8.94	3.36
46	6.19	6.16	2.11	8.05	7.42	2.64	9.46	8.63	3.04	9.70	8.59	3.10	10.03	8.53	3.13	10.69	8.40	3.19	11.44	8.28	3.21
48	6.19	6.16	2.18	8.05	7.42	2.74	9.24	8.50	2.99	9.43	8.41	3.05	9.69	8.30	3.08	10.22	8.08	3.15	10.83	7.87	3.16
50	6.19	6.16	2.26	8.05	7.42	2.83	8.99	8.25	2.95	9.17	8.24	3.01	9.36	8.08	3.04	9.75	7.75	3.10	10.22	7.46	3.12

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]****30.8 Capacity Correction Factor**

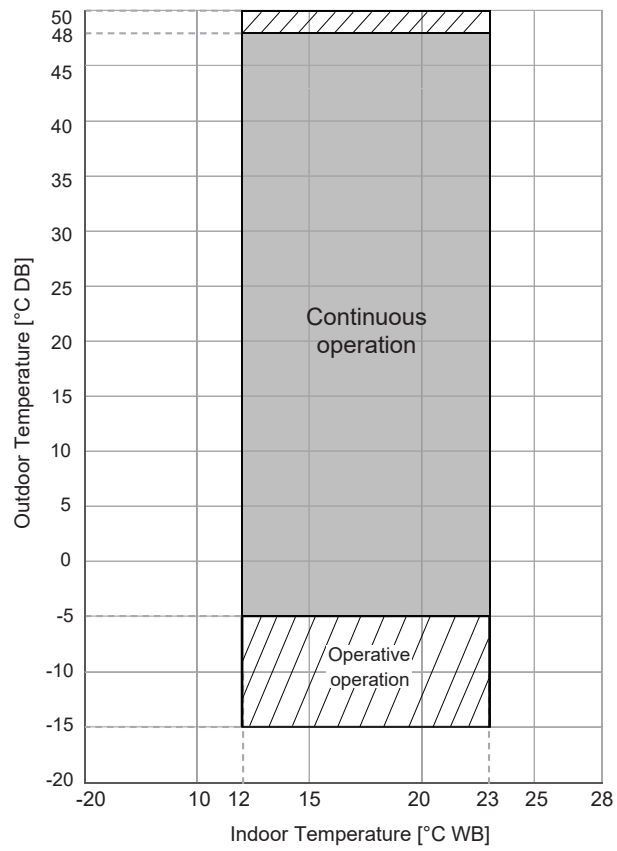
Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

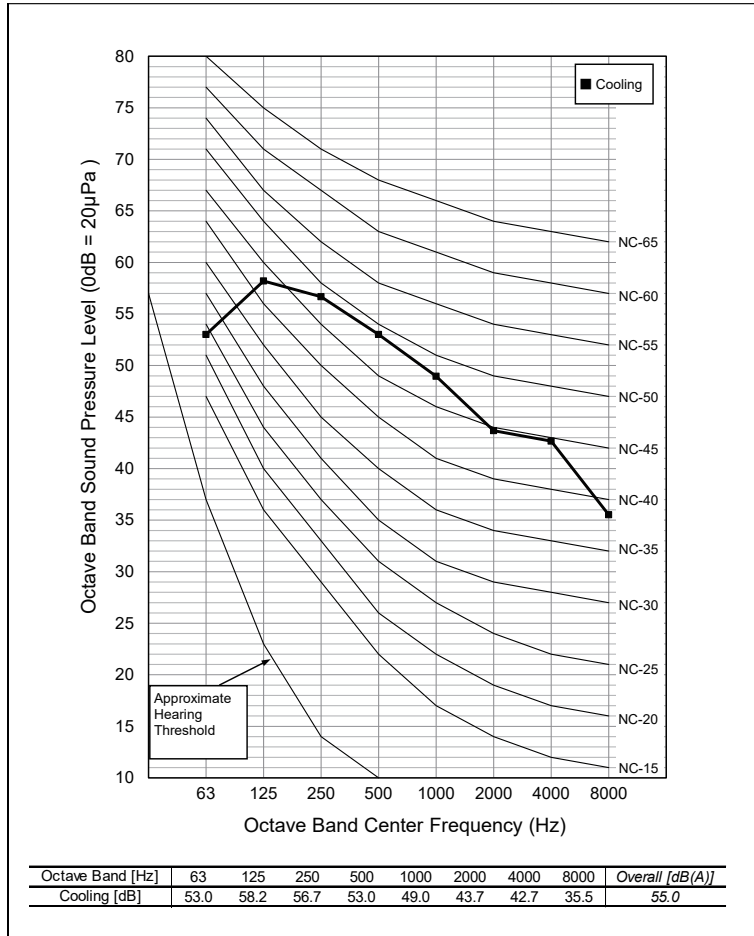
**30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]****30.9 Operation Limits****30.9.1 Cooling****Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

30. ZUUQ36LA0 [ZUAD3] + ZBNQ36LM3A0 [ZBNQ36LM3A0]

30.10 Sound Levels

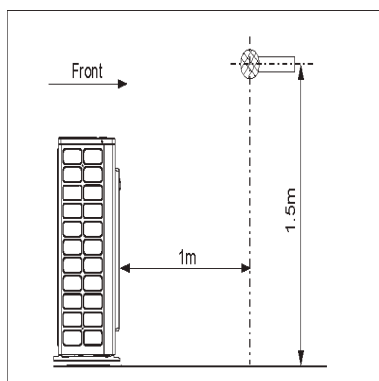
30.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



## 31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

## 31.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	13.61
		Btu/h	46,500
	Min ~ Max	kW	4.05~14.33
		Btu/h	13,800~48,950
	Sensible Heat (Rated)	kW	12.25
		Btu/h	41,850
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~4.30~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.17
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 6.00/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	4.4
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	18.0
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]****31.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]****31.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMD200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

**Note**

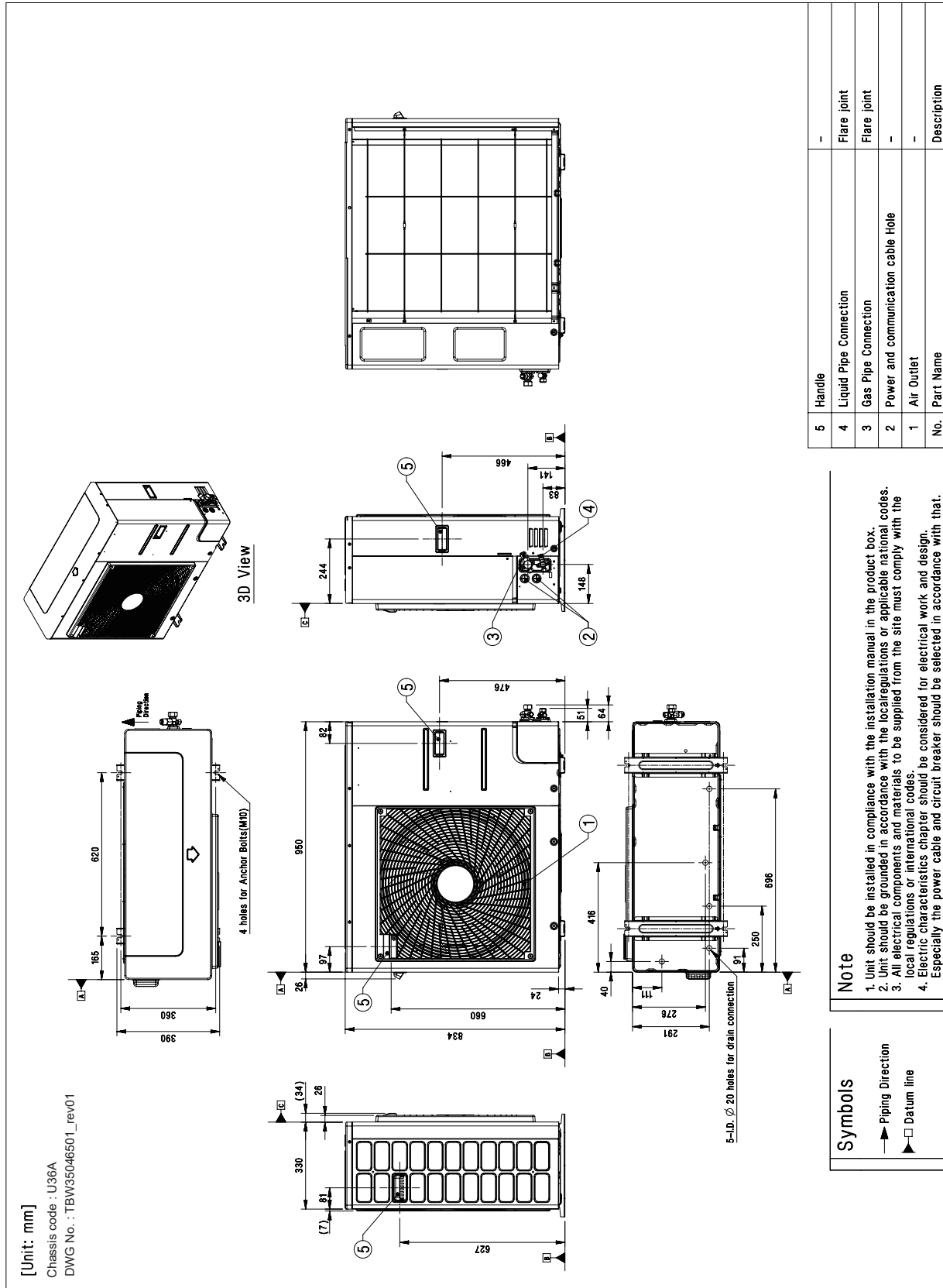
- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.



