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**Manufacture reserves the right to discontinue, or change at any time, specifications or designs without notices and without incurring obligations.**

# Part 1      General Information

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# 1. Product Lineup

## Outdoor Units



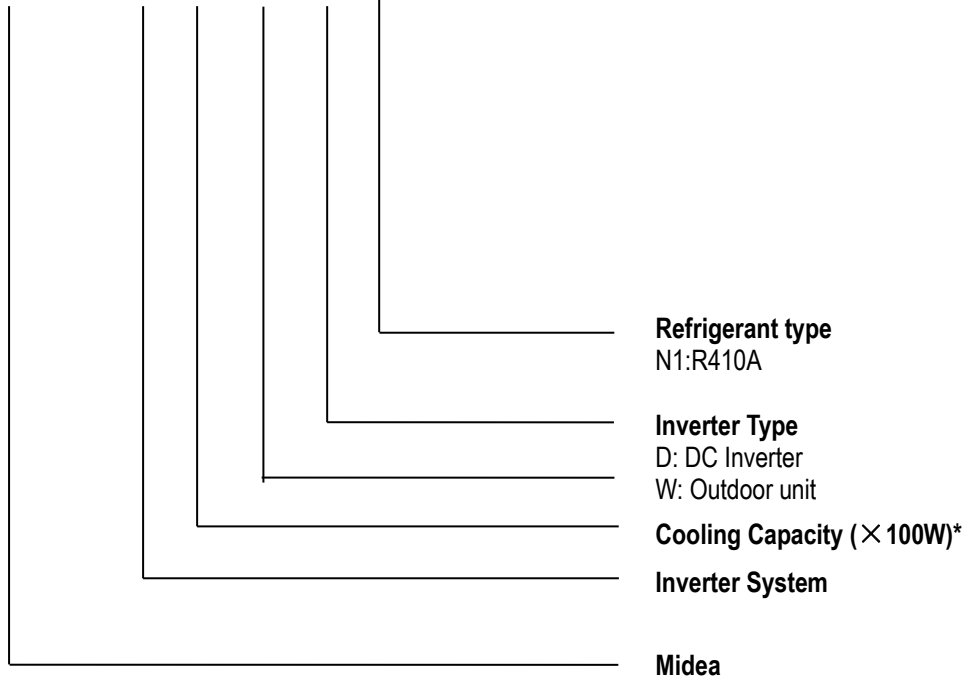
### 80/105 Model

### 120~180 Model

Model name	Dimension body(mm)	Net/Gross weight (kg)	Power supply
MDV-V80W/DN1	Width:990 Height:966 Depth:336	62/67	220~240V-1ph 50Hz
MDV-V105W/DN1	Width:990 Height: 966 Depth:336	74/81	220~240V-1ph 50Hz
MDV-V120W/DN1	Width:900 Height:1327 Depth:320	95/106	220~240V-1ph 50Hz
MDV-V140W/DN1	Width:900 Height:1327 Depth:320	95/106	220~240V-1ph 50Hz
MDV-V160W/DN1(B)	Width:900 Height:1327 Depth:320	100/111	220~240V-1ph 50Hz
MDV-V180W/DN1	Width:900 Height:1327 Depth:320	107/118	220~240V-1ph 50Hz

## 2. Nomenclature

**M D V - V 105 W / D N1**



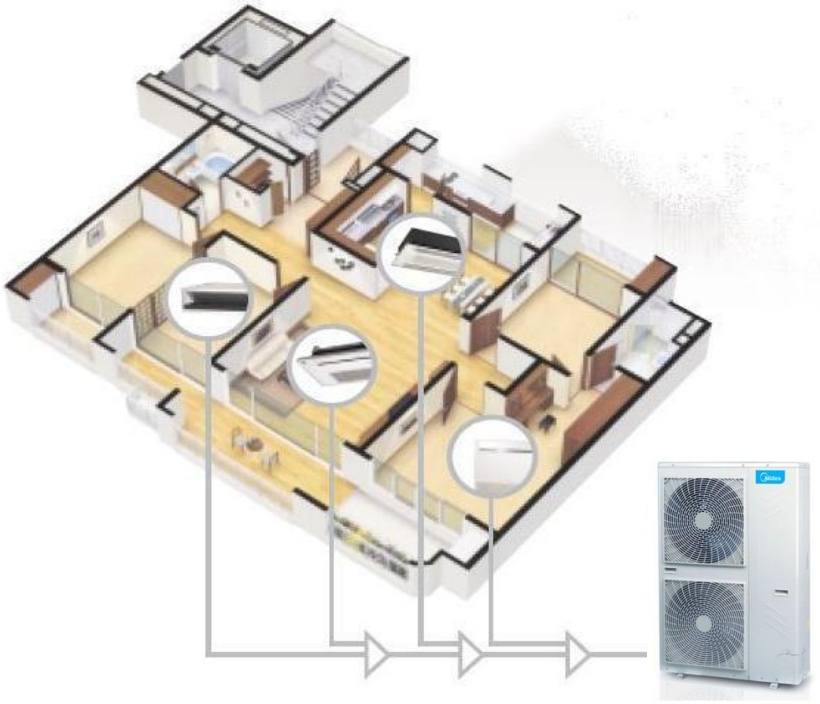
\*Note: the actual cooling capacity please refer to the nameplate.



### 3. Features

#### 3.1 Wide application

The Full DC Inverter mini VRF system is a highly efficient solution for small commercial buildings requiring heating and cooling of up to 7 zones with one outdoor unit. Such as villa, restaurant, school etc.



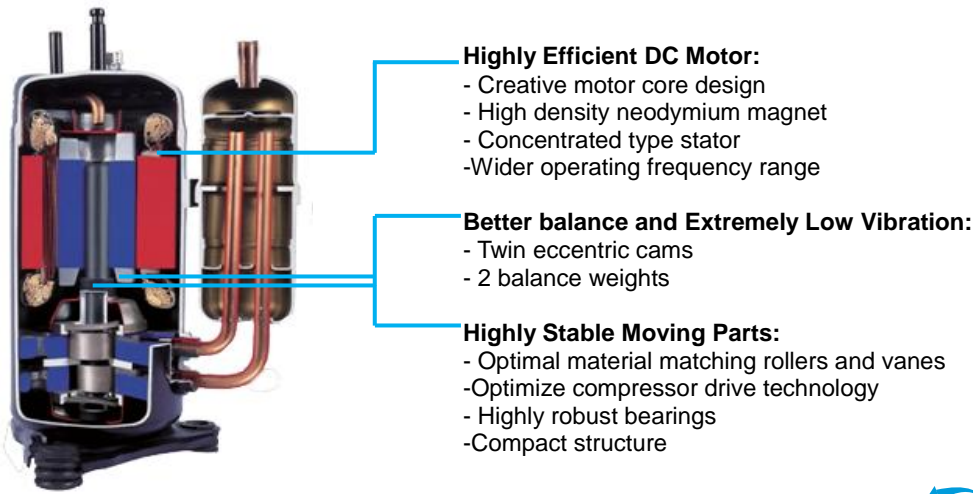
Midea offers a variety indoor unit, about 100 models of 10 types. Capacity ranges are from 1.5kW to 16 kW. It is full compliance with residential and light commercial place. Our systems can operate up to 130% of capacity which allows any system to be designed to the customers and applications needs.



### 3.2 High efficient DC inverter compressor

Full DC inverter mini VRF adopts highly intelligent inverter-driven compressor. This advanced technology enables the output of the outdoor unit to be modulated by the real heat load demands..

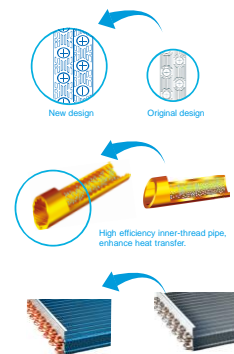
This advanced system ensures precise temperature regulation and highly efficient energy usage, making a significant contribution to the limiting the impact on the environment.



### 3.3 High performance heat exchanger

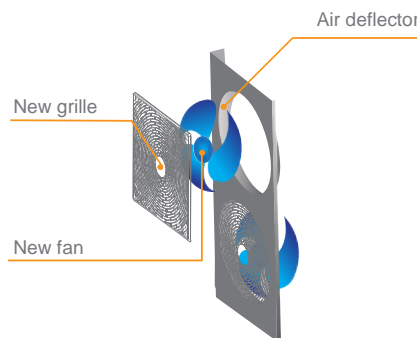
The new designed window fins enlarge the heat-exchanging area, which decrease the air resistance, save more power and enhance heat exchange performance.

Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency.



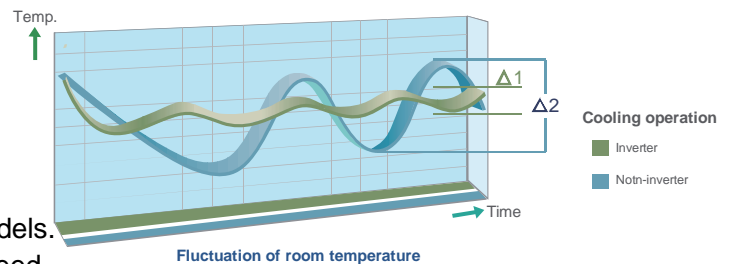
### 3.4 Low-operating sound design

Optimally design fan shape and new designed discharge air grille and air deflector, making higher air volume and lower operation sound.



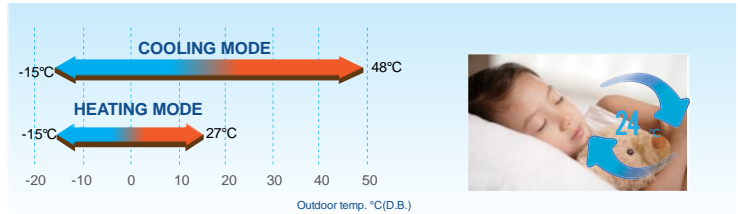
### 3.5 Quick warm-up & cool-down design and less temperature fluctuation

Utilizing the inverter compressor benefits, the system can reach full load quickly and shorten warm-up or cool-down time for an immediate comfortable air solution. Less temperature fluctuation will create a better living environment. Used across entire range of models. Efficiency improvement by up to 45% especially at low speed.

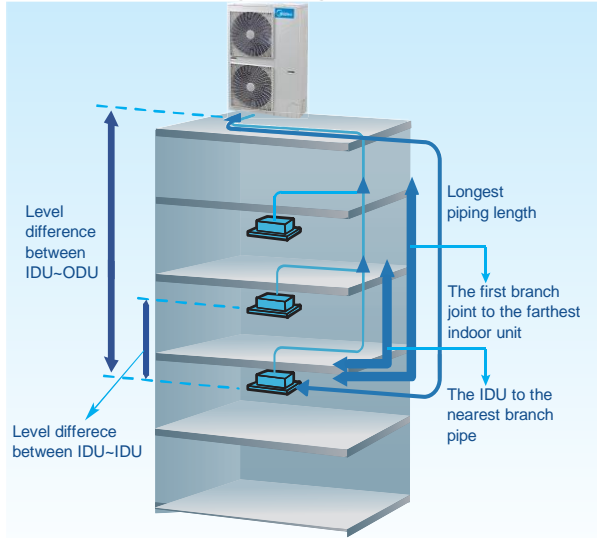


### 3.6 Wide operation temperature range

No matter in extremely cold winter when outdoor temperature gets as low as -15°C or in hot summer when temperature is up to 48°C, the mini VRF system will keep stable performance.



### 3.7 Flexible piping design

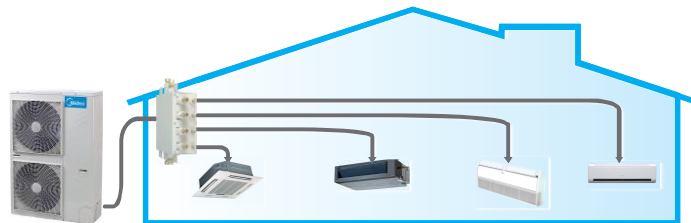


Piping Length		Permitted Value
Total piping length (Actual)		100m
Longest piping length	Actual	45m(80/105 model)
		60m(120~180 model)
	Equivalent	50m(80/105 model)
		70m(120~180 model)
The first branch joint to the farthest IDU		20m
The IDU to the nearest branch pipe		15m
Level difference between ODU~IDU	ODU up	30m
	ODU down	20m
Level difference between IDU~IDU		8m

### 3.8 Flexible indoor unit's connection

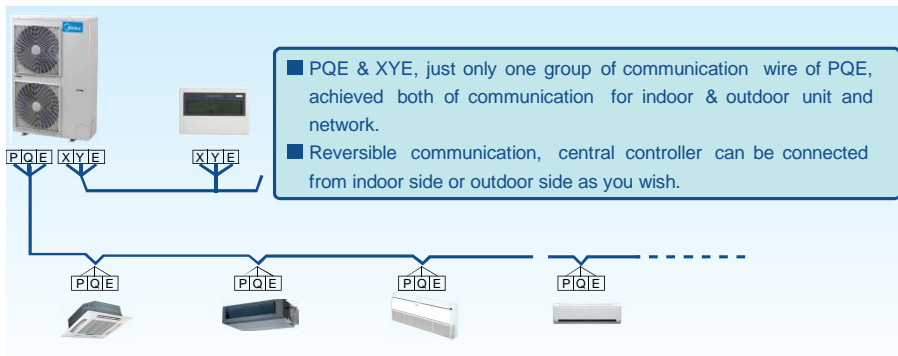
Mini VRF with intelligent control gives you independent zoning control with maximum flexibility. A single outdoor unit supports up to nine indoor units, freeing up considerable space outside. Use your backyard more wisely with much more space available created by less number of outdoor units.

- Max. 4 indoor units for a 80 model outdoor unit installation
- Max. 5 indoor units for a 105 model outdoor unit installation
- Max. 6 indoor units for a 120 model outdoor unit installation
- Max. 6 indoor units for a 140 model outdoor unit installation
- Max. 7 indoor units for a 160 model outdoor unit installation
- Max. 9 indoor units for a 180 model outdoor unit installation



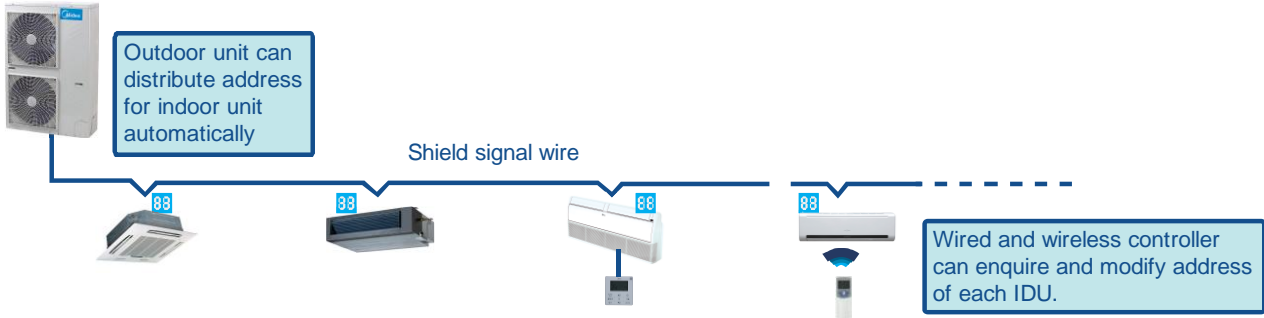
### 3.9 Simple signal line connection

Installation is much easier as the communication wiring between indoor & outdoor units can be shared. It's easy for the user to retrofit the existing system with a centralized control by simply connecting to outdoor unit.



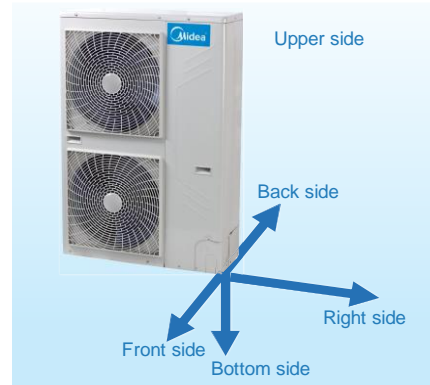
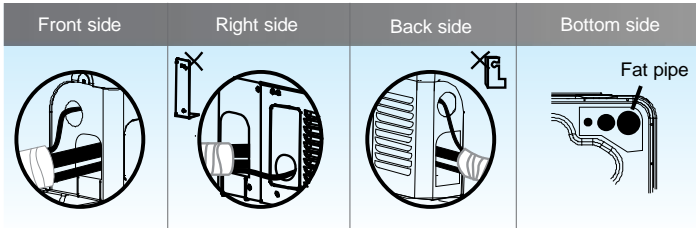
### 3.10 Auto address setting function

The addresses of indoor units can be set automatically by outdoor unit. Wired controller and wireless controller can enquire and modify the address of each indoor unit.



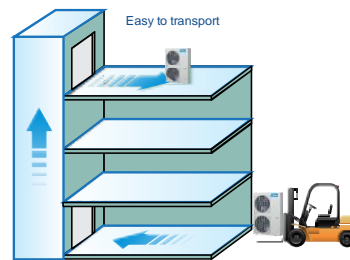
**3.11 Easy piping connection**

Offering four directions to connect pipes and wirings to meet various installation requests.



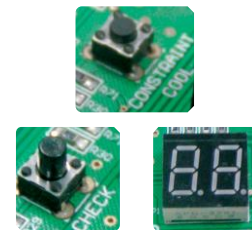
**3.12 Easy installation**

The mini VRF can be transported by elevator which makes installation dramatically easy, and effectively reduces time and labor thanks to the small size.



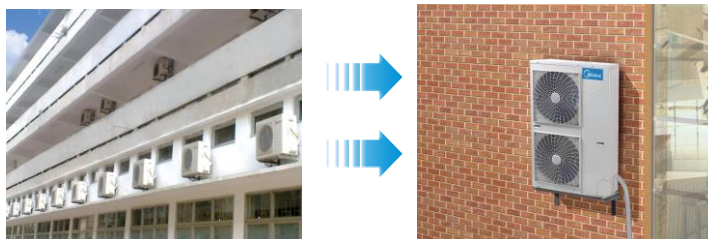
**3.13 Easy maintenance**

Forced cooling button makes outdoor unit run in cooling mode at any condition, so it is very easy for you to charge refrigerant to the system when it needs to be done. The self-diagnosis function detects malfunctions in major locations in the system and displays the type of malfunction and location. This allows service and maintenance to be performed more efficiently.












**3.14 Space saving**





The Mini VRF units are more compact, resulting in significant savings in installation space. It is particularly suitable for small offices, villas, shops, etc.







### 4. Indoor Units Lineup

Capacity (×100W)	Cassette type				
	One-way cassette		Two-way cassette	Compact four-way cassette	Four-way cassette
					
15				•	
18	•				
22	•			•	
28	•		•	•	•
36	•		•	•	•
45		•	•	•	•
56		•	•		•
71			•		•
80					•
90					•
100					•
112					•
140					•

Capacity (×100W)	Duct type			
	Medium static pressure duct		High static pressure duct	
				
15		•		
18		•		
22		•		
28		•		
36		•		
45		•		
56		•		
71		•	•	
80	•		•	
90	•		•	
100				
112	•		•	
140	•			•
160				•

Capacity (×100W)	Floor-standing/Ceiling & Floor/Console			
	Cased floor-standing	Uncased floor-standing	Ceiling & floor	console
				
22	•	•		•
28	•	•		•
36	•	•	•	•
45	•	•	•	•
56	•	•	•	
71	•	•	•	
80	•	•	•	
90			•	
112			•	
140			•	
160			•	

Capacity (×100W)	Wall mounted			
	Wall mounted (S panel)	Wall mounted (C panel)	Wall mounted (D panel)	Wall mounted (R panel)
				
15	•			
22	•			
28	•			
36	•			
45	•			
56	•			
71			•	
80				•
90				•
125				•
140				•

**Note:** If ODU connect only one IDU, the capacity of IDU should be not more than ODU.

If ODU connect more than one IDU, the capacity of each IDU should be not more than 8kW for refrigerant uniform distribution.

Due to continuous improvement, specifications are subject to change without prior notice.

## **Part 2 Specifications & Performance**

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# 1. Specifications

Sale Model			MDV-V80W/DN1	MDV-V105W/DN1	MDV-V120W/DN1	
Code			260V00000190	260V00000191	220095101631	
Power supply		V-Ph-Hz	220-240V~50Hz	220-240V~50Hz	220-240V~50Hz	
Cooling	Capacity	kW	8	10.5	12.3	
	Input	kW	2.05	2.68	3.25	
	EER	kW/ kW	3.90	3.92	3.78	
Heating	Capacity	kW	9	11.5	13.2	
	Input	kW	2.24	2.90	3.47	
	COP	kW/ kW	4.02	3.97	3.80	
Max. current		A	18.5	22.8	24.4	
Compressor	Model		TNB220FLHMC	TNB220FLHMC	TNB306FPGMC	
	Type		Rotary	Rotary	Rotary	
	Brand		MITSUBISHI	MITSUBISHI	MITSUBISHI	
	Capacity	Btu/h	24334	24334	33642	
	Input	W	2200	2200	3010	
	Rated current(RLA)	A	9.7	9.7	13.5	
	Crankcase	W	25	25	25	
	Refrigerant oil	ml	FV50S 670ml+200ml	FV50S 670ml+200ml	FV50S 870ml+630ml	
Outdoor fan motor	Model		WZDK170-38G-1	WZDK170-38G-1	WZDK100-38G	
	Type		DC Motor	DC Motor	DC motor	
	Brand		Panasonic	Panasonic	Panasonic	
	Insulation class		E	E	E	
	Safe class		IPX4	IPX4	IP23	
	Input	W	195	195	2*100	
	Output	W	170	170	2*85	
	Rated current	A	1.6	1.6	2*0.9	
	Speed	r/min	820	820	800	
Outdoor fan	Material		ASG20	ASG20	ASG20	
	Type		Axial fan	Axial fan	Axial fan	
	Diameter	mm	560	560	508	
	Height	mm	170	170	170	
Outdoor coil	Number of rows		1.7	2	2	
	Tube pitch(a) × row pitch(b)	mm	22 × 19.05	25.4 × 22	25.4 × 22	
	Fin spacing	mm	1.6	1.6	1.6	
	Fin type (code)		Hydrophilic aluminum			
	Tube outside dia.and type	mm		Φ7.94	Φ7.94	Φ7.94
				Inner groove tube	Inner groove tube	Inner groove tube
	Coil length × height	mm	890×880	880×914	1276×870	
Number of circuits		9	5	7		



Sale Model			MDV-V80W/DN1	MDV-V105W/DN1	MDV-V120W/DN1
Outdoor air flow		m <sup>3</sup> /h	5499	5531	6000
Outdoor sound level(sound pressure level )		dB(A)	56	57	57
Indoor unit connectable (Total Capacity)			45%~130%	45%~130%	45%~130%
Max. quantity of indoor unit			4	5	6
Outdoor unit	Dimension (W×H×D)	mm	990×966×336	990×966×336	900×1327×320
	Packing (W×H×D)	mm	1120×1015×435	1120×1015×435	1030×1456×435
	Net/Gross weight	kg	62/67	74/81	95/106
Refrigerant	Type		R410a	R410a	R410A
	Charged volume	g	2800	2950	3300
Throttle type			Electronic expansion valve		
Design pressure		MPa	4.4/2.6	4.4/2.6	4.4/2.6
Refrigerant piping	Liquid side/ Gas side	mm	Φ9.52/Φ15.9	Φ9.52/Φ15.9	Φ9.52/Φ15.9
	Max. refrigerant pipe length	m	100	100	100
	Max. difference in level	m	8	8	8
Connection wiring	Power wiring	mm <sup>2</sup>	3 core × 4.0	3 core × 4.0	3 core × 4.0
	Signal wiring	mm <sup>2</sup>	3 core shielded wire × 0.75	3 core shielded wire × 0.75	3 core shielded wire × 0.75
Ambient tempereature		℃	(Cooling -15~48) (Heating -15~27)		

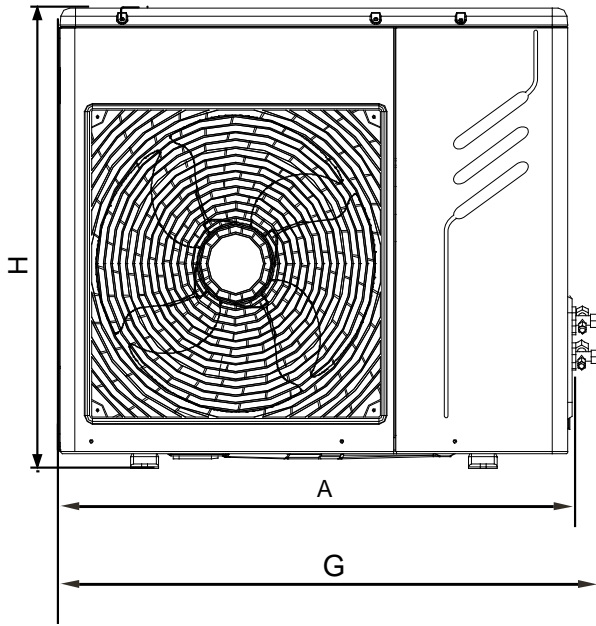
Sale Model			MDV-V140W/DN1	MDV-V160W/DN1(B)	MDV-V180W/DN1
Code			220095100891	220095102360	220095103540
Power supply		V-Ph-Hz	220-240V~50Hz	220-240V~50Hz	220-240V~50Hz
Cooling	Capacity	kW	14	15.5	17.5
	Input	kW	3.95	4.52	5.3
	EER	W/ W	3.54	3.43	3.3
Heating	Capacity	kW	15.4	17	19
	Input	kW	4.16	4.77	5
	COP	kW/ kW	3.70	3.56	3.80
Max. current		A	29.8	30.0	30.2
Compressor	Model		TNB306FPGMC	LNB42FSCMC	LNB42FSCMC
	Type		Rotary	Rotary	Rotary
	Brand		MITSUBISHI	MITSUBISHI	MITSUBISHI
	Capacity	Btu/h	33642	47700	47700
	Input	W	3010	4240	4240
	Rated current(RLA)	A	13.5	16.1	16.1
	Crankcase	W	25	25	25
	Refrigerant oil	ml	FV50S 870ml+630ml	FV50S 1400ml+250ml	FV50S 1400ml+250ml
Outdoor fan motor	Model		WZDK100-38G	WZDK100-38G	WZDK100-38G
	Type		DC motor	DC motor	DC motor
	Brand		Panasonic	Panasonic	Panasonic

Sale Model			MDV-V140W/DN1	MDV-V160W/DN1(B)	MDV-V180W/DN1	
	Insulation class		E	E	E	
Outdoor Fan motor	Safe class		IP23	IP23	IP23	
	Input	W	2*100	2*100	2*100	
	Output	W	2*85	2*85	2*85	
	Rated current	A	2*0.9	2*0.9	2*0.9	
	Speed	r/min	800	800	800	
Outdoor fan	Material		ASG20	ASG20	ASG20	
	Type		Axial fan	Axial fan	Axial fan	
	Diameter	mm	508	508	508	
	Height	mm	170	170	170	
Outdoor coil	Number of rows		2	2	2	
	Tube pitch(a) × row pitch(b)	mm	25.4×22	25.4×22	25.4×22	
	Fin spacing	mm	1.6	1.6	1.6	
	Fin type (code)		Hydrophilic aluminum			
	Tube outside diameter and type	mm		Φ7.94	Φ7.94	Φ7.94
				Inner groove tube	Inner groove tube	Inner groove tube
	Coil length × height	mm	1276×870	1276×870	1276×870	
Number of circuits		7	7	7		
Outdoor air flow	m <sup>3</sup> /h		6000	6000	6800	
Outdoor sound level(sound pressure level)	dB(A)		57	57	59	
Indoor unit connectable (total capacity)			45%~130%	45%~130%	45%~130%	
Max. quantity of indoor unit			6	7	9	
Outdoor unit	Dimension (W×H×D)	mm	900×1327×320	900×1327×320	900×1327×320	
	Packing (W×H×D)	mm	1030×1456×435	1030×1456×435	1030×1456×435	
	Net/Gross weight	kg	95/106	100/111	107/118	
Refrigerant	Type		R410A	R410A	R410A	
	Charged volume	g	3900	3900	4500	
Throttle type			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve	
Design pressure		MPa	4.4/2.6	4.4/2.6	4.4/2.6	
Refrigerant piping	Liquid side/ Gas side	mm	Φ9.53/Φ15.9	Φ9.53/Φ19.1	Φ9.53/Φ19.1	
	Max. refrigerant pipe length	m	100	100	100	
	Max. difference in level	m	8	8	8	
Connection wiring	Power wiring	mm <sup>2</sup>	3 core × 4.0	3 core × 4.0	3 core × 4.0	
	Signal wiring	mm <sup>2</sup>	3 core shielded wire × 0.75	3 core shielded wire × 0.75	3 core shielded wire × 0.75	
Ambient temperature		℃	(Cooling -15~48) (Heating -15~27)			

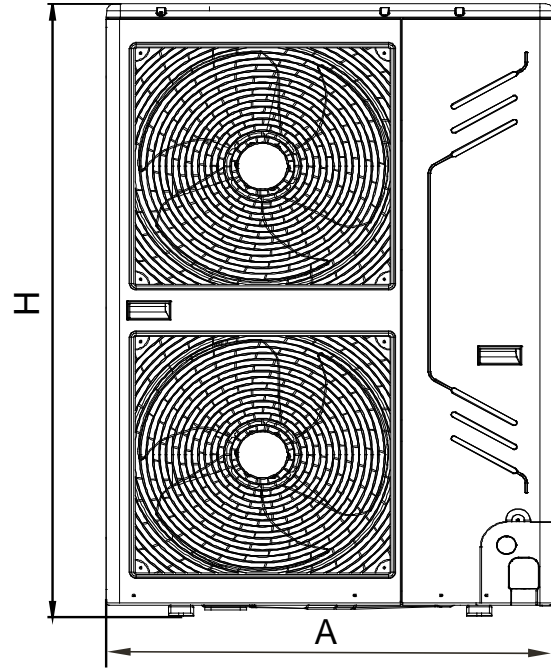
**Notes:**

- The cooling conditions: indoor temp.: 27℃DB(80.6°F), 19℃WB(60°F) outdoor temp.: 35℃DB(95°F) equivalent pipe length: 5m drop length: 0m.
- The heating conditions: indoor temp.: 20℃DB(68°F), 15℃WB(44.6°F) outdoor temp.: 7℃DB(42.8°F) equivalent pipe length: 5m drop length: 0m.
- Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of \*m(1m for 80/105 model, 1.2m for 120~160 model). During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- The above data may be changed without notice for future improvement on quality and performance.

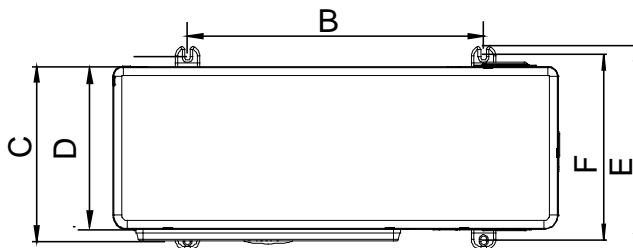
## 2. Dimensions



80/105 model



120~180 model



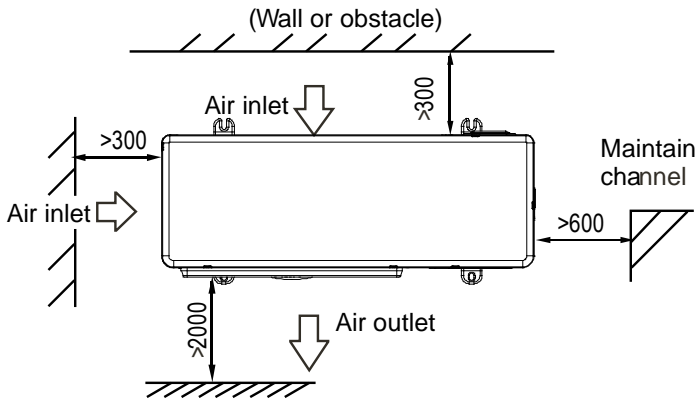
Unit:mm

MODEL	A	B	C	D	E	F	G	H
80/105	990	624	354	336	396	366	1075	966
120/140/160/180	900	600	348	320	400	360	-	1327

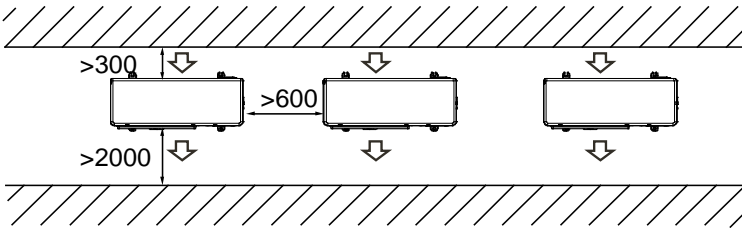
### 3. Service Space

Unit: mm

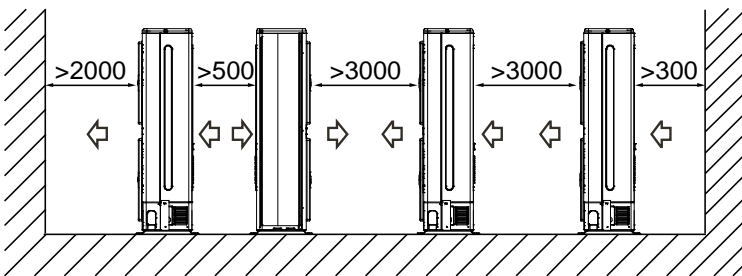
- Single unit installation



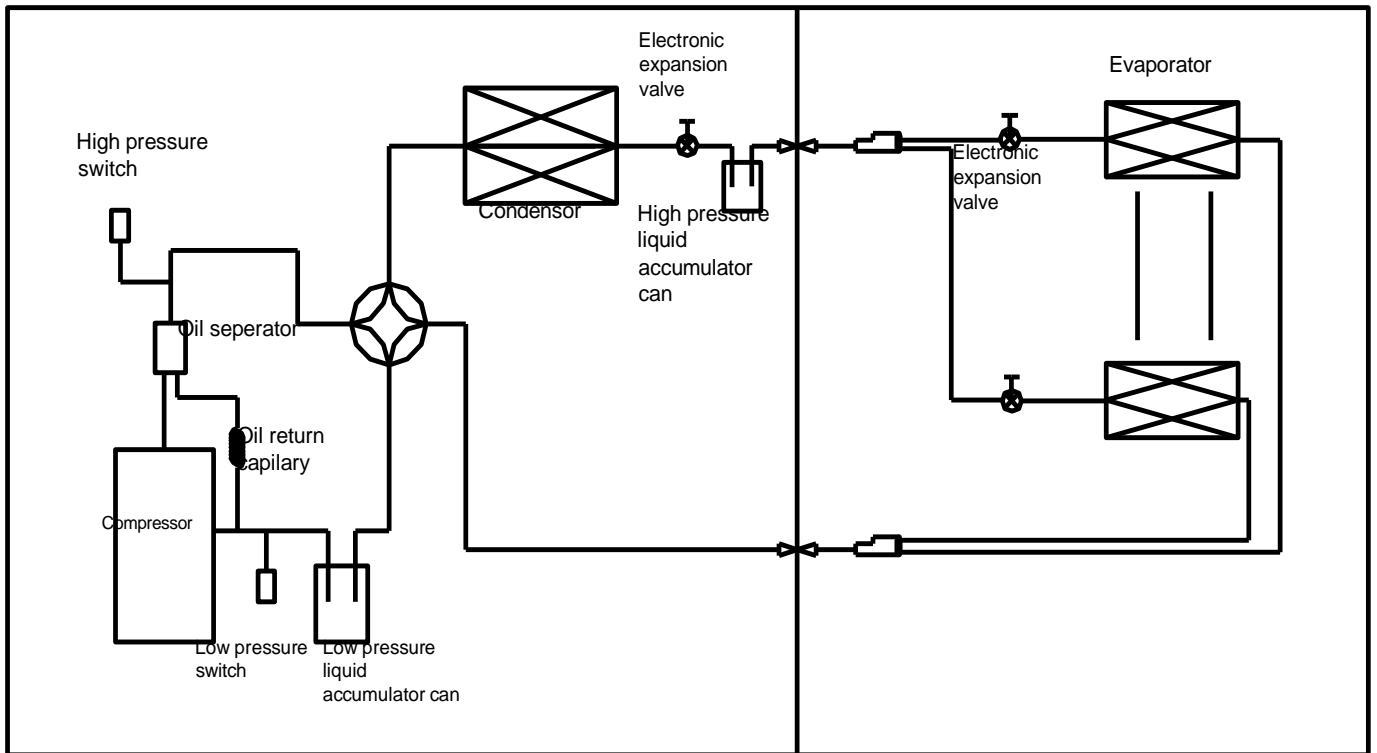
- Parallel connect the two units or above



- Parallel connect the front with rear sides



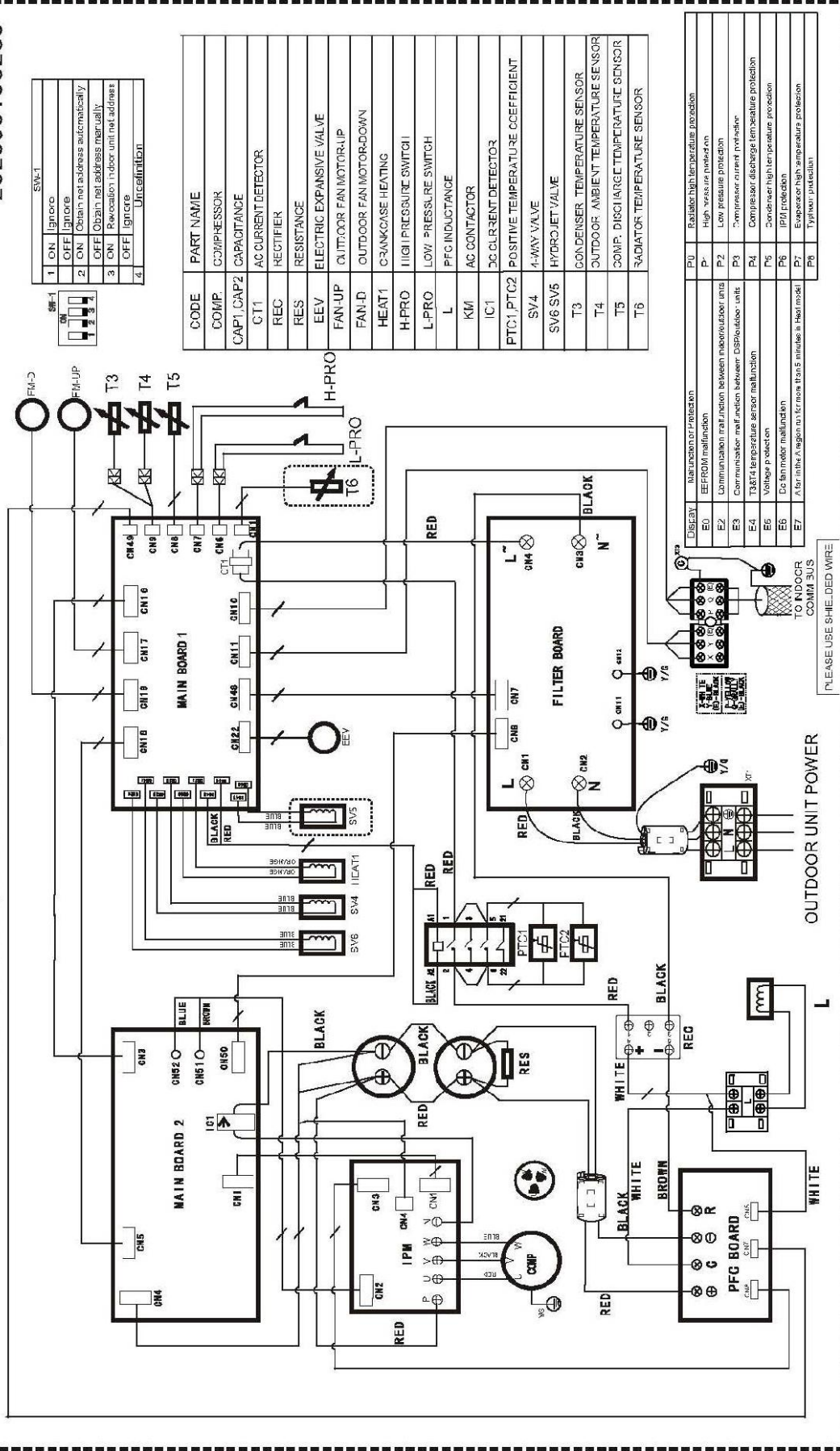
### 4. Piping Diagrams





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WIRING DIAGRAM (OUTDOOR UNIT)



SW-1	SW-1
1 ON	Ignore
2 ON	Ignore
3 OFF	Obtain net address automatically
4 OFF	Obtain net address manually
5 ON	Reassign indoor unit net address
6 OFF	Ignore
7 OFF	Ignore
8 OFF	Ignore

CODE	PART NAME
COMP	COMPRESSOR
CAP1, CAP2	CAPACITANCE
CT1	AC CURRENT DETECTOR
REC	RECTIFIER
RES	RESISTANCE
EEV	ELECTRIC EXPANSIVE VALVE
FAN-D	OUTDOOR FAN MOTOR-UP
FAN-D	OUTDOOR FAN MOTOR-DOWN
HEAT1	C-RANKCASE HEATING
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
L	PFC INDUCTANCE
KM	AC CONTACTOR
IC1	DC CURRENT DETECTOR
PTC1, PTC2	POSITIVE TEMPERATURE COEFFICIENT
SV4	4-WAY VALVE
SV6 SV5	HYDROJET VALVE
T3	CONDENSER TEMPERATURE SENSOR
T4	OUTDOOR AMBIENT TEMPERATURE SENSOR
T5	COMP. DISCHARGE TEMPERATURE SENSOR
T6	RADIATOR TEMPERATURE SENSOR

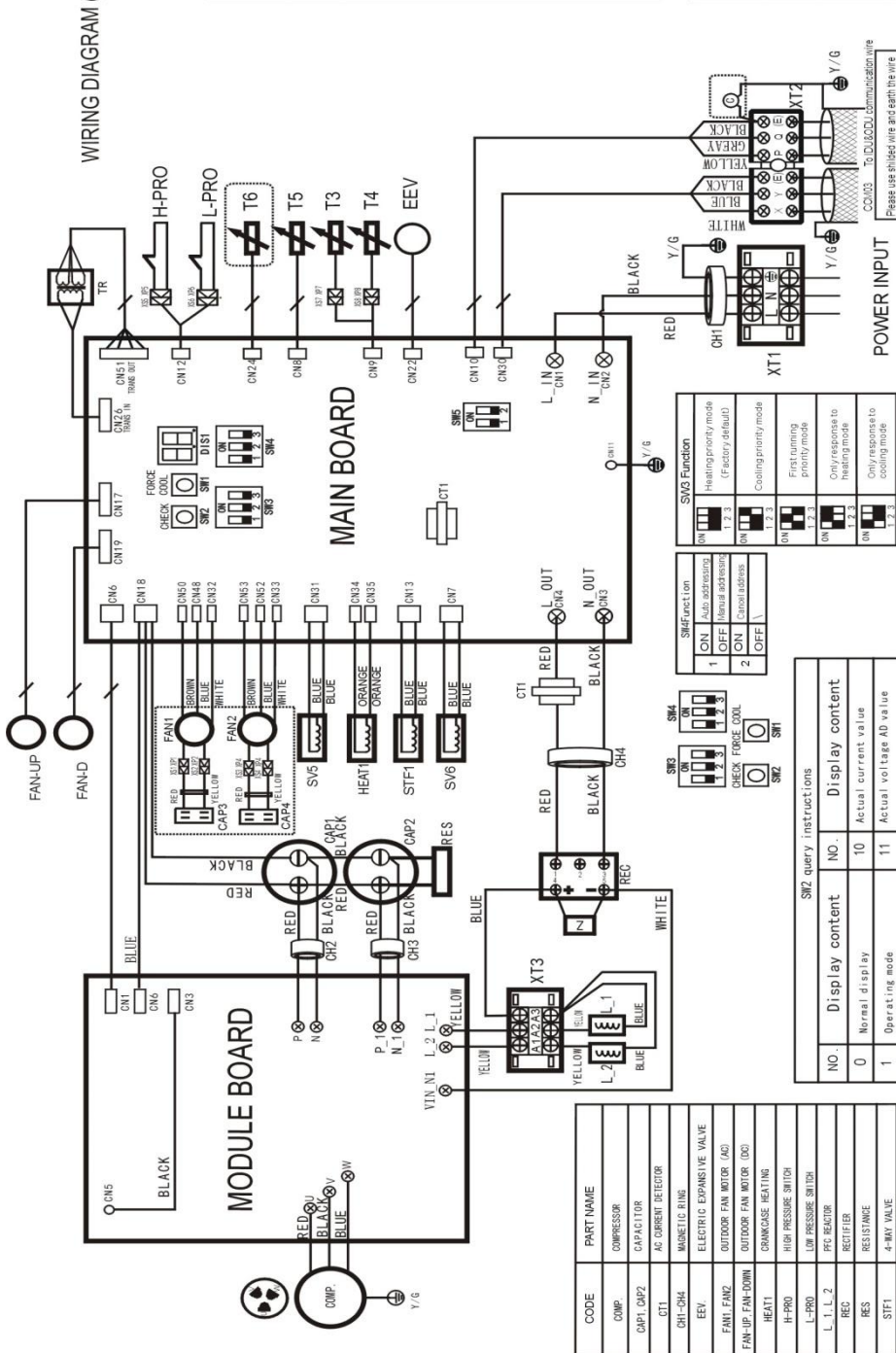
Display	Malfunction Protection
P0	Radiator high temperature protection
P1	High pressure protection
P2	Low pressure protection
P3	Compressor current protection
P4	Compressor discharge temperature protection
P5	Condenser high temperature protection
P6	IPM Error
P7	Evaporator high temperature protection
P8	Typical protection

PLEASE USE SHIELDED WIRE

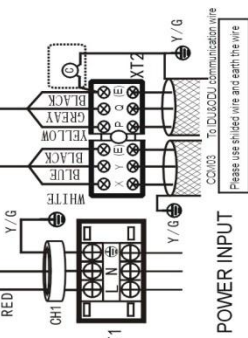
OUTDOOR UNIT POWER



WIRING DIAGRAM (OUTDOOR UNIT)  
202095190855



Display	Main Function or Protection
E2	Communication malfunction between indoor/outdoor units.
E4	Indoor fan speed malfunction.
E5	Power voltage protection.
E6	Fan Protection.
E7	Compressor discharge temperature sensor malfunction.
E9	EEPROM malfunction.
Ea	A fan in the A region run for more than 3 minutes in the same mode.
Eb	2-time of E5 protection in 10 minutes.
H0	Communication malfunction between R410a main board.
P1	Hi-pressure protection.
P2	Low-pressure protection.
P3	Input current protection.
P4	Compressor discharge temperature protection.
P5	Compressor high temperature protection.
P6	Inverter module protection.
P8	Typical protection.
PE	Indoor evaporator hi-temp protection.



SW2 Function	Setting
Heating priority mode (Factory default)	1 2 3
Cooling priority mode	1 2 3
First running priority mode	1 2 3
Only response to heating mode	1 2 3
Only response to cooling mode	1 2 3

SW1 Function	Setting
1 ON Auto addressing (Manual address)	1 2 3
2 ON Check address	1 2 3
OFF 1	1 2 3

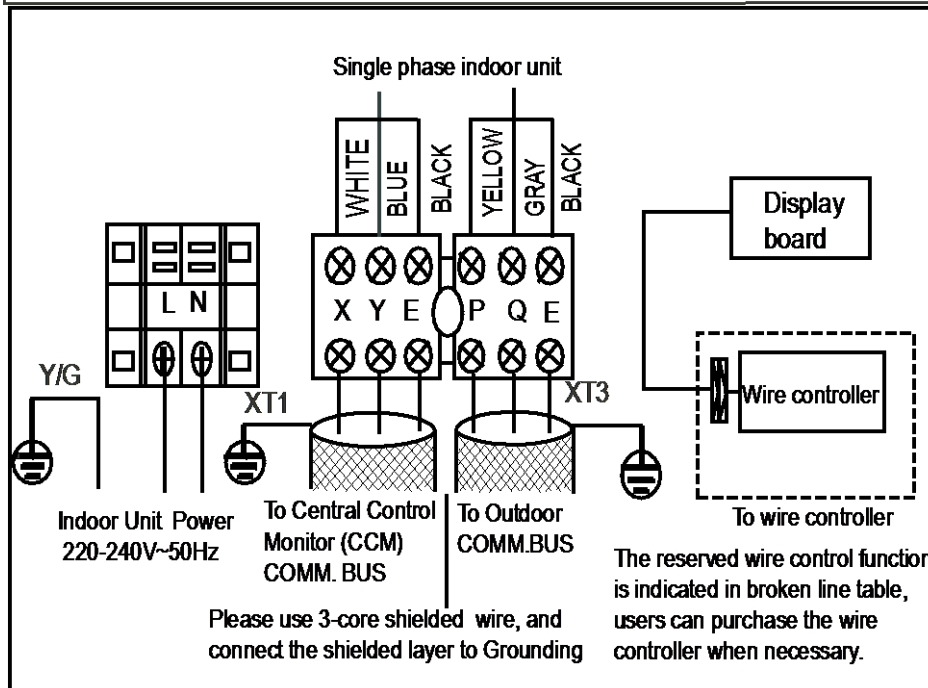
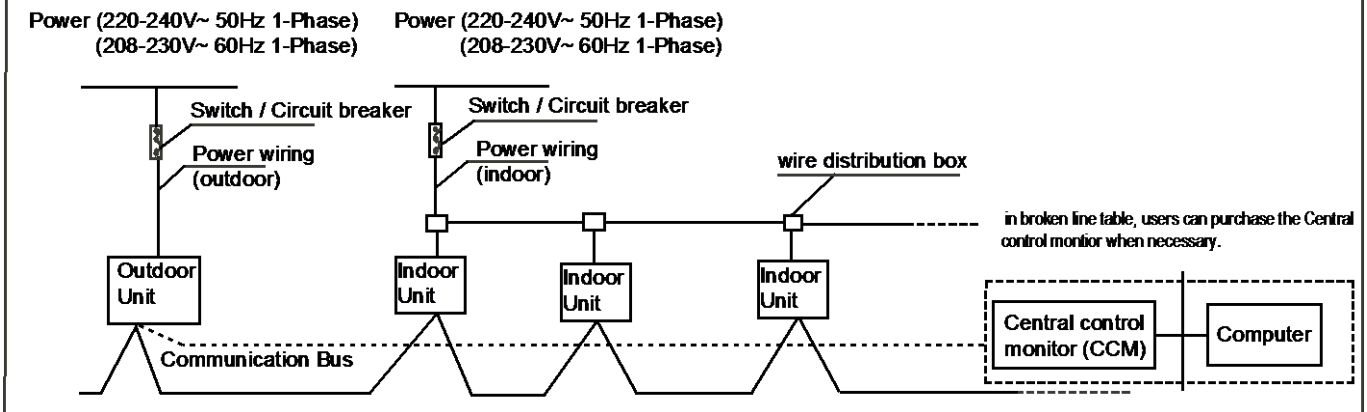
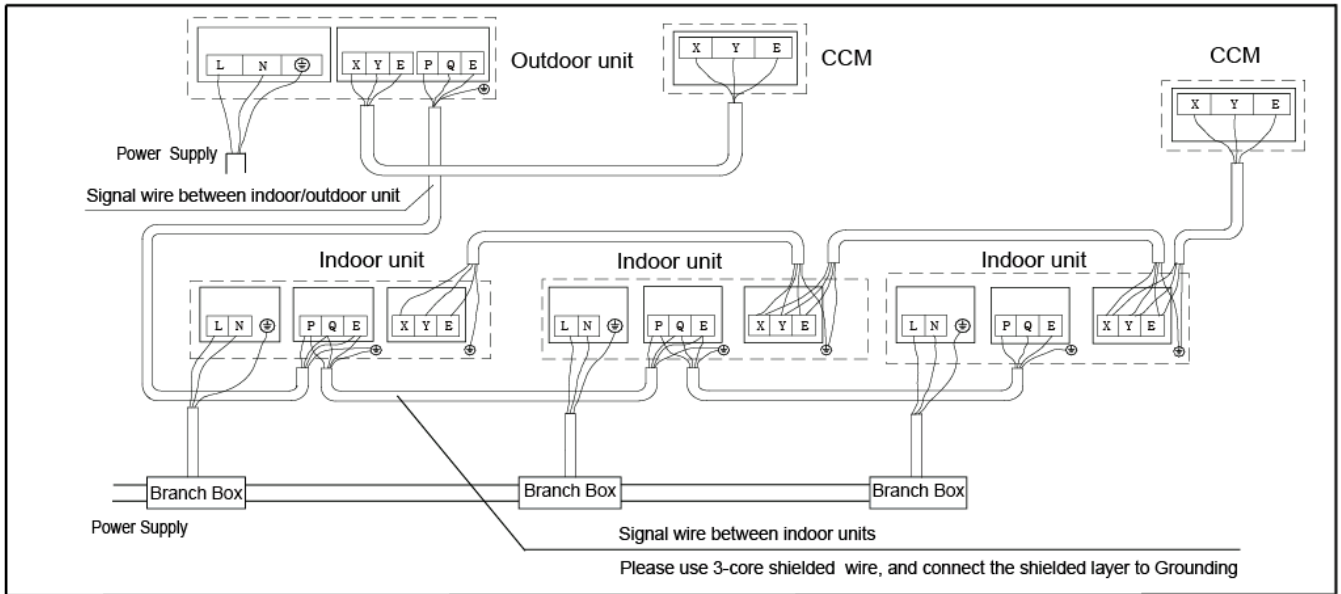
NO.	Display content	NO.	Display content
0	Normal display	10	Actual current value
1	Operating mode	11	Actual voltage AD value
2	Operating fan speed grade	12	T2 average temperature
3	The total capacity requirements of the indoor unit	13	Total quantities of the indoor unit
4	The capacity requirements of the revised external unit	14	operating interior units
5	T3 piping temperature	15	Model
6	T4 environment temperature	16	Priority mode
7	T5 discharge temperature	17	Version of the program
8	The surface temperature of the HEAT SINK	18	The last fault or protection code
9	Opening degree of RW	19	Display "..."

CODE	PART NAME
COMP	COMPRESSOR
CAP1, CAP2	CAPACITOR
CT1	AC CURRENT DETECTOR
CR1-CR4	MAGNETIC RING
EEV	ELECTRIC EXPANSIVE VALVE
FAN1, FAN2	OUTDOOR FAN MOTOR (AO)
FAN-UP, FAN-DOWN	OUTDOOR FAN MOTOR (OO)
HEAT1	CRANKCASE HEATING
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
L_1, L_2	PTC REACTOR
REC	RECTIFIER
RES	RESISTANCE
STF1	4-WAY VALVE
SV5, SV6	SINGLE WAY VALVE
T3	PIPE TEMPERATURE SENSOR
T4	OUTDOOR TEMPERATURE SENSOR
T5	COMPRESSOR DISCHARGE TEMPERATURE SENSOR
T6	HEAT SINK TEMPERATURE SENSOR
TR	TRANSFORMER
XT1	3-WAY TERMINAL
XT2	6-WAY TERMINAL
Z	Voltage Dependent Resistor

1. Check function  
 2. Sw2 button on PCB is check button. LED will display the parameters sequentially.  
 3. Force cooling function  
 SW1 button on PCB is force cooling button. Press once to enter into force cooling function, Press twice force cooling function will be exit.  
 Note: FAN1 and FAN2 wiring are used for A0 fan series.  
 FAN-UP and FAN-D wiring are used for full DC inverter series.



## 6. Field Wiring



## 7. Capacity Tables

MDV-V80W/DN1

Cooling

Combination (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(°C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	7.03	0.84	8.37	1.02	9.71	1.10	10.09	1.14	10.57	1.17	10.83	1.28	11.10	1.28
	-2	7.03	0.84	8.37	1.04	9.71	1.10	10.09	1.15	10.57	1.17	10.83	1.29	11.10	1.30
	0	7.03	0.85	8.37	1.06	9.71	1.14	10.09	1.21	10.57	1.24	10.83	1.31	11.10	1.31
	2	7.03	0.87	8.37	1.06	9.71	1.18	10.09	1.28	10.57	1.26	10.83	1.32	11.10	1.33
	4	7.03	0.89	8.37	1.08	9.71	1.22	10.09	1.28	10.57	1.27	10.83	1.32	11.10	1.36
	6	7.03	0.90	8.37	1.11	9.71	1.26	10.09	1.29	10.45	1.31	10.70	1.32	10.98	1.37
	8	7.03	0.93	8.37	1.13	9.71	1.32	10.09	1.36	10.32	1.35	10.58	3.90	10.84	1.38
	10	7.03	0.94	8.37	1.15	9.71	1.37	10.09	1.40	10.20	4.04	10.46	4.06	10.71	1.42
	12	7.03	0.96	8.37	1.18	9.71	1.40	9.94	4.03	10.09	4.06	10.31	4.07	10.57	1.43
	14	7.03	0.98	8.37	1.20	9.69	4.05	9.83	4.06	9.94	4.08	10.20	4.09	10.46	1.46
	16	7.03	1.00	8.37	1.22	9.57	4.06	9.69	4.08	9.80	4.10	10.06	4.12	10.31	1.49
	18	7.03	1.02	8.37	1.25	9.43	1.46	9.54	1.47	9.69	1.48	9.94	1.49	10.20	1.51
	20	7.03	1.04	8.37	1.33	9.29	1.54	9.43	1.54	9.54	1.55	9.80	1.57	10.06	1.58
	21	7.03	1.07	8.37	1.38	9.23	1.57	9.37	1.58	9.49	1.59	9.74	1.61	10.00	1.62
	23	7.03	1.14	8.37	1.48	9.11	1.64	9.23	1.65	9.34	1.66	9.60	1.68	9.86	1.69
	25	7.03	1.22	8.37	1.58	8.97	1.72	9.09	1.72	9.23	1.74	9.49	1.75	9.74	1.77
	27	7.03	1.30	8.37	1.69	8.86	1.79	8.97	1.80	9.09	1.81	9.34	1.83	9.60	1.85
	29	7.03	1.39	8.37	1.81	8.71	1.86	8.83	1.87	8.97	1.88	9.23	1.90	9.49	1.92
	31	7.03	1.49	8.34	1.91	8.57	1.93	8.71	1.94	8.83	1.95	9.09	1.98	9.34	2.00
	33	7.03	1.58	8.20	1.98	8.46	2.01	8.57	2.02	8.71	2.03	8.97	2.05	9.20	2.07
35	7.03	1.69	8.06	2.06	8.31	2.08	8.46	2.09	8.57	2.10	8.83	2.13	9.09	2.15	
37	7.03	1.80	7.94	2.13	8.20	2.16	8.31	2.17	8.46	2.18	8.69	2.20	8.94	2.23	
39	7.03	1.91	7.80	2.15	8.06	2.23	8.20	2.24	8.31	2.25	8.57	2.28	8.83	2.31	
41	7.03	2.01	7.72	2.17	7.97	2.25	8.12	2.26	8.23	2.28	8.49	2.28	8.49	2.33	
43	7.03	2.06	7.66	2.18	7.93	2.25	8.07	2.27	8.14	2.28	8.33	2.29	8.39	2.33	
45	7.03	2.17	7.61	2.20	7.85	2.28	7.99	2.29	8.03	2.29	8.11	2.30	8.22	2.38	
48	7.03	2.24	7.89	2.28	8.55	2.30	8.71	2.31	8.78	2.32	8.74	2.34	8.90	2.34	
120%	-5	6.49	0.81	7.71	0.98	8.97	1.16	9.60	1.26	10.06	1.32	10.29	1.36	10.51	1.40
	-2	6.49	0.82	7.71	0.99	8.97	1.17	9.60	1.27	10.06	1.33	10.29	1.37	10.51	1.40
	0	6.49	0.82	7.71	1.00	8.97	1.18	9.60	1.27	10.06	1.35	10.29	1.38	10.51	1.40
	2	6.49	0.83	7.71	1.01	8.97	1.19	9.60	1.29	10.06	1.35	10.29	1.39	10.51	1.41
	4	6.49	0.84	7.71	1.02	8.97	1.21	9.60	1.30	10.06	1.37	10.29	1.39	10.51	1.41
	6	6.49	0.84	7.71	1.03	8.97	1.22	9.60	1.31	10.06	1.38	10.29	1.40	10.51	1.41
	8	6.49	0.85	7.71	1.04	8.97	1.24	9.60	1.33	10.06	1.40	10.29	1.41	10.51	1.42
	10	6.49	0.86	7.71	1.05	8.97	1.25	9.60	1.35	10.06	1.40	10.29	1.41	10.51	1.43
	12	6.49	0.88	7.71	1.07	8.97	1.28	9.60	1.38	9.91	1.40	10.14	1.40	10.37	1.44
	14	6.49	0.90	7.71	1.09	8.97	1.30	9.60	1.41	9.77	1.41	10.03	1.43	10.26	1.45
	16	6.49	0.91	7.71	1.12	8.97	1.33	9.54	4.10	9.66	1.43	9.89	1.45	10.11	1.48
	18	6.49	0.93	7.71	1.14	8.97	1.37	9.40	1.46	9.51	1.47	9.74	1.48	10.00	1.50
	20	6.49	0.95	7.71	1.18	8.97	1.48	9.29	1.54	9.40	1.54	9.63	1.56	9.86	1.57
	21	6.49	0.96	7.71	1.22	8.97	1.53	9.20	1.57	9.31	1.58	9.57	1.59	9.80	1.61
23	6.49	1.02	7.71	1.31	8.97	1.64	9.09	1.64	9.20	1.65	9.43	1.67	9.66	1.68	
25	6.49	1.09	7.71	1.40	8.83	1.71	8.94	1.71	9.06	1.72	9.31	1.74	9.54	1.75	
27	6.49	1.17	7.71	1.50	8.71	1.78	8.83	1.79	8.94	1.80	9.17	1.81	9.40	1.83	