31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

31.4 Dimensions

31.4.1 Product



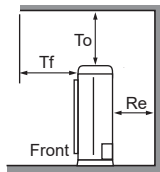
31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

31.4.2 Install Space

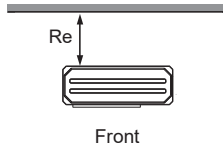
For Side Discharge (capacity < 28.0 kW)

Obstacle on the Suction side

[Unit : mm(inch)]

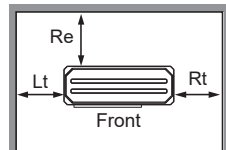


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

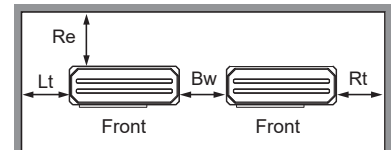


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



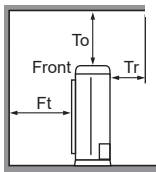
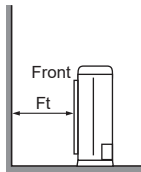
**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)



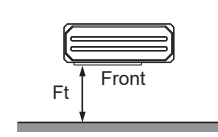
**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

Obstacle on the Discharge side

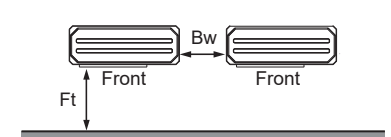
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

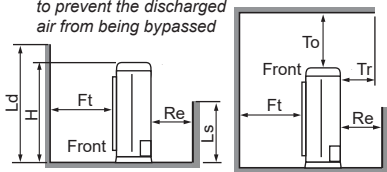


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

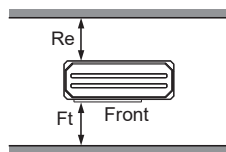
Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

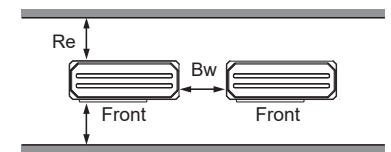
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

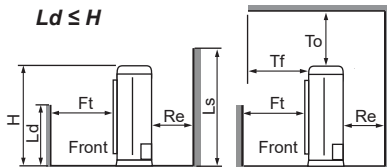


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



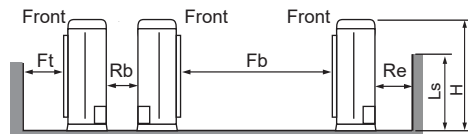
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

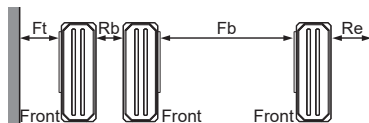
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

Collective/Continuous Installation (Multiple Columns)

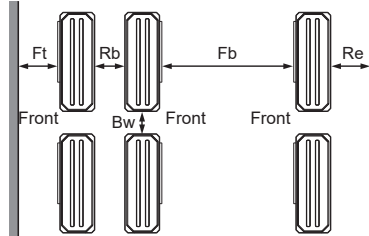


※ In case of Multiple columns/continuous installation, Ls should be lower than H.



1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)



Multiple Columns

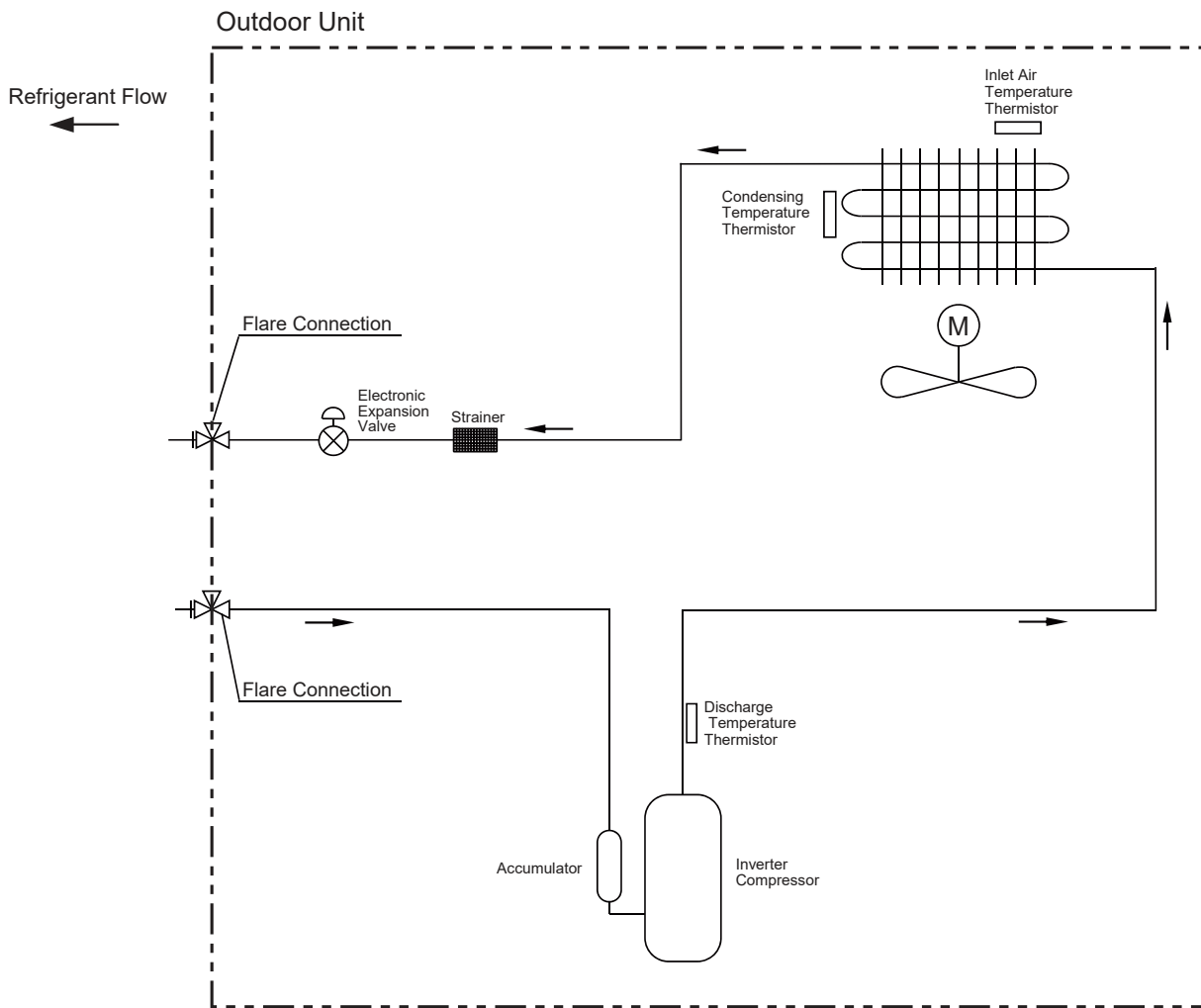
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

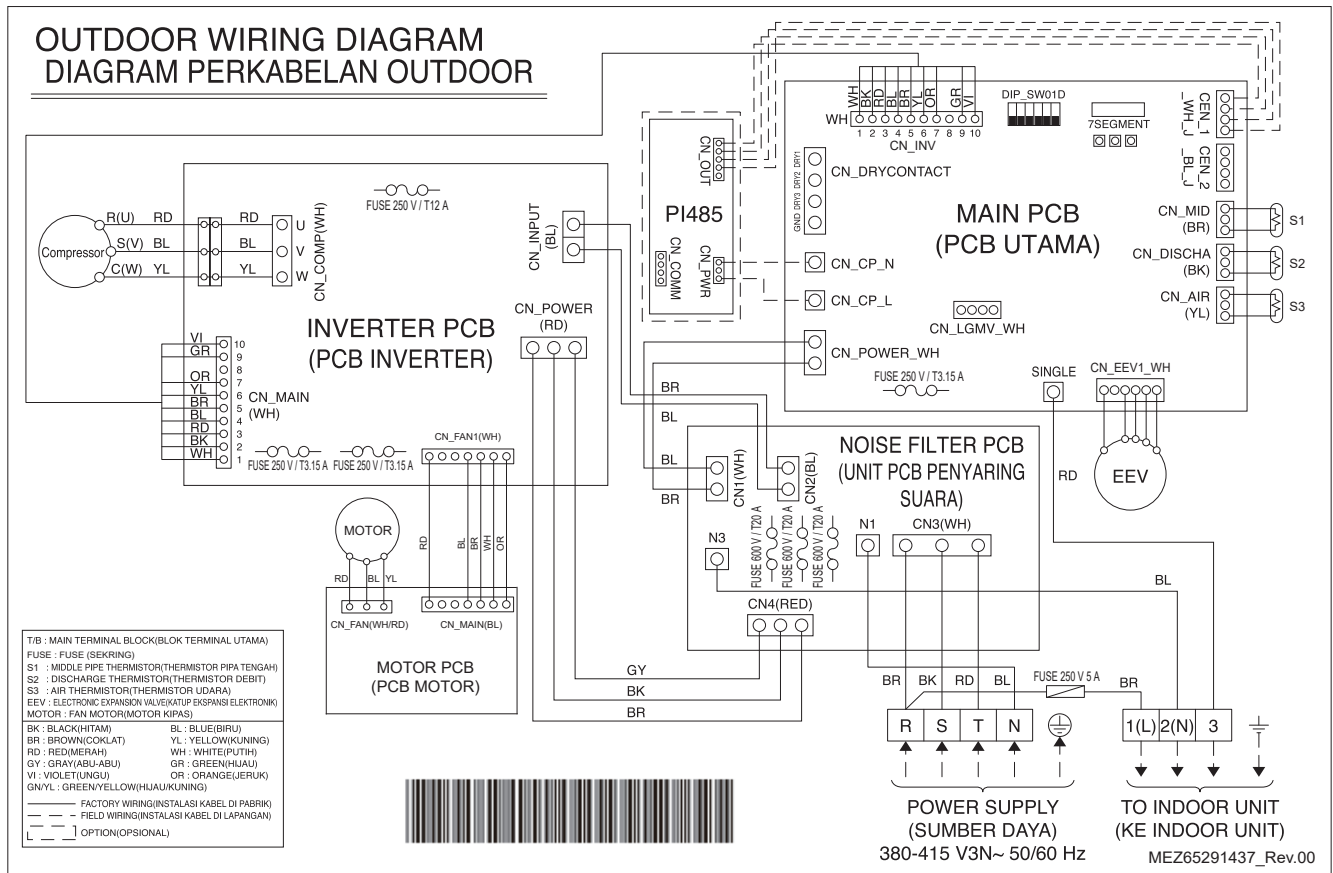
31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

31.5 Piping Diagrams



31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

31.6 Wiring Diagrams



**31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]****31.7 Capacity Tables****31.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	7.99	7.95	1.75	10.39	9.85	2.20	12.22	11.45	2.55	13.61	12.25	2.79	14.07	12.17	2.82	15.00	12.02	2.88	16.06	11.87	2.89
25	7.99	7.95	2.07	10.39	9.85	2.59	12.22	11.45	3.00	13.61	12.25	3.30	14.07	12.17	3.33	15.00	12.02	3.39	16.06	11.87	3.41
32	7.99	7.95	2.51	10.39	9.85	3.15	12.22	11.45	3.65	13.61	12.25	4.00	14.07	12.17	4.04	15.00	12.02	4.12	16.06	11.87	4.14
35	7.99	7.95	2.70	10.39	9.85	3.38	12.22	11.45	3.92	13.61	12.25	4.30	14.07	12.17	4.34	15.00	12.02	4.43	16.06	11.87	4.46
40	7.99	7.95	2.52	10.39	9.85	3.17	12.22	11.45	3.67	12.50	11.44	4.03	12.92	11.35	4.07	13.77	11.18	4.15	14.74	11.00	4.17
43	7.99	7.95	2.42	10.39	9.85	3.04	11.59	10.93	3.52	11.83	10.94	3.86	12.23	10.85	3.90	13.04	10.66	3.98	13.95	10.48	4.00
46	7.99	7.95	2.32	10.39	9.85	2.92	10.94	10.32	3.38	11.16	10.44	3.70	11.54	10.34	3.74	12.30	10.14	3.81	13.17	9.95	3.83
48	7.99	7.95	2.23	10.39	9.85	2.80	10.47	9.88	3.24	10.68	10.07	3.57	10.98	9.92	3.61	11.58	9.61	3.68	12.28	9.33	3.70
50	7.99	7.95	2.14	9.80	9.40	2.68	10.00	9.54	3.11	10.21	9.69	3.44	10.43	9.48	3.47	10.87	9.07	3.54	11.40	8.69	3.56

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table.  
Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]****31.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

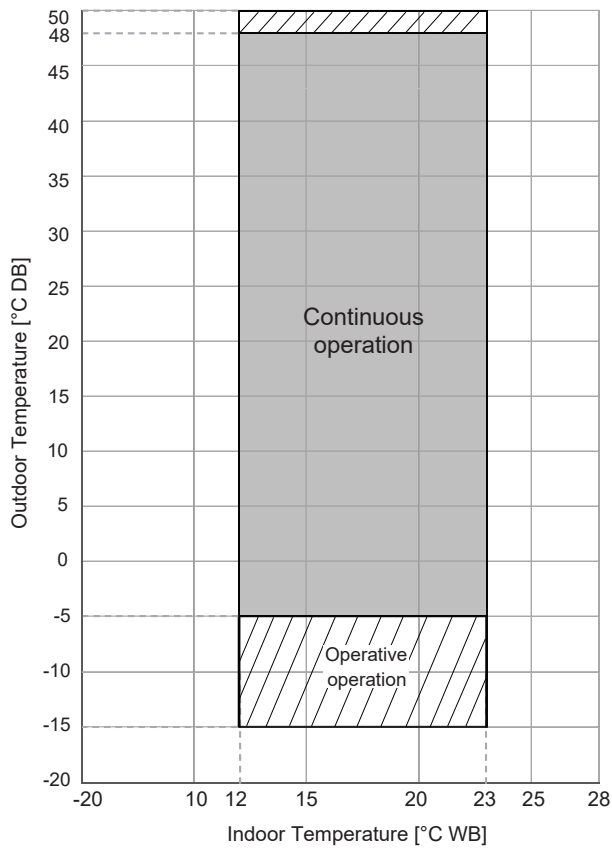
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]**

**31.9 Operation Limits**

**31.9.1 Cooling**



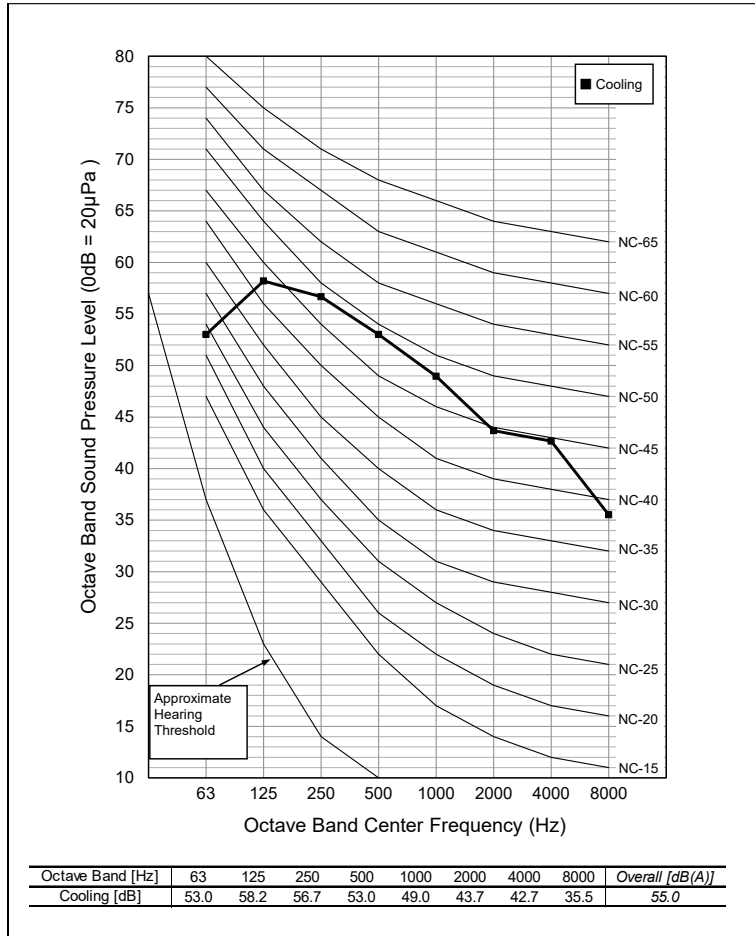
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

31. ZUUQ36LA0 [ZUAD3] + ZBNQ48LM3A0 [ZBNQ48LM3A0]

31.10 Sound Levels

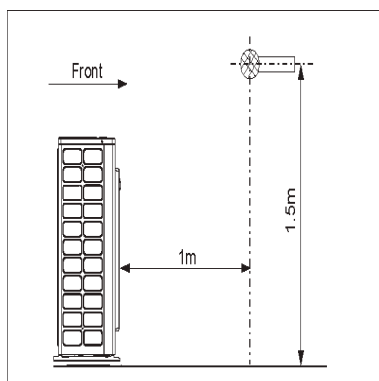
31.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.





## 32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

## 32.1 Specifications

Category		Unit	Value
Major	Minor		
<b>Combinational Specification</b>			
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Cooling Capacity	Rated	kW	10.54
		Btu/h	36,000
	Min ~ Max	kW	3.15~11.71
		Btu/h	10,800~40,000
	Sensible Heat (Rated)	kW	7.53
		Btu/h	25,711
Heating Capacity	Rated	kW	-
		Btu/h	-
	Min ~ Max	kW	~
		Btu/h	~
	Low Heating Max (-7°C/19.4°F)	kW	-
		Btu/h	-
Power Input(Cooling)	Min ~ Rated ~ Max	kW	~3.51~
Power Input(Heating)	Min ~ Rated ~ Max	kW	~
Efficiency	EER	W/W	3.01
	COP	W/W	-
Running Current(Cooling)	Min/Rated/Max	A	- / 4.90/
Running Current(Heating)	Min/Rated/Max	A	- / - /
Running Current	Maximum	A	12.00
Power Factor(Cooling/Heating)	Rated	-	0.92 / 0.92
Dehumidification Rate	-	ℓ/h	2.02
Refrigerant	Type	-	R32
	Additional Charging amount	g/m	40
	Chargeless-Pipe Length	m	15
Connecting Pipe	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
Piping Length	IDU - ODU(Rated / Max / Min)	m	7.5 / 50 / 5
Maximum Height Difference	IDU - ODU(Max)	m	30
Sound Pressure Level(Outdoor Unit)	Cooling / Heating (@ 1.5m height)	dB(A)	55 / -
Measurement Standard (Pressure Level)	-	-	ISO 3745
Sound Power Level(Outdoor Unit)	Cooling / Heating	dB(A)	-
Measurement Standard (Power Level)	-	-	-
Electrical Characteristic	Minimum Circuit Amperes (MCA)	A	16.3
	Maximum Fuse Amperes (MFA)	A	20
	Comp_Rated Load Amperes (Max)	A	12.0
	Outdoor Fan Motor_Full Load Amperes (FLA / Max)	A	0.48
<b>Outdoor Unit Specification</b>			
Classification	Chassis	-	U36A
Power Supply	#1	-	380-400-415, 3, 50/60
	#2	-	-
	Limit Range of Voltage	V	342~456
Outdoor Fan	Type	-	Axial Fan
	Air Flow Rate(Max)	m <sup>3</sup> /min x No.	60 X 1
	Max. External Static Pressure	mmAq	-
Outdoor Fan Motor	Type	-	BLDC

## 32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

Category		Unit	Value
Major	Minor		
Outdoor Fan Motor	Drive	-	External
	Output	W x No.	124.0 x 1
Compressor	Type	-	Twin Rotary
	Model x No.	-	DPT442MAB x 1
	Motor Type	-	BLDC
	Motor Output	W x No.	4,000 x 1
	Oil Type	-	FW68D
	Oil Charging amount	cc x No.	1,300 x 1
Heat Exchanger	Rows x Columns x FPI	-	2 X 38 X 18
	No.	-	1
	Fin Type	-	Louver
	Corrosion Protection (Coating)	-	-
	Material (Tube / Fin)	-	-
	Face Area	m <sup>2</sup>	0.75
Dimensions	Net(W x H x D)	mm	950 x 834 x 330
	Shipping(W x H x D)	mm	1065 x 918 x 461
Weight	Net	kg	60.8
	Shipping	kg	68.7
Exterior	Color	-	Warm Gray
	RAL (Classic)	-	RAL 7044
Protection Device	High Pressure Prevention	-	-
	Frost Prevention	-	-
	Discharge Temperature Control	-	O
	Inverter Protection	-	O
Refrigerant	Type	-	R32
	Precharged Amount	kg	1.8
	Control Type	-	EEV
Drain Pipe(using Drain Pump)	Material	-	-
	O.D / I.D	mm(inch)	-
	Insulation Thickness	mm	-
Pipe Connecting Socket	Liquid	mm(inch)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)
	Connection Type(Liquid)	-	Flare
	Connection Type(Gas)	-	Flare
Connecting Cable	Power Supply Cable(H07RN-F)	mm <sup>2</sup> x cores	2.5 X 5C

**Note**

- Due to our policy of innovation some specifications may be changed without notification.
  - Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
  - Power factor could vary less than ±1% according to the operating conditions.
  - Sound level values are depend on the ambient conditions and values are normally higher in actual operation.
  - This product contains Fluorinated greenhouse gases.
  - Voltage supplied to the unit terminals should be within the minimum and maximum range.
  - Maximum allowable voltage unbalance between phase is 2%.
  - MSC means the Max. current during the starting of compressor.
  - MSC and RLA are measured as the compressor only test condition.
  - OFM and IFM are measured as the outdoor unit test condition.
  - Select the wire size based on MCA.
  - MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].
- Performances are based on the following conditions :
- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB
  - Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB
  - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

**32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]****32.2 List of Functions**

Category	Functions	Value
Reliability	Defrost / Deicing	X
	High Pressure Switch	X
	Low Pressure Switch	X
	Phase Protection	O
	Restart Delay (3-minutes)	O
	Self Diagnosis	O
	Soft Start	X
Convenience	Night Low Noise Operation	O
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Forced Cooling Operation (Outdoor Unit)	X
	SLC(Smart Load Control)	X
	Auto Detecting Mode	X
Special Functions	ODU Dry Contact Function	O (on/off control)