	29	6.49	1.24	7.71	1.60	8.57	1.85	8.69	1.86	8.80	1.87	9.03	1.89	9.29	1.90
	31	6.49	1.33	7.71	1.71	8.43	1.92	8.57	1.93	8.69	1.94	8.91	1.96	9.14	1.98
	33	6.49	1.41	7.71	1.82	8.31	1.99	8.43	2.01	8.54	2.01	8.77	2.04	9.00	2.06
	35	6.49	1.50	7.71	1.95	8.17	2.07	8.29	2.08	8.43	2.09	8.66	2.11	8.89	2.13
	37	6.49	1.60	7.71	2.07	8.06	2.14	8.17	2.15	8.29	2.16	8.51	2.19	8.74	2.21
	39	6.49	1.70	7.69	2.19	7.91	2.21	8.03	2.23	8.14	2.24	8.40	2.26	8.63	2.28
	41	6.49	1.75	7.62	2.20	7.85	2.23	7.97	2.24	8.08	2.25	8.34	2.27	8.38	2.30
	43	6.49	1.77	7.58	2.22	7.79	2.24	7.90	2.25	8.02	2.26	8.19	2.28	8.25	2.35
	45	6.49	1.80	7.54	2.24	7.72	2.26	7.82	2.27	7.95	2.28	8.03	2.28	8.17	2.40
	48	7.51	1.81	8.66	2.26	8.82	2.28	8.92	2.29	9.11	2.30	9.16	2.29	9.34	2.43
110%	-5	5.94	0.71	7.09	0.88	8.23	1.05	8.80	1.13	9.37	1.21	10.09	1.26	10.31	1.30
	-2	5.94	0.72	7.09	0.89	8.23	1.06	8.80	1.14	9.37	1.22	10.09	1.27	10.31	1.31
	0	5.94	0.73	7.09	0.90	8.23	1.07	8.80	1.15	9.37	1.24	10.09	1.28	10.31	1.32
	2	5.94	0.74	7.09	0.90	8.23	1.08	8.80	1.16	9.37	1.25	10.09	1.30	10.31	1.34
	4	5.94	0.76	7.09	0.92	8.23	1.09	8.80	1.17	9.37	1.27	10.09	1.32	10.31	1.35
	6	5.94	0.77	7.09	0.93	8.23	1.10	8.80	1.19	9.37	1.28	10.09	1.33	10.31	1.37
	8	5.94	0.77	7.09	0.94	8.23	1.12	8.80	1.20	9.37	1.30	10.09	1.34	10.31	1.38
	10	5.94	0.78	7.09	0.95	8.23	1.13	8.80	1.22	9.37	1.32	10.09	1.35	10.31	1.40
	12	5.94	0.80	7.09	0.97	8.23	1.15	8.80	1.25	9.37	1.34	9.97	1.37	10.17	1.42
	14	5.94	0.81	7.09	0.99	8.23	1.18	8.80	1.27	9.37	1.37	9.83	1.38	10.06	1.43
	16	5.94	0.83	7.09	1.01	8.23	1.20	8.80	1.30	9.37	1.40	9.71	1.40	9.91	1.44
	18	5.94	0.84	7.09	1.03	8.23	1.22	8.80	1.33	9.37	1.46	9.57	1.47	9.80	1.49
	20	5.94	0.86	7.09	1.05	8.23	1.30	8.80	1.43	9.23	1.53	9.46	1.54	9.66	1.56
	21	5.94	0.87	7.09	1.08	8.23	1.34	8.80	1.48	9.17	1.57	9.37	1.58	9.60	1.59
	23	5.94	0.91	7.09	1.16	8.23	1.44	8.80	1.59	9.03	1.64	9.26	1.65	9.46	1.67
	25	5.94	0.97	7.09	1.24	8.23	1.54	8.80	1.70	8.91	1.71	9.11	1.73	9.34	1.74
	27	5.94	1.03	7.09	1.32	8.23	1.65	8.66	1.78	8.77	1.78	9.00	1.80	9.20	1.82
	29	5.94	1.10	7.09	1.41	8.23	1.76	8.54	1.85	8.66	1.86	8.86	1.87	9.09	1.89
	31	5.94	1.17	7.09	1.51	8.23	1.88	8.40	1.92	8.51	1.93	8.74	1.95	8.94	1.96
	33	5.94	1.25	7.09	1.61	8.17	1.98	8.29	1.99	8.40	2.00	8.60	2.02	8.83	2.04
35	5.94	1.33	7.09	1.71	8.03	2.05	8.14	2.06	8.26	2.08	8.46	2.09	8.69	2.11	
37	5.94	1.41	7.09	1.82	7.91	2.13	8.03	2.14	8.11	2.15	8.34	2.17	8.54	2.19	
39	5.94	1.50	7.09	1.94	7.77	2.20	7.89	2.21	8.00	2.22	8.20	2.24	8.43	2.27	
41	5.94	1.52	7.09	1.96	7.71	2.21	7.82	2.23	7.94	2.24	8.10	2.26	8.18	2.28	
43	5.94	1.53	7.09	1.98	7.65	2.23	7.76	2.24	7.88	2.25	8.02	2.27	8.05	2.33	
45	5.94	1.58	7.09	1.99	7.57	2.25	7.68	2.27	7.81	2.27	7.94	2.33	7.97	2.38	
48	6.51	1.64	7.76	2.16	8.17	2.27	8.28	2.28	8.45	2.30	8.56	2.34	8.62	2.41	
100%	-5	5.40	0.64	6.43	0.77	7.49	0.92	8.00	0.99	8.51	1.07	9.57	1.22	10.11	1.28
	-2	5.40	0.65	6.43	0.79	7.49	0.93	8.00	1.01	8.51	1.09	9.57	1.24	10.11	1.28
	0	5.40	0.66	6.43	0.79	7.49	0.94	8.00	1.02	8.51	1.10	9.57	1.26	10.11	1.30
	2	5.40	0.67	6.43	0.80	7.49	0.95	8.00	1.03	8.51	1.11	9.57	1.28	10.11	1.32
	4	5.40	0.68	6.43	0.81	7.49	0.97	8.00	1.05	8.51	1.12	9.57	1.29	10.11	1.33
	6	5.40	0.69	6.43	0.83	7.49	0.98	8.00	1.07	8.51	1.14	9.57	1.31	10.11	1.35
	8	5.40	0.70	6.43	0.84	7.49	1.00	8.00	1.08	8.51	1.16	9.57	1.33	10.11	1.38
	10	5.40	0.71	6.43	0.86	7.49	1.01	8.00	1.10	8.51	1.18	9.57	1.35	10.11	1.40
	12	5.40	0.72	6.43	0.87	7.49	1.03	8.00	1.12	8.51	1.20	9.57	1.37	9.97	1.41
	14	5.40	0.73	6.43	0.89	7.49	1.05	8.00	1.14	8.51	1.22	9.57	1.40	9.86	1.42
	16	5.40	0.75	6.43	0.91	7.49	1.07	8.00	1.16	8.51	1.25	9.51	1.42	9.71	1.44
	18	5.40	0.76	6.43	0.92	7.49	1.09	8.00	1.18	8.51	1.27	9.40	1.46	9.60	1.48
	20	5.40	0.77	6.43	0.94	7.49	1.13	8.00	1.24	8.51	1.36	9.26	1.53	9.46	1.55
	21	5.40	0.78	6.43	0.95	7.49	1.17	8.00	1.29	8.51	1.41	9.20	1.57	9.40	1.58
	23	5.40	0.80	6.43	1.01	7.49	1.25	8.00	1.38	8.51	1.51	9.09	1.64	9.26	1.65
25	5.40	0.85	6.43	1.08	7.49	1.34	8.00	1.48	8.51	1.62	8.94	1.71	9.14	1.73	

	27	5.40	0.91	6.43	1.15	7.49	1.43	8.00	1.58	8.51	1.74	8.80	1.78	9.00	1.80
	29	5.40	0.97	6.43	1.23	7.49	1.53	8.00	1.69	8.49	1.84	8.69	1.86	8.89	1.87
	31	5.40	1.03	6.43	1.32	7.49	1.63	8.00	1.80	8.37	1.91	8.54	1.93	8.74	1.95
	33	5.40	1.10	6.43	1.40	7.49	1.74	8.00	1.92	8.23	1.99	8.43	2.00	8.63	2.02
	35	5.40	1.17	6.43	1.49	7.49	1.85	8.00	2.05	8.09	2.06	8.29	2.08	8.49	2.09
	37	5.40	1.24	6.43	1.59	7.49	1.98	7.86	2.12	7.97	2.13	8.17	2.15	8.34	2.17
	39	5.40	1.32	6.43	1.69	7.49	2.10	7.74	2.19	7.83	2.20	8.03	2.22	8.23	2.25
	41	5.40	1.38	6.43	1.75	7.49	2.18	7.62	2.21	7.77	2.24	7.89	2.28	8.11	2.29
	43	5.40	1.44	6.43	1.81	7.49	2.22	7.50	2.23	7.71	2.26	7.94	2.29	7.97	2.32
	45	5.40	1.52	6.43	1.89	7.49	2.26	7.34	2.27	7.67	2.30	7.87	2.33	7.81	2.35
	48	5.59	1.59	6.66	1.96	7.75	2.26	7.29	2.29	7.93	2.34	7.65	2.35	7.91	2.37
90%	-5	4.86	0.57	5.80	0.68	6.74	0.81	7.20	0.88	7.66	0.94	8.60	1.08	9.54	1.23
	-2	4.86	0.57	5.80	0.69	6.74	0.82	7.20	0.89	7.66	0.95	8.60	1.09	9.54	1.24
	0	4.86	0.58	5.80	0.70	6.74	0.83	7.20	0.90	7.66	0.96	8.60	1.10	9.54	1.25
	2	4.86	0.59	5.80	0.71	6.74	0.84	7.20	0.92	7.66	0.97	8.60	1.12	9.54	1.27
	4	4.86	0.60	5.80	0.72	6.74	0.85	7.20	0.93	7.66	0.99	8.60	1.14	9.54	1.29
	6	4.86	0.61	5.80	0.73	6.74	0.87	7.20	0.95	7.66	1.00	8.60	1.16	9.54	1.31
	8	4.86	0.62	5.80	0.75	6.74	0.88	7.20	0.96	7.66	1.02	8.60	1.18	9.54	1.32
	10	4.86	0.63	5.80	0.76	6.74	0.90	7.20	0.97	7.66	1.04	8.60	1.19	9.54	1.35
	12	4.86	0.64	5.80	0.78	6.74	0.92	7.20	0.99	7.66	1.06	8.60	1.22	9.54	1.37
	14	4.86	0.65	5.80	0.79	6.74	0.93	7.20	1.01	7.66	1.08	8.60	1.24	9.54	1.40
	16	4.86	0.67	5.80	0.80	6.74	0.95	7.20	1.03	7.66	1.11	8.60	1.26	9.51	1.42
	18	4.86	0.68	5.80	0.82	6.74	0.97	7.20	1.05	7.66	1.13	8.60	1.29	9.40	1.46
	20	4.86	0.69	5.80	0.84	6.74	0.99	7.20	1.07	7.66	1.17	8.60	1.38	9.26	1.53
	21	4.86	0.70	5.80	0.85	6.74	1.01	7.20	1.11	7.66	1.21	8.60	1.43	9.20	1.57
	23	4.86	0.71	5.80	0.88	6.74	1.08	7.20	1.19	7.66	1.30	8.60	1.54	9.06	1.64
	25	4.86	0.75	5.80	0.94	6.74	1.15	7.20	1.27	7.66	1.39	8.60	1.65	8.94	1.71
	27	4.86	0.80	5.80	1.00	6.74	1.23	7.20	1.35	7.66	1.48	8.60	1.76	8.80	1.78
	29	4.86	0.85	5.80	1.07	6.74	1.31	7.20	1.44	7.66	1.59	8.51	1.84	8.69	1.86
	31	4.86	0.90	5.80	1.14	6.74	1.40	7.20	1.54	7.66	1.69	8.37	1.91	8.54	1.93
	33	4.86	0.96	5.80	1.21	6.74	1.49	7.20	1.64	7.66	1.80	8.26	1.99	8.43	2.00
35	4.86	1.02	5.80	1.28	6.74	1.59	7.20	1.75	7.66	1.92	8.11	2.06	8.29	2.08	
37	4.86	1.08	5.80	1.36	6.74	1.69	7.20	1.86	7.66	2.05	7.97	2.13	8.17	2.15	
39	4.86	1.14	5.80	1.45	6.74	1.80	7.20	1.99	7.66	2.18	7.86	2.21	8.03	2.22	
41	4.86	1.18	5.80	1.52	6.74	1.86	7.20	2.04	7.66	2.20	7.80	2.26	7.97	2.28	
43	4.86	1.24	5.80	1.58	6.74	1.93	7.20	2.09	7.66	2.24	7.76	2.29	7.91	2.31	
45	4.86	1.32	5.80	1.66	6.74	2.01	7.20	2.16	7.66	2.30	7.72	2.32	7.79	2.34	
48	4.86	1.39	5.80	1.74	6.74	2.08	7.20	2.19	7.66	2.32	8.51	2.35	8.42	2.37	
80%	-5	4.31	0.50	5.14	0.59	5.97	0.70	6.40	0.75	6.83	0.80	7.66	0.93	8.49	1.06
	-2	4.31	0.51	5.14	0.60	5.97	0.71	6.40	0.76	6.83	0.81	7.66	0.94	8.49	1.07
	0	4.31	0.52	5.14	0.61	5.97	0.72	6.40	0.77	6.83	0.83	7.66	0.95	8.49	1.09
	2	4.31	0.53	5.14	0.62	5.97	0.73	6.40	0.78	6.83	0.84	7.66	0.97	8.49	1.11
	4	4.31	0.54	5.14	0.63	5.97	0.74	6.40	0.80	6.83	0.86	7.66	0.99	8.49	1.12
	6	4.31	0.55	5.14	0.64	5.97	0.75	6.40	0.82	6.83	0.87	7.66	1.00	8.49	1.14
	8	4.31	0.56	5.14	0.66	5.97	0.77	6.40	0.83	6.83	0.89	7.66	1.02	8.49	1.16
	10	4.31	0.56	5.14	0.67	5.97	0.79	6.40	0.85	6.83	0.91	7.66	1.04	8.49	1.17
	12	4.31	0.57	5.14	0.68	5.97	0.80	6.40	0.87	6.83	0.93	7.66	1.06	8.49	1.20
	14	4.31	0.58	5.14	0.70	5.97	0.82	6.40	0.88	6.83	0.95	7.66	1.08	8.49	1.22
	16	4.31	0.59	5.14	0.71	5.97	0.83	6.40	0.90	6.83	0.96	7.66	1.10	8.49	1.24
	18	4.31	0.60	5.14	0.72	5.97	0.85	6.40	0.92	6.83	0.98	7.66	1.12	8.49	1.27
	20	4.31	0.61	5.14	0.73	5.97	0.87	6.40	0.93	6.83	1.00	7.66	1.17	8.49	1.35
	21	4.31	0.62	5.14	0.74	5.97	0.88	6.40	0.94	6.83	1.03	7.66	1.21	8.49	1.40
23	4.31	0.63	5.14	0.76	5.97	0.92	6.40	1.01	6.83	1.10	7.66	1.29	8.49	1.51	

	25	4.31	0.65	5.14	0.80	5.97	0.98	6.40	1.07	6.83	1.17	7.66	1.38	8.49	1.61
	27	4.31	0.69	5.14	0.86	5.97	1.04	6.40	1.15	6.83	1.25	7.66	1.48	8.49	1.72
	29	4.31	0.73	5.14	0.91	5.97	1.11	6.40	1.22	6.83	1.34	7.66	1.58	8.49	1.84
	31	4.31	0.78	5.14	0.97	5.97	1.19	6.40	1.30	6.83	1.43	7.66	1.69	8.34	1.91
	33	4.31	0.83	5.14	1.03	5.97	1.26	6.40	1.39	6.83	1.52	7.66	1.80	8.23	1.99
	35	4.31	0.88	5.14	1.10	5.97	1.34	6.40	1.48	6.83	1.62	7.66	1.91	8.09	2.06
	37	4.31	0.93	5.14	1.16	5.97	1.43	6.40	1.57	6.83	1.72	7.66	2.04	7.97	2.13
	39	4.31	0.98	5.14	1.24	5.97	1.52	6.40	1.67	6.83	1.83	7.66	2.17	7.83	2.20
	41	4.31	1.01	5.14	1.25	5.97	1.54	6.40	1.72	6.83	1.87	7.66	2.23	7.78	2.24
	43	4.31	1.04	5.14	1.26	5.97	1.56	6.40	1.75	6.83	1.89	7.66	2.26	7.73	2.27
	45	4.31	1.06	5.14	1.28	5.97	1.59	6.40	1.78	6.83	1.92	7.66	2.28	7.64	2.30
	48	4.31	1.10	5.14	1.29	6.72	1.62	6.40	1.81	6.83	1.94	7.66	2.30	8.52	2.34
70%	-5	3.77	0.45	4.51	0.53	5.23	0.59	5.60	0.64	5.97	0.68	6.69	0.78	7.43	0.90
	-2	3.77	0.45	4.51	0.53	5.23	0.60	5.60	0.65	5.97	0.69	6.69	0.79	7.43	0.91
	0	3.77	0.45	4.51	0.53	5.23	0.61	5.60	0.66	5.97	0.71	6.69	0.81	7.43	0.92
	2	3.77	0.46	4.51	0.54	5.23	0.62	5.60	0.67	5.97	0.72	6.69	0.82	7.43	0.93
	4	3.77	0.46	4.51	0.55	5.23	0.63	5.60	0.69	5.97	0.73	6.69	0.84	7.43	0.96
	6	3.77	0.47	4.51	0.56	5.23	0.65	5.60	0.71	5.97	0.75	6.69	0.85	7.43	0.98
	8	3.77	0.48	4.51	0.58	5.23	0.66	5.60	0.72	5.97	0.77	6.69	0.88	7.43	0.99
	10	3.77	0.49	4.51	0.59	5.23	0.68	5.60	0.73	5.97	0.79	6.69	0.90	7.43	1.01
	12	3.77	0.50	4.51	0.59	5.23	0.70	5.60	0.75	5.97	0.80	6.69	0.91	7.43	1.03
	14	3.77	0.51	4.51	0.61	5.23	0.71	5.60	0.76	5.97	0.82	6.69	0.93	7.43	1.04
	16	3.77	0.52	4.51	0.62	5.23	0.72	5.60	0.78	5.97	0.83	6.69	0.94	7.43	1.06
	18	3.77	0.52	4.51	0.63	5.23	0.73	5.60	0.79	5.97	0.85	6.69	0.96	7.43	1.09
	20	3.77	0.53	4.51	0.64	5.23	0.75	5.60	0.80	5.97	0.86	6.69	0.98	7.43	1.12
	21	3.77	0.54	4.51	0.64	5.23	0.75	5.60	0.81	5.97	0.87	6.69	1.00	7.43	1.15
	23	3.77	0.55	4.51	0.65	5.23	0.77	5.60	0.84	5.97	0.91	6.69	1.07	7.43	1.24
	25	3.77	0.56	4.51	0.68	5.23	0.82	5.60	0.90	5.97	0.98	6.69	1.14	7.43	1.32
	27	3.77	0.59	4.51	0.73	5.23	0.88	5.60	0.96	5.97	1.04	6.69	1.22	7.43	1.41
	29	3.77	0.63	4.51	0.77	5.23	0.93	5.60	1.02	5.97	1.11	6.69	1.30	7.43	1.51
	31	3.77	0.66	4.51	0.82	5.23	0.99	5.60	1.08	5.97	1.18	6.69	1.39	7.43	1.61
	33	3.77	0.70	4.51	0.87	5.23	1.06	5.60	1.15	5.97	1.26	6.69	1.48	7.43	1.72
35	3.77	0.75	4.51	0.92	5.23	1.12	5.60	1.23	5.97	1.34	6.69	1.57	7.43	1.83	
37	3.77	0.79	4.51	0.98	5.23	1.19	5.60	1.30	5.97	1.42	6.69	1.68	7.43	1.95	
39	3.77	0.83	4.51	1.04	5.23	1.26	5.60	1.38	5.97	1.51	6.69	1.78	7.43	2.08	
41	3.77	0.87	4.51	1.07	5.23	1.30	5.60	1.43	5.97	1.56	6.69	1.86	7.43	2.17	
43	3.77	0.94	4.51	1.15	5.23	1.35	5.60	1.51	5.97	1.60	6.69	1.92	7.43	2.24	
45	3.77	0.96	4.51	1.17	5.23	1.38	5.60	1.53	5.97	1.68	6.69	2.03	7.43	2.32	
48	3.77	0.99	4.51	1.18	5.23	1.40	5.60	1.56	5.97	1.73	6.69	2.12	7.43	2.38	
60%	-5	3.23	0.38	3.86	0.44	4.49	0.52	4.80	0.55	5.11	0.59	5.74	0.67	6.37	0.76
	-2	3.23	0.38	3.86	0.45	4.49	0.53	4.80	0.56	5.11	0.60	5.74	0.68	6.37	0.77
	0	3.23	0.39	3.86	0.46	4.49	0.53	4.80	0.56	5.11	0.61	5.74	0.69	6.37	0.78
	2	3.23	0.40	3.86	0.47	4.49	0.54	4.80	0.58	5.11	0.62	5.74	0.70	6.37	0.79
	4	3.23	0.41	3.86	0.47	4.49	0.55	4.80	0.58	5.11	0.63	5.74	0.71	6.37	0.80
	6	3.23	0.41	3.86	0.48	4.49	0.56	4.80	0.60	5.11	0.64	5.74	0.73	6.37	0.82
	8	3.23	0.42	3.86	0.49	4.49	0.57	4.80	0.61	5.11	0.65	5.74	0.74	6.37	0.83
	10	3.23	0.43	3.86	0.50	4.49	0.58	4.80	0.62	5.11	0.67	5.74	0.75	6.37	0.85
	12	3.23	0.44	3.86	0.51	4.49	0.59	4.80	0.64	5.11	0.68	5.74	0.77	6.37	0.86
	14	3.23	0.44	3.86	0.52	4.49	0.60	4.80	0.65	5.11	0.69	5.74	0.78	6.37	0.88
	16	3.23	0.45	3.86	0.53	4.49	0.61	4.80	0.66	5.11	0.70	5.74	0.80	6.37	0.89
	18	3.23	0.46	3.86	0.54	4.49	0.62	4.80	0.67	5.11	0.72	5.74	0.81	6.37	0.91
	20	3.23	0.46	3.86	0.55	4.49	0.64	4.80	0.68	5.11	0.73	5.74	0.83	6.37	0.93
21	3.23	0.47	3.86	0.55	4.49	0.64	4.80	0.69	5.11	0.73	5.74	0.83	6.37	0.94	

	23	3.23	0.47	3.86	0.56	4.49	0.65	4.80	0.70	5.11	0.75	5.74	0.87	6.37	1.00
	25	3.23	0.48	3.86	0.57	4.49	0.68	4.80	0.73	5.11	0.80	5.74	0.93	6.37	1.06
	27	3.23	0.50	3.86	0.60	4.49	0.72	4.80	0.78	5.11	0.85	5.74	0.99	6.37	1.14
	29	3.23	0.53	3.86	0.64	4.49	0.77	4.80	0.83	5.11	0.90	5.74	1.05	6.37	1.21
	31	3.23	0.56	3.86	0.68	4.49	0.81	4.80	0.89	5.11	0.96	5.74	1.12	6.37	1.29
	33	3.23	0.59	3.86	0.72	4.49	0.86	4.80	0.94	5.11	1.02	5.74	1.19	6.37	1.38
	35	3.23	0.63	3.86	0.77	4.49	0.92	4.80	1.00	5.11	1.09	5.74	1.27	6.37	1.46
	37	3.23	0.66	3.86	0.81	4.49	0.97	4.80	1.06	5.11	1.15	5.74	1.35	6.37	1.56
	39	3.23	0.70	3.86	0.86	4.49	1.03	4.80	1.12	5.11	1.22	5.74	1.43	6.37	1.66
	41	3.23	0.72	3.86	0.89	4.49	1.07	4.80	1.17	5.11	1.27	5.74	1.50	6.37	1.73
	43	3.23	0.74	3.86	0.93	4.49	1.11	4.80	1.20	5.11	1.31	5.74	1.56	6.37	1.81
	45	3.23	0.78	3.86	0.98	4.49	1.15	4.80	1.25	5.11	1.38	5.74	1.63	6.37	1.91
	48	3.23	0.81	3.86	1.02	4.49	1.19	4.80	1.28	5.11	1.43	5.74	1.69	6.37	2.00
50%	-5	2.70	0.33	3.23	0.38	3.74	0.44	4.00	0.46	4.26	0.49	4.77	0.55	5.31	0.60
	-2	2.70	0.33	3.23	0.39	3.74	0.45	4.00	0.47	4.26	0.50	4.77	0.56	5.31	0.60
	0	2.70	0.34	3.23	0.40	3.74	0.45	4.00	0.47	4.26	0.50	4.77	0.57	5.31	0.62
	2	2.70	0.34	3.23	0.40	3.74	0.46	4.00	0.48	4.26	0.51	4.77	0.57	5.31	0.63
	4	2.70	0.35	3.23	0.41	3.74	0.47	4.00	0.49	4.26	0.52	4.77	0.59	5.31	0.64
	6	2.70	0.35	3.23	0.42	3.74	0.47	4.00	0.50	4.26	0.53	4.77	0.60	5.31	0.66
	8	2.70	0.36	3.23	0.42	3.74	0.48	4.00	0.51	4.26	0.54	4.77	0.61	5.31	0.68
	10	2.70	0.37	3.23	0.43	3.74	0.49	4.00	0.52	4.26	0.55	4.77	0.62	5.31	0.69
	12	2.70	0.37	3.23	0.43	3.74	0.50	4.00	0.53	4.26	0.56	4.77	0.63	5.31	0.70
	14	2.70	0.38	3.23	0.44	3.74	0.50	4.00	0.54	4.26	0.57	4.77	0.64	5.31	0.72
	16	2.70	0.38	3.23	0.44	3.74	0.51	4.00	0.55	4.26	0.58	4.77	0.65	5.31	0.73
	18	2.70	0.39	3.23	0.45	3.74	0.52	4.00	0.56	4.26	0.59	4.77	0.67	5.31	0.74
	20	2.70	0.40	3.23	0.46	3.74	0.53	4.00	0.56	4.26	0.60	4.77	0.68	5.31	0.76
	21	2.70	0.40	3.23	0.46	3.74	0.53	4.00	0.57	4.26	0.61	4.77	0.69	5.31	0.77
	23	2.70	0.40	3.23	0.47	3.74	0.54	4.00	0.58	4.26	0.62	4.77	0.70	5.31	0.78
	25	2.70	0.41	3.23	0.48	3.74	0.55	4.00	0.59	4.26	0.64	4.77	0.73	5.31	0.83
	27	2.70	0.42	3.23	0.50	3.74	0.58	4.00	0.63	4.26	0.68	4.77	0.78	5.31	0.89
	29	2.70	0.44	3.23	0.52	3.74	0.62	4.00	0.67	4.26	0.72	4.77	0.83	5.31	0.95
	31	2.70	0.46	3.23	0.56	3.74	0.65	4.00	0.71	4.26	0.77	4.77	0.88	5.31	1.01
	33	2.70	0.49	3.23	0.59	3.74	0.70	4.00	0.75	4.26	0.81	4.77	0.94	5.31	1.07
35	2.70	0.52	3.23	0.62	3.74	0.73	4.00	0.80	4.26	0.86	4.77	0.99	5.31	1.14	
37	2.70	0.55	3.23	0.66	3.74	0.78	4.00	0.84	4.26	0.91	4.77	1.06	5.31	1.21	
39	2.70	0.58	3.23	0.69	3.74	0.82	4.00	0.89	4.26	0.97	4.77	1.12	5.31	1.28	
41	2.70	0.60	3.23	0.72	3.74	0.85	4.00	0.93	4.26	1.01	4.77	1.18	5.31	1.34	
43	2.70	0.64	3.23	0.77	3.74	0.88	4.00	0.98	4.26	1.03	4.77	1.24	5.31	1.40	
45	2.70	0.66	3.23	0.79	3.74	0.94	4.00	1.05	4.26	1.08	4.77	1.36	5.31	1.52	
48	2.70	0.67	3.23	0.82	3.74	1.00	4.00	1.12	4.26	1.13	4.77	1.47	5.31	1.64	