**Note**

■ O : Applied, X : Not applied

- Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

**32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]****32.3 Accessory Compatibility List**

Category	Accessory Name	Model Name	Description	Value
Central Controller	AC EZ	PQCSZ250S0	Small type	O
	AC EZ touch	PACEZA000	Small / Touch type	O
	AC Smart IV	PACS4B000	Touch type	O
	AC Smart 5	PACS5A000	Touch type	O
	ACP IV	PACP4B000	-	O
	ACP 5	PACP5A000	-	O
	AC Manager IV	PACM4B000	Integrated	O
	AC Manager 5	PACM5A000	Integrated	O
Gateway	ODU PI485	PMNFP14A1	For 16-room (3 series)	O
	ACP BACnet	PQNFB17C0	-	O
	ACP Lonwork	PLNWKB000	-	O
	Cloud Gateway	PWFMDDB200	-	X
Integration Device	AHU comm. kit	PAHCMR000	For AHU Control (Multi V / Single ODU Communication)	X
		PAHCMS000	For AHU Control (Multi V / Single ODU Communication)	X
	AHU Controller Module	PAHCMC000	For AHU Control (Communication Module)	X
		PAHCMM000	For AHU Control (Main Module)	X
	PDI Standard	PPWRDB000	Power distributor 2port	X
	PDI Premium	PQNUD1S40	Power distributor 8port	X

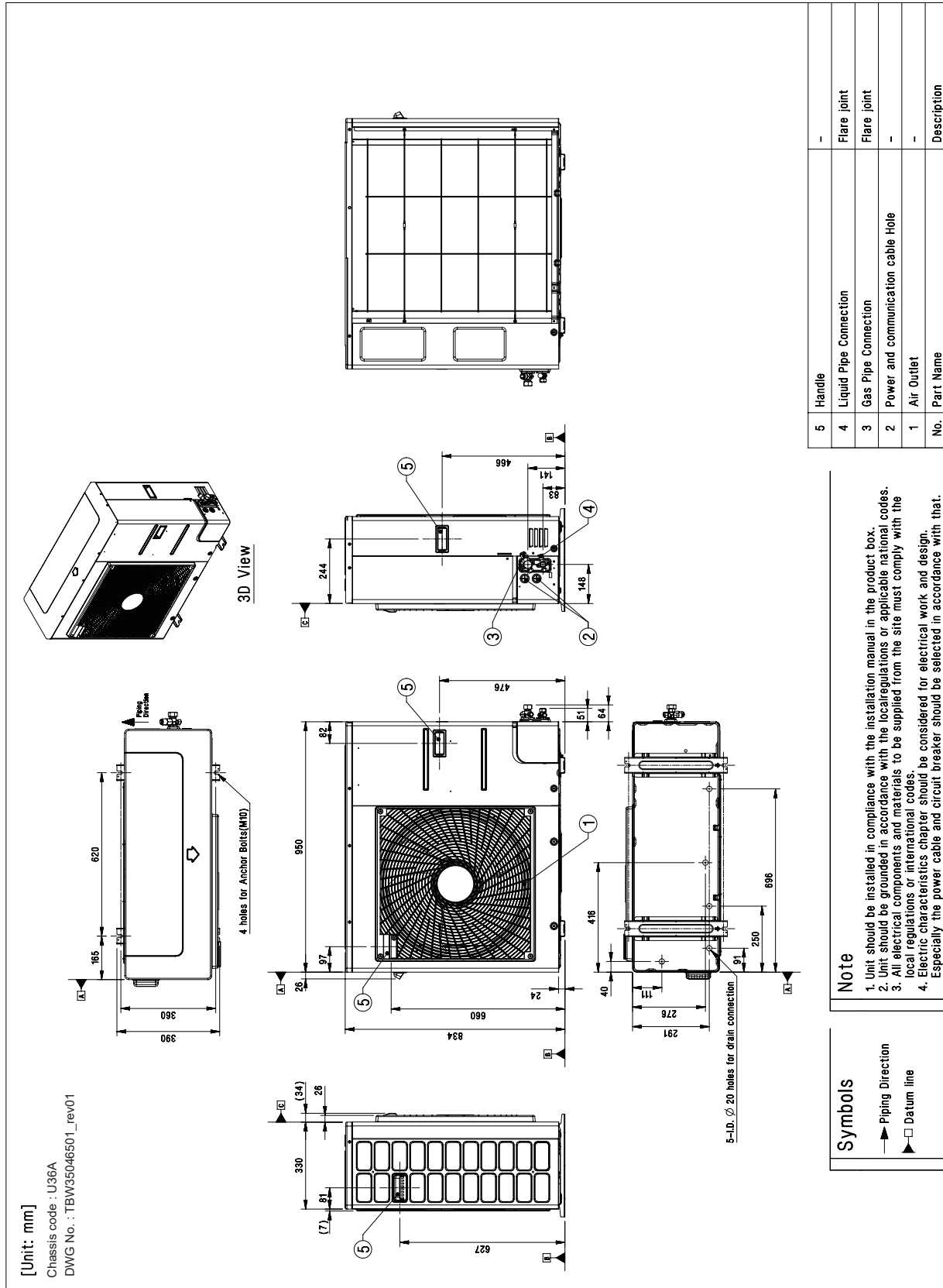
**Note**

- O: Possible, X: Impossible, -: Unconfirmed or irrelevant
- AC Manager requires ACP or AC Smart.
- Compatibility of individual controller(wireless/wired remote controller) could be found with function list on Indoor Unit's PDB.
- If you need more detail, please refer to the Control(BECON) PDB or the manual of product.  
(<http://partner.lge.com/global> : Home> Doc.Library> Product > Control(BECON)).
- Accessory line-ups varies by region, so check your local catalogue or local sales material.

32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

32.4 Dimensions

32.4.1 Product

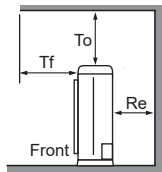


### 32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

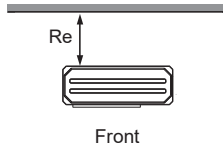
#### 32.4.2 Install Space

For Side Discharge (capacity < 28.0 kW)

##### Obstacle on the Suction side

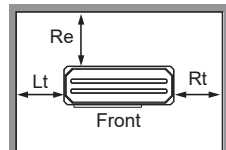


To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

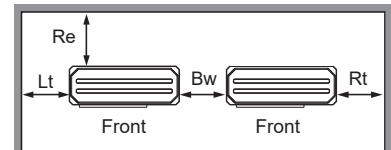


**Case 1**  
Re ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)

※ Case 1 : No obstacle on top side  
Case 2 : Obstacle on top side



**Case 1**  
Re ≥ 100(3-15/16)  
Lt ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 150(5-29/32)  
Rt ≥ 150(5-29/32)

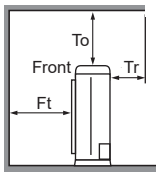
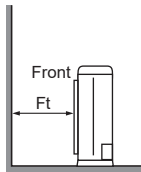


**Case 1**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Re ≥ 300(11-13/16)  
Lt ≥ 1,000(39-3/8)  
Rt ≥ 200(7-7/8)  
Bw ≥ 100(3-15/16)

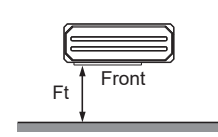
[Unit : mm(inch)]

##### Obstacle on the Discharge side

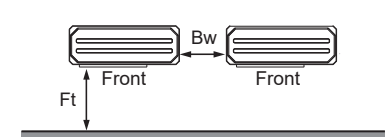
※ For Rear Piping / External SVC Valve type / Side-CBOX type  
: Re, Lt ≥ 300(11-13/16) and Rt, Bw, Rb ≥ 600(23-5/8) for ALL CASE.



To ≥ 1,000(39-3/8)  
Tr ≤ 500(19-11/16)



**Case 1**  
Ft ≥ 500(19-11/16)  
**Case 2**  
Ft ≥ 500(19-11/16)

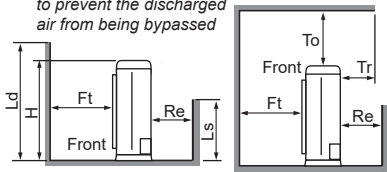


**Case 1**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Bw ≥ 100(3-15/16)

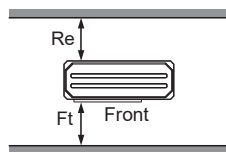
##### Obstacle on the Suction and Discharge side

Ld > H (Ls should be lower H.)

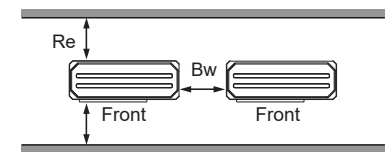
※ Close the bottom of the installation frame to prevent the discharged air from being bypassed



To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

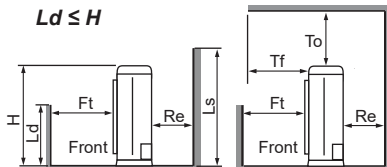


**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8) \*  
Re ≥ 300(11-13/16)  
\* If Ls ≤ H/2,  
Ft ≥ 750(29-17/32)



**Case 1**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,250(49-7/32)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

Ld ≤ H



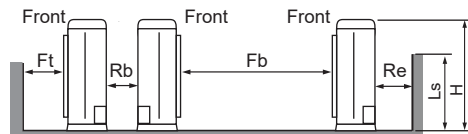
To ≥ 1,000(39-3/8)  
Tf ≤ 500(19-11/16)

**Case 1**  
Ft ≥ 500(19-11/16)  
Re ≥ 300(11-13/16)  
**Case 2**  
Ft ≥ 1,000(39-3/8)  
Re ≥ 300(11-13/16)

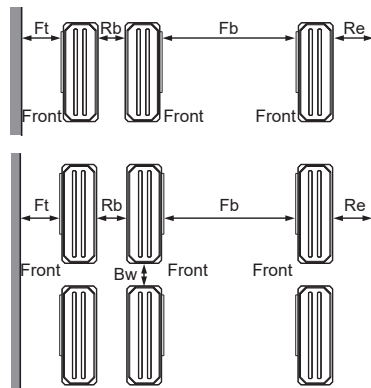
**Case 1**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)  
**Case 2**  
Ft ≥ 1,500(59-1/16)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

※ In case of series installation (2 Units or more) for 2 Fan models, Ld should be lower than H/2.

##### Collective/Continuous Installation (Multiple Columns)



※ In case of Multiple columns/continuous installation, Ls should be lower than H.