**Note:**

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combination (%) (Capacity index)	Outdoor temperature(°C DB)		Indoor temperature(°C WB)											
			16		18		20		21		22		24	
	°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
130%	-19.8	-20	5.83	1.58	5.80	1.69	5.77	1.81	5.77	1.86	5.74	1.92	5.74	2.03
	-18.8	-19	5.91	1.62	5.89	1.73	5.89	1.84	5.86	1.89	5.86	1.95	5.83	2.06
	-16.7	-17	6.14	1.69	6.11	1.80	6.09	1.91	6.09	1.96	6.09	2.01	6.06	2.11
	-13.7	-15	6.40	1.77	6.37	1.87	6.34	1.98	6.34	2.02	6.31	2.08	6.31	2.18
	-11.8	-13	6.66	1.85	6.66	1.95	6.63	2.05	6.60	2.09	6.60	2.14	6.57	2.24
	-9.8	-11	6.97	1.93	6.94	2.02	6.91	2.12	6.91	2.16	6.91	2.21	6.89	2.30
	-9.5	-10	7.14	1.97	7.11	2.06	7.09	2.15	7.09	2.20	7.06	2.24	7.06	2.33
	-8.5	-9.1	7.29	2.01	7.26	2.09	7.26	2.18	7.23	2.23	7.23	2.27	7.20	2.36
	-7	-7.6	7.54	2.07	7.54	2.15	7.51	2.24	7.51	2.28	7.49	2.32	7.46	2.41
	-5	-5.6	7.94	2.14	7.91	2.23	7.89	2.31	7.89	2.35	7.86	2.39	7.86	2.47
	-3	-3.7	8.31	2.21	8.29	2.29	8.29	2.37	8.26	2.41	8.26	2.45	8.23	2.52
	0	-0.7	8.97	2.32	8.97	2.39	8.94	2.46	8.94	2.49	8.91	2.54	8.91	2.61
	3	2.2	9.68	2.42	9.66	2.48	9.63	2.55	9.63	2.58	9.63	2.62	9.60	2.68
	5	4.1	10.17	2.48	10.14	2.54	10.14	2.60	10.11	2.64	10.11	2.67	10.09	2.73
	7	6	10.69	2.54	10.66	2.59	10.66	2.66	10.63	2.69	10.63	2.71	10.20	2.61
	9	7.9	11.23	2.59	11.20	2.65	11.20	2.70	11.17	2.73	10.94	2.67	10.20	2.45
11	9.8	11.80	2.64	11.77	2.69	11.71	2.73	11.31	2.62	10.94	2.51	10.20	2.31	
13	11.8	12.43	2.69	12.40	2.74	11.71	2.56	11.31	2.46	10.94	2.36	10.20	2.16	
15	13.7	13.03	2.74	12.46	2.60	11.71	2.41	11.31	2.32	10.94	2.22	10.20	2.04	
120%	-19.8	-20	5.80	1.73	5.77	1.84	5.74	1.94	5.74	1.99	5.74	2.04	5.71	2.15
	-18.8	-19	5.89	1.77	5.86	1.87	5.86	1.97	5.83	2.02	5.83	2.07	5.80	2.17
	-16.7	-17	6.11	1.84	6.09	1.93	6.05	2.03	6.06	2.08	6.06	2.13	6.03	2.23
	-13.7	-15	6.37	1.91	6.34	2.00	6.31	2.09	6.31	2.14	6.31	2.19	6.29	2.28
	-11.8	-13	6.63	1.98	6.63	2.07	6.60	2.16	6.60	2.21	6.57	2.25	6.57	2.34
	-9.8	-11	6.94	2.06	6.91	2.14	6.91	2.23	6.89	2.27	6.89	2.31	6.86	2.40
	-9.5	-10	7.12	2.09	7.09	2.18	7.06	2.26	7.06	2.30	7.06	2.34	7.03	2.43
	-8.5	-9.1	7.26	2.13	7.23	2.21	7.23	2.29	7.20	2.33	7.20	2.37	7.17	2.46
	-7	-7.6	7.51	2.18	7.51	2.26	7.49	2.34	7.49	2.38	7.46	2.42	7.46	2.50
	-5	-5.6	7.91	2.25	7.89	2.33	7.86	2.40	7.86	2.44	7.86	2.48	7.83	2.55
	-3	-3.7	8.29	2.32	8.29	2.39	8.26	2.46	8.26	2.50	8.23	2.53	8.23	2.60
	0	-0.7	8.94	2.42	8.94	2.48	8.91	2.55	8.91	2.58	8.89	2.62	8.89	2.68
	3	2.2	9.66	2.51	9.63	2.57	9.63	2.63	9.60	2.66	9.60	2.69	9.40	2.68
	5	4.1	10.14	2.56	10.11	2.62	10.11	2.68	10.09	2.71	10.09	2.74	9.40	2.51
	7	6	10.66	2.62	10.66	2.67	10.63	2.73	10.46	2.69	10.11	2.58	9.40	2.37
	9	7.9	11.20	2.67	11.17	2.72	10.80	2.63	10.46	2.53	10.11	2.42	9.40	2.23
11	9.8	11.77	2.71	11.49	2.67	10.80	2.47	10.46	2.38	10.11	2.28	9.40	2.10	
13	11.8	12.20	2.69	11.49	2.50	10.80	2.32	10.46	2.23	10.11	2.14	9.40	1.97	
15	13.7	12.20	2.53	11.49	2.36	10.80	2.19	10.46	2.10	10.11	2.02	9.40	1.86	
110%	-19.8	-20	5.77	1.89	5.74	1.98	5.71	2.07	5.71	2.12	5.72	2.17	5.69	2.26
	-18.8	-19	5.86	1.91	5.83	2.01	5.83	2.10	5.83	2.15	5.80	2.19	5.80	2.29
	-16.7	-17	6.09	1.98	6.06	2.07	6.14	2.16	6.03	2.20	6.03	2.25	6.00	2.34
	-13.7	-15	6.34	2.05	6.32	2.13	6.29	2.22	6.29	2.26	6.29	2.30	6.26	2.39
	-11.8	-13	6.60	2.11	6.60	2.20	6.57	2.28	6.57	2.32	6.54	2.36	6.54	2.44
	-9.8	-11	6.91	2.18	6.89	2.26	6.89	2.34	6.86	2.38	6.86	2.42	6.86	2.50
	-9.5	-10	7.09	2.22	7.06	2.29	7.03	2.37	7.03	2.41	7.03	2.45	7.00	2.52
	-8.5	-9.1	7.23	2.25	7.20	2.32	7.20	2.40	7.17	2.44	7.17	2.47	7.17	2.25
	-7	-7.6	7.49	2.30	7.49	2.37	7.46	2.44	7.46	2.48	7.46	2.51	7.43	2.59
-5	-5.6	7.89	2.36	7.86	2.43	7.83	2.50	7.83	2.53	7.83	2.57	7.80	2.64	

	-3	-3.7	8.26	2.42	8.26	2.49	8.23	2.55	8.23	2.59	8.20	2.62	8.20	2.69
	0	-0.7	8.91	2.51	8.91	2.57	8.89	2.64	8.89	2.66	8.89	2.70	8.63	2.64
	3	2.2	9.63	2.60	9.60	2.65	9.60	2.71	9.57	2.73	9.26	2.62	8.63	2.41
	5	4.1	10.11	2.65	10.11	2.70	9.91	2.68	9.57	2.57	9.26	2.47	8.63	2.26
	7	6	10.63	2.70	10.54	2.71	9.91	2.51	9.57	2.41	9.26	2.32	8.63	2.13
	9	7.9	11.17	2.74	10.54	2.55	9.91	2.36	9.57	2.27	9.26	2.18	8.63	2.01
	11	9.8	11.17	2.58	10.54	2.40	9.91	2.23	9.57	2.14	9.26	2.06	8.63	1.89
	13	11.8	11.17	2.42	10.54	2.25	9.91	2.09	9.57	2.01	9.26	1.93	8.63	1.78
	15	13.7	11.17	2.15	10.54	2.12	9.91	1.98	9.57	1.90	9.26	1.83	8.63	1.69
100%	-19.8	-20	5.74	2.04	5.71	2.12	5.71	2.21	5.69	2.25	5.69	2.29	5.66	2.38
	-18.8	-19	5.83	2.06	5.83	2.15	5.80	2.23	5.80	2.27	5.77	2.32	5.77	2.40
	-16.7	-17	6.06	2.12	6.03	2.20	6.03	2.28	6.00	2.32	6.00	2.36	6.00	2.45
	-13.7	-15	6.31	2.18	6.29	2.26	6.26	2.34	6.26	2.38	6.26	2.42	6.23	2.50
	-11.8	-13	6.57	2.25	6.57	2.32	6.54	2.39	6.54	2.43	6.54	2.47	6.51	2.55
	-9.8	-11	6.89	2.31	6.86	2.38	6.86	2.45	6.86	2.49	6.83	2.52	6.83	2.59
	-9.5	-10	7.06	2.34	7.03	2.41	7.03	2.48	7.00	2.51	7.00	2.55	6.97	2.62
	-8.5	-9.1	7.20	2.36	7.17	2.43	7.17	2.50	7.17	2.54	7.14	2.57	7.14	2.64
	-7	-7.6	7.46	2.41	7.46	2.48	7.43	2.54	7.43	2.58	7.43	2.61	7.40	2.68
	-5	-5.6	7.86	2.47	7.83	2.53	7.83	2.60	7.80	2.63	7.80	2.66	7.77	2.72
	-3	-3.7	8.23	2.53	8.23	2.30	8.20	2.65	8.20	2.68	8.20	2.71	7.86	2.59
	0	-0.7	8.89	2.61	8.89	2.66	8.86	2.72	8.71	2.68	8.43	2.57	7.86	2.35
	3	2.2	9.60	2.69	9.57	2.73	9.00	2.53	8.71	2.43	8.43	2.34	7.86	2.14
	5	4.1	10.09	2.73	9.57	2.57	9.00	2.38	8.71	2.29	8.43	2.20	7.86	2.02
	7	6	10.14	2.59	9.57	2.41	9.00	2.24	8.71	2.16	8.43	2.07	7.86	1.91
	9	7.9	10.14	2.44	9.57	2.27	9.00	2.11	8.71	2.00	8.43	1.95	7.86	1.80
	11	9.8	10.14	2.30	9.57	2.14	9.00	1.99	8.71	1.91	8.43	1.84	7.86	1.70
	13	11.8	10.14	2.16	9.57	2.01	9.00	1.87	8.71	1.80	8.43	1.74	7.86	1.60
15	13.7	10.14	2.03	9.57	1.90	9.00	1.77	8.71	1.70	8.43	1.64	7.86	1.52	
90%	-19.8	-20	5.70	2.19	5.68	2.26	5.68	2.34	5.65	2.38	5.65	2.42	5.65	2.50
	-18.8	-19	5.79	2.21	5.79	2.29	5.76	2.37	5.76	2.40	5.76	2.44	5.73	2.52
	-16.7	-17	6.02	2.27	5.99	2.34	5.99	2.41	5.99	2.45	5.96	2.48	5.96	2.56
	-13.7	-15	6.27	2.32	6.25	2.39	6.25	2.46	6.22	2.50	6.22	2.53	6.22	2.60
	-11.8	-13	6.53	2.38	6.53	2.44	6.50	2.51	6.50	2.55	6.50	2.58	6.47	2.64
	-9.8	-11	6.85	2.43	6.85	2.50	6.82	2.56	6.82	2.59	6.82	2.63	6.79	2.69
	-9.5	-10	7.02	2.46	6.99	2.53	6.99	2.59	6.96	2.62	6.96	2.65	6.96	2.71
	-8.5	-9.1	7.16	2.49	7.16	2.55	7.13	2.61	7.13	2.64	7.13	2.67	7.04	2.70
	-7	-7.6	7.42	2.53	7.42	2.59	7.39	2.65	7.39	2.68	7.39	2.71	7.04	2.57
	-5	-5.6	7.81	2.58	7.79	2.64	7.79	2.69	7.76	2.72	7.56	2.64	7.04	2.42
	-3	-3.7	8.19	2.63	8.19	2.69	8.10	2.70	7.81	2.59	7.56	2.48	7.04	2.28
	0	-0.7	8.87	2.71	8.61	2.64	8.10	2.45	7.81	2.35	7.56	2.26	7.04	2.07
	3	2.2	9.13	2.58	8.61	2.40	8.10	2.23	7.81	2.14	7.56	2.06	7.04	1.90
	5	4.1	9.13	2.43	8.61	2.26	8.10	2.10	7.81	2.02	7.56	1.94	7.04	1.79
	7	6	9.13	2.28	8.61	2.13	8.10	1.98	7.81	1.91	7.56	1.83	7.04	1.69
	9	7.9	9.13	2.15	8.61	2.00	8.10	1.86	7.81	1.80	7.56	1.73	7.04	1.60
	11	9.8	9.13	2.02	8.61	1.89	8.10	1.76	7.81	1.70	7.56	1.63	7.04	1.51
	13	11.8	9.13	1.91	8.61	1.78	8.10	1.66	7.81	1.60	7.56	1.54	7.04	1.43
15	13.7	9.13	1.80	8.61	1.68	8.10	1.57	7.81	1.52	7.56	1.46	7.04	1.36	
80%	-19.8	-20	5.69	2.34	5.66	2.41	5.66	2.48	5.66	2.51	5.63	2.55	5.63	2.61
	-18.8	-19	5.77	2.36	5.77	2.43	5.74	2.50	5.74	2.53	5.74	2.56	5.71	2.63
	-16.7	-17	6.00	2.41	5.97	2.47	5.97	2.54	5.97	2.57	5.97	2.60	5.94	2.67
	-13.7	-15	6.26	2.46	6.23	2.52	6.23	2.58	6.23	2.61	6.20	2.64	6.20	2.71
	-11.8	-13	6.51	2.51	6.51	2.57	6.49	2.63	6.49	2.66	6.49	2.69	6.29	2.62
	-9.8	-11	6.83	2.56	6.83	2.62	6.80	2.67	6.80	2.70	6.74	2.69	6.29	2.47



	-9.5	-10	7.00	2.58	6.97	2.64	6.97	2.69	6.97	2.72	6.74	2.62	6.29	2.40
	-8.5	-9.1	7.14	2.61	6.64	2.66	7.11	2.71	6.97	2.65	6.74	2.55	6.29	2.33
	-7	-7.6	7.40	2.64	7.40	2.70	7.20	2.64	6.97	2.53	6.74	2.43	6.29	2.23
	-5	-5.6	7.80	2.69	7.66	2.68	7.20	2.48	6.97	2.38	6.74	2.29	6.29	2.10
	-3	-3.7	8.11	2.71	7.66	2.52	7.20	2.33	6.97	2.25	6.74	2.16	6.29	1.98
	0	-0.7	8.11	2.46	7.66	2.29	7.20	2.12	6.97	2.05	6.74	1.96	6.29	1.81
	3	2.2	8.11	2.24	7.66	2.09	7.20	1.94	6.97	1.87	6.74	1.80	6.29	1.66
	5	4.1	8.11	2.11	7.66	1.97	7.20	1.83	6.97	1.76	6.74	1.70	6.29	1.57
	7	6	8.11	1.98	7.66	1.86	7.20	1.73	6.97	1.67	6.74	1.61	6.29	1.48
	9	7.9	8.11	1.87	7.66	1.75	7.20	1.63	6.97	1.57	6.74	1.52	6.29	1.40
	11	9.8	8.11	1.77	7.66	1.66	7.20	1.54	6.97	1.49	6.74	1.44	6.29	1.33
	13	11.8	8.11	1.67	7.66	1.56	7.20	1.46	6.97	1.41	6.74	1.36	6.29	1.26
	15	13.7	8.11	1.58	7.66	1.48	7.20	1.38	6.97	1.34	6.74	1.29	6.29	1.20
70%	-19.8	-20	5.64	2.49	5.62	2.55	5.62	2.61	5.62	2.64	5.62	2.67	5.47	2.64
	-18.8	-19	5.73	2.51	5.73	2.57	5.70	2.63	5.70	2.66	5.70	2.69	5.47	2.59
	-16.7	-17	5.96	2.55	5.96	2.61	5.93	2.66	5.93	2.69	5.87	2.40	5.47	2.47
	-13.7	-15	6.21	2.59	6.19	2.65	6.19	2.71	6.07	2.66	5.87	2.56	5.47	2.34
	-11.8	-13	6.47	2.64	6.47	2.69	6.30	2.63	6.07	2.52	5.87	2.42	5.47	2.22
	-9.8	-11	6.78	2.68	6.70	2.68	6.30	2.48	6.07	2.39	5.87	2.29	5.47	2.10
	-9.5	-10	6.96	2.71	6.70	2.60	6.30	2.41	6.07	2.32	5.87	2.23	5.47	2.04
	-8.5	-9.1	7.10	2.72	6.70	2.53	6.30	2.34	6.07	2.25	5.87	2.17	5.47	1.99
	-7	-7.6	7.10	2.60	6.70	2.42	6.30	2.24	6.07	2.16	5.87	2.07	5.47	1.91
	-5	-5.6	7.10	2.44	6.70	2.27	6.30	2.11	6.07	2.03	5.87	2.00	5.47	1.80
	-3	-3.7	7.10	2.30	6.70	2.14	6.30	1.99	6.07	1.92	5.87	1.84	5.47	1.70
	0	-0.7	7.10	2.09	6.70	1.95	6.30	1.82	6.07	1.75	5.87	1.69	5.47	1.56
	3	2.2	7.10	1.91	6.70	1.79	6.30	1.67	6.07	1.61	5.87	1.55	5.47	1.43
	5	4.1	7.10	1.80	6.70	1.69	6.30	1.58	6.07	1.52	5.87	1.46	5.47	1.36
	7	6	7.10	1.70	6.70	1.60	6.30	1.49	6.07	1.44	5.87	1.39	5.47	1.29
	9	7.9	7.10	1.61	6.70	1.51	6.30	1.41	6.07	1.36	5.87	1.31	5.47	1.22
11	9.8	7.10	1.52	6.70	1.43	6.30	1.34	6.07	1.29	5.87	1.25	5.47	1.16	
13	11.8	7.10	1.44	6.70	1.35	6.30	1.27	6.07	1.22	5.87	1.18	5.47	1.10	
15	13.7	7.10	1.36	6.70	1.28	6.30	1.20	6.07	1.16	5.87	1.12	5.47	1.05	
60%	-19.8	-20	5.63	2.64	5.60	2.69	5.40	2.59	5.23	2.49	5.06	2.39	4.71	2.19
	-18.8	-19	5.71	2.66	5.71	2.71	5.40	2.53	5.23	2.43	5.06	2.34	4.71	2.14
	-16.7	-17	5.94	2.69	5.74	2.61	5.40	2.42	5.23	2.32	5.06	2.23	4.71	2.05
	-13.7	-15	6.09	2.66	5.74	2.48	5.40	2.30	5.23	2.21	5.06	2.12	4.71	1.95
	-11.8	-13	6.09	2.52	5.74	2.35	5.40	2.18	5.23	2.10	5.06	2.02	4.71	1.86
	-9.8	-11	6.09	2.38	5.74	2.22	5.40	2.06	5.23	1.98	5.06	1.91	4.71	1.76
	-9.5	-10	6.09	2.32	5.74	2.16	5.40	2.00	5.23	1.93	5.06	1.86	4.71	1.71
	-8.5	-9.1	6.09	2.25	5.74	2.10	5.40	1.95	5.23	1.88	5.06	1.81	4.71	1.67
	-7	-7.6	6.09	2.16	5.74	2.01	5.40	1.87	5.23	1.80	5.06	1.73	4.71	1.60
	-5	-5.6	6.09	2.03	5.74	1.90	5.40	1.77	5.23	1.70	5.06	1.64	4.71	1.52
	-3	-3.7	6.09	1.92	5.74	1.79	5.40	1.67	5.23	1.61	5.06	1.55	4.71	1.43
	0	-0.7	6.09	1.75	5.74	1.64	5.40	1.53	5.23	1.48	5.06	1.42	4.71	1.32
	3	2.2	6.09	1.61	5.74	1.51	5.40	1.41	5.23	1.36	5.06	1.31	4.71	1.22
	5	4.1	6.09	1.52	5.74	1.43	5.40	1.33	5.23	1.29	5.06	1.24	4.71	1.15
	7	6	6.09	1.44	5.74	1.35	5.40	1.26	5.23	1.22	5.06	1.18	4.71	1.10
	9	7.9	6.09	1.36	5.74	1.28	5.40	1.20	5.23	1.16	5.06	1.12	4.71	1.04
11	9.8	6.09	1.29	5.74	1.22	5.40	1.14	5.23	1.10	5.06	1.06	4.71	0.99	
13	11.8	6.09	1.22	5.74	1.15	5.40	1.08	5.23	1.05	5.06	1.01	4.71	0.95	
15	13.7	6.09	1.16	5.74	1.09	5.40	1.03	5.23	1.00	5.06	0.97	4.71	0.90	
50%	-19.8	-20	5.07	2.40	4.78	2.24	4.50	2.08	4.33	2.00	4.19	1.92	3.90	1.77
	-18.8	-19	5.07	2.35	4.78	2.19	4.50	2.04	4.33	1.96	4.19	1.88	3.90	1.74

	-16.7	-17	5.07	2.24	4.78	2.09	4.50	1.95	4.33	1.87	4.19	1.80	3.90	1.66
	-13.7	-15	5.07	2.14	4.78	1.99	4.50	1.85	4.33	1.79	4.19	1.72	3.90	1.59
	-11.8	-13	5.07	2.03	4.78	1.89	4.50	1.76	4.33	1.70	4.19	1.63	3.90	1.51
	-9.8	-11	5.07	1.92	4.78	1.79	4.50	1.67	4.33	1.61	4.19	1.55	3.90	1.44
	-9.5	-10	5.07	1.87	4.78	1.75	4.50	1.63	4.33	1.57	4.19	1.51	3.90	1.40
	-8.5	-9.1	5.07	1.82	4.78	1.70	4.50	1.59	4.33	1.53	4.19	1.48	3.90	1.37
	-7	-7.6	5.07	1.75	4.78	1.63	4.50	1.52	4.33	1.47	4.19	1.42	3.90	1.31
	-5	-5.6	5.07	1.65	4.78	1.54	4.50	1.44	4.33	1.39	4.19	1.34	3.90	1.25
	-3	-3.7	5.07	1.56	4.78	1.46	4.50	1.37	4.33	1.32	4.19	1.27	3.90	1.18
	0	-0.7	5.07	1.43	4.78	1.34	4.50	1.26	4.33	1.22	4.19	1.18	3.90	1.09
	3	2.2	5.07	1.32	4.78	1.24	4.50	1.16	4.33	1.12	4.19	1.08	3.90	1.01
	5	4.1	5.07	1.25	4.78	1.18	4.50	1.10	4.33	1.07	4.19	1.03	3.90	0.96
	7	6	5.07	1.19	4.78	1.12	4.50	1.05	4.33	1.02	4.19	0.98	3.90	0.92
	9	7.9	5.07	1.13	4.78	1.06	4.50	1.00	4.33	0.97	4.19	0.94	3.90	0.88
	11	9.8	5.07	1.07	4.78	1.01	4.50	0.95	4.33	0.92	4.19	0.89	3.90	0.83
	13	11.8	5.07	1.02	4.78	0.96	4.50	0.90	4.33	0.88	4.19	0.85	3.90	0.80
	15	13.7	5.07	0.97	4.78	0.92	4.50	0.86	4.33	0.84	4.19	0.81	3.90	0.76

**Note:**

- 1,  is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

MDV-V105W/DN1

Cooling

Combination (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(°C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	9.22	1.10	10.99	1.34	12.75	1.43	13.24	1.49	13.87	1.53	14.21	1.67	14.57	1.68
	-2	9.22	1.10	10.99	1.36	12.75	1.43	13.24	1.50	13.87	1.53	14.21	1.69	14.57	1.70
	0	9.22	1.11	10.99	1.39	12.75	1.49	13.24	1.58	13.87	1.62	14.21	1.71	14.57	1.72
	2	9.22	1.13	10.99	1.39	12.75	1.54	13.24	1.67	13.87	1.64	14.21	1.72	14.57	1.74
	4	9.22	1.16	10.99	1.42	12.75	1.59	13.24	1.68	13.87	1.66	14.21	1.72	14.57	1.78
	6	9.22	1.18	10.99	1.44	12.75	1.65	13.24	1.69	13.72	1.71	14.04	1.72	14.41	1.79
	8	9.22	1.21	10.99	1.48	12.75	1.73	13.24	1.78	13.55	1.77	13.89	3.90	14.23	1.81
	10	9.22	1.24	10.99	1.51	12.75	1.80	13.24	1.84	13.39	4.04	13.72	4.06	14.06	1.86
	12	9.22	1.26	10.99	1.54	12.75	1.83	13.05	4.03	13.24	4.06	13.54	4.07	13.87	1.87
	14	9.22	1.28	10.99	1.57	12.71	4.05	12.90	4.06	13.05	4.08	13.39	4.09	13.72	1.91
	16	9.22	1.30	10.99	1.60	12.56	4.06	12.71	4.08	12.86	4.10	13.20	4.12	13.54	1.94
	18	9.22	1.33	10.99	1.63	12.37	1.91	12.52	1.93	12.71	1.94	13.05	1.95	13.39	1.97
	20	9.22	1.36	10.99	1.74	12.19	2.01	12.37	2.02	12.52	2.03	12.86	2.05	13.20	2.07
	21	9.22	1.39	10.99	1.80	12.11	2.06	12.30	2.07	12.45	2.08	12.79	2.10	13.12	2.12
	23	9.22	1.50	10.99	1.93	11.96	2.15	12.11	2.16	12.26	2.17	12.60	2.19	12.94	2.21
	25	9.22	1.60	10.99	2.07	11.77	2.24	11.92	2.25	12.11	2.27	12.45	2.29	12.79	2.31
	27	9.22	1.70	10.99	2.21	11.62	2.34	11.77	2.35	11.92	2.36	12.26	2.39	12.60	2.41
	29	9.22	1.82	10.99	2.36	11.44	2.43	11.59	2.45	11.77	2.46	12.11	2.49	12.45	2.51
	31	9.22	1.94	10.95	2.50	11.25	2.53	11.44	2.54	11.59	2.55	11.92	2.58	12.26	2.61
	33	9.22	2.07	10.76	2.59	11.10	2.62	11.25	2.64	11.44	2.65	11.77	2.68	12.07	2.71
35	9.22	2.21	10.57	2.69	10.91	2.72	11.10	2.73	11.25	2.75	11.59	2.78	11.92	2.81	
37	9.22	2.35	10.42	2.78	10.76	2.82	10.91	2.83	11.10	2.85	11.40	2.88	11.74	2.92	
39	9.22	2.50	10.24	2.81	10.57	2.91	10.76	2.93	10.91	2.95	11.25	2.98	11.59	3.02	
41	9.22	2.63	10.13	2.84	10.46	2.94	10.65	2.96	10.80	2.97	11.14	2.99	11.14	3.04	
43	9.22	2.70	10.06	2.85	10.41	2.95	10.60	2.97	10.69	2.98	10.94	2.99	11.01	3.05	
45	9.22	2.83	9.99	2.88	10.30	2.97	10.48	2.99	10.53	2.99	10.64	3.00	10.79	3.11	
48	9.22	2.93	10.35	2.98	11.23	3.00	11.43	3.02	11.53	3.03	11.48	3.05	11.68	3.06	
120%	-5	8.51	1.06	10.12	1.28	11.78	1.52	12.60	1.65	13.20	1.72	13.50	1.78	13.80	1.83
	-2	8.51	1.07	10.12	1.30	11.78	1.53	12.60	1.66	13.20	1.74	13.50	1.79	13.80	1.83
	0	8.51	1.08	10.12	1.30	11.78	1.55	12.60	1.67	13.20	1.76	13.50	1.80	13.80	1.84
	2	8.51	1.08	10.12	1.32	11.78	1.56	12.60	1.68	13.20	1.77	13.50	1.82	13.80	1.84
	4	8.51	1.09	10.12	1.33	11.78	1.58	12.60	1.70	13.20	1.79	13.50	1.82	13.80	1.84
	6	8.51	1.10	10.12	1.34	11.78	1.60	12.60	1.72	13.20	1.81	13.50	1.84	13.80	1.85
	8	8.51	1.11	10.12	1.36	11.78	1.62	12.60	1.74	13.20	1.83	13.50	1.84	13.80	1.86
	10	8.51	1.13	10.12	1.38	11.78	1.64	12.60	1.77	13.20	1.83	13.50	1.85	13.80	1.87
	12	8.51	1.15	10.12	1.40	11.78	1.67	12.60	1.80	13.01	1.84	13.31	1.84	13.61	1.88
	14	8.51	1.17	10.12	1.43	11.78	1.70	12.60	1.84	12.82	1.85	13.16	1.86	13.46	1.90
	16	8.51	1.19	10.12	1.46	11.78	1.73	12.52	4.10	12.67	1.87	12.97	1.90	13.27	1.93
	18	8.51	1.21	10.12	1.49	11.78	1.79	12.34	1.91	12.49	1.92	12.79	1.94	13.12	1.96
	20	8.51	1.24	10.12	1.55	11.78	1.93	12.19	2.01	12.34	2.02	12.64	2.03	12.94	2.05
	21	8.51	1.25	10.12	1.60	11.78	2.00	12.07	2.06	12.22	2.06	12.56	2.08	12.86	2.10
	23	8.51	1.34	10.12	1.72	11.78	2.14	11.93	2.15	12.07	2.16	12.37	2.18	12.67	2.20
	25	8.51	1.43	10.12	1.83	11.59	2.23	11.74	2.24	11.89	2.25	12.22	2.27	12.52	2.29
27	8.51	1.52	10.12	1.96	11.44	2.32	11.59	2.34	11.74	2.35	12.04	2.37	12.34	2.39	
29	8.51	1.63	10.12	2.09	11.25	2.42	11.40	2.43	11.55	2.44	11.85	2.47	12.19	2.49	
31	8.51	1.73	10.12	2.24	11.06	2.51	11.25	2.52	11.40	2.54	11.70	2.56	12.00	2.59	