##### 1 Column

Ft ≥ 1,000(39-3/8)  
Rb ≥ 200(7-7/8)  
Fb ≥ 2,000(78-3/4)  
Re ≥ 100(3-15/16)

##### Multiple Columns

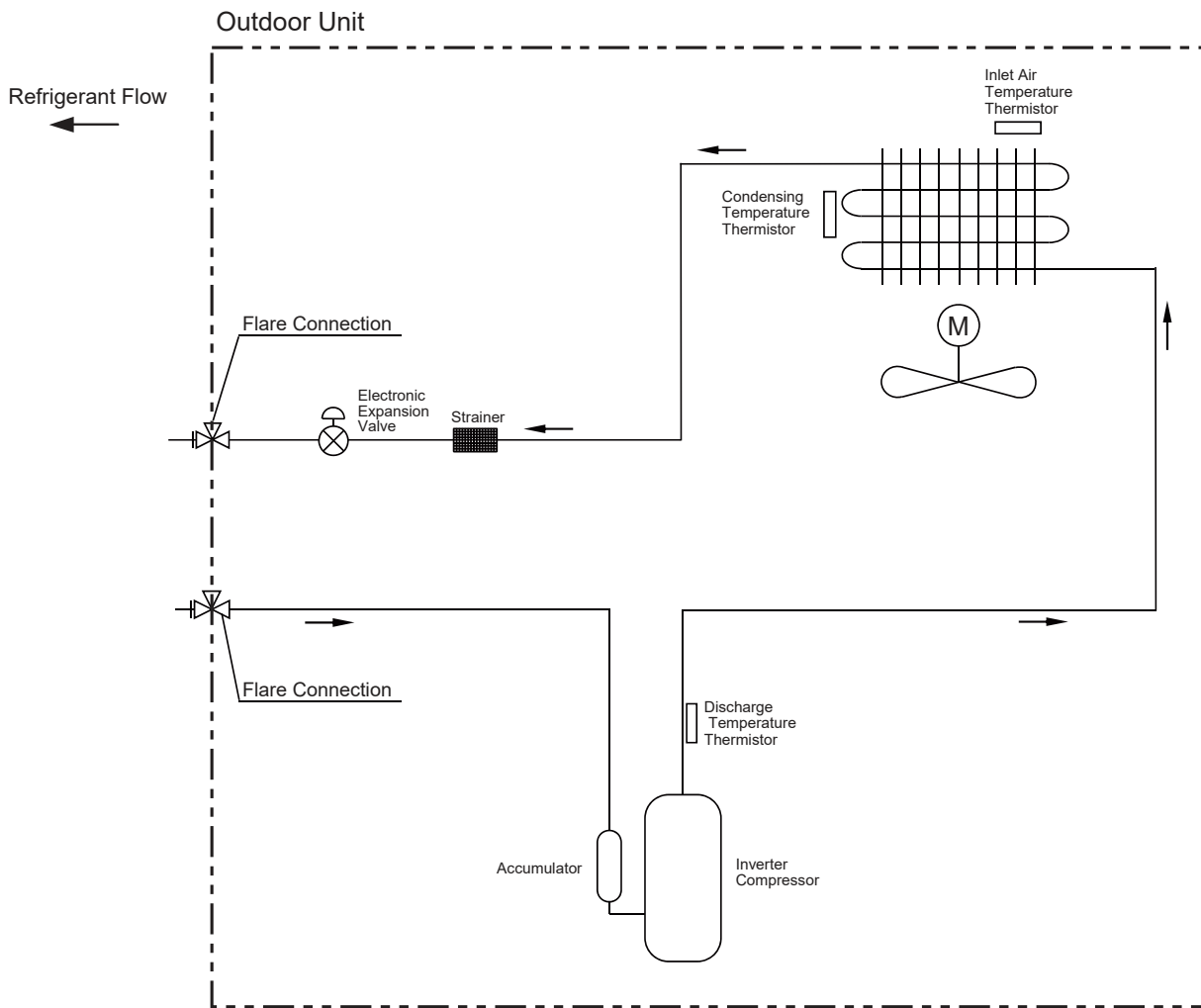
Ft ≥ 1,500(59-1/16)  
Rb ≥ 600(23-5/8)  
Fb ≥ 3,000(118-1/8)  
Re ≥ 300(11-13/16)  
Bw ≥ 100(3-15/16)

##### Note

- If there is a concern about product performance degradation due to group installation or interference with obstacles, secure an additional separation distance.
- Secure enough space for smooth service and maintenance.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

32.5 Piping Diagrams







**32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]****32.7 Capacity Tables****32.7.1 Cooling**

Outdoor Air Temp. (°C, DB)	Indoor Air Temp. (°C, DB/WB)																				
	20.0 / 14.0			22.0 / 16.0			25.0 / 18.0			27.0 / 19.0			28.0 / 20.0			30.0 / 22.0			32.0 / 24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
20	6.19	5.07	1.43	8.05	6.06	1.79	9.46	7.04	2.08	10.54	7.53	2.28	10.90	7.48	2.30	11.62	7.39	2.35	12.43	7.29	2.36
25	6.19	5.07	1.69	8.05	6.06	2.12	9.46	7.04	2.45	10.54	7.53	2.69	10.90	7.48	2.72	11.62	7.39	2.77	12.43	7.29	2.79
32	6.19	5.07	2.05	8.05	6.06	2.57	9.46	7.04	2.98	10.54	7.53	3.26	10.90	7.48	3.29	11.62	7.39	3.36	12.43	7.29	3.38
35	6.19	5.07	2.20	8.05	6.06	2.76	9.46	7.04	3.20	10.54	7.53	3.51	10.90	7.48	3.55	11.62	7.39	3.62	12.43	7.29	3.64
40	6.19	5.07	2.34	8.05	6.06	2.93	9.46	7.04	3.40	10.54	7.53	3.73	10.90	7.48	3.77	11.62	7.39	3.84	12.43	7.29	3.86
43	6.19	5.07	2.42	8.05	6.06	3.04	9.46	7.04	3.52	10.54	7.53	3.86	10.90	7.48	3.90	11.62	7.39	3.98	12.43	7.29	4.00
46	6.19	5.07	2.51	8.05	6.06	3.15	9.46	7.04	3.61	9.70	7.00	3.69	10.03	6.95	3.73	10.69	6.85	3.80	11.44	6.75	3.82
48	6.19	5.07	2.59	8.05	6.06	3.26	9.24	6.94	3.56	9.43	6.87	3.63	9.69	6.78	3.67	10.22	6.59	3.74	10.83	6.42	3.76
50	6.19	5.07	2.69	8.05	6.06	3.37	8.99	6.73	3.51	9.17	6.72	3.58	9.36	6.59	3.62	9.75	6.32	3.69	10.22	6.09	3.71

**Note**

- DB : Dry bulb temperature(°C), WB : Wet bulb temperature(°C)
- TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)
- PI : Power Input (kW, Compressor + indoor fan motor + outdoor fan motor)
- All capacities are net. A deduction of capacity due to operating heat of indoor unit motor is reflected.
- Direct interpolation is permissible. Do not extrapolate.
- Rated capacities and power inputs are based on standard temperature and piping conditions, and it can be found on specifications table. Except for rated value, the performance is not guaranteed.
- In accordance with the test standard(or nations), the rating will vary slightly.

**32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]****32.8 Capacity Correction Factor**

Operation	Capacity correction factor (%) by Equivalent pipe length (m)										
	5	7.5	10	15	20	25	30	35	40	45	50
Cooling	100.0	100.0	99.7	98.6	97.3	95.8	94.4	93.1	91.8	90.4	89.1

**Note**

In Order to estimate the actual system capacity, the influence of various installation conditions should be reflected.

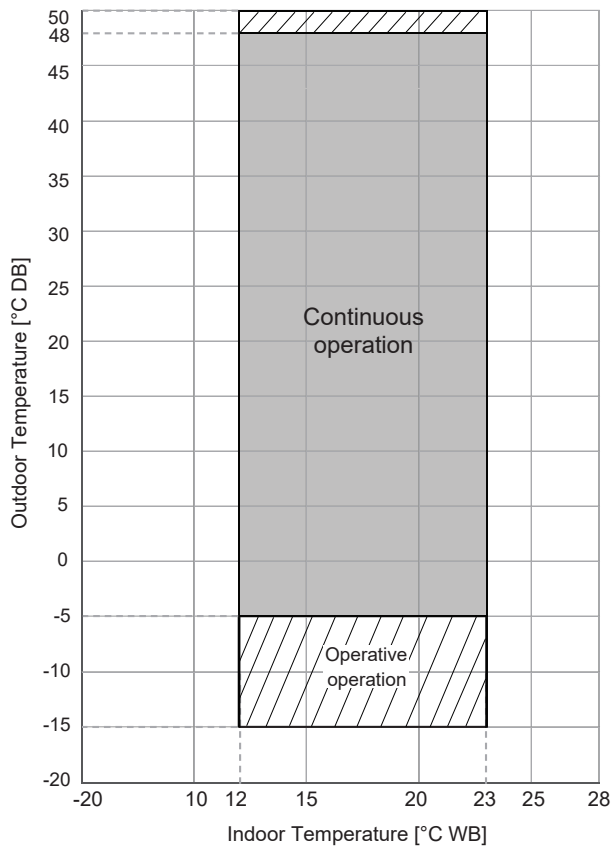
Reflect the capacity correction factor effect of piping installation as below.

- Qodu [from specification table] : Outdoor unit standard capacity.
- Q(Ti, To) [from capacity table] : Outdoor unit capacity at Ti, To temperature.
- F(Ti, To) = Q(Ti, To) / Qodu. : Outdoor unit capacity correction factor
- Fpiping for piping length [from capacity correction factor table] : Piping correction factor
- Indoor unit actual capacity : Qactual = Qodu x F(Ti, To) x Fpiping

**32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]**

**32.9 Operation Limits**

**32.9.1 Cooling**



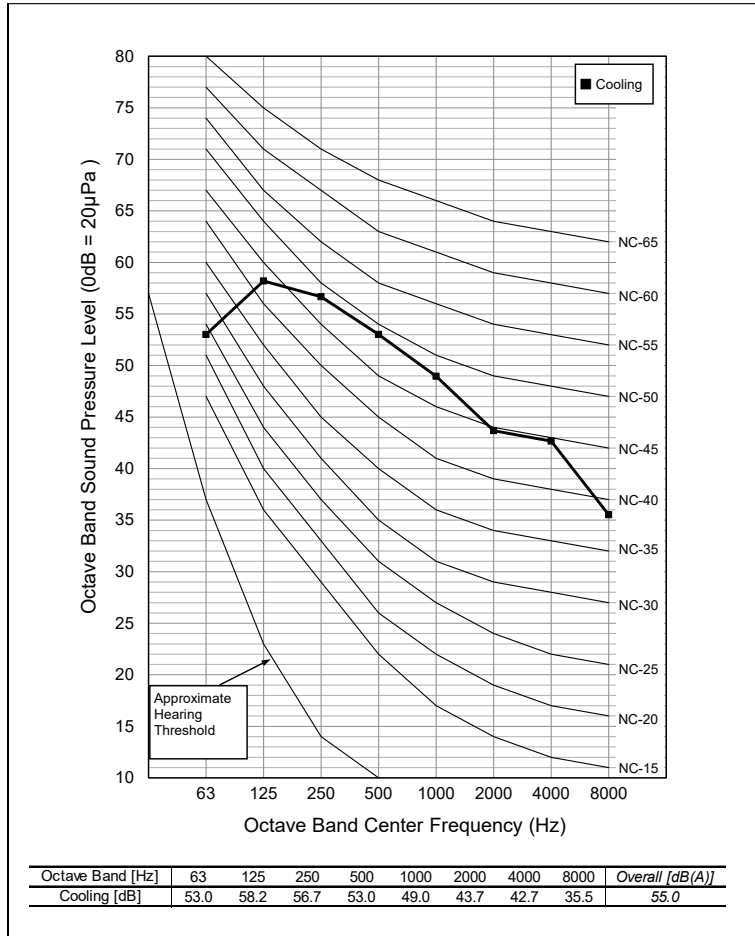
**Note**

- Warming up operation and operative mean that the outdoor unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.