	33	8.51	1.85	10.12	2.38	10.91	2.61	11.06	2.62	11.21	2.63	11.51	2.66	11.81	2.69
	35	8.51	1.96	10.12	2.54	10.72	2.70	10.87	2.72	11.06	2.73	11.36	2.76	11.66	2.79
	37	8.51	2.09	10.12	2.71	10.57	2.80	10.72	2.81	10.87	2.83	11.17	2.86	11.48	2.89
	39	8.51	2.22	10.09	2.86	10.39	2.89	10.54	2.91	10.69	2.93	11.02	2.96	11.33	2.99
	41	8.51	2.29	10.01	2.88	10.31	2.91	10.46	2.93	10.61	2.95	10.94	2.97	11.00	3.01
	43	8.51	2.32	9.95	2.90	10.22	2.93	10.37	2.94	10.52	2.96	10.75	2.97	10.83	3.07
	45	8.51	2.35	9.90	2.93	10.13	2.96	10.27	2.97	10.43	2.98	10.54	2.98	10.72	3.14
	48	9.86	2.37	11.37	2.96	11.58	2.99	11.71	2.99	11.95	3.00	12.02	2.99	12.26	3.18
110%	-5	7.80	0.92	9.30	1.15	10.80	1.37	11.55	1.47	12.30	1.59	13.24	1.65	13.54	1.70
	-2	7.80	0.94	9.30	1.17	10.80	1.38	11.55	1.49	12.30	1.60	13.24	1.66	13.54	1.71
	0	7.80	0.95	9.30	1.17	10.80	1.39	11.55	1.50	12.30	1.62	13.24	1.68	13.54	1.73
	2	7.80	0.97	9.30	1.18	10.80	1.42	11.55	1.51	12.30	1.63	13.24	1.70	13.54	1.75
	4	7.80	0.99	9.30	1.20	10.80	1.43	11.55	1.53	12.30	1.66	13.24	1.73	13.54	1.76
	6	7.80	1.00	9.30	1.21	10.80	1.44	11.55	1.56	12.30	1.68	13.24	1.74	13.54	1.79
	8	7.80	1.01	9.30	1.23	10.80	1.46	11.55	1.57	12.30	1.70	13.24	1.76	13.54	1.81
	10	7.80	1.02	9.30	1.25	10.80	1.48	11.55	1.60	12.30	1.72	13.24	1.77	13.54	1.83
	12	7.80	1.04	9.30	1.27	10.80	1.51	11.55	1.63	12.30	1.76	13.09	1.80	13.35	1.85
	14	7.80	1.06	9.30	1.29	10.80	1.54	11.55	1.66	12.30	1.79	12.90	1.81	13.20	1.86
	16	7.80	1.08	9.30	1.32	10.80	1.57	11.55	1.69	12.30	1.82	12.75	1.83	13.01	1.88
	18	7.80	1.10	9.30	1.34	10.80	1.60	11.55	1.74	12.30	1.91	12.56	1.93	12.86	1.94
	20	7.80	1.12	9.30	1.37	10.80	1.69	11.55	1.87	12.11	2.00	12.41	2.02	12.68	2.04
	21	7.80	1.13	9.30	1.41	10.80	1.76	11.55	1.94	12.04	2.05	12.30	2.07	12.60	2.08
	23	7.80	1.19	9.30	1.51	10.80	1.88	11.55	2.08	11.85	2.14	12.15	2.16	12.41	2.18
	25	7.80	1.27	9.30	1.62	10.80	2.01	11.55	2.23	11.70	2.24	11.96	2.26	12.26	2.28
	27	7.80	1.35	9.30	1.73	10.80	2.15	11.36	2.32	11.51	2.33	11.81	2.35	12.08	2.37
	29	7.80	1.44	9.30	1.85	10.80	2.30	11.21	2.42	11.36	2.43	11.63	2.45	11.93	2.47
	31	7.80	1.54	9.30	1.97	10.80	2.46	11.03	2.51	11.18	2.52	11.48	2.54	11.74	2.57
	33	7.80	1.63	9.30	2.10	10.73	2.59	10.87	2.60	11.03	2.62	11.29	2.64	11.59	2.67
35	7.80	1.74	9.30	2.24	10.54	2.68	10.69	2.70	10.84	2.71	11.10	2.74	11.40	2.76	
37	7.80	1.85	9.30	2.38	10.39	2.78	10.54	2.79	10.65	2.81	10.95	2.84	11.21	2.86	
39	7.80	1.96	9.30	2.54	10.20	2.88	10.35	2.89	10.50	2.90	10.76	2.93	11.06	2.96	
41	7.80	1.99	9.30	2.56	10.12	2.90	10.27	2.91	10.42	2.92	10.63	2.95	10.73	2.98	
43	7.80	2.01	9.30	2.59	10.04	2.92	10.19	2.93	10.34	2.94	10.53	2.96	10.57	3.04	
45	7.80	2.07	9.30	2.60	9.94	2.94	10.08	2.97	10.25	2.97	10.42	3.04	10.47	3.11	
48	8.54	2.14	10.19	2.82	10.73	2.96	10.87	2.99	11.10	3.00	11.23	3.06	11.32	3.15	
100%	-5	7.09	0.84	8.44	1.01	9.82	1.21	10.50	1.29	11.18	1.40	12.56	1.60	13.28	1.67
	-2	7.09	0.85	8.44	1.03	9.82	1.22	10.50	1.32	11.18	1.42	12.56	1.62	13.28	1.68
	0	7.09	0.86	8.44	1.04	9.82	1.23	10.50	1.33	11.18	1.43	12.56	1.64	13.28	1.70
	2	7.09	0.88	8.44	1.05	9.82	1.25	10.50	1.35	11.18	1.45	12.56	1.67	13.28	1.72
	4	7.09	0.88	8.44	1.06	9.82	1.26	10.50	1.37	11.18	1.47	12.56	1.68	13.28	1.74
	6	7.09	0.90	8.44	1.08	9.82	1.28	10.50	1.39	11.18	1.49	12.56	1.71	13.28	1.77
	8	7.09	0.91	8.44	1.10	9.82	1.30	10.50	1.41	11.18	1.51	12.56	1.73	13.28	1.80
	10	7.09	0.92	8.44	1.12	9.82	1.33	10.50	1.43	11.18	1.54	12.56	1.76	13.28	1.82
	12	7.09	0.94	8.44	1.14	9.82	1.35	10.50	1.46	11.18	1.57	12.56	1.80	13.09	1.84
	14	7.09	0.96	8.44	1.16	9.82	1.38	10.50	1.49	11.18	1.60	12.56	1.83	12.94	1.86
	16	7.09	0.98	8.44	1.18	9.82	1.41	10.50	1.52	11.18	1.63	12.49	1.85	12.75	1.88
	18	7.09	0.99	8.44	1.21	9.82	1.43	10.50	1.55	11.18	1.67	12.34	1.91	12.60	1.93
	20	7.09	1.01	8.44	1.23	9.82	1.47	10.50	1.63	11.18	1.78	12.15	2.00	12.41	2.02
	21	7.09	1.02	8.44	1.24	9.82	1.53	10.50	1.68	11.18	1.85	12.08	2.05	12.34	2.07
	23	7.09	1.05	8.44	1.33	9.82	1.64	10.50	1.80	11.18	1.98	11.92	2.15	12.15	2.16
	25	7.09	1.12	8.44	1.42	9.82	1.75	10.50	1.93	11.18	2.12	11.74	2.24	12.00	2.26
27	7.09	1.19	8.44	1.51	9.82	1.87	10.50	2.07	11.18	2.27	11.55	2.33	11.81	2.35	
29	7.09	1.27	8.44	1.61	9.82	2.00	10.50	2.21	11.14	2.41	11.40	2.43	11.66	2.45	

	31	7.09	1.35	8.44	1.72	9.82	2.13	10.50	2.35	10.99	2.50	11.21	2.52	11.47	2.55
	33	7.09	1.43	8.44	1.83	9.82	2.27	10.50	2.51	10.80	2.60	11.06	2.62	11.33	2.64
	35	7.09	1.52	8.44	1.95	9.82	2.42	10.50	2.68	10.61	2.69	10.87	2.72	11.14	2.74
	37	7.09	1.62	8.44	2.07	9.82	2.58	10.31	2.77	10.46	2.79	10.72	2.81	10.95	2.84
	39	7.09	1.72	8.44	2.20	9.82	2.75	10.16	2.87	10.27	2.88	10.54	2.91	10.80	2.94
	41	7.09	1.80	8.44	2.28	9.82	2.85	10.00	2.89	10.20	2.93	10.35	2.98	10.64	3.00
	43	7.09	1.88	8.44	2.36	9.82	2.90	9.85	2.92	10.12	2.95	10.42	3.00	10.46	3.03
	45	7.09	1.99	8.44	2.47	9.82	2.95	9.64	2.96	10.07	3.01	10.33	3.04	10.25	3.07
	48	7.34	2.08	8.74	2.56	10.18	2.96	9.57	3.00	10.41	3.06	10.04	3.07	10.38	3.10
90%	-5	6.37	0.74	7.61	0.89	8.85	1.05	9.45	1.15	10.05	1.22	11.29	1.41	12.53	1.61
	-2	6.37	0.75	7.61	0.90	8.85	1.07	9.45	1.17	10.05	1.24	11.29	1.42	12.53	1.63
	0	6.37	0.76	7.61	0.91	8.85	1.08	9.45	1.18	10.05	1.25	11.29	1.44	12.53	1.64
	2	6.37	0.77	7.61	0.93	8.85	1.09	9.45	1.20	10.05	1.27	11.29	1.47	12.53	1.66
	4	6.37	0.79	7.61	0.94	8.85	1.11	9.45	1.21	10.05	1.29	11.29	1.49	12.53	1.69
	6	6.37	0.80	7.61	0.96	8.85	1.13	9.45	1.24	10.05	1.31	11.29	1.51	12.53	1.72
	8	6.37	0.81	7.61	0.98	8.85	1.16	9.45	1.25	10.05	1.33	11.29	1.54	12.53	1.73
	10	6.37	0.83	7.61	1.00	8.85	1.18	9.45	1.27	10.05	1.37	11.29	1.56	12.53	1.76
	12	6.37	0.84	7.61	1.01	8.85	1.20	9.45	1.29	10.05	1.39	11.29	1.59	12.53	1.79
	14	6.37	0.86	7.61	1.03	8.85	1.22	9.45	1.32	10.05	1.42	11.29	1.62	12.53	1.82
	16	6.37	0.87	7.61	1.05	8.85	1.25	9.45	1.34	10.05	1.44	11.29	1.65	12.49	1.86
	18	6.37	0.88	7.61	1.07	8.85	1.27	9.45	1.37	10.05	1.47	11.29	1.68	12.34	1.91
	20	6.37	0.90	7.61	1.10	8.85	1.29	9.45	1.40	10.05	1.53	11.29	1.81	12.15	2.00
	21	6.37	0.91	7.61	1.11	8.85	1.31	9.45	1.44	10.05	1.58	11.29	1.87	12.08	2.05
	23	6.37	0.93	7.61	1.15	8.85	1.41	9.45	1.55	10.05	1.70	11.29	2.01	11.89	2.15
	25	6.37	0.98	7.61	1.23	8.85	1.51	9.45	1.66	10.05	1.81	11.29	2.15	11.74	2.24
	27	6.37	1.04	7.61	1.31	8.85	1.61	9.45	1.77	10.05	1.94	11.29	2.30	11.55	2.33
	29	6.37	1.11	7.61	1.39	8.85	1.72	9.45	1.89	10.05	2.07	11.17	2.41	11.40	2.43
	31	6.37	1.18	7.61	1.48	8.85	1.83	9.45	2.02	10.05	2.21	10.99	2.50	11.21	2.52
	33	6.37	1.25	7.61	1.58	8.85	1.95	9.45	2.15	10.05	2.36	10.84	2.60	11.06	2.62
35	6.37	1.33	7.61	1.68	8.85	2.08	9.45	2.29	10.05	2.51	10.65	2.69	10.88	2.72	
37	6.37	1.41	7.61	1.78	8.85	2.21	9.45	2.44	10.05	2.68	10.46	2.79	10.72	2.81	
39	6.37	1.50	7.61	1.90	8.85	2.35	9.45	2.60	10.05	2.85	10.31	2.89	10.54	2.91	
41	6.37	1.55	7.61	1.99	8.85	2.44	9.45	2.67	10.05	2.87	10.24	2.96	10.47	2.98	
43	6.37	1.62	7.61	2.07	8.85	2.52	9.45	2.73	10.05	2.93	10.19	3.00	10.38	3.02	
45	6.37	1.72	7.61	2.17	8.85	2.63	9.45	2.83	10.05	3.01	10.13	3.03	10.22	3.06	
48	6.37	1.82	7.61	2.28	8.85	2.73	9.45	2.86	10.05	3.04	11.16	3.07	11.05	3.10	
80%	-5	5.66	0.66	6.75	0.78	7.84	0.92	8.40	0.98	8.96	1.05	10.05	1.22	11.14	1.39
	-2	5.66	0.67	6.75	0.79	7.84	0.93	8.40	0.99	8.96	1.06	10.05	1.23	11.14	1.40
	0	5.66	0.68	6.75	0.79	7.84	0.94	8.40	1.00	8.96	1.08	10.05	1.24	11.14	1.42
	2	5.66	0.69	6.75	0.81	7.84	0.95	8.40	1.02	8.96	1.10	10.05	1.27	11.14	1.45
	4	5.66	0.70	6.75	0.82	7.84	0.97	8.40	1.05	8.96	1.12	10.05	1.29	11.14	1.47
	6	5.66	0.71	6.75	0.84	7.84	0.98	8.40	1.07	8.96	1.14	10.05	1.31	11.14	1.49
	8	5.66	0.73	6.75	0.86	7.84	1.01	8.40	1.09	8.96	1.16	10.05	1.33	11.14	1.52
	10	5.66	0.73	6.75	0.88	7.84	1.03	8.40	1.11	8.96	1.19	10.05	1.36	11.14	1.54
	12	5.66	0.74	6.75	0.89	7.84	1.05	8.40	1.13	8.96	1.22	10.05	1.39	11.14	1.56
	14	5.66	0.76	6.75	0.91	7.84	1.07	8.40	1.15	8.96	1.24	10.05	1.41	11.14	1.59
	16	5.66	0.77	6.75	0.92	7.84	1.09	8.40	1.17	8.96	1.26	10.05	1.44	11.14	1.62
	18	5.66	0.78	6.75	0.94	7.84	1.11	8.40	1.20	8.96	1.29	10.05	1.47	11.14	1.65
	20	5.66	0.80	6.75	0.96	7.84	1.13	8.40	1.22	8.96	1.31	10.05	1.52	11.14	1.77
	21	5.66	0.81	6.75	0.97	7.84	1.14	8.40	1.24	8.96	1.34	10.05	1.58	11.14	1.83
23	5.66	0.82	6.75	0.99	7.84	1.20	8.40	1.31	8.96	1.43	10.05	1.69	11.14	1.97	
25	5.66	0.85	6.75	1.05	7.84	1.28	8.40	1.41	8.96	1.53	10.05	1.81	11.14	2.11	
27	5.66	0.90	6.75	1.12	7.84	1.37	8.40	1.50	8.96	1.64	10.05	1.93	11.14	2.25	

	29	5.66	0.96	6.75	1.19	7.84	1.46	8.40	1.60	8.96	1.75	10.05	2.06	11.14	2.41
	31	5.66	1.01	6.75	1.27	7.84	1.55	8.40	1.70	8.96	1.86	10.05	2.20	10.95	2.50
	33	5.66	1.08	6.75	1.35	7.84	1.65	8.40	1.81	8.96	1.98	10.05	2.35	10.80	2.60
	35	5.66	1.14	6.75	1.43	7.84	1.76	8.40	1.93	8.96	2.11	10.05	2.50	10.61	2.69
	37	5.66	1.21	6.75	1.52	7.84	1.87	8.40	2.06	8.96	2.25	10.05	2.67	10.46	2.78
	39	5.66	1.29	6.75	1.62	7.84	1.99	8.40	2.19	8.96	2.39	10.05	2.84	10.27	2.88
	41	5.66	1.31	6.75	1.64	7.84	2.02	8.40	2.24	8.96	2.44	10.05	2.91	10.21	2.93
	43	5.66	1.35	6.75	1.65	7.84	2.04	8.40	2.28	8.96	2.47	10.05	2.95	10.15	2.96
	45	5.66	1.39	6.75	1.67	7.84	2.08	8.40	2.33	8.96	2.51	10.05	2.98	10.02	3.01
	48	5.66	1.44	6.75	1.68	8.82	2.12	8.40	2.36	8.96	2.54	10.05	3.01	11.18	3.05
70%	-5	4.95	0.59	5.92	0.69	6.86	0.78	7.35	0.83	7.84	0.89	8.78	1.02	9.75	1.17
	-2	4.95	0.59	5.92	0.69	6.86	0.78	7.35	0.85	7.84	0.91	8.78	1.03	9.75	1.19
	0	4.95	0.59	5.92	0.70	6.86	0.80	7.35	0.87	7.84	0.92	8.78	1.06	9.75	1.20
	2	4.95	0.60	5.92	0.70	6.86	0.81	7.35	0.88	7.84	0.94	8.78	1.08	9.75	1.22
	4	4.95	0.60	5.92	0.72	6.86	0.83	7.35	0.90	7.84	0.96	8.78	1.10	9.75	1.25
	6	4.95	0.61	5.92	0.73	6.86	0.85	7.35	0.93	7.84	0.98	8.78	1.11	9.75	1.27
	8	4.95	0.63	5.92	0.75	6.86	0.87	7.35	0.94	7.84	1.00	8.78	1.15	9.75	1.30
	10	4.95	0.64	5.92	0.77	6.86	0.89	7.35	0.96	7.84	1.03	8.78	1.17	9.75	1.31
	12	4.95	0.65	5.92	0.78	6.86	0.91	7.35	0.98	7.84	1.05	8.78	1.19	9.75	1.34
	14	4.95	0.66	5.92	0.79	6.86	0.92	7.35	0.99	7.84	1.07	8.78	1.21	9.75	1.37
	16	4.95	0.68	5.92	0.81	6.86	0.94	7.35	1.01	7.84	1.09	8.78	1.24	9.75	1.39
	18	4.95	0.69	5.92	0.82	6.86	0.96	7.35	1.03	7.84	1.11	8.78	1.26	9.75	1.42
	20	4.95	0.70	5.92	0.83	6.86	0.98	7.35	1.05	7.84	1.13	8.78	1.29	9.75	1.46
	21	4.95	0.70	5.92	0.84	6.86	0.99	7.35	1.06	7.84	1.14	8.78	1.30	9.75	1.51
	23	4.95	0.72	5.92	0.86	6.86	1.01	7.35	1.10	7.84	1.20	8.78	1.40	9.75	1.62
	25	4.95	0.73	5.92	0.89	6.86	1.07	7.35	1.17	7.84	1.27	8.78	1.50	9.75	1.73
	27	4.95	0.77	5.92	0.95	6.86	1.15	7.35	1.25	7.84	1.36	8.78	1.60	9.75	1.85
	29	4.95	0.82	5.92	1.01	6.86	1.22	7.35	1.33	7.84	1.45	8.78	1.70	9.75	1.98
	31	4.95	0.87	5.92	1.07	6.86	1.30	7.35	1.42	7.84	1.54	8.78	1.81	9.75	2.11
	33	4.95	0.92	5.92	1.14	6.86	1.38	7.35	1.51	7.84	1.64	8.78	1.93	9.75	2.25
35	4.95	0.98	5.92	1.21	6.86	1.46	7.35	1.60	7.84	1.75	8.78	2.06	9.75	2.39	
37	4.95	1.03	5.92	1.28	6.86	1.56	7.35	1.70	7.84	1.86	8.78	2.19	9.75	2.55	
39	4.95	1.09	5.92	1.35	6.86	1.65	7.35	1.81	7.84	1.98	8.78	2.33	9.75	2.72	
41	4.95	1.14	5.92	1.40	6.86	1.70	7.35	1.87	7.84	2.04	8.78	2.43	9.75	2.84	
43	4.95	1.23	5.92	1.50	6.86	1.77	7.35	1.97	7.84	2.10	8.78	2.51	9.75	2.92	
45	4.95	1.26	5.92	1.53	6.86	1.81	7.35	2.00	7.84	2.20	8.78	2.65	9.75	3.04	
48	4.95	1.29	5.92	1.54	6.86	1.82	7.35	2.03	7.84	2.26	8.78	2.77	9.75	3.11	
60%	-5	4.24	0.50	5.06	0.58	5.89	0.67	6.30	0.72	6.71	0.78	7.54	0.87	8.36	1.00
	-2	4.24	0.50	5.06	0.59	5.89	0.69	6.30	0.73	6.71	0.78	7.54	0.89	8.36	1.01
	0	4.24	0.51	5.06	0.60	5.89	0.70	6.30	0.74	6.71	0.80	7.54	0.90	8.36	1.02
	2	4.24	0.52	5.06	0.61	5.89	0.71	6.30	0.75	6.71	0.81	7.54	0.92	8.36	1.03
	4	4.24	0.53	5.06	0.62	5.89	0.72	6.30	0.76	6.71	0.82	7.54	0.93	8.36	1.05
	6	4.24	0.54	5.06	0.63	5.89	0.74	6.30	0.78	6.71	0.84	7.54	0.95	8.36	1.07
	8	4.24	0.55	5.06	0.64	5.89	0.75	6.30	0.79	6.71	0.85	7.54	0.97	8.36	1.09
	10	4.24	0.56	5.06	0.66	5.89	0.76	6.30	0.82	6.71	0.87	7.54	0.99	8.36	1.11
	12	4.24	0.57	5.06	0.67	5.89	0.78	6.30	0.83	6.71	0.88	7.54	1.00	8.36	1.12
	14	4.24	0.58	5.06	0.68	5.89	0.79	6.30	0.85	6.71	0.90	7.54	1.02	8.36	1.14
	16	4.24	0.59	5.06	0.69	5.89	0.80	6.30	0.86	6.71	0.92	7.54	1.04	8.36	1.17
	18	4.24	0.60	5.06	0.70	5.89	0.82	6.30	0.87	6.71	0.94	7.54	1.06	8.36	1.19
	20	4.24	0.60	5.06	0.72	5.89	0.83	6.30	0.89	6.71	0.95	7.54	1.08	8.36	1.21
	21	4.24	0.61	5.06	0.72	5.89	0.84	6.30	0.90	6.71	0.96	7.54	1.09	8.36	1.22
	23	4.24	0.62	5.06	0.73	5.89	0.85	6.30	0.92	6.71	0.98	7.54	1.13	8.36	1.30
25	4.24	0.63	5.06	0.74	5.89	0.88	6.30	0.96	6.71	1.04	7.54	1.21	8.36	1.39	

	27	4.24	0.65	5.06	0.79	5.89	0.94	6.30	1.03	6.71	1.11	7.54	1.29	8.36	1.48
	29	4.24	0.69	5.06	0.84	5.89	1.00	6.30	1.09	6.71	1.18	7.54	1.38	8.36	1.59
	31	4.24	0.73	5.06	0.89	5.89	1.07	6.30	1.16	6.71	1.26	7.54	1.46	8.36	1.69
	33	4.24	0.77	5.06	0.94	5.89	1.13	6.30	1.23	6.71	1.34	7.54	1.56	8.36	1.80
	35	4.24	0.82	5.06	1.00	5.89	1.20	6.30	1.31	6.71	1.42	7.54	1.66	8.36	1.91
	37	4.24	0.87	5.06	1.06	5.89	1.27	6.30	1.39	6.71	1.51	7.54	1.76	8.36	2.04
	39	4.24	0.91	5.06	1.12	5.89	1.35	6.30	1.47	6.71	1.60	7.54	1.87	8.36	2.17
	41	4.24	0.94	5.06	1.17	5.89	1.40	6.30	1.53	6.71	1.66	7.54	1.96	8.36	2.26
	43	4.24	0.97	5.06	1.22	5.89	1.45	6.30	1.57	6.71	1.72	7.54	2.04	8.36	2.36
	45	4.24	1.02	5.06	1.28	5.89	1.50	6.30	1.63	6.71	1.80	7.54	2.13	8.36	2.49
	48	4.24	1.06	5.06	1.34	5.89	1.55	6.30	1.68	6.71	1.87	7.54	2.21	8.36	2.61
50%	-5	3.54	0.43	4.24	0.50	4.91	0.58	5.25	0.60	5.59	0.64	6.26	0.72	6.98	0.78
	-2	3.54	0.44	4.24	0.51	4.91	0.58	5.25	0.61	5.59	0.65	6.26	0.73	6.98	0.79
	0	3.54	0.44	4.24	0.52	4.91	0.59	5.25	0.62	5.59	0.66	6.26	0.75	6.98	0.80
	2	3.54	0.45	4.24	0.53	4.91	0.60	5.25	0.63	5.59	0.67	6.26	0.75	6.98	0.82
	4	3.54	0.45	4.24	0.54	4.91	0.61	5.25	0.64	5.59	0.68	6.26	0.77	6.98	0.84
	6	3.54	0.46	4.24	0.54	4.91	0.62	5.25	0.65	5.59	0.69	6.26	0.78	6.98	0.87
	8	3.54	0.47	4.24	0.55	4.91	0.63	5.25	0.67	5.59	0.70	6.26	0.79	6.98	0.89
	10	3.54	0.48	4.24	0.56	4.91	0.64	5.25	0.68	5.59	0.72	6.26	0.81	6.98	0.91
	12	3.54	0.49	4.24	0.57	4.91	0.65	5.25	0.69	5.59	0.74	6.26	0.83	6.98	0.92
	14	3.54	0.49	4.24	0.57	4.91	0.66	5.25	0.70	5.59	0.75	6.26	0.84	6.98	0.94
	16	3.54	0.50	4.24	0.58	4.91	0.67	5.25	0.72	5.59	0.76	6.26	0.86	6.98	0.95
	18	3.54	0.51	4.24	0.59	4.91	0.68	5.25	0.73	5.59	0.77	6.26	0.87	6.98	0.97
	20	3.54	0.52	4.24	0.60	4.91	0.69	5.25	0.74	5.59	0.79	6.26	0.88	6.98	0.99
	21	3.54	0.52	4.24	0.61	4.91	0.70	5.25	0.74	5.59	0.79	6.26	0.90	6.98	1.00
	23	3.54	0.53	4.24	0.61	4.91	0.71	5.25	0.76	5.59	0.81	6.26	0.91	6.98	1.02
	25	3.54	0.53	4.24	0.62	4.91	0.72	5.25	0.77	5.59	0.83	6.26	0.96	6.98	1.09
	27	3.54	0.55	4.24	0.65	4.91	0.76	5.25	0.82	5.59	0.88	6.26	1.02	6.98	1.16
	29	3.54	0.57	4.24	0.69	4.91	0.81	5.25	0.87	5.59	0.94	6.26	1.08	6.98	1.24
	31	3.54	0.61	4.24	0.73	4.91	0.86	5.25	0.93	5.59	1.00	6.26	1.15	6.98	1.32
	33	3.54	0.64	4.24	0.77	4.91	0.91	5.25	0.98	5.59	1.06	6.26	1.22	6.98	1.40
35	3.54	0.68	4.24	0.81	4.91	0.96	5.25	1.04	5.59	1.12	6.26	1.30	6.98	1.49	
37	3.54	0.72	4.24	0.86	4.91	1.02	5.25	1.10	5.59	1.19	6.26	1.38	6.98	1.58	
39	3.54	0.75	4.24	0.91	4.91	1.08	5.25	1.17	5.59	1.26	6.26	1.46	6.98	1.68	
41	3.54	0.79	4.24	0.95	4.91	1.12	5.25	1.22	5.59	1.32	6.26	1.54	6.98	1.76	
43	3.54	0.84	4.24	1.01	4.91	1.15	5.25	1.28	5.59	1.35	6.26	1.62	6.98	1.84	
45	3.54	0.86	4.24	1.04	4.91	1.23	5.25	1.37	5.59	1.41	6.26	1.77	6.98	1.99	
48	3.54	0.88	4.24	1.07	4.91	1.30	5.25	1.46	5.59	1.47	6.26	1.92	6.98	2.14	

Note:

- 1, [redacted] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combination (%) (Capacity index)	Outdoor temperature(°C DB)		Indoor temperature(°C WB)											
			16		18		20		21		22		24	
	°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
130%	-19.8	-20	7.45	2.05	7.41	2.19	7.38	2.34	7.38	2.41	7.34	2.48	7.34	2.63
	-18.8	-19	7.56	2.09	7.52	2.24	7.52	2.38	7.48	2.45	7.48	2.52	7.45	2.66
	-16.7	-17	7.85	2.19	7.81	2.33	7.78	2.47	7.78	2.53	7.78	2.60	7.74	2.74
	-13.7	-15	8.18	2.29	8.14	2.43	8.10	2.56	8.10	2.62	8.07	2.69	8.07	2.82
	-11.8	-13	8.51	2.40	8.51	2.52	8.47	2.65	8.43	2.71	8.43	2.78	8.40	2.90
	-9.8	-11	8.91	2.50	8.87	2.62	8.83	2.74	8.83	2.80	8.83	2.86	8.80	2.98
	-9.5	-10	9.13	2.55	9.09	2.67	9.05	2.79	9.05	2.85	9.02	2.90	9.02	3.02
	-8.5	-9.1	9.31	2.60	9.27	2.71	9.27	2.83	9.24	2.88	9.24	2.94	9.20	3.06
	-7	-7.6	9.64	2.67	9.64	2.79	9.60	2.90	9.60	2.95	9.56	3.01	9.53	3.12
	-5	-5.6	10.15	2.78	10.11	2.88	10.08	2.99	10.08	3.04	10.04	3.09	10.04	3.19
	-3	-3.7	10.62	2.87	10.59	2.97	10.59	3.07	10.55	3.12	10.55	3.17	10.51	3.27
	0	-0.7	11.46	3.01	11.46	3.10	11.43	3.19	11.43	3.22	11.39	3.28	11.39	3.37
	3	2.2	12.38	3.13	12.34	3.22	12.30	3.30	12.30	3.34	12.30	3.39	12.27	3.47
	5	4.1	13.00	3.21	12.96	3.29	12.96	3.37	12.92	3.41	12.92	3.45	12.89	3.53
	7	6	13.65	3.28	13.62	3.36	13.62	3.44	13.58	3.48	13.58	3.51	13.03	3.37
	9	7.9	14.35	3.35	14.31	3.43	14.31	3.50	14.27	3.54	13.98	3.46	13.03	3.17
	11	9.8	15.08	3.42	15.04	3.49	14.97	3.53	14.46	3.39	13.98	3.25	13.03	2.99
13	11.8	15.88	3.48	15.84	3.55	14.97	3.31	14.46	3.18	13.98	3.05	13.03	2.80	
15	13.7	16.65	3.54	15.92	3.36	14.97	3.12	14.46	3.00	13.98	2.88	13.03	2.64	
120%	-19.8	-20	7.41	2.24	7.37	2.38	7.34	2.51	7.34	2.58	7.34	2.64	7.30	2.78
	-18.8	-19	7.52	2.29	7.48	2.42	7.48	2.55	7.45	2.61	7.45	2.68	7.41	2.81
	-16.7	-17	7.81	2.38	7.78	2.50	7.73	2.63	7.74	2.69	7.74	2.76	7.70	2.88
	-13.7	-15	8.14	2.47	8.11	2.59	8.07	2.71	8.07	2.78	8.07	2.84	8.03	2.96
	-11.8	-13	8.47	2.56	8.47	2.68	8.43	2.80	8.43	2.86	8.40	2.91	8.40	3.03
	-9.8	-11	8.87	2.66	8.83	2.77	8.83	2.88	8.80	2.94	8.80	2.99	8.76	3.11
	-9.5	-10	9.09	2.71	9.05	2.82	9.02	2.93	9.02	2.98	9.02	3.04	8.98	3.14
	-8.5	-9.1	9.27	2.75	9.24	2.86	9.24	2.96	9.20	3.02	9.20	3.07	9.16	3.18
	-7	-7.6	9.60	2.82	9.60	2.93	9.57	3.03	9.57	3.08	9.53	3.13	9.53	3.23
	-5	-5.6	10.11	2.91	10.08	3.01	10.04	3.11	10.04	3.16	10.04	3.21	10.00	3.30
	-3	-3.7	10.59	3.00	10.59	3.10	10.55	3.19	10.55	3.23	10.51	3.28	10.51	3.37
	0	-0.7	11.43	3.13	11.43	3.22	11.39	3.30	11.39	3.34	11.35	3.39	11.35	3.47
	3	2.2	12.34	3.25	12.30	3.33	12.30	3.40	12.27	3.45	12.27	3.48	12.01	3.47
	5	4.1	12.96	3.32	12.92	3.39	12.92	3.47	12.89	3.51	12.89	3.54	12.01	3.25
	7	6	13.62	3.39	13.62	3.46	13.58	3.53	13.36	3.48	12.92	3.34	12.01	3.06
	9	7.9	14.31	3.45	14.28	3.52	13.80	3.40	13.36	3.27	12.92	3.14	12.01	2.88
	11	9.8	15.04	3.51	14.68	3.45	13.80	3.20	13.36	3.08	12.92	2.95	12.01	2.72
13	11.8	15.59	3.48	14.68	3.24	13.80	3.00	13.36	2.89	12.92	2.78	12.01	2.55	
15	13.7	15.59	3.28	14.68	3.05	13.80	2.83	13.36	2.72	12.92	2.62	12.01	2.41	
110%	-19.8	-20	7.37	2.44	7.34	2.56	7.30	2.69	7.30	2.75	7.30	2.81	7.27	2.93
	-18.8	-19	7.48	2.48	7.45	2.60	7.45	2.72	7.45	2.78	7.41	2.84	7.41	2.96
	-16.7	-17	7.78	2.56	7.74	2.68	7.85	2.79	7.70	2.85	7.70	2.91	7.67	3.02
	-13.7	-15	8.11	2.65	8.07	2.76	8.03	2.87	8.03	2.93	8.03	2.98	8.00	3.09
	-11.8	-13	8.43	2.74	8.43	2.84	8.40	2.95	8.40	3.00	8.36	3.05	8.36	3.16
	-9.8	-11	8.83	2.82	8.80	2.93	8.80	3.03	8.76	3.08	8.76	3.13	8.76	3.23
	-9.5	-10	9.05	2.87	9.02	2.97	8.98	3.07	8.98	3.12	8.98	3.17	8.95	3.27
	-8.5	-9.1	9.24	2.91	9.20	3.01	9.20	3.10	9.16	3.15	9.16	3.20	9.16	2.92
	-7	-7.6	9.56	2.98	9.56	3.07	9.53	3.16	9.53	3.21	9.53	3.25	9.49	3.35
-5	-5.6	10.08	3.06	10.04	3.15	10.00	3.24	10.00	3.28	10.00	3.33	9.97	3.42	



	-3	-3.7	10.55	3.14	10.55	3.22	10.51	3.31	10.51	3.35	10.48	3.39	10.48	3.48
	0	-0.7	11.39	3.25	11.39	3.33	11.35	3.41	11.35	3.45	11.35	3.49	11.03	3.42
	3	2.2	12.30	3.36	12.27	3.44	12.27	3.51	12.23	3.54	11.83	3.40	11.03	3.11
	5	4.1	12.92	3.43	12.92	3.50	12.67	3.46	12.23	3.33	11.83	3.19	11.03	2.93
	7	6	13.58	3.49	13.47	3.51	12.67	3.25	12.23	3.13	11.83	3.00	11.03	2.76
	9	7.9	14.27	3.55	13.47	3.30	12.67	3.06	12.23	2.94	11.83	2.82	11.03	2.60
	11	9.8	14.27	3.34	13.47	3.11	12.67	2.88	12.23	2.77	11.83	2.66	11.03	2.45
	13	11.8	14.27	3.13	13.47	2.92	12.67	2.71	12.23	2.61	11.83	2.50	11.03	2.31
	15	13.7	14.27	2.78	13.47	2.75	12.67	2.56	12.23	2.46	11.83	2.37	11.03	2.18
100%	-19.8	-20	7.34	2.64	7.30	2.75	7.30	2.86	7.26	2.92	7.26	2.97	7.23	3.08
	-18.8	-19	7.45	2.67	7.45	2.78	7.41	2.89	7.41	2.95	7.37	3.00	7.37	3.11
	-16.7	-17	7.74	2.75	7.70	2.85	7.70	2.96	7.67	3.01	7.67	3.06	7.67	3.17
	-13.7	-15	8.07	2.82	8.03	2.93	7.99	3.03	7.99	3.08	7.99	3.13	7.96	3.23
	-11.8	-13	8.40	2.91	8.40	3.00	8.36	3.10	8.36	3.15	8.36	3.20	8.32	3.30
	-9.8	-11	8.80	2.99	8.76	3.08	8.76	3.17	8.76	3.22	8.73	3.27	8.73	3.36
	-9.5	-10	9.02	3.03	8.98	3.12	8.98	3.21	8.94	3.25	8.94	3.30	8.91	3.39
	-8.5	-9.1	9.20	3.06	9.16	3.15	9.16	3.24	9.16	3.28	9.13	3.33	9.13	3.42
	-7	-7.6	9.53	3.12	9.53	3.21	9.49	3.29	9.49	3.34	9.49	3.38	9.46	3.46
	-5	-5.6	10.04	3.20	10.00	3.28	10.00	3.36	9.97	3.40	9.97	3.44	9.93	3.53
	-3	-3.7	10.51	3.27	10.51	2.97	10.48	3.43	10.48	3.46	10.48	3.50	10.04	3.36
	0	-0.7	11.35	3.38	11.35	3.45	11.32	3.52	11.14	3.46	10.77	3.32	10.04	3.05
	3	2.2	12.27	3.48	12.23	3.54	11.50	3.28	11.14	3.15	10.77	3.02	10.04	2.78
	5	4.1	12.89	3.54	12.23	3.33	11.50	3.08	11.14	2.96	10.77	2.85	10.04	2.62
	7	6	12.96	3.36	12.23	3.13	11.50	2.90	11.14	2.79	10.77	2.68	10.04	2.47
	9	7.9	12.96	3.16	12.23	2.94	11.50	2.73	11.14	2.59	10.77	2.53	10.04	2.33
	11	9.8	12.96	2.97	12.23	2.77	11.50	2.58	11.14	2.48	10.77	2.38	10.04	2.20
	13	11.8	12.96	2.79	12.23	2.61	11.50	2.43	11.14	2.34	10.77	2.25	10.04	2.08
15	13.7	12.96	2.63	12.23	2.46	11.50	2.29	11.14	2.21	10.77	2.12	10.04	1.97	
90%	-19.8	-20	7.29	2.83	7.25	2.93	7.25	3.03	7.22	3.08	7.22	3.13	7.22	3.23
	-18.8	-19	7.40	2.86	7.40	2.96	7.36	3.06	7.36	3.11	7.36	3.16	7.32	3.26
	-16.7	-17	7.69	2.93	7.65	3.03	7.65	3.12	7.65	3.17	7.62	3.22	7.62	3.31
	-13.7	-15	8.02	3.01	7.98	3.10	7.98	3.19	7.94	3.23	7.94	3.28	7.94	3.37
	-11.8	-13	8.35	3.08	8.35	3.16	8.31	3.25	8.31	3.30	8.31	3.34	8.27	3.42
	-9.8	-11	8.75	3.15	8.75	3.23	8.71	3.31	8.71	3.36	8.71	3.40	8.67	3.48
	-9.5	-10	8.97	3.19	8.93	3.27	8.93	3.35	8.89	3.39	8.89	3.43	8.89	3.51
	-8.5	-9.1	9.15	3.22	9.15	3.30	9.11	3.38	9.11	3.42	9.11	3.46	9.00	3.49
	-7	-7.6	9.48	3.27	9.48	3.35	9.44	3.43	9.44	3.46	9.44	3.50	9.00	3.33
	-5	-5.6	9.99	3.34	9.95	3.42	9.95	3.49	9.91	3.53	9.66	3.42	9.00	3.13
	-3	-3.7	10.46	3.41	10.46	3.48	10.35	3.49	9.99	3.35	9.66	3.22	9.00	2.95
	0	-0.7	11.33	3.51	11.01	3.42	10.35	3.17	9.99	3.04	9.66	2.92	9.00	2.69
	3	2.2	11.66	3.34	11.01	3.11	10.35	2.88	9.99	2.78	9.66	2.67	9.00	2.46
	5	4.1	11.66	3.14	11.01	2.93	10.35	2.72	9.99	2.61	9.66	2.52	9.00	2.32
	7	6	11.66	2.95	11.01	2.76	10.35	2.56	9.99	2.47	9.66	2.37	9.00	2.19
	9	7.9	11.66	2.78	11.01	2.59	10.35	2.41	9.99	2.33	9.66	2.24	9.00	2.07
	11	9.8	11.66	2.62	11.01	2.45	10.35	2.28	9.99	2.20	9.66	2.12	9.00	1.96
	13	11.8	11.66	2.47	11.01	2.31	10.35	2.15	9.99	2.08	9.66	2.00	9.00	1.85
15	13.7	11.66	2.33	11.01	2.18	10.35	2.04	9.99	1.97	9.66	1.89	9.00	1.76	
80%	-19.8	-20	7.27	3.03	7.23	3.11	7.23	3.21	7.23	3.25	7.19	3.30	7.19	3.38
	-18.8	-19	7.37	3.05	7.37	3.14	7.34	3.23	7.34	3.28	7.34	3.32	7.30	3.41
	-16.7	-17	7.67	3.12	7.63	3.20	7.63	3.29	7.63	3.33	7.63	3.37	7.59	3.45
	-13.7	-15	7.99	3.18	7.96	3.26	7.96	3.34	7.96	3.38	7.92	3.42	7.92	3.51
	-11.8	-13	8.32	3.25	8.32	3.33	8.29	3.40	8.29	3.44	8.29	3.48	8.03	3.39
	-9.8	-11	8.73	3.31	8.73	3.39	8.69	3.46	8.69	3.49	8.62	3.49	8.03	3.20

	-9.5	-10	8.94	3.34	8.91	3.42	8.91	3.49	8.91	3.53	8.62	3.39	8.03	3.10
	-8.5	-9.1	9.13	3.37	8.48	3.45	9.09	3.51	8.91	3.43	8.62	3.30	8.03	3.02
	-7	-7.6	9.46	3.42	9.46	3.49	9.20	3.42	8.91	3.28	8.62	3.15	8.03	2.89
	-5	-5.6	9.97	3.48	9.78	3.46	9.20	3.21	8.91	3.08	8.62	2.96	8.03	2.72
	-3	-3.7	10.37	3.50	9.78	3.26	9.20	3.02	8.91	2.91	8.62	2.79	8.03	2.57
	0	-0.7	10.37	3.18	9.78	2.96	9.20	2.75	8.91	2.65	8.62	2.54	8.03	2.34
	3	2.2	10.37	2.90	9.78	2.70	9.20	2.51	8.91	2.42	8.62	2.33	8.03	2.15
	5	4.1	10.37	2.73	9.78	2.55	9.20	2.37	8.91	2.28	8.62	2.20	8.03	2.03
	7	6	10.37	2.57	9.78	2.40	9.20	2.24	8.91	2.16	8.62	2.08	8.03	1.92
	9	7.9	10.37	2.43	9.78	2.27	9.20	2.11	8.91	2.04	8.62	1.97	8.03	1.82
	11	9.8	10.37	2.29	9.78	2.14	9.20	2.00	8.91	1.93	8.62	1.86	8.03	1.72
	13	11.8	10.37	2.16	9.78	2.02	9.20	1.89	8.91	1.82	8.62	1.76	8.03	1.63
	15	13.7	10.37	2.04	9.78	1.92	9.20	1.79	8.91	1.73	8.62	1.67	8.03	1.55
70%	-19.8	-20	7.21	3.22	7.18	3.30	7.18	3.38	7.18	3.42	7.18	3.46	6.99	3.42
	-18.8	-19	7.32	3.25	7.32	3.33	7.29	3.40	7.29	3.44	7.29	3.48	6.99	3.35
	-16.7	-17	7.61	3.30	7.61	3.38	7.58	3.45	7.58	3.49	7.50	3.11	6.99	3.19
	-13.7	-15	7.94	3.36	7.90	3.43	7.90	3.50	7.76	3.45	7.50	3.31	6.99	3.04
	-11.8	-13	8.27	3.42	8.27	3.48	8.05	3.40	7.76	3.27	7.50	3.14	6.99	2.88
	-9.8	-11	8.67	3.47	8.56	3.47	8.05	3.21	7.76	3.09	7.50	2.96	6.99	2.72
	-9.5	-10	8.89	3.50	8.56	3.37	8.05	3.12	7.76	3.00	7.50	2.88	6.99	2.65
	-8.5	-9.1	9.07	3.52	8.56	3.28	8.05	3.04	7.76	2.92	7.50	2.81	6.99	2.58
	-7	-7.6	9.07	3.36	8.56	3.13	8.05	2.90	7.76	2.79	7.50	2.69	6.99	2.47
	-5	-5.6	9.07	3.16	8.56	2.94	8.05	2.73	7.76	2.63	7.50	3.11	6.99	2.33
	-3	-3.7	9.07	2.98	8.56	2.78	8.05	2.58	7.76	2.48	7.50	2.39	6.99	2.20
	0	-0.7	9.07	2.71	8.56	2.53	8.05	2.35	7.76	2.27	7.50	2.18	6.99	2.02
	3	2.2	9.07	2.47	8.56	2.32	8.05	2.16	7.76	2.08	7.50	2.00	6.99	1.85
	5	4.1	9.07	2.33	8.56	2.18	8.05	2.04	7.76	1.97	7.50	1.89	6.99	1.76
	7	6	9.07	2.21	8.56	2.07	8.05	1.93	7.76	1.86	7.50	1.80	6.99	1.66
	9	7.9	9.07	2.09	8.56	1.95	8.05	1.83	7.76	1.76	7.50	1.70	6.99	1.58
11	9.8	9.07	1.97	8.56	1.85	8.05	1.73	7.76	1.67	7.50	1.62	6.99	1.50	
13	11.8	9.07	1.86	8.56	1.75	8.05	1.64	7.76	1.59	7.50	1.53	6.99	1.42	
15	13.7	9.07	1.77	8.56	1.66	8.05	1.56	7.76	1.51	7.50	1.45	6.99	1.36	
60%	-19.8	-20	7.19	3.42	7.16	3.48	6.90	3.35	6.68	3.22	6.46	3.09	6.02	2.84
	-18.8	-19	7.30	3.44	7.30	3.51	6.90	3.28	6.68	3.15	6.46	3.02	6.02	2.78
	-16.7	-17	7.59	3.49	7.34	3.38	6.90	3.13	6.68	3.01	6.46	2.89	6.02	2.65
	-13.7	-15	7.78	3.45	7.34	3.21	6.90	2.98	6.68	2.86	6.46	2.75	6.02	2.53
	-11.8	-13	7.78	3.27	7.34	3.04	6.90	2.82	6.68	2.72	6.46	2.61	6.02	2.41
	-9.8	-11	7.78	3.08	7.34	2.87	6.90	2.67	6.68	2.57	6.46	2.47	6.02	2.28
	-9.5	-10	7.78	3.00	7.34	2.79	6.90	2.59	6.68	2.50	6.46	2.40	6.02	2.21
	-8.5	-9.1	7.78	2.92	7.34	2.72	6.90	2.53	6.68	2.44	6.46	2.34	6.02	2.16
	-7	-7.6	7.78	2.79	7.34	2.61	6.90	2.42	6.68	2.33	6.46	2.24	6.02	2.08
	-5	-5.6	7.78	2.63	7.34	2.46	6.90	2.29	6.68	2.20	6.46	2.12	6.02	1.96
	-3	-3.7	7.78	2.48	7.34	2.32	6.90	2.16	6.68	2.09	6.46	2.01	6.02	1.86
	0	-0.7	7.78	2.27	7.34	2.12	6.90	1.98	6.68	1.91	6.46	1.84	6.02	1.71
	3	2.2	7.78	2.08	7.34	1.95	6.90	1.82	6.68	1.76	6.46	1.70	6.02	1.57
	5	4.1	7.78	1.97	7.34	1.85	6.90	1.72	6.68	1.67	6.46	1.61	6.02	1.50
	7	6	7.78	1.86	7.34	1.75	6.90	1.63	6.68	1.58	6.46	1.53	6.02	1.42
	9	7.9	7.78	1.76	7.34	1.66	6.90	1.55	6.68	1.50	6.46	1.45	6.02	1.35
11	9.8	7.78	1.67	7.34	1.57	6.90	1.48	6.68	1.43	6.46	1.38	6.02	1.29	
13	11.8	7.78	1.58	7.34	1.49	6.90	1.40	6.68	1.36	6.46	1.31	6.02	1.22	
15	13.7	7.78	1.51	7.34	1.42	6.90	1.33	6.68	1.29	6.46	1.25	6.02	1.17	
50%	-19.8	-20	6.48	3.11	6.11	2.90	5.75	2.69	5.53	2.59	5.35	2.49	4.99	2.29
	-18.8	-19	6.48	3.04	6.11	2.84	5.75	2.64	5.53	2.53	5.35	2.44	4.99	2.25

-16.7	-17	6.48	2.90	6.11	2.71	5.75	2.52	5.53	2.43	5.35	2.33	4.99	2.15
-13.7	-15	6.48	2.76	6.11	2.58	5.75	2.40	5.53	2.31	5.35	2.23	4.99	2.06
-11.8	-13	6.48	2.62	6.11	2.45	5.75	2.28	5.53	2.20	5.35	2.12	4.99	1.96
-9.8	-11	6.48	2.49	6.11	2.32	5.75	2.17	5.53	2.09	5.35	2.01	4.99	1.86
-9.5	-10	6.48	2.42	6.11	2.26	5.75	2.11	5.53	2.03	5.35	1.96	4.99	1.81
-8.5	-9.1	6.48	2.36	6.11	2.21	5.75	2.06	5.53	1.98	5.35	1.91	4.99	1.77
-7	-7.6	6.48	2.26	6.11	2.12	5.75	1.97	5.53	1.91	5.35	1.84	4.99	1.70
-5	-5.6	6.48	2.13	6.11	2.00	5.75	1.87	5.53	1.80	5.35	1.74	4.99	1.61
-3	-3.7	6.48	2.02	6.11	1.89	5.75	1.77	5.53	1.71	5.35	1.65	4.99	1.53
0	-0.7	6.48	1.85	6.11	1.74	5.75	1.63	5.53	1.57	5.35	1.52	4.99	1.42
3	2.2	6.48	1.71	6.11	1.60	5.75	1.50	5.53	1.45	5.35	1.40	4.99	1.31
5	4.1	6.48	1.62	6.11	1.52	5.75	1.43	5.53	1.38	5.35	1.34	4.99	1.25
7	6	6.48	1.54	6.11	1.45	5.75	1.36	5.53	1.31	5.35	1.27	4.99	1.19
9	7.9	6.48	1.46	6.11	1.37	5.75	1.29	5.53	1.25	5.35	1.21	4.99	1.13
11	9.8	6.48	1.39	6.11	1.31	5.75	1.23	5.53	1.19	5.35	1.16	4.99	1.08
13	11.8	6.48	1.32	6.11	1.24	5.75	1.17	5.53	1.14	5.35	1.10	4.99	1.03
15	13.7	6.48	1.25	6.11	1.19	5.75	1.12	5.53	1.08	5.35	1.05	4.99	0.99

Note:

- 1, [redacted] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

MDV-V120W/DN1

Cooling

Combinati on (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(° C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	10.81	1.33	12.87	1.62	14.93	1.74	15.51	1.81	16.25	1.86	16.65	2.02	17.07	2.04
	-2	10.81	1.33	12.87	1.65	14.93	1.74	15.51	1.82	16.25	1.86	16.65	2.05	17.07	2.06
	0	10.81	1.35	12.87	1.68	14.93	1.80	15.51	1.92	16.25	1.97	16.65	2.07	17.07	2.08
	2	10.81	1.38	12.87	1.69	14.93	1.86	15.51	2.03	16.25	1.99	16.65	2.09	17.07	2.11
	4	10.81	1.41	12.87	1.72	14.93	1.93	15.51	2.04	16.25	2.02	16.65	2.09	17.07	2.15
	6	10.81	1.43	12.87	1.75	14.93	2.00	15.51	2.05	16.07	2.08	16.44	2.09	16.88	2.17
	8	10.81	1.47	12.87	1.79	14.93	2.10	15.51	2.15	15.87	2.15	16.27	3.90	16.66	2.19
	10	10.81	1.50	12.87	1.83	14.93	2.18	15.51	2.23	15.68	4.04	16.08	4.06	16.47	2.25
	12	10.81	1.52	12.87	1.87	14.93	2.22	15.29	4.03	15.51	4.06	15.86	4.07	16.25	2.27
	14	10.81	1.56	12.87	1.90	14.89	4.05	15.11	4.06	15.29	4.08	15.68	4.09	16.08	2.32
	16	10.81	1.58	12.87	1.94	14.72	4.06	14.89	4.08	15.07	4.10	15.46	4.12	15.86	2.36
	18	10.81	1.61	12.87	1.98	14.50	2.32	14.67	2.33	14.89	2.35	15.29	2.37	15.68	2.39
	20	10.81	1.65	12.87	2.11	14.28	2.44	14.50	2.45	14.67	2.46	15.07	2.48	15.46	2.51
	21	10.81	1.69	12.87	2.18	14.19	2.49	14.41	2.51	14.58	2.52	14.98	2.55	15.37	2.57
	23	10.81	1.81	12.87	2.34	14.01	2.61	14.19	2.62	14.36	2.63	14.76	2.66	15.15	2.69
	25	10.81	1.94	12.87	2.51	13.79	2.72	13.97	2.73	14.19	2.75	14.58	2.78	14.98	2.80
	27	10.81	2.07	12.87	2.68	13.62	2.83	13.79	2.85	13.97	2.86	14.36	2.90	14.76	2.93
	29	10.81	2.21	12.87	2.86	13.40	2.95	13.57	2.97	13.79	2.98	14.19	3.01	14.58	3.04
	31	10.81	2.36	12.83	3.03	13.18	3.07	13.40	3.08	13.57	3.10	13.97	3.13	14.36	3.17
	33	10.81	2.51	12.61	3.15	13.00	3.18	13.18	3.20	13.40	3.22	13.79	3.25	14.14	3.29
35	10.81	2.68	12.39	3.26	12.78	3.30	13.00	3.32	13.18	3.33	13.57	3.37	13.97	3.41	
37	10.81	2.85	12.21	3.38	12.61	3.42	12.78	3.43	13.00	3.46	13.35	3.50	13.75	3.54	
39	10.81	3.03	11.99	3.41	12.39	3.53	12.61	3.55	12.78	3.57	13.18	3.61	13.57	3.66	
41	10.81	3.19	11.87	3.45	12.26	3.56	12.48	3.59	12.65	3.61	13.05	3.62	13.05	3.69	
43	10.81	3.27	11.78	3.46	12.19	3.57	12.41	3.60	12.52	3.61	12.81	3.63	12.90	3.70	
45	10.81	3.43	11.71	3.50	12.06	3.61	12.28	3.63	12.34	3.63	12.46	3.64	12.64	3.77	
48	10.81	3.56	12.13	3.61	13.15	3.64	13.39	3.66	13.50	3.67	13.44	3.70	13.69	3.71	
120%	-5	9.97	1.28	11.86	1.55	13.79	1.84	14.76	2.00	15.46	2.09	15.81	2.16	16.17	2.21
	-2	9.97	1.30	11.86	1.57	13.79	1.86	14.76	2.02	15.46	2.11	15.81	2.17	16.17	2.22
	0	9.97	1.31	11.86	1.58	13.79	1.88	14.76	2.02	15.46	2.13	15.81	2.19	16.17	2.23
	2	9.97	1.31	11.86	1.60	13.79	1.89	14.76	2.04	15.46	2.14	15.81	2.20	16.17	2.23
	4	9.97	1.32	11.86	1.62	13.79	1.92	14.76	2.06	15.46	2.17	15.81	2.21	16.17	2.24
	6	9.97	1.34	11.86	1.63	13.79	1.94	14.76	2.08	15.46	2.19	15.81	2.23	16.17	2.24
	8	9.97	1.35	11.86	1.65	13.79	1.97	14.76	2.11	15.46	2.22	15.81	2.23	16.17	2.25
	10	9.97	1.37	11.86	1.67	13.79	1.98	14.76	2.15	15.46	2.22	15.81	2.24	16.17	2.26
	12	9.97	1.39	11.86	1.70	13.79	2.02	14.76	2.19	15.24	2.23	15.59	2.23	15.95	2.28
	14	9.97	1.42	11.86	1.73	13.79	2.06	14.76	2.23	15.02	2.24	15.42	2.26	15.77	2.31
	16	9.97	1.45	11.86	1.77	13.79	2.10	14.67	4.10	14.85	2.27	15.20	2.30	15.55	2.34
	18	9.97	1.47	11.86	1.80	13.79	2.17	14.45	2.32	14.63	2.33	14.98	2.35	15.37	2.37
	20	9.97	1.50	11.86	1.87	13.79	2.34	14.28	2.44	14.45	2.44	14.80	2.47	15.16	2.49
	21	9.97	1.52	11.86	1.94	13.79	2.42	14.14	2.49	14.32	2.50	14.72	2.52	15.07	2.55
	23	9.97	1.62	11.86	2.08	13.79	2.59	13.97	2.60	14.14	2.62	14.50	2.64	14.85	2.66
	25	9.97	1.73	11.86	2.23	13.57	2.71	13.75	2.72	13.93	2.73	14.32	2.75	14.67	2.78
	27	9.97	1.85	11.86	2.38	13.40	2.82	13.57	2.83	13.75	2.85	14.10	2.87	14.45	2.90
	29	9.97	1.97	11.86	2.54	13.18	2.93	13.35	2.95	13.53	2.96	13.88	2.99	14.28	3.02
	31	9.97	2.10	11.86	2.71	12.96	3.05	13.18	3.06	13.35	3.08	13.71	3.11	14.06	3.14
	33	9.97	2.24	11.86	2.89	12.78	3.16	12.96	3.18	13.13	3.19	13.49	3.23	13.84	3.26
35	9.97	2.38	11.86	3.08	12.56	3.28	12.74	3.29	12.96	3.31	13.31	3.35	13.66	3.38	
37	9.97	2.54	11.86	3.28	12.39	3.39	12.56	3.41	12.74	3.43	13.09	3.46	13.44	3.50	
39	9.97	2.70	11.82	3.47	12.17	3.51	12.34	3.53	12.52	3.55	12.91	3.59	13.27	3.62	
41	9.97	2.77	11.72	3.49	12.07	3.53	12.25	3.56	12.42	3.57	12.82	3.60	12.88	3.65	
43	9.97	2.81	11.66	3.52	11.98	3.55	12.15	3.57	12.33	3.59	12.60	3.61	12.68	3.72	
45	9.97	2.85	11.59	3.55	11.86	3.59	12.03	3.60	12.22	3.61	12.34	3.62	12.56	3.80	
48	11.55	2.87	13.32	3.59	13.57	3.62	13.71	3.63	14.00	3.64	14.08	3.63	14.36	3.85	
110%	-5	9.14	1.12	10.90	1.39	12.65	1.66	13.53	1.79	14.41	1.92	15.51	2.00	15.86	2.06
	-2	9.14	1.14	10.90	1.41	12.65	1.68	13.53	1.80	14.41	1.94	15.51	2.02	15.86	2.07
	0	9.14	1.15	10.90	1.42	12.65	1.69	13.53	1.82	14.41	1.96	15.51	2.04	15.86	2.09
	2	9.14	1.18	10.90	1.43	12.65	1.72	13.53	1.84	14.41	1.98	15.51	2.07	15.86	2.12

	4	9.14	1.20	10.90	1.45	12.65	1.73	13.53	1.86	14.41	2.01	15.51	2.09	15.86	2.14
	6	9.14	1.21	10.90	1.47	12.65	1.75	13.53	1.89	14.41	2.03	15.51	2.12	15.86	2.17
	8	9.14	1.23	10.90	1.49	12.65	1.77	13.53	1.91	14.41	2.06	15.51	2.13	15.86	2.20
	10	9.14	1.24	10.90	1.51	12.65	1.80	13.53	1.94	14.41	2.09	15.51	2.15	15.86	2.21
	12	9.14	1.27	10.90	1.54	12.65	1.83	13.53	1.98	14.41	2.13	15.33	2.18	15.64	2.24
	14	9.14	1.29	10.90	1.57	12.65	1.87	13.53	2.01	14.41	2.17	15.11	2.19	15.46	2.26
	16	9.14	1.31	10.90	1.60	12.65	1.90	13.53	2.05	14.41	2.21	14.94	2.22	15.24	2.28
	18	9.14	1.34	10.90	1.63	12.65	1.94	13.53	2.11	14.41	2.32	14.72	2.33	15.07	2.36
	20	9.14	1.36	10.90	1.66	12.65	2.05	13.53	2.27	14.19	2.43	14.54	2.45	14.85	2.47
	21	9.14	1.38	10.90	1.71	12.65	2.13	13.53	2.35	14.10	2.49	14.41	2.51	14.76	2.53
	23	9.14	1.44	10.90	1.84	12.65	2.28	13.53	2.52	13.88	2.60	14.23	2.62	14.54	2.65
	25	9.14	1.54	10.90	1.96	12.65	2.44	13.53	2.70	13.71	2.71	14.01	2.74	14.36	2.76
	27	9.14	1.64	10.90	2.10	12.65	2.61	13.31	2.82	13.49	2.83	13.84	2.85	14.15	2.88
	29	9.14	1.75	10.90	2.24	12.65	2.79	13.13	2.93	13.31	2.94	13.62	2.97	13.97	3.00
	31	9.14	1.86	10.90	2.39	12.65	2.98	12.92	3.04	13.09	3.06	13.44	3.08	13.75	3.11
	33	9.14	1.98	10.90	2.55	12.56	3.14	12.74	3.16	12.92	3.17	13.22	3.20	13.57	3.23
	35	9.14	2.11	10.90	2.71	12.34	3.25	12.52	3.27	12.70	3.29	13.00	3.32	13.36	3.35
	37	9.14	2.24	10.90	2.89	12.17	3.37	12.34	3.39	12.48	3.40	12.83	3.44	13.13	3.47
	39	9.14	2.38	10.90	3.08	11.95	3.49	12.12	3.50	12.30	3.52	12.61	3.56	12.96	3.59
	41	9.14	2.41	10.90	3.10	11.86	3.51	12.03	3.53	12.21	3.55	12.45	3.58	12.57	3.62
	43	9.14	2.43	10.90	3.14	11.76	3.54	11.94	3.55	12.11	3.57	12.34	3.59	12.38	3.69
	45	9.14	2.51	10.90	3.16	11.64	3.57	11.81	3.60	12.01	3.60	12.21	3.69	12.26	3.78
	48	10.01	2.60	11.93	3.42	12.57	3.59	12.73	3.62	13.00	3.64	13.15	3.71	13.26	3.82
100%	-5	8.30	1.02	9.88	1.23	11.51	1.46	12.30	1.57	13.09	1.70	14.72	1.94	15.55	2.02
	-2	8.30	1.03	9.88	1.24	11.51	1.48	12.30	1.60	13.09	1.72	14.72	1.96	15.55	2.03
	0	8.30	1.04	9.88	1.26	11.51	1.50	12.30	1.62	13.09	1.74	14.72	1.99	15.55	2.06
	2	8.30	1.06	9.88	1.27	11.51	1.51	12.30	1.64	13.09	1.76	14.72	2.02	15.55	2.09
	4	8.30	1.07	9.88	1.29	11.51	1.53	12.30	1.66	13.09	1.78	14.72	2.04	15.55	2.11
	6	8.30	1.09	9.88	1.31	11.51	1.55	12.30	1.69	13.09	1.81	14.72	2.07	15.55	2.15
	8	8.30	1.11	9.88	1.33	11.51	1.58	12.30	1.71	13.09	1.84	14.72	2.10	15.55	2.18
	10	8.30	1.12	9.88	1.36	11.51	1.61	12.30	1.74	13.09	1.87	14.72	2.14	15.55	2.21
	12	8.30	1.14	9.88	1.38	11.51	1.64	12.30	1.77	13.09	1.91	14.72	2.18	15.33	2.23
	14	8.30	1.16	9.88	1.41	11.51	1.67	12.30	1.80	13.09	1.94	14.72	2.22	15.15	2.26
	16	8.30	1.18	9.88	1.44	11.51	1.70	12.30	1.84	13.09	1.98	14.63	2.25	14.94	2.28
	18	8.30	1.20	9.88	1.46	11.51	1.73	12.30	1.87	13.09	2.02	14.45	2.32	14.76	2.34
	20	8.30	1.23	9.88	1.49	11.51	1.79	12.30	1.97	13.09	2.16	14.23	2.43	14.54	2.45
	21	8.30	1.24	9.88	1.51	11.51	1.85	12.30	2.04	13.09	2.24	14.15	2.49	14.45	2.51
	23	8.30	1.27	9.88	1.61	11.51	1.98	12.30	2.19	13.09	2.40	13.97	2.60	14.23	2.62
	25	8.30	1.35	9.88	1.72	11.51	2.12	12.30	2.34	13.09	2.57	13.75	2.72	14.06	2.74
	27	8.30	1.45	9.88	1.83	11.51	2.27	12.30	2.51	13.09	2.75	13.53	2.83	13.84	2.86
	29	8.30	1.54	9.88	1.95	11.51	2.42	12.30	2.68	13.05	2.92	13.35	2.95	13.66	2.97
	31	8.30	1.64	9.88	2.08	11.51	2.58	12.30	2.86	12.87	3.04	13.14	3.06	13.44	3.09
	33	8.30	1.74	9.88	2.22	11.51	2.76	12.30	3.05	12.65	3.15	12.96	3.18	13.27	3.21
35	8.30	1.85	9.88	2.36	11.51	2.94	12.30	3.25	12.43	3.26	12.74	3.29	13.05	3.32	
37	8.30	1.97	9.88	2.51	11.51	3.13	12.08	3.36	12.26	3.38	12.56	3.41	12.83	3.44	
39	8.30	2.09	9.88	2.67	11.51	3.33	11.90	3.48	12.04	3.50	12.34	3.53	12.65	3.56	
41	8.30	2.19	9.88	2.77	11.51	3.46	11.72	3.50	11.94	3.55	12.13	3.61	12.47	3.63	
43	8.30	2.28	9.88	2.87	11.51	3.52	11.53	3.54	11.86	3.58	12.20	3.63	12.25	3.67	
45	8.30	2.41	9.88	3.00	11.51	3.58	11.29	3.59	11.80	3.65	12.10	3.69	12.00	3.72	
48	8.60	2.52	10.24	3.10	11.92	3.58	11.21	3.63	12.20	3.71	11.77	3.73	12.16	3.76	
90%	-5	7.47	0.90	8.92	1.08	10.37	1.28	11.07	1.39	11.77	1.48	13.22	1.70	14.67	1.95
	-2	7.47	0.91	8.92	1.09	10.37	1.29	11.07	1.41	11.77	1.50	13.22	1.72	14.67	1.97
	0	7.47	0.92	8.92	1.11	10.37	1.31	11.07	1.43	11.77	1.52	13.22	1.74	14.67	1.99
	2	7.47	0.94	8.92	1.12	10.37	1.33	11.07	1.45	11.77	1.54	13.22	1.78	14.67	2.02
	4	7.47	0.95	8.92	1.14	10.37	1.35	11.07	1.47	11.77	1.56	13.22	1.80	14.67	2.05
	6	7.47	0.97	8.92	1.16	10.37	1.37	11.07	1.50	11.77	1.59	13.22	1.83	14.67	2.08
	8	7.47	0.98	8.92	1.18	10.37	1.40	11.07	1.52	11.77	1.62	13.22	1.87	14.67	2.10
	10	7.47	1.00	8.92	1.21	10.37	1.43	11.07	1.54	11.77	1.66	13.22	1.89	14.67	2.13
	12	7.47	1.02	8.92	1.23	10.37	1.45	11.07	1.57	11.77	1.69	13.22	1.93	14.67	2.17
	14	7.47	1.04	8.92	1.25	10.37	1.48	11.07	1.60	11.77	1.72	13.22	1.96	14.67	2.21
	16	7.47	1.06	8.92	1.27	10.37	1.51	11.07	1.63	11.77	1.75	13.22	2.00	14.63	2.25
18	7.47	1.07	8.92	1.30	10.37	1.54	11.07	1.66	11.77	1.79	13.22	2.04	14.45	2.32	
20	7.47	1.09	8.92	1.33	10.37	1.57	11.07	1.69	11.77	1.85	13.22	2.19	14.23	2.43	
21	7.47	1.10	8.92	1.34	10.37	1.59	11.07	1.75	11.77	1.92	13.22	2.27	14.15	2.49	