32. ZUUQ36LA0 [ZUAD3] + ZPNQ36LR5A0 [ZPNQ36LR5A0]

32.10 Sound Levels

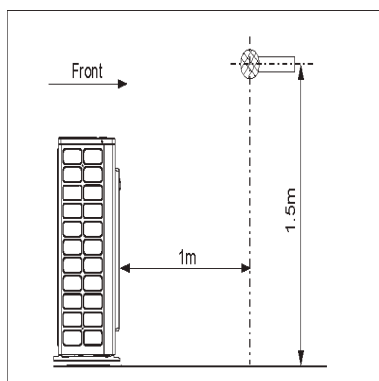
32.10.1 Pressure Levels



Sound level [ dB(A), @ Standard condition ]	
Cooling / Heating (@ 1.5m height)	55 / -

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference acoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions. (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



Installation

**Installation for Outdoor Unit**

## 1. Information for Refrigerant

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### 1.1 Alternative Refrigerant

- The refrigerant R32 has a lower GWP (Global Warming Potential) value, and higher efficiency than R410A. The Ozone Depletion Potential (ODP) of R32 is 0, and Global Warming Potential(GWP) is 675.
- Refrigerant piping consists of copper/steel pipes, joints, and other fittings. All components must be selected and installed in conformity with the standards pertaining to the Refrigeration Safety Regulation.
- Same piping as for R410A can be used.

#### **< ! > WARNING**

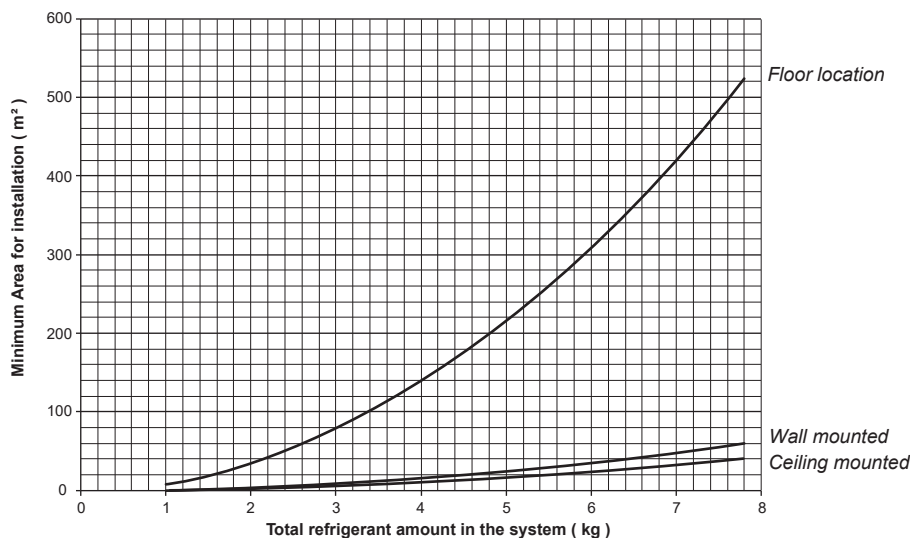
- This product contains fluorinated greenhouse gases (Refrigerant type : R32).  
DO NOT LEAK refrigerant gases into the atmosphere.
- The refrigerant R32 is a Slightly Flammable gas. It does not leak normally. If the refrigerant leaks in the installed place and is in contact with a flaming source, it may cause fire, or a harmful gas.
- If there is some leak, turn off any combustion devices, ventilate the installation location, and contact the dealer from which you purchased the unit. Do not use the unit until the refrigerant leaked is repaired.
- Only use R32 as refrigerant. Other substances may cause explosions and accidents.

#### **< ! > CAUTIONS**

- The wall thickness of the piping should comply with the relevant local and national regulations for the designed pressure.
- For high-pressure refrigerant, any unapproved pipe must not be used.
- Do not heat pipes more than necessary to prevent them from softening.

# 1. Information for Refrigerant

## 1.2 Minimum Floor Area for Installation : accordance with IEC05



### <I> CAUTIONS

- "Minimum Area for installation" might be different by revision of IEC regulation. "Minimum Area for installation" should be selected in accordance with that revision based on the local and national environment.
- The following information is according to '**IEC 60335-2-40:2013+A1:2016 Edition 5.1'**.
- Pipe-work shall be protected from physical damage and shall not be installed in an unventilated space, if that space is smaller than minimum area for installation.
- The unit should be installed, operated and stored in a room with a floor area larger than the minimum area.  
Use the upper graph or the below table to determine the minimum area.
  - $m_c$  : Total refrigerant amount in the system = factory refrigerant charge + additional refrigerant amount (kg)
  - $A_{min}$  : Minimum Area for installation of unit

$m_c$ (kg)	$A_{min}$		
	Floor Location	Wall Mounted	Ceiling Mounted
1.0	8.58	0.95	0.64
1.224	12.90	1.43	0.958
1.4	16.82	1.87	1.25
1.6	21.97	2.44	1.63
1.8	27.80	3.09	2.07
2.0	34.32	3.81	2.55
2.2	41.53	4.61	3.09
2.4	49.42	5.49	3.68
2.6	58.00	6.44	4.31
2.8	67.27	7.47	5.00
3.0	77.22	8.58	5.74
3.2	87.86	9.76	6.54
3.4	99.19	11.02	7.38
3.6	111.20	12.36	8.27
3.8	123.90	13.77	9.22
4.0	137.29	15.25	10.21
4.2	151.36	16.82	11.26
4.4	166.12	18.46	12.36
4.6	181.56	20.17	13.50
4.8	197.70	21.97	14.70
5.0	214.51	23.83	15.96
5.2	232.02	25.78	17.26
5.4	250.21	27.80	18.61
5.6	269.09	29.90	20.01
5.8	288.65	32.07	21.47
6.0	308.90	34.32	22.98
6.2	329.84	36.65	24.53
6.4	351.46	39.05	26.14
6.6	373.77	41.53	27.80
6.8	396.76	44.08	29.51
7.0	420.45	46.72	31.27
7.2	444.81	49.42	33.09
7.4	469.87	52.21	34.95
7.6	495.61	55.07	36.86
7.8	522.04	58.00	38.83

## 1. Information for Refrigerant

### 1.3 Minimum Floor Area for Installation : accordance with IEC06

#### <!/ CAUTIONS

• "Minimum Area for installation" might be different by revision of IEC regulation. "Minimum Area for installation" should be selected in accordance with that revision based on the local and national environment.

• The following information is according to '**IEC 60335-2-40:2018 Edition 6.0**'.

• Pipe-work shall be protected from physical damage and shall not be installed in an unventilated space, if that space is smaller than minimum area for installation.

• The unit should be installed, operated and stored in a room with a floor area larger than the minimum area.

Use the below calculation formula to determine the minimum area.

-  $m_c$  : Total refrigerant amount in the system = factory refrigerant charge + additional refrigerant amount (kg)

-  $A_{min}$  : Minimum Area for installation of unit

- LFL : Lower flammability limit (kg/m<sup>3</sup>). In case of R32, LFL is 0.307 kg/m<sup>3</sup>

-  $h_0$  : Height of unit installation

Choose the higher of the two values.

$$A_{min} = [m_c / (2.5 \times LFL^{5/4} \times h_0)]^2 \text{ or } A_{min} = m_c / (0.75 \times LFL \times h_0)$$

\* The table below is a reference value, and the exact value is calculated and applied.

$m_c$ (kg)	$A_{min}$	$m_c$ (kg)	$A_{min}$	$m_c$ (kg)	$A_{min}$
< 1.842	No Limit	6.6	27.6	11.6	85.2
1.842	3.6	6.8	29.3	11.8	88.1
2.0	3.9	7.0	31.0	12.0	91.2
2.2	4.3	7.2	32.8	12.2	94.2
2.4	4.7	7.41	34.7	12.4	97.3
2.6	5.1	7.6	36.6	12.6	100.5
2.8	5.5	7.8	38.5	12.8	103.7
3.0	5.9	8.0	40.5	13.0	107.0
3.2	6.5	8.2	42.6	13.2	110.3
3.4	7.3	8.4	44.7	13.4	113.7
3.6	8.2	8.6	46.8	13.6	117.1
3.8	9.1	8.8	49.0	13.8	120.6
4.0	10.1	9.0	51.3	14.0	124.1
4.2	11.2	9.2	53.6	14.2	127.6
4.4	12.3	9.4	55.9	14.4	131.3
4.6	13.4	9.6	58.3	14.6	134.9
4.8	14.6	9.8	60.8	14.8	138.7
5.0	15.8	10.0	63.3	15.0	142.4
5.2	17.1	10.2	65.9	15.2	146.3
5.4	18.5	10.4	68.5	15.4	150.1
5.6	19.9	10.6	71.1	15.6	154.1
5.8	21.3	10.8	73.8	15.8	158.0
6.0	22.8	11.0	76.6	15.964	161.3
6.2	24.3	11.2	79.4		
6.4	25.9	11.4	82.3		



## 2. Selection of the best Location

---

### 2.1 Best Location

Select space for installing outdoor unit, which will meet the following conditions:

- No direct thermal radiation from other heat sources.
- No possibility of annoying neighbors due to noise of unit.
- No exposition to strong wind.
- Place with strength which bears weight of unit.
- Note that drain flows out of unit when heating mode operation (except for Cooling only model).
- Because of the possibility of fire, do not install unit to the space where generation, inflow, stagnation, and leakage of combustible gas is expected.
- Avoid unit installation in a place where acidic solution and spray (sulfur) are often used.
- Do not use unit under any special environment where oil, steam and sulfuric gas exist.
- It is recommended to fence round the outdoor unit in order to prevent any person or animal from accessing the outdoor unit.
- If installation site is area of heavy snowfall, then the following directions should be observed.
  - Make the foundation as high as possible / Fit a snow protection hood.
- Select installation location considering following conditions to avoid bad condition when performing defrost operation.
  - Install the unit at a place well ventilated and having a lot of sunshine in case of installing the product at a place with a high humidity in winter (near beach, coast, lake, etc).  
(Ex) Rooftop where sunshine always shines.
  - Performance of heating will be reduced and pre-heat time of the indoor unit may be lengthened in case of installing the outdoor unit in winter at following location:
    - ▷ Shade position with a narrow space.
    - ▷ Location with much moisture in neighboring floor.
    - ▷ Location with much humidity around.  
It is recommended to install the outdoor unit at a place with a lot of sunshine as possible as.
    - ▷ Location where liquid gathers since the floor is not even.
    - ▷ When installing the outdoor unit in a place that is constantly exposed to a strong wind like a coast or on a high story of a building, secure a normal fan operation by using a duct or a wind shield.

#### ■ Cautions corresponding to strong/seasonal wind

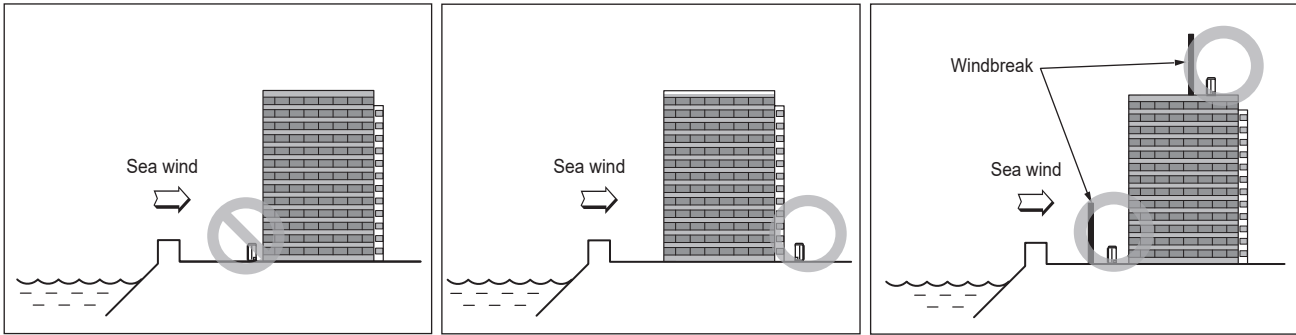
- When the "Outdoor unit of Side Discharge Type" is installed in a place that is constantly exposed to a strong wind like a coast or on a high story of a building, secure a normal fan operation by using a duct or a wind shield.
  - Don't install the suction hole and discharge hole of the Outdoor unit facing the seasonal wind.
  - Install the unit so that its discharge port faces to the wall of the building.  
Keep a distance 500mm or more between the unit and the wall surface.
  - Supposing the wind direction during the operation season of the air conditioner, install the unit so that the discharge port is set at right angle to the wind direction.

#### ■ Cautions in winter

- Sufficient measures are required in a snow area or severe cold area in winter so that product can be operated well.
- Get ready for seasonal wind or snow in winter even in other areas.
- Install a suction and discharge duct not to let in snow or rain.
- Install the outdoor unit not to come in contact with snow directly. If snow piles up and freezes on the air suction hole, the system may malfunction. If it is installed at snowy area, attach the hood to the system.
- Where snow accumulated on the upper part of the Outdoor Unit, always remove snow for operation.
- If width of the frame is wider than that of the product, snow may accumulate. So, its width shall not exceed the width of the product.

## 2. Selection of the best Location

### 2.2 Special guide for installation at the Seaside



※ This figure is representative. Actual appearance of outdoor unit may be different by product type.

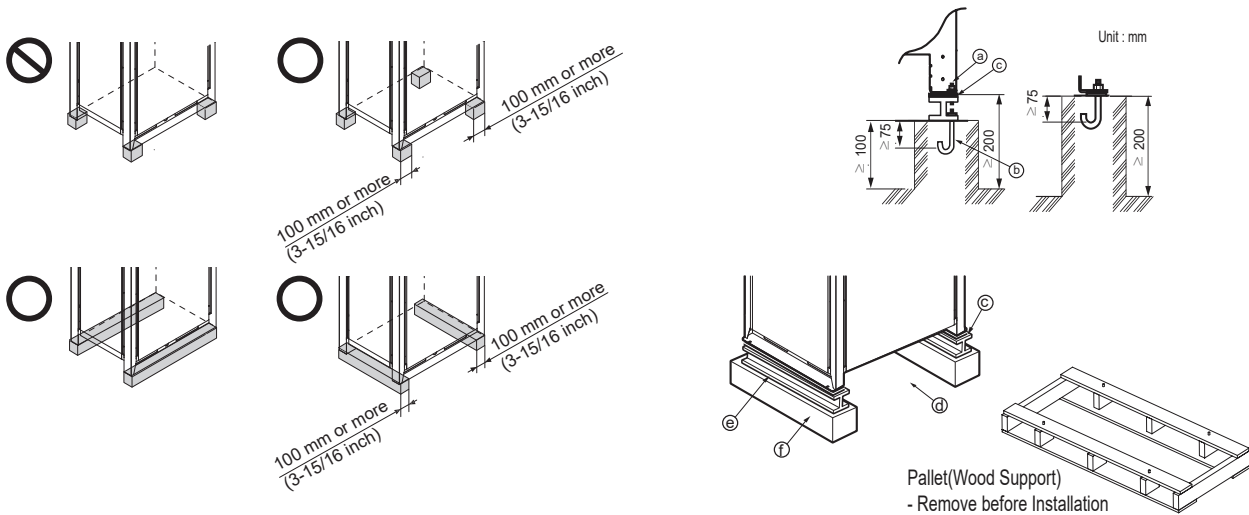
#### < ! > CAUTIONS

- Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
- Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient performance.
- If outdoor unit is installed close to the seaside, it should avoid direct exposure to the sea wind. Otherwise it needs additional anticorrosion treatment on the heat exchanger.

#### ■ Selecting the location of Outdoor Units

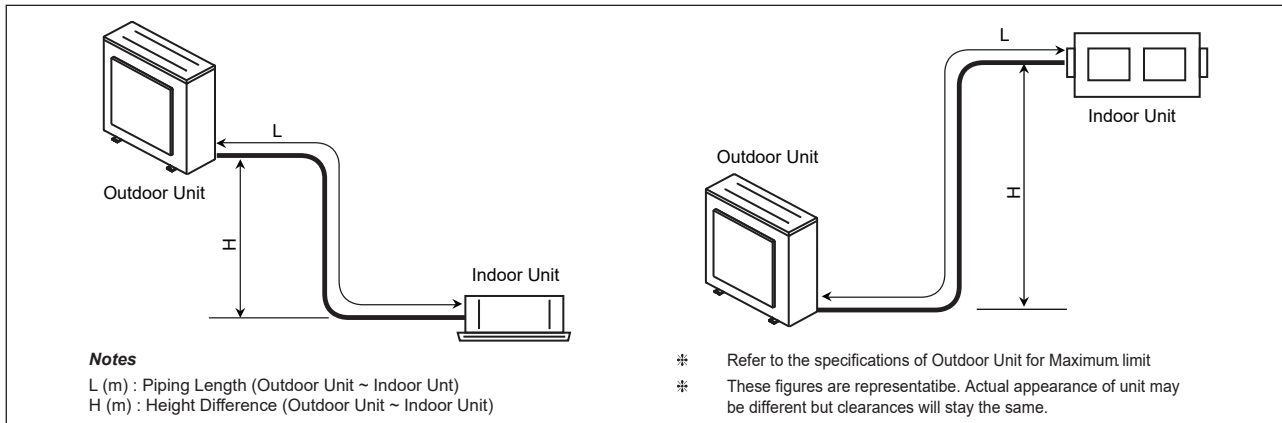
- If the outdoor unit is to be installed close to the seaside, direct exposure to the sea wind should be avoided.
- Install the outdoor unit on the opposite side of the sea wind direction.
- It should be strong enough like concrete to prevent the sea wind from the sea.
- The height and width should be more than 150% of the outdoor unit.
- It should be kept more than 70 cm of space between outdoor unit and the windbreak for easy air flow. In case, to install the outdoor unit on the seaside, set up a windbreak not to be exposed to the sea wind.
- Select a well-drained place.
- Periodic ( more than once/year ) cleaning of the dust or salt particles stuck on the heat exchanger by using water.

### 3. Foundation for Installation



- Install where it can sufficiently support the weight of the outdoor unit.  
If the support strength is not enough, the outdoor unit may drop and hurt people.
- Install where the outdoor unit may not fall in strong wind or earthquake.  
If there is a fault in the supporting conditions, the outdoor unit may fall and hurt people.
- Please take extra cautions on the supporting strength of the ground, water outlet treatment (treatment of the water flowing out of the outdoor unit in operation), and the passages of the pipe and wiring, when making the ground support.
- Do not use tube or pipe for water outlet in the Base pan. Use drainage instead for water outlet.  
The tube or pipe may freeze and the water may not be drained.
- Install at places where it can endure the weight and vibration/noise of the outdoor unit.
- The outdoor unit supports at the bottom shall have width of at least 100mm under the unit's legs before being fixed.
- The outdoor unit supports should have minimum height of 200mm.
- Anchor bolts must be inserted at least 75mm.
- Fix the unit tightly with bolts as shown so that unit will not fall down due to earthquake or gust.
  - a. The corner part must be fixed firmly. Otherwise, the support for the installation may be bent.
  - b. Get and use M10 Anchor bolt.
  - c. Noise and vibration may occur from the floor or wall since vibration is transferred through the installation part depending on installation status. Thus, use anti-vibration materials (cushion pad) fully.  
(The base pad shall be more than 200mm)
  - d. Space for pipes and wiring (Pipes and wiring for bottom side)
  - e. Use the H-beam support as a base support
  - f. Concrete support
- Be sure to remove the Pallet (Wood Support) of the bottom of the outdoor unit before fixing the bolt or welding.  
It may cause the unstable state of the outdoor settlement, and may cause freezing of the heat exchanger resulting in abnormal operations, hazard of fire during welding.