	23	7.47	1.13	8.92	1.39	10.37	1.71	11.07	1.88	11.77	2.06	13.22	2.44	13.92	2.60
	25	7.47	1.19	8.92	1.49	10.37	1.83	11.07	2.01	11.77	2.20	13.22	2.61	13.75	2.72
	27	7.47	1.26	8.92	1.59	10.37	1.95	11.07	2.15	11.77	2.35	13.22	2.79	13.53	2.83
	29	7.47	1.34	8.92	1.69	10.37	2.08	11.07	2.29	11.77	2.51	13.09	2.92	13.35	2.94
	31	7.47	1.43	8.92	1.80	10.37	2.22	11.07	2.44	11.77	2.68	12.87	3.04	13.13	3.06
	33	7.47	1.52	8.92	1.91	10.37	2.37	11.07	2.61	11.77	2.86	12.70	3.15	12.96	3.18
	35	7.47	1.61	8.92	2.04	10.37	2.52	11.07	2.78	11.77	3.05	12.48	3.27	12.74	3.29
	37	7.47	1.71	8.92	2.16	10.37	2.68	11.07	2.96	11.77	3.25	12.26	3.38	12.56	3.41
	39	7.47	1.81	8.92	2.30	10.37	2.85	11.07	3.15	11.77	3.46	12.08	3.50	12.34	3.53
	41	7.47	1.88	8.92	2.41	10.37	2.96	11.07	3.23	11.77	3.48	12.00	3.59	12.26	3.61
	43	7.47	1.97	8.92	2.51	10.37	3.06	11.07	3.32	11.77	3.56	11.93	3.64	12.16	3.66
	45	7.47	2.09	8.92	2.64	10.37	3.18	11.07	3.43	11.77	3.65	11.87	3.67	11.97	3.71
	48	7.47	2.21	8.92	2.76	10.37	3.30	11.07	3.47	11.77	3.69	13.08	3.72	12.94	3.76
80%	-5	6.63	0.80	7.91	0.94	9.18	1.11	9.84	1.18	10.50	1.27	11.77	1.47	13.05	1.68
	-2	6.63	0.81	7.91	0.95	9.18	1.12	9.84	1.20	10.50	1.29	11.77	1.49	13.05	1.70
	0	6.63	0.82	7.91	0.96	9.18	1.14	9.84	1.22	10.50	1.31	11.77	1.51	13.05	1.72
	2	6.63	0.84	7.91	0.98	9.18	1.15	9.84	1.24	10.50	1.33	11.77	1.54	13.05	1.75
	4	6.63	0.85	7.91	0.99	9.18	1.17	9.84	1.27	10.50	1.36	11.77	1.57	13.05	1.78
	6	6.63	0.87	7.91	1.02	9.18	1.19	9.84	1.30	10.50	1.38	11.77	1.59	13.05	1.81
	8	6.63	0.88	7.91	1.04	9.18	1.22	9.84	1.32	10.50	1.41	11.77	1.61	13.05	1.84
	10	6.63	0.89	7.91	1.06	9.18	1.25	9.84	1.35	10.50	1.45	11.77	1.65	13.05	1.86
	12	6.63	0.90	7.91	1.08	9.18	1.27	9.84	1.38	10.50	1.48	11.77	1.68	13.05	1.90
	14	6.63	0.92	7.91	1.10	9.18	1.30	9.84	1.40	10.50	1.50	11.77	1.71	13.05	1.93
	16	6.63	0.93	7.91	1.12	9.18	1.32	9.84	1.42	10.50	1.53	11.77	1.75	13.05	1.97
	18	6.63	0.95	7.91	1.14	9.18	1.35	9.84	1.45	10.50	1.56	11.77	1.78	13.05	2.01
	20	6.63	0.97	7.91	1.17	9.18	1.38	9.84	1.48	10.50	1.59	11.77	1.85	13.05	2.15
	21	6.63	0.98	7.91	1.17	9.18	1.39	9.84	1.50	10.50	1.63	11.77	1.91	13.05	2.23
	23	6.63	0.99	7.91	1.20	9.18	1.45	9.84	1.59	10.50	1.74	11.77	2.05	13.05	2.39
	25	6.63	1.02	7.91	1.27	9.18	1.55	9.84	1.70	10.50	1.86	11.77	2.19	13.05	2.55
	27	6.63	1.09	7.91	1.36	9.18	1.66	9.84	1.82	10.50	1.98	11.77	2.34	13.05	2.73
	29	6.63	1.16	7.91	1.45	9.18	1.77	9.84	1.94	10.50	2.12	11.77	2.50	13.05	2.92
	31	6.63	1.23	7.91	1.54	9.18	1.88	9.84	2.06	10.50	2.26	11.77	2.67	12.83	3.04
	33	6.63	1.31	7.91	1.63	9.18	2.00	9.84	2.20	10.50	2.40	11.77	2.85	12.65	3.15
35	6.63	1.39	7.91	1.74	9.18	2.13	9.84	2.34	10.50	2.56	11.77	3.04	12.43	3.26	
37	6.63	1.47	7.91	1.84	9.18	2.26	9.84	2.49	10.50	2.73	11.77	3.24	12.26	3.38	
39	6.63	1.56	7.91	1.97	9.18	2.41	9.84	2.65	10.50	2.90	11.77	3.45	12.04	3.50	
41	6.63	1.59	7.91	1.98	9.18	2.44	9.84	2.72	10.50	2.96	11.77	3.53	11.96	3.56	
43	6.63	1.64	7.91	2.00	9.18	2.48	9.84	2.77	10.50	3.00	11.77	3.58	11.89	3.59	
45	6.63	1.69	7.91	2.03	9.18	2.53	9.84	2.83	10.50	3.05	11.77	3.62	11.74	3.65	
48	6.63	1.74	7.91	2.04	10.33	2.57	9.84	2.86	10.50	3.08	11.77	3.65	13.10	3.70	
70%	-5	5.80	0.71	6.94	0.83	8.04	0.94	8.61	1.01	9.18	1.08	10.28	1.23	11.42	1.42
	-2	5.80	0.72	6.94	0.84	8.04	0.95	8.61	1.03	9.18	1.10	10.28	1.25	11.42	1.44
	0	5.80	0.72	6.94	0.85	8.04	0.97	8.61	1.05	9.18	1.12	10.28	1.28	11.42	1.46
	2	5.80	0.72	6.94	0.85	8.04	0.98	8.61	1.07	9.18	1.14	10.28	1.31	11.42	1.48
	4	5.80	0.73	6.94	0.87	8.04	1.01	8.61	1.09	9.18	1.16	10.28	1.33	11.42	1.52
	6	5.80	0.74	6.94	0.89	8.04	1.03	8.61	1.12	9.18	1.19	10.28	1.35	11.42	1.55
	8	5.80	0.76	6.94	0.91	8.04	1.05	8.61	1.14	9.18	1.22	10.28	1.39	11.42	1.58
	10	5.80	0.77	6.94	0.93	8.04	1.08	8.61	1.17	9.18	1.25	10.28	1.42	11.42	1.59
	12	5.80	0.79	6.94	0.94	8.04	1.10	8.61	1.19	9.18	1.27	10.28	1.45	11.42	1.63
	14	5.80	0.81	6.94	0.96	8.04	1.12	8.61	1.20	9.18	1.29	10.28	1.47	11.42	1.66
	16	5.80	0.82	6.94	0.98	8.04	1.14	8.61	1.23	9.18	1.32	10.28	1.50	11.42	1.69
	18	5.80	0.83	6.94	0.99	8.04	1.17	8.61	1.25	9.18	1.34	10.28	1.53	11.42	1.72
	20	5.80	0.85	6.94	1.01	8.04	1.19	8.61	1.27	9.18	1.37	10.28	1.56	11.42	1.77
	21	5.80	0.85	6.94	1.02	8.04	1.20	8.61	1.29	9.18	1.38	10.28	1.58	11.42	1.83
	23	5.80	0.87	6.94	1.04	8.04	1.22	8.61	1.33	9.18	1.45	10.28	1.70	11.42	1.96
	25	5.80	0.88	6.94	1.08	8.04	1.30	8.61	1.42	9.18	1.55	10.28	1.81	11.42	2.10
	27	5.80	0.94	6.94	1.15	8.04	1.39	8.61	1.52	9.18	1.65	10.28	1.94	11.42	2.24
	29	5.80	0.99	6.94	1.22	8.04	1.48	8.61	1.62	9.18	1.76	10.28	2.06	11.42	2.40
	31	5.80	1.05	6.94	1.30	8.04	1.57	8.61	1.72	9.18	1.87	10.28	2.20	11.42	2.55
	33	5.80	1.12	6.94	1.38	8.04	1.67	8.61	1.83	9.18	1.99	10.28	2.34	11.42	2.72
35	5.80	1.18	6.94	1.46	8.04	1.77	8.61	1.94	9.18	2.12	10.28	2.50	11.42	2.90	
37	5.80	1.25	6.94	1.55	8.04	1.89	8.61	2.06	9.18	2.26	10.28	2.66	11.42	3.09	
39	5.80	1.32	6.94	1.64	8.04	2.00	8.61	2.19	9.18	2.40	10.28	2.83	11.42	3.29	
41	5.80	1.38	6.94	1.70	8.04	2.06	8.61	2.27	9.18	2.47	10.28	2.94	11.42	3.44	
43	5.80	1.49	6.94	1.82	8.04	2.14	8.61	2.39	9.18	2.54	10.28	3.05	11.42	3.55	

	45	5.80	1.53	6.94	1.86	8.04	2.19	8.61	2.43	9.18	2.67	10.28	3.21	11.42	3.68
	48	5.80	1.57	6.94	1.87	8.04	2.21	8.61	2.47	9.18	2.74	10.28	3.36	11.42	3.77
60%	-5	4.96	0.61	5.93	0.70	6.90	0.82	7.38	0.87	7.86	0.94	8.83	1.06	9.80	1.21
	-2	4.96	0.61	5.93	0.71	6.90	0.83	7.38	0.88	7.86	0.95	8.83	1.07	9.80	1.22
	0	4.96	0.62	5.93	0.72	6.90	0.84	7.38	0.90	7.86	0.97	8.83	1.09	9.80	1.24
	2	4.96	0.63	5.93	0.74	6.90	0.86	7.38	0.91	7.86	0.98	8.83	1.11	9.80	1.25
	4	4.96	0.65	5.93	0.75	6.90	0.88	7.38	0.92	7.86	0.99	8.83	1.13	9.80	1.27
	6	4.96	0.65	5.93	0.77	6.90	0.89	7.38	0.94	7.86	1.01	8.83	1.15	9.80	1.30
	8	4.96	0.67	5.93	0.78	6.90	0.91	7.38	0.96	7.86	1.04	8.83	1.17	9.80	1.32
	10	4.96	0.68	5.93	0.80	6.90	0.92	7.38	0.99	7.86	1.06	8.83	1.20	9.80	1.34
	12	4.96	0.69	5.93	0.81	6.90	0.94	7.38	1.01	7.86	1.07	8.83	1.22	9.80	1.36
	14	4.96	0.70	5.93	0.82	6.90	0.95	7.38	1.02	7.86	1.09	8.83	1.24	9.80	1.39
	16	4.96	0.71	5.93	0.84	6.90	0.97	7.38	1.04	7.86	1.11	8.83	1.26	9.80	1.41
	18	4.96	0.72	5.93	0.85	6.90	0.99	7.38	1.06	7.86	1.13	8.83	1.28	9.80	1.44
	20	4.96	0.73	5.93	0.87	6.90	1.01	7.38	1.08	7.86	1.16	8.83	1.31	9.80	1.47
	21	4.96	0.74	5.93	0.87	6.90	1.02	7.38	1.09	7.86	1.16	8.83	1.32	9.80	1.48
	23	4.96	0.75	5.93	0.89	6.90	1.03	7.38	1.11	7.86	1.19	8.83	1.38	9.80	1.58
	25	4.96	0.76	5.93	0.90	6.90	1.07	7.38	1.16	7.86	1.26	8.83	1.47	9.80	1.69
	27	4.96	0.79	5.93	0.96	6.90	1.14	7.38	1.24	7.86	1.34	8.83	1.56	9.80	1.80
	29	4.96	0.84	5.93	1.02	6.90	1.22	7.38	1.32	7.86	1.43	8.83	1.67	9.80	1.92
	31	4.96	0.89	5.93	1.08	6.90	1.29	7.38	1.41	7.86	1.52	8.83	1.77	9.80	2.05
	33	4.96	0.94	5.93	1.14	6.90	1.37	7.38	1.49	7.86	1.62	8.83	1.89	9.80	2.18
35	4.96	0.99	5.93	1.21	6.90	1.45	7.38	1.59	7.86	1.72	8.83	2.01	9.80	2.32	
37	4.96	1.05	5.93	1.28	6.90	1.54	7.38	1.68	7.86	1.83	8.83	2.14	9.80	2.47	
39	4.96	1.11	5.93	1.36	6.90	1.63	7.38	1.78	7.86	1.94	8.83	2.27	9.80	2.63	
41	4.96	1.14	5.93	1.42	6.90	1.69	7.38	1.85	7.86	2.01	8.83	2.38	9.80	2.75	
43	4.96	1.18	5.93	1.48	6.90	1.75	7.38	1.91	7.86	2.08	8.83	2.48	9.80	2.87	
45	4.96	1.23	5.93	1.55	6.90	1.82	7.38	1.98	7.86	2.18	8.83	2.59	9.80	3.02	
48	4.96	1.28	5.93	1.62	6.90	1.89	7.38	2.03	7.86	2.27	8.83	2.68	9.80	3.17	
50%	-5	4.15	0.53	4.96	0.61	5.75	0.70	6.15	0.73	6.55	0.77	7.34	0.88	8.17	0.95
	-2	4.15	0.53	4.96	0.62	5.75	0.71	6.15	0.74	6.55	0.79	7.34	0.89	8.17	0.96
	0	4.15	0.54	4.96	0.63	5.75	0.72	6.15	0.75	6.55	0.79	7.34	0.90	8.17	0.98
	2	4.15	0.55	4.96	0.64	5.75	0.73	6.15	0.76	6.55	0.81	7.34	0.91	8.17	0.99
	4	4.15	0.55	4.96	0.65	5.75	0.74	6.15	0.77	6.55	0.82	7.34	0.93	8.17	1.02
	6	4.15	0.56	4.96	0.66	5.75	0.75	6.15	0.79	6.55	0.84	7.34	0.95	8.17	1.05
	8	4.15	0.58	4.96	0.67	5.75	0.76	6.15	0.81	6.55	0.85	7.34	0.96	8.17	1.08
	10	4.15	0.59	4.96	0.68	5.75	0.78	6.15	0.82	6.55	0.88	7.34	0.99	8.17	1.10
	12	4.15	0.59	4.96	0.69	5.75	0.79	6.15	0.84	6.55	0.89	7.34	1.00	8.17	1.12
	14	4.15	0.60	4.96	0.70	5.75	0.80	6.15	0.85	6.55	0.91	7.34	1.02	8.17	1.14
	16	4.15	0.61	4.96	0.71	5.75	0.81	6.15	0.87	6.55	0.92	7.34	1.04	8.17	1.16
	18	4.15	0.62	4.96	0.72	5.75	0.82	6.15	0.88	6.55	0.94	7.34	1.06	8.17	1.18
	20	4.15	0.63	4.96	0.73	5.75	0.84	6.15	0.89	6.55	0.95	7.34	1.07	8.17	1.20
	21	4.15	0.63	4.96	0.74	5.75	0.85	6.15	0.90	6.55	0.96	7.34	1.09	8.17	1.21
	23	4.15	0.64	4.96	0.74	5.75	0.86	6.15	0.92	6.55	0.98	7.34	1.10	8.17	1.24
	25	4.15	0.65	4.96	0.76	5.75	0.88	6.15	0.94	6.55	1.01	7.34	1.16	8.17	1.32
	27	4.15	0.66	4.96	0.79	5.75	0.92	6.15	1.00	6.55	1.07	7.34	1.24	8.17	1.41
	29	4.15	0.70	4.96	0.83	5.75	0.98	6.15	1.06	6.55	1.14	7.34	1.31	8.17	1.50
	31	4.15	0.74	4.96	0.88	5.75	1.04	6.15	1.13	6.55	1.21	7.34	1.40	8.17	1.60
	33	4.15	0.78	4.96	0.93	5.75	1.10	6.15	1.19	6.55	1.29	7.34	1.48	8.17	1.70
35	4.15	0.82	4.96	0.99	5.75	1.16	6.15	1.26	6.55	1.36	7.34	1.58	8.17	1.80	
37	4.15	0.87	4.96	1.04	5.75	1.24	6.15	1.34	6.55	1.45	7.34	1.67	8.17	1.92	
39	4.15	0.92	4.96	1.10	5.75	1.31	6.15	1.41	6.55	1.53	7.34	1.77	8.17	2.04	
41	4.15	0.95	4.96	1.15	5.75	1.35	6.15	1.48	6.55	1.60	7.34	1.87	8.17	2.13	
43	4.15	1.02	4.96	1.23	5.75	1.40	6.15	1.55	6.55	1.64	7.34	1.96	8.17	2.23	
45	4.15	1.04	4.96	1.26	5.75	1.49	6.15	1.67	6.55	1.71	7.34	2.15	8.17	2.41	
48	4.15	1.06	4.96	1.29	5.75	1.58	6.15	1.77	6.55	1.79	7.34	2.33	8.17	2.60	

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combinati on (%) (Capacity index)	Outdoor Air temperature(°C DB)		Indoor temperature(°C WB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	
130%	-19.8	-20	8.55	2.45	8.51	2.62	8.47	2.80	8.47	2.88	8.42	2.97	8.42	3.15
	-18.8	-19	8.67	2.51	8.63	2.68	8.63	2.85	8.59	2.93	8.59	3.01	8.55	3.19
	-16.7	-17	9.01	2.62	8.97	2.79	8.92	2.95	8.92	3.03	8.92	3.11	8.88	3.28
	-13.7	-15	9.39	2.74	9.35	2.90	9.30	3.06	9.30	3.14	9.26	3.22	9.26	3.38
	-11.8	-13	9.76	2.87	9.76	3.02	9.72	3.17	9.68	3.24	9.68	3.32	9.64	3.47
	-9.8	-11	10.23	2.99	10.18	3.14	10.14	3.28	10.14	3.35	10.14	3.42	10.10	3.57
	-9.5	-10	10.48	3.06	10.43	3.20	10.39	3.33	10.39	3.41	10.35	3.47	10.35	3.61
	-8.5	-9.1	10.68	3.11	10.64	3.24	10.64	3.38	10.60	3.45	10.60	3.52	10.56	3.66
	-7	-7.6	11.06	3.20	11.06	3.33	11.02	3.47	11.02	3.53	10.98	3.60	10.94	3.73
	-5	-5.6	11.65	3.32	11.61	3.45	11.56	3.57	11.56	3.64	11.52	3.70	11.52	3.82
	-3	-3.7	12.19	3.43	12.15	3.55	12.15	3.67	12.11	3.73	12.11	3.79	12.07	3.91
	0	-0.7	13.16	3.60	13.16	3.71	13.12	3.82	13.12	3.86	13.07	3.93	13.07	4.04
	3	2.2	14.20	3.74	14.16	3.85	14.12	3.95	14.12	4.00	14.12	4.06	14.08	4.16
	5	4.1	14.92	3.84	14.88	3.94	14.88	4.03	14.83	4.08	14.83	4.13	14.79	4.23
	7	6	15.67	3.93	15.63	4.02	15.63	4.11	15.59	4.16	15.59	4.20	14.96	4.04
9	7.9	16.47	4.01	16.43	4.10	16.43	4.19	16.39	4.23	16.05	4.14	14.96	3.79	
11	9.8	17.31	4.09	17.27	4.17	17.18	4.23	16.59	4.06	16.05	3.89	14.96	3.57	
13	11.8	18.23	4.17	18.19	4.25	17.18	3.96	16.59	3.80	16.05	3.65	14.96	3.35	
15	13.7	19.11	4.24	18.27	4.02	17.18	3.73	16.59	3.59	16.05	3.44	14.96	3.16	
120%	-19.8	-20	8.51	2.69	8.46	2.84	8.42	3.01	8.42	3.08	8.42	3.16	8.38	3.33
	-18.8	-19	8.63	2.74	8.59	2.89	8.59	3.05	8.55	3.13	8.55	3.21	8.51	3.37
	-16.7	-17	8.97	2.84	8.93	3.00	8.87	3.15	8.88	3.22	8.88	3.30	8.84	3.45
	-13.7	-15	9.35	2.96	9.30	3.10	9.26	3.24	9.26	3.32	9.26	3.39	9.22	3.54
	-11.8	-13	9.72	3.07	9.72	3.21	9.68	3.35	9.68	3.42	9.64	3.49	9.64	3.63
	-9.8	-11	10.18	3.19	10.14	3.32	10.14	3.45	10.10	3.52	10.10	3.58	10.06	3.72
	-9.5	-10	10.44	3.24	10.39	3.38	10.35	3.50	10.35	3.57	10.35	3.63	10.31	3.76
	-8.5	-9.1	10.64	3.29	10.60	3.42	10.60	3.55	10.56	3.61	10.56	3.68	10.52	3.80
	-7	-7.6	11.02	3.38	11.02	3.50	10.98	3.62	10.98	3.69	10.94	3.75	10.94	3.87
	-5	-5.6	11.61	3.49	11.57	3.61	11.52	3.72	11.52	3.78	11.52	3.84	11.48	3.95
	-3	-3.7	12.15	3.59	12.15	3.70	12.11	3.81	12.11	3.87	12.07	3.93	12.07	4.03
	0	-0.7	13.12	3.75	13.12	3.85	13.07	3.95	13.07	4.00	13.03	4.05	13.03	4.16
	3	2.2	14.16	3.88	14.12	3.98	14.12	4.07	14.08	4.12	14.08	4.17	13.79	4.15
	5	4.1	14.88	3.97	14.83	4.06	14.83	4.15	14.79	4.20	14.79	4.24	13.79	3.89
	7	6	15.63	4.05	15.63	4.14	15.59	4.22	15.34	4.16	14.83	3.99	13.79	3.66
9	7.9	16.43	4.13	16.39	4.21	15.84	4.07	15.34	3.91	14.83	3.75	13.79	3.45	
11	9.8	17.27	4.20	16.85	4.13	15.84	3.83	15.34	3.68	14.83	3.53	13.79	3.25	
13	11.8	17.89	4.16	16.85	3.88	15.84	3.59	15.34	3.46	14.83	3.32	13.79	3.06	
15	13.7	17.89	3.92	16.85	3.65	15.84	3.39	15.34	3.26	14.83	3.13	13.79	2.88	
110%	-19.8	-20	8.46	2.92	8.42	3.06	8.38	3.21	8.38	3.29	8.38	3.36	8.34	3.51
	-18.8	-19	8.59	2.97	8.55	3.11	8.55	3.25	8.55	3.33	8.51	3.40	8.51	3.54
	-16.7	-17	8.93	3.06	8.88	3.20	9.01	3.34	8.84	3.41	8.84	3.48	8.80	3.62
	-13.7	-15	9.30	3.17	9.26	3.30	9.22	3.43	9.22	3.50	9.22	3.57	9.18	3.70
	-11.8	-13	9.68	3.28	9.68	3.40	9.64	3.53	9.64	3.59	9.60	3.66	9.60	3.79
	-9.8	-11	10.14	3.38	10.10	3.50	10.10	3.62	10.06	3.69	10.06	3.74	10.06	3.87
	-9.5	-10	10.39	3.43	10.35	3.55	10.31	3.67	10.31	3.73	10.31	3.79	10.27	3.91
	-8.5	-9.1	10.60	3.48	10.56	3.60	10.56	3.71	10.52	3.77	10.52	3.83	10.52	3.49
	-7	-7.6	10.98	3.56	10.98	3.67	10.94	3.78	10.94	3.84	10.94	3.89	10.90	4.01
	-5	-5.6	11.57	3.66	11.52	3.77	11.48	3.87	11.48	3.93	11.48	3.98	11.44	4.09
	-3	-3.7	12.11	3.75	12.11	3.85	12.07	3.96	12.07	4.01	12.03	4.06	12.03	4.16
	0	-0.7	13.07	3.89	13.07	3.99	13.03	4.08	13.03	4.13	13.03	4.18	12.66	4.10
	3	2.2	14.12	4.02	14.08	4.11	14.08	4.20	14.04	4.24	13.58	4.07	12.66	3.73
	5	4.1	14.83	4.10	14.83	4.19	14.54	4.15	14.04	3.98	13.58	3.82	12.66	3.51
	7	6	15.59	4.18	15.46	4.20	14.54	3.89	14.04	3.74	13.58	3.59	12.66	3.30
9	7.9	16.38	4.25	15.46	3.95	14.54	3.66	14.04	3.52	13.58	3.38	12.66	3.11	
11	9.8	16.38	3.99	15.46	3.72	14.54	3.45	14.04	3.32	13.58	3.19	12.66	2.93	
13	11.8	16.38	3.74	15.46	3.49	14.54	3.24	14.04	3.12	13.58	3.00	12.66	2.76	
15	13.7	16.38	3.33	15.46	3.29	14.54	3.06	14.04	2.94	13.58	2.83	12.66	2.61	
100%	-19.8	-20	8.42	3.15	8.38	3.29	8.38	3.42	8.34	3.49	8.34	3.55	8.30	3.69
	-18.8	-19	8.55	3.20	8.55	3.33	8.51	3.46	8.51	3.52	8.47	3.59	8.47	3.72