## 4. Refrigerant Piping System



### ■ Refrigerant additional charge calculation method

#### • **Additional Refrigerant = (L - A) x a**

- L (m) : Installed Piping Length (Outdoor Unit ~ Indoor Unit)
- A (m) : Charge-less piping length
- a (g/m) : Additional charging volume

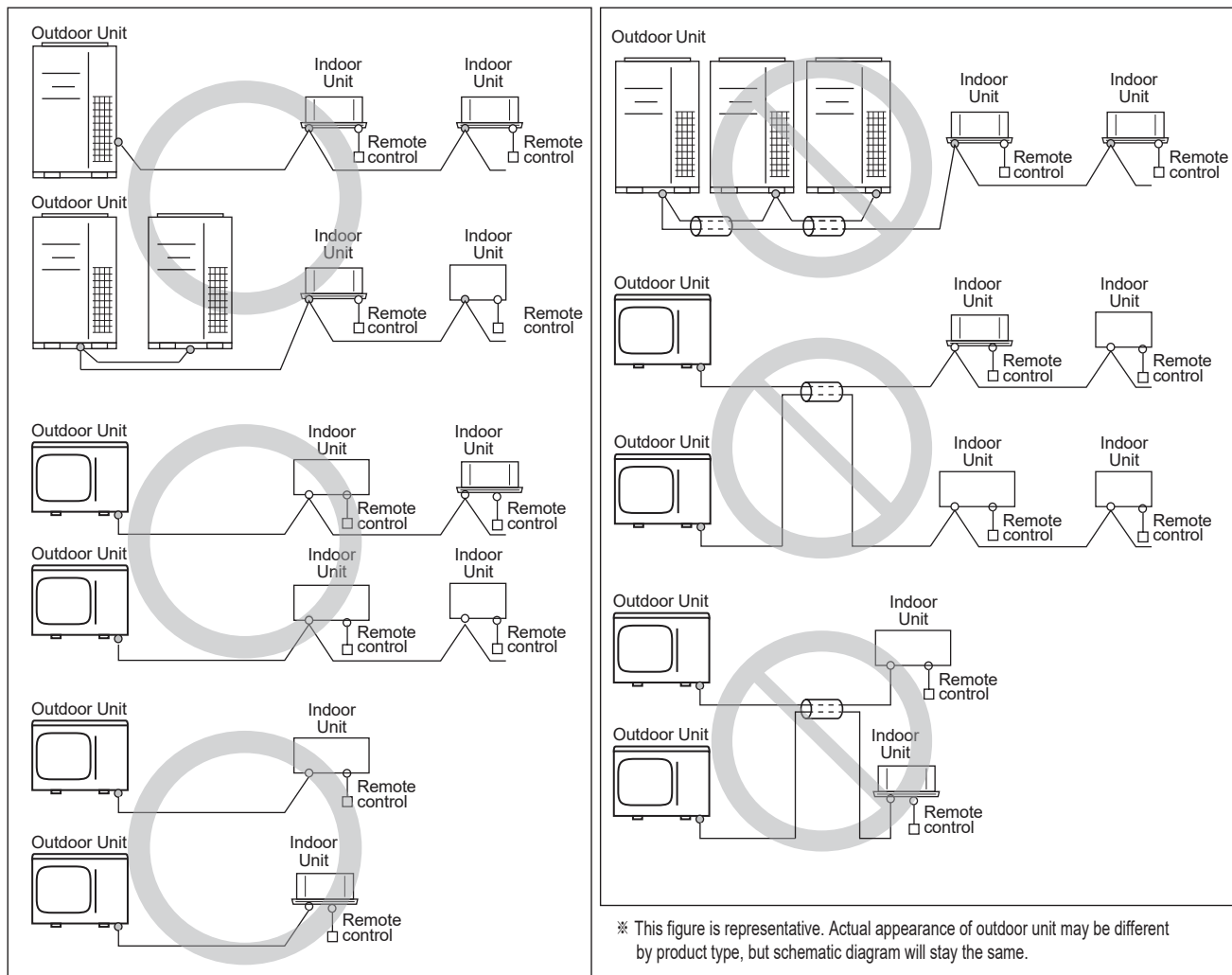
\* Refer to the specifications for detail information of A, a.

\* If total additional charge value after calculation comes out to be negative, then do not consider additional charge.

#### < ! > CAUTIONS

- Please check the product type. Piping installation and refrigerant charge varies depending on the type of product. For more information, please refer to the installation manual.
- Capacity is based on standard length and maximum allowance length is on the basis of reliability.
- Improper refrigerant charge may result in abnormal cycle.

### 5. Electrical Wiring



- Follow ordinance of local regulation for technical standard related to electrical equipment, wiring regulations and guidance of each electric power company.
- Be sure to provide designated grounding work to installed unit.
- Give some allowance to wiring for electrical part box of units, because the box is sometimes removed at the time of service work.
- Only the communication line specified should be connected to the terminal block for unit communication.

#### < ! > WARNING

- Be sure to have authorized electrical engineers do the electric work using special circuits in accordance with regulations and installation manual. If power supply circuit has a lack of capacity or electric work deficiency, it may cause an electric shock or fire.
- Be sure to connect the installed unit to earth. Do not connect earth line to any gas pipe, liquid pipe, lightning rod or telephone earth line. If earth is incomplete, it may cause an electric shock.

#### < ! > CAUTIONS

- Product which use 3-phase power source have reversed phase protection detector that only works when the power is turned on. If there exists black out or the power goes on and off which the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase may break the compressor and other parts.
- Install the communication line away from the power source wiring so that it is not affected by electric noise from the power source. (Do not run it through the same conduit.) Never use them together with power cables.
- Never use multi-core cable.

If communication lines of different systems are wired with the same multiplecore cable, the resultant poor transmitting and receiving will cause erroneous operations.

## 5. Electrical Wiring

- The conductive shielding layer of cable should be grounded to the metal part of both units.
- As this unit is equipped with an inverter, to install a phase leading capacitor not only will deteriorate power factor improvement effect, but also may cause capacitor abnormal heating. Therefore, never install a phase leading capacitor.
- Make sure that the power unbalance ratio is not greater than 2%. If it is greater, the unit's lifespan will be reduced.
- Never connect the main power source to terminal block of communication line.  
If connected, electrical parts will be burnt out.
- Introducing with a missing "N" phase or with a mistaken "N" phase will break the equipment.
- When the power supply is applied to "N" phase by mistake, replace inverter PCB and transformer in control box.

### Communication and Power Lines

- Communication cable
  - Types : shielded cables
  - Use wires of size : over 1.0 ~ 1.5 mm<sup>2</sup>
  - Maximum allowable temperature of cable : over 60°C (140°F)
  - Maximum allowable line length: under 1,000m
- Remote control cable
  - Types : 3-core cable
- Central control cable
  - Please check the model function table for compatibility with central controller.

Product Type	Wire Type	Diameter
ACP & AC Manager	2-core cables (Shielded)	1.0~1.5mm <sup>2</sup>
AC Smart	2-core cables (Shielded)	1.0~1.5mm <sup>2</sup>
Simple central controller	4-core cables (Shielded)	1.0~1.5mm <sup>2</sup>
AC Ez	4-core cables (Shielded)	1.0~1.5mm <sup>2</sup>

- Separation of communication and power lines
  - If communication and power lines are installed alongside each other then there is a strong likelihood of operational faults developing due to interference in the signal wiring caused by electrostatic and electromagnetic coupling.  
The tables below indicates our recommendation as to appropriate spacing of communication and power lines where these are to be run side by side.

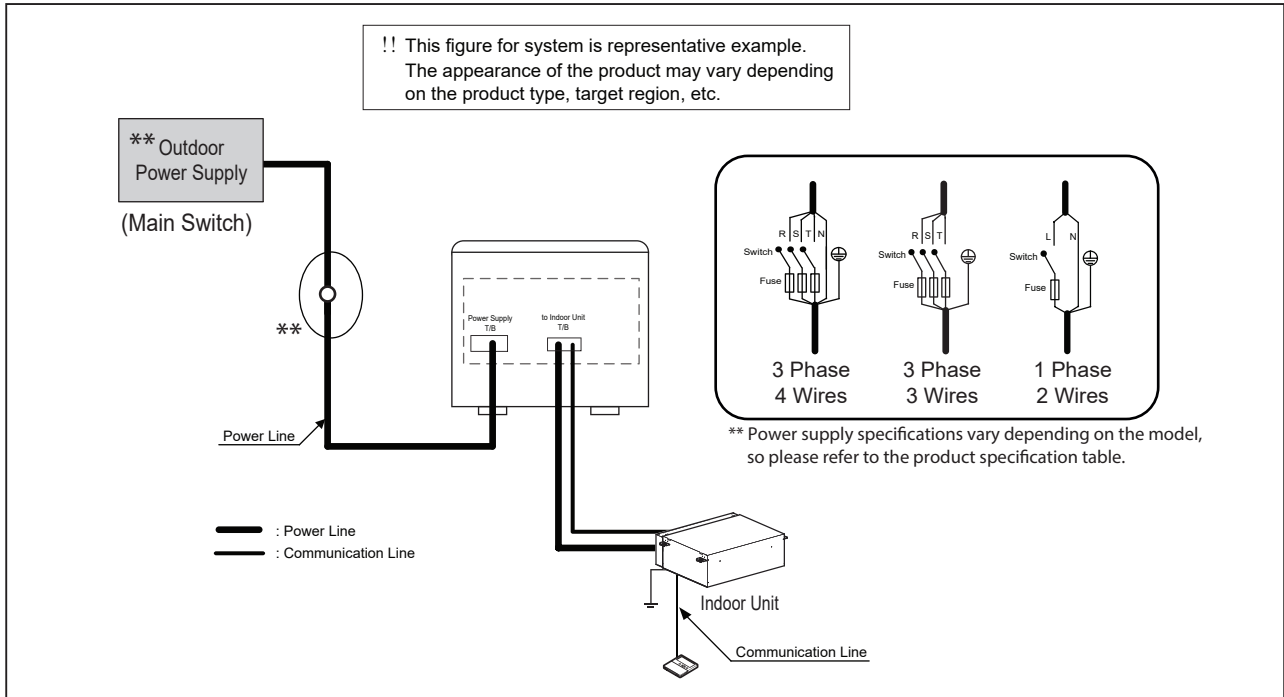
Current capacity of power line	Spacing	
100V or more	10 A	300 mm
	50 A	500 mm
	100 A	1,000 mm
	Exceed 100 A	1,500 mm

- The figures are based on assumed length of parallel cabling up to 100m. For length in excess of 100m the figures will have to be recalculated in direct proportion to the additional length of line involved.
- If the power supply waveform continues to exhibit some distortion the recommended spacing in the table should be increased.
  - ▷ If the lines are laid inside conduits then the following point must also be taken into account when grouping various lines together for introduction into the conduits
  - ▷ Power lines(including power supply to air conditioner) and signal lines must not be laid inside the same
  - ▷ In the same way, when grouping the lines power and signal lines should not be bunched together.

### < ! > CAUTIONS

- If apparatus is not properly earthed then there is always a risk of electric shock, the grounding of the apparatus must be carried out by a qualified person.

## 6. Field Wiring



### ■ Wiring of Main Power Supply

- Bear in mind ambient conditions (ambient temperature, direct sunlight, rain liquid, etc.) when proceeding with the wiring and connections
- The wire size is the minimum value for metal conduit wiring. The power cord size should be 1 rank thicker taking into account the line voltage drops. Make sure the power-supply voltage does not drop more than 10%.
- Specific wiring requirements should adhere to the wiring regulations of the region.
- Power supply cords of parts of appliances for outdoor use should not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57).
- Don't install an individual switch or electrical outlet to disconnect each of indoor unit separately from the power supply.

### < ! > WARNING

- Make sure to use specified wires for connections so that no external force is imparted to terminal connections. If connections are not fixed firmly, it may cause heating or fire.
- Make sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.
- All Installation site must require attachment of an earth leakage breaker. If no earth leakage breaker is installed, it may cause an electric shock.
- Do not use anything other than breaker and fuse with correct capacity. Using fuse and wire or copper wire with too large capacity may cause a malfunction of unit or fire.



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Air Solution

LG Electronics Inc, 128, Yeoui-daero,  
Yeongdeungpo-gu, Seoul, Korea  
(07336)

<http://partner.lge.com>

<http://sedc.lge.com>

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