	-16.7	-17	8.88	3.29	8.84	3.41	8.84	3.54	8.80	3.60	8.80	3.66	8.80	3.79
	-13.7	-15	9.26	3.38	9.22	3.50	9.18	3.62	9.18	3.69	9.18	3.74	9.14	3.87
	-11.8	-13	9.64	3.48	9.64	3.59	9.60	3.71	9.60	3.77	9.60	3.83	9.55	3.94
	-9.8	-11	10.10	3.57	10.06	3.69	10.06	3.79	10.06	3.85	10.01	3.91	10.01	4.02
	-9.5	-10	10.35	3.62	10.31	3.73	10.31	3.84	10.27	3.89	10.27	3.95	10.22	4.06
	-8.5	-9.1	10.56	3.66	10.52	3.77	10.52	3.88	10.52	3.93	10.48	3.98	10.48	4.09
	-7	-7.6	10.94	3.74	10.94	3.84	10.90	3.94	10.90	3.99	10.90	4.04	10.85	4.15
	-5	-5.6	11.52	3.83	11.48	3.93	11.48	4.02	11.44	4.07	11.44	4.12	11.40	4.22
	-3	-3.7	12.07	3.92	12.07	3.56	12.03	4.10	12.03	4.15	12.03	4.19	11.52	4.02
	0	-0.7	13.03	4.04	13.03	4.13	12.99	4.21	12.78	4.15	12.36	3.97	11.52	3.65
	3	2.2	14.08	4.16	14.04	4.24	13.20	3.92	12.78	3.77	12.36	3.62	11.52	3.32
	5	4.1	14.79	4.24	14.04	3.98	13.20	3.69	12.78	3.55	12.36	3.41	11.52	3.13
	7	6	14.88	4.02	14.04	3.74	13.20	3.47	12.78	3.34	12.36	3.21	11.52	2.95
	9	7.9	14.88	3.78	14.04	3.52	13.20	3.27	12.78	3.10	12.36	3.02	11.52	2.79
	11	9.8	14.88	3.56	14.04	3.32	13.20	3.08	12.78	2.97	12.36	2.85	11.52	2.63
	13	11.8	14.88	3.34	14.04	3.12	13.20	2.90	12.78	2.79	12.36	2.69	11.52	2.48
	15	13.7	14.88	3.15	14.04	2.94	13.20	2.74	12.78	2.64	12.36	2.54	11.52	2.35
90%	-19.8	-20	8.37	3.39	8.32	3.51	8.32	3.63	8.28	3.69	8.28	3.75	8.28	3.87
	-18.8	-19	8.49	3.42	8.49	3.55	8.45	3.66	8.45	3.72	8.45	3.78	8.41	3.90
	-16.7	-17	8.83	3.51	8.78	3.62	8.78	3.74	8.78	3.79	8.74	3.85	8.74	3.96
	-13.7	-15	9.20	3.60	9.16	3.70	9.16	3.81	9.12	3.87	9.12	3.92	9.12	4.03
	-11.8	-13	9.58	3.68	9.58	3.79	9.54	3.89	9.54	3.94	9.54	3.99	9.50	4.10
	-9.8	-11	10.04	3.77	10.04	3.87	10.00	3.97	10.00	4.02	10.00	4.07	9.96	4.17
	-9.5	-10	10.29	3.81	10.25	3.91	10.25	4.01	10.21	4.06	10.21	4.11	10.21	4.20
	-8.5	-9.1	10.50	3.85	10.50	3.95	10.46	4.04	10.46	4.09	10.46	4.14	10.33	4.18
	-7	-7.6	10.88	3.92	10.88	4.01	10.83	4.10	10.83	4.15	10.83	4.19	10.33	3.99
	-5	-5.6	11.46	4.00	11.42	4.09	11.42	4.17	11.38	4.22	11.09	4.09	10.33	3.75
	-3	-3.7	12.01	4.08	12.01	4.16	11.88	4.18	11.46	4.01	11.09	3.85	10.33	3.53
	0	-0.7	13.01	4.20	12.63	4.09	11.88	3.79	11.46	3.64	11.09	3.50	10.33	3.21
	3	2.2	13.39	4.00	12.63	3.72	11.88	3.45	11.46	3.32	11.09	3.19	10.33	2.94
	5	4.1	13.39	3.76	12.63	3.50	11.88	3.25	11.46	3.13	11.09	3.01	10.33	2.77
	7	6	13.39	3.53	12.63	3.30	11.88	3.06	11.46	2.95	11.09	2.84	10.33	2.62
9	7.9	13.39	3.33	12.63	3.10	11.88	2.89	11.46	2.78	11.09	2.68	10.33	2.47	
11	9.8	13.39	3.14	12.63	2.93	11.88	2.73	11.46	2.63	11.09	2.53	10.33	2.34	
13	11.8	13.39	2.95	12.63	2.76	11.88	2.57	11.46	2.48	11.09	2.39	10.33	2.21	
15	13.7	13.39	2.79	12.63	2.61	11.88	2.44	11.46	2.35	11.09	2.27	10.33	2.10	
80%	-19.8	-20	8.34	3.62	8.30	3.73	8.30	3.83	8.30	3.89	8.25	3.94	8.25	4.05
	-18.8	-19	8.46	3.65	8.46	3.76	8.42	3.87	8.42	3.92	8.42	3.97	8.38	4.08
	-16.7	-17	8.80	3.73	8.76	3.83	8.76	3.93	8.76	3.98	8.76	4.03	8.72	4.13
	-13.7	-15	9.18	3.81	9.14	3.90	9.14	4.00	9.14	4.05	9.09	4.10	9.09	4.20
	-11.8	-13	9.55	3.88	9.55	3.98	9.51	4.07	9.51	4.11	9.51	4.16	9.22	4.05
	-9.8	-11	10.02	3.96	10.02	4.05	9.97	4.14	9.97	4.18	9.89	4.17	9.22	3.83
	-9.5	-10	10.27	4.00	10.22	4.09	10.23	4.17	10.23	4.22	9.89	4.05	9.22	3.71
	-8.5	-9.1	10.48	4.04	9.74	4.12	10.43	4.20	10.23	4.11	9.89	3.94	9.22	3.61
	-7	-7.6	10.85	4.10	10.85	4.18	10.56	4.09	10.23	3.92	9.89	3.77	9.22	3.46
	-5	-5.6	11.44	4.17	11.23	4.15	10.56	3.84	10.23	3.69	9.89	3.54	9.22	3.25
	-3	-3.7	11.90	4.19	11.23	3.90	10.56	3.61	10.23	3.48	9.89	3.34	9.22	3.07
	0	-0.7	11.90	3.80	11.23	3.54	10.56	3.29	10.23	3.17	9.89	3.04	9.22	2.80
	3	2.2	11.90	3.47	11.23	3.23	10.56	3.01	10.23	2.89	9.89	2.78	9.22	2.57
	5	4.1	11.90	3.26	11.23	3.05	10.56	2.83	10.23	2.73	9.89	2.63	9.22	2.43
	7	6	11.90	3.07	11.23	2.88	10.56	2.68	10.23	2.58	9.89	2.49	9.22	2.30
9	7.9	11.90	2.90	11.23	2.71	10.56	2.53	10.23	2.44	9.89	2.35	9.22	2.18	
11	9.8	11.90	2.74	11.23	2.56	10.56	2.39	10.23	2.31	9.89	2.23	9.22	2.06	
13	11.8	11.90	2.58	11.23	2.42	10.56	2.26	10.23	2.18	9.89	2.10	9.22	1.95	
15	13.7	11.90	2.44	11.23	2.29	10.56	2.14	10.23	2.07	9.89	2.00	9.22	1.86	
70%	-19.8	-20	8.28	3.86	8.24	3.95	8.24	4.04	8.24	4.09	8.24	4.14	8.03	4.09
	-18.8	-19	8.40	3.89	8.40	3.98	8.36	4.07	8.36	4.11	8.36	4.16	8.03	4.01
	-16.7	-17	8.74	3.95	8.74	4.04	8.70	4.13	8.70	4.17	8.61	3.72	8.03	3.82
	-13.7	-15	9.11	4.02	9.07	4.11	9.07	4.19	8.91	4.13	8.61	3.96	8.03	3.63
	-11.8	-13	9.49	4.09	9.49	4.17	9.24	4.07	8.91	3.91	8.61	3.75	8.03	3.44
	-9.8	-11	9.95	4.15	9.82	4.15	9.24	3.84	8.91	3.70	8.61	3.55	8.03	3.26
	-9.5	-10	10.20	4.19	9.82	4.03	9.24	3.73	8.91	3.59	8.61	3.45	8.03	3.17
	-8.5	-9.1	10.41	4.21	9.82	3.92	9.24	3.63	8.91	3.49	8.61	3.36	8.03	3.09
	-7	-7.6	10.41	4.02	9.82	3.74	9.24	3.47	8.91	3.34	8.61	3.21	8.03	2.96
	-5	-5.6	10.41	3.78	9.82	3.52	9.24	3.27	8.91	3.15	8.61	3.02	8.03	2.79

	-3	-3.7	10.41	3.56	9.82	3.32	9.24	3.09	8.91	2.97	8.61	2.86	8.03	2.64
	0	-0.7	10.41	3.24	9.82	3.03	9.24	2.82	8.91	2.71	8.61	2.61	8.03	2.42
	3	2.2	10.41	2.96	9.82	2.77	9.24	2.58	8.91	2.49	8.61	2.40	8.03	2.22
	5	4.1	10.41	2.79	9.82	2.61	9.24	2.44	8.91	2.35	8.61	2.27	8.03	2.10
	7	6	10.41	2.64	9.82	2.47	9.24	2.31	8.91	2.23	8.61	2.15	8.03	1.99
	9	7.9	10.41	2.50	9.82	2.34	9.24	2.19	8.91	2.11	8.61	2.04	8.03	1.89
	11	9.8	10.41	2.36	9.82	2.21	9.24	2.07	8.91	2.00	8.61	1.93	8.03	1.79
	13	11.8	10.41	2.23	9.82	2.10	9.24	1.96	8.91	1.90	8.61	1.83	8.03	1.70
	15	13.7	10.41	2.11	9.82	1.99	9.24	1.86	8.91	1.80	8.61	1.74	8.03	1.62
60%	-19.8	-20	8.26	4.09	8.21	4.17	7.92	4.01	7.67	3.85	7.42	3.70	6.91	3.39
	-18.8	-19	8.38	4.12	8.38	4.20	7.92	3.92	7.67	3.77	7.42	3.62	6.91	3.32
	-16.7	-17	8.72	4.17	8.42	4.04	7.92	3.74	7.67	3.60	7.42	3.46	6.91	3.18
	-13.7	-15	8.93	4.13	8.42	3.84	7.92	3.56	7.67	3.42	7.42	3.29	6.91	3.02
	-11.8	-13	8.93	3.91	8.42	3.64	7.92	3.38	7.67	3.25	7.42	3.12	6.91	2.89
	-9.8	-11	8.93	3.69	8.42	3.44	7.92	3.19	7.67	3.07	7.42	2.96	6.91	2.73
	-9.5	-10	8.93	3.59	8.42	3.34	7.92	3.10	7.67	2.99	7.42	2.87	6.91	2.65
	-8.5	-9.1	8.93	3.49	8.42	3.26	7.92	3.03	7.67	2.92	7.42	2.80	6.91	2.59
	-7	-7.6	8.93	3.34	8.42	3.12	7.92	2.90	7.67	2.79	7.42	2.69	6.91	2.48
	-5	-5.6	8.93	3.15	8.42	2.94	7.92	2.74	7.67	2.64	7.42	2.54	6.91	2.35
	-3	-3.7	8.93	2.97	8.42	2.78	7.92	2.59	7.67	2.50	7.42	2.40	6.91	2.22
	0	-0.7	8.93	2.71	8.42	2.54	7.92	2.37	7.67	2.29	7.42	2.20	6.91	2.04
	3	2.2	8.93	2.49	8.42	2.33	7.92	2.18	7.67	2.10	7.42	2.03	6.91	1.88
	5	4.1	8.93	2.35	8.42	2.21	7.92	2.06	7.67	2.00	7.42	1.92	6.91	1.79
	7	6	8.93	2.23	8.42	2.09	7.92	1.96	7.67	1.89	7.42	1.83	6.91	1.70
	9	7.9	8.93	2.11	8.42	1.98	7.92	1.86	7.67	1.80	7.42	1.73	6.91	1.62
11	9.8	8.93	2.00	8.42	1.88	7.92	1.77	7.67	1.71	7.42	1.65	6.91	1.54	
13	11.8	8.93	1.89	8.42	1.78	7.92	1.68	7.67	1.62	7.42	1.57	6.91	1.46	
15	13.7	8.93	1.80	8.42	1.69	7.92	1.60	7.67	1.55	7.42	1.50	6.91	1.40	
50%	-19.8	-20	7.44	3.72	7.02	3.47	6.60	3.22	6.35	3.10	6.14	2.98	5.72	2.74
	-18.8	-19	7.44	3.64	7.02	3.39	6.60	3.15	6.35	3.03	6.14	2.92	5.72	2.69
	-16.7	-17	7.44	3.47	7.02	3.24	6.60	3.01	6.35	2.90	6.14	2.79	5.72	2.58
	-13.7	-15	7.44	3.31	7.02	3.09	6.60	2.87	6.35	2.77	6.14	2.66	5.72	2.46
	-11.8	-13	7.44	3.14	7.02	2.93	6.60	2.73	6.35	2.63	6.14	2.53	5.72	2.34
	-9.8	-11	7.44	2.97	7.02	2.78	6.60	2.59	6.35	2.50	6.14	2.41	5.72	2.23
	-9.5	-10	7.44	2.89	7.02	2.70	6.60	2.52	6.35	2.43	6.14	2.34	5.72	2.17
	-8.5	-9.1	7.44	2.82	7.02	2.64	6.60	2.46	6.35	2.37	6.14	2.29	5.72	2.12
	-7	-7.6	7.44	2.70	7.02	2.53	6.60	2.36	6.35	2.28	6.14	2.20	5.72	2.04
	-5	-5.6	7.44	2.55	7.02	2.39	6.60	2.24	6.35	2.16	6.14	2.08	5.72	1.93
	-3	-3.7	7.44	2.42	7.02	2.27	6.60	2.12	6.35	2.05	6.14	1.97	5.72	1.83
	0	-0.7	7.44	2.22	7.02	2.08	6.60	1.95	6.35	1.88	6.14	1.82	5.72	1.69
	3	2.2	7.44	2.04	7.02	1.92	6.60	1.80	6.35	1.74	6.14	1.68	5.72	1.57
	5	4.1	7.44	1.94	7.02	1.82	6.60	1.71	6.35	1.65	6.14	1.60	5.72	1.49
	7	6	7.44	1.84	7.02	1.73	6.60	1.63	6.35	1.57	6.14	1.52	5.72	1.42
	9	7.9	7.44	1.74	7.02	1.64	6.60	1.55	6.35	1.50	6.14	1.45	5.72	1.36
11	9.8	7.44	1.66	7.02	1.56	6.60	1.47	6.35	1.43	6.14	1.38	5.72	1.29	
13	11.8	7.44	1.58	7.02	1.49	6.60	1.40	6.35	1.36	6.14	1.32	5.72	1.23	
15	13.7	7.44	1.50	7.02	1.42	6.60	1.34	6.35	1.30	6.14	1.26	5.72	1.18	

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

MDV-V140W/DN1

Cooling

Combinati on (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(° C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	12.30	1.61	14.65	1.97	17.00	2.11	17.65	2.20	18.50	2.26	18.95	2.46	19.43	2.47
	-2	12.30	1.61	14.65	2.01	17.00	2.11	17.65	2.21	18.50	2.26	18.95	2.49	19.43	2.50
	0	12.30	1.64	14.65	2.04	17.00	2.19	17.65	2.33	18.50	2.39	18.95	2.52	19.43	2.53
	2	12.30	1.67	14.65	2.05	17.00	2.26	17.65	2.46	18.50	2.42	18.95	2.54	19.43	2.57
	4	12.30	1.71	14.65	2.09	17.00	2.34	17.65	2.47	18.50	2.45	18.95	2.54	19.43	2.62
	6	12.30	1.74	14.65	2.13	17.00	2.43	17.65	2.50	18.29	2.53	18.72	2.54	19.21	2.64
	8	12.30	1.78	14.65	2.18	17.00	2.55	17.65	2.62	18.07	2.61	18.51	3.90	18.97	2.66
	10	12.30	1.82	14.65	2.23	17.00	2.65	17.65	2.70	17.85	4.04	18.30	4.06	18.75	2.74
	12	12.30	1.85	14.65	2.27	17.00	2.70	17.40	4.03	17.65	4.06	18.05	4.07	18.50	2.76
	14	12.30	1.89	14.65	2.31	16.95	4.05	17.20	4.06	17.40	4.08	17.85	4.09	18.30	2.82
	16	12.30	1.92	14.65	2.36	16.75	4.06	16.95	4.08	17.15	4.10	17.60	4.12	18.05	2.86
	18	12.30	1.96	14.65	2.41	16.50	2.82	16.70	2.84	16.95	2.85	17.40	2.88	17.85	2.91
	20	12.30	2.00	14.65	2.56	16.25	2.96	16.50	2.98	16.70	2.99	17.15	3.02	17.60	3.05
	21	12.30	2.05	14.65	2.65	16.15	3.03	16.40	3.05	16.60	3.06	17.05	3.09	17.50	3.12
	23	12.30	2.20	14.65	2.84	15.95	3.17	16.15	3.18	16.35	3.20	16.80	3.23	17.25	3.26
	25	12.30	2.35	14.65	3.05	15.70	3.31	15.90	3.32	16.15	3.34	16.60	3.38	17.05	3.41
	27	12.30	2.51	14.65	3.26	15.50	3.44	15.70	3.47	15.90	3.48	16.35	3.52	16.80	3.56
	29	12.30	2.68	14.65	3.48	15.25	3.58	15.45	3.60	15.70	3.63	16.15	3.66	16.60	3.70
	31	12.30	2.86	14.60	3.68	15.00	3.73	15.25	3.75	15.45	3.76	15.90	3.81	16.35	3.85
	33	12.30	3.05	14.35	3.82	14.80	3.86	15.00	3.89	15.25	3.91	15.70	3.95	16.10	3.99
35	12.30	3.25	14.10	3.96	14.55	4.01	14.80	4.03	15.00	4.05	15.45	4.10	15.90	4.14	
37	12.30	3.46	13.90	4.10	14.35	4.15	14.55	4.17	14.80	4.20	15.20	4.25	15.65	4.30	
39	12.30	3.68	13.65	4.15	14.10	4.29	14.35	4.32	14.55	4.34	15.00	4.39	15.45	4.45	
41	12.30	3.88	13.51	4.19	13.95	4.33	14.20	4.36	14.40	4.38	14.85	4.40	14.86	4.49	
43	12.30	3.98	13.41	4.21	13.88	4.34	14.13	4.38	14.25	4.39	14.58	4.41	14.68	4.50	
45	12.30	4.17	13.33	4.25	13.73	4.38	13.98	4.41	14.05	4.41	14.19	4.43	14.39	4.58	
48	12.30	4.32	13.80	4.39	14.97	4.42	15.24	4.45	15.37	4.46	15.30	4.50	15.58	4.51	
120%	-5	11.35	1.56	13.50	1.89	15.70	2.23	16.80	2.44	17.60	2.54	18.00	2.62	18.40	2.69
	-2	11.35	1.57	13.50	1.91	15.70	2.26	16.80	2.45	17.60	2.57	18.00	2.64	18.40	2.70
	0	11.35	1.59	13.50	1.92	15.70	2.28	16.80	2.46	17.60	2.59	18.00	2.66	18.40	2.71
	2	11.35	1.59	13.50	1.94	15.70	2.30	16.80	2.48	17.60	2.60	18.00	2.68	18.40	2.71
	4	11.35	1.61	13.50	1.97	15.70	2.33	16.80	2.50	17.60	2.64	18.00	2.68	18.40	2.72
	6	11.35	1.63	13.50	1.98	15.70	2.36	16.80	2.53	17.60	2.67	18.00	2.71	18.40	2.73
	8	11.35	1.64	13.50	2.00	15.70	2.39	16.80	2.56	17.60	2.69	18.00	2.71	18.40	2.74
	10	11.35	1.66	13.50	2.03	15.70	2.41	16.80	2.61	17.60	2.69	18.00	2.72	18.40	2.75
	12	11.35	1.69	13.50	2.07	15.70	2.46	16.80	2.66	17.35	2.71	17.75	2.71	18.15	2.77
	14	11.35	1.73	13.50	2.11	15.70	2.51	16.80	2.71	17.10	2.72	17.55	2.75	17.95	2.80
	16	11.35	1.76	13.50	2.15	15.70	2.56	16.70	4.10	16.90	2.76	17.30	2.79	17.70	2.84
	18	11.35	1.79	13.50	2.19	15.70	2.64	16.45	2.82	16.65	2.83	17.05	2.86	17.50	2.89
	20	11.35	1.83	13.50	2.28	15.70	2.84	16.25	2.96	16.45	2.97	16.85	3.00	17.25	3.02
	21	11.35	1.84	13.50	2.36	15.70	2.94	16.10	3.03	16.30	3.04	16.75	3.07	17.15	3.10
	23	11.35	1.97	13.50	2.53	15.70	3.15	15.90	3.16	16.10	3.18	16.50	3.21	16.90	3.24
	25	11.35	2.10	13.50	2.70	15.45	3.29	15.65	3.30	15.85	3.32	16.30	3.35	16.70	3.38
	27	11.35	2.25	13.50	2.89	15.25	3.42	15.45	3.44	15.65	3.46	16.05	3.49	16.45	3.52
	29	11.35	2.40	13.50	3.09	15.00	3.56	15.20	3.58	15.40	3.60	15.80	3.64	16.25	3.67
	31	11.35	2.56	13.50	3.30	14.75	3.71	15.00	3.72	15.20	3.74	15.60	3.78	16.00	3.82
	33	11.35	2.72	13.50	3.51	14.55	3.84	14.75	3.86	14.95	3.88	15.35	3.92	15.75	3.96
35	11.35	2.90	13.50	3.75	14.30	3.98	14.50	4.00	14.75	4.02	15.15	4.07	15.55	4.11	
37	11.35	3.08	13.50	3.99	14.10	4.13	14.30	4.15	14.50	4.17	14.90	4.21	15.30	4.26	
39	11.35	3.28	13.45	4.22	13.85	4.26	14.05	4.29	14.25	4.31	14.70	4.36	15.10	4.40	
41	11.35	3.37	13.34	4.25	13.74	4.29	13.94	4.32	14.14	4.34	14.59	4.37	14.67	4.44	
43	11.35	3.42	13.27	4.28	13.63	4.32	13.83	4.34	14.03	4.36	14.34	4.38	14.44	4.52	
45	11.35	3.46	13.20	4.32	13.50	4.36	13.69	4.38	13.91	4.39	14.05	4.40	14.29	4.62	
48	13.15	3.49	15.16	4.36	15.44	4.40	15.61	4.41	15.94	4.43	16.02	4.41	16.34	4.68	
110%	-5	10.40	1.36	12.40	1.70	14.40	2.02	15.40	2.17	16.40	2.34	17.65	2.43	18.05	2.50
	-2	10.40	1.39	12.40	1.72	14.40	2.04	15.40	2.19	16.40	2.35	17.65	2.45	18.05	2.51
	0	10.40	1.40	12.40	1.73	14.40	2.06	15.40	2.21	16.40	2.38	17.65	2.47	18.05	2.55
	2	10.40	1.43	12.40	1.74	14.40	2.09	15.40	2.23	16.40	2.41	17.65	2.51	18.05	2.58

	4	10.40	1.46	12.40	1.76	14.40	2.11	15.40	2.26	16.40	2.44	17.65	2.55	18.05	2.60
	6	10.40	1.48	12.40	1.78	14.40	2.13	15.40	2.29	16.40	2.47	17.65	2.57	18.05	2.64
	8	10.40	1.49	12.40	1.81	14.40	2.15	15.40	2.32	16.40	2.50	17.65	2.59	18.05	2.67
	10	10.40	1.51	12.40	1.84	14.40	2.18	15.40	2.36	16.40	2.54	17.65	2.61	18.05	2.69
	12	10.40	1.54	12.40	1.87	14.40	2.23	15.40	2.41	16.40	2.59	17.45	2.65	17.80	2.73
	14	10.40	1.57	12.40	1.91	14.40	2.27	15.40	2.45	16.40	2.64	17.20	2.67	17.60	2.75
	16	10.40	1.59	12.40	1.94	14.40	2.31	15.40	2.50	16.40	2.69	17.00	2.70	17.35	2.78
	18	10.40	1.62	12.40	1.98	14.40	2.36	15.40	2.57	16.40	2.82	16.75	2.84	17.15	2.86
	20	10.40	1.66	12.40	2.02	14.40	2.50	15.40	2.76	16.15	2.95	16.55	2.98	16.90	3.00
	21	10.40	1.67	12.40	2.08	14.40	2.59	15.40	2.86	16.05	3.02	16.40	3.05	16.80	3.07
	23	10.40	1.75	12.40	2.23	14.40	2.77	15.40	3.07	15.80	3.16	16.20	3.19	16.55	3.22
	25	10.40	1.87	12.40	2.38	14.40	2.97	15.40	3.28	15.60	3.30	15.95	3.33	16.35	3.35
	27	10.40	1.99	12.40	2.55	14.40	3.17	15.15	3.42	15.35	3.43	15.75	3.47	16.10	3.50
	29	10.40	2.12	12.40	2.72	14.40	3.39	14.95	3.56	15.15	3.58	15.50	3.61	15.90	3.64
	31	10.40	2.26	12.40	2.90	14.40	3.62	14.70	3.70	14.90	3.72	15.30	3.75	15.65	3.79
	33	10.40	2.41	12.40	3.09	14.30	3.82	14.50	3.84	14.70	3.85	15.05	3.89	15.45	3.93
	35	10.40	2.56	12.40	3.30	14.05	3.96	14.25	3.98	14.45	4.00	14.80	4.04	15.20	4.07
	37	10.40	2.73	12.40	3.51	13.85	4.10	14.05	4.12	14.20	4.14	14.60	4.18	14.95	4.22
	39	10.40	2.90	12.40	3.74	13.60	4.24	13.80	4.26	14.00	4.28	14.35	4.32	14.75	4.37
	41	10.40	2.93	12.40	3.77	13.49	4.27	13.69	4.29	13.89	4.31	14.17	4.35	14.31	4.40
	43	10.40	2.96	12.40	3.82	13.39	4.30	13.59	4.32	13.79	4.34	14.04	4.37	14.09	4.48
	45	10.40	3.05	12.40	3.84	13.25	4.34	13.44	4.37	13.66	4.38	13.90	4.49	13.96	4.59
	48	11.39	3.16	13.58	4.16	14.30	4.37	14.49	4.40	14.80	4.43	14.97	4.50	15.09	4.64
100%	-5	9.45	1.24	11.25	1.49	13.10	1.78	14.00	1.90	14.90	2.07	16.75	2.35	17.70	2.46
	-2	9.45	1.26	11.25	1.51	13.10	1.80	14.00	1.94	14.90	2.09	16.75	2.38	17.70	2.47
	0	9.45	1.27	11.25	1.53	13.10	1.82	14.00	1.96	14.90	2.11	16.75	2.42	17.70	2.50
	2	9.45	1.29	11.25	1.55	13.10	1.84	14.00	1.99	14.90	2.14	16.75	2.46	17.70	2.54
	4	9.45	1.30	11.25	1.56	13.10	1.86	14.00	2.02	14.90	2.16	16.75	2.48	17.70	2.57
	6	9.45	1.32	11.25	1.60	13.10	1.89	14.00	2.05	14.90	2.20	16.75	2.52	17.70	2.61
	8	9.45	1.35	11.25	1.62	13.10	1.92	14.00	2.08	14.90	2.23	16.75	2.56	17.70	2.65
	10	9.45	1.36	11.25	1.65	13.10	1.95	14.00	2.11	14.90	2.27	16.75	2.60	17.70	2.69
	12	9.45	1.38	11.25	1.68	13.10	1.99	14.00	2.15	14.90	2.32	16.75	2.65	17.45	2.71
	14	9.45	1.41	11.25	1.71	13.10	2.03	14.00	2.19	14.90	2.36	16.75	2.70	17.25	2.74
	16	9.45	1.44	11.25	1.75	13.10	2.07	14.00	2.24	14.90	2.41	16.65	2.73	17.00	2.77
	18	9.45	1.46	11.25	1.78	13.10	2.11	14.00	2.28	14.90	2.45	16.45	2.82	16.80	2.84
	20	9.45	1.49	11.25	1.82	13.10	2.17	14.00	2.40	14.90	2.63	16.20	2.95	16.55	2.98
	21	9.45	1.51	11.25	1.83	13.10	2.25	14.00	2.48	14.90	2.72	16.10	3.02	16.45	3.05
	23	9.45	1.54	11.25	1.95	13.10	2.41	14.00	2.66	14.90	2.92	15.90	3.16	16.20	3.19
	25	9.45	1.64	11.25	2.09	13.10	2.58	14.00	2.85	14.90	3.12	15.65	3.30	16.00	3.33
	27	9.45	1.76	11.25	2.23	13.10	2.76	14.00	3.05	14.90	3.34	15.40	3.44	15.75	3.47
	29	9.45	1.87	11.25	2.37	13.10	2.94	14.00	3.25	14.85	3.55	15.20	3.58	15.55	3.61
	31	9.45	1.99	11.25	2.53	13.10	3.14	14.00	3.47	14.65	3.69	14.95	3.72	15.30	3.75
	33	9.45	2.11	11.25	2.70	13.10	3.35	14.00	3.71	14.40	3.83	14.75	3.86	15.10	3.90
35	9.45	2.25	11.25	2.87	13.10	3.57	14.00	3.95	14.15	3.97	14.50	4.00	14.85	4.04	
37	9.45	2.39	11.25	3.06	13.10	3.81	13.75	4.09	13.95	4.11	14.30	4.15	14.60	4.18	
39	9.45	2.54	11.25	3.25	13.10	4.05	13.55	4.23	13.70	4.25	14.05	4.29	14.40	4.33	
41	9.45	2.66	11.25	3.37	13.10	4.20	13.34	4.26	13.59	4.31	13.81	4.39	14.19	4.42	
43	9.45	2.78	11.25	3.48	13.10	4.28	13.13	4.31	13.50	4.36	13.89	4.41	13.94	4.47	
45	9.45	2.93	11.25	3.64	13.10	4.35	12.85	4.37	13.43	4.43	13.77	4.48	13.66	4.53	
48	9.79	3.06	11.65	3.77	13.57	4.36	12.76	4.42	13.88	4.51	13.39	4.53	13.84	4.57	
90%	-5	8.50	1.10	10.15	1.32	11.80	1.55	12.60	1.69	13.40	1.80	15.05	2.07	16.70	2.37
	-2	8.50	1.11	10.15	1.33	11.80	1.57	12.60	1.72	13.40	1.82	15.05	2.09	16.70	2.40
	0	8.50	1.12	10.15	1.35	11.80	1.60	12.60	1.74	13.40	1.85	15.05	2.12	16.70	2.41
	2	8.50	1.14	10.15	1.36	11.80	1.61	12.60	1.77	13.40	1.88	15.05	2.16	16.70	2.45
	4	8.50	1.16	10.15	1.38	11.80	1.64	12.60	1.79	13.40	1.90	15.05	2.19	16.70	2.49
	6	8.50	1.17	10.15	1.41	11.80	1.67	12.60	1.82	13.40	1.93	15.05	2.23	16.70	2.53
	8	8.50	1.20	10.15	1.44	11.80	1.70	12.60	1.85	13.40	1.97	15.05	2.27	16.70	2.55
	10	8.50	1.22	10.15	1.47	11.80	1.74	12.60	1.87	13.40	2.01	15.05	2.30	16.70	2.59
	12	8.50	1.24	10.15	1.50	11.80	1.77	12.60	1.91	13.40	2.05	15.05	2.34	16.70	2.64
	14	8.50	1.26	10.15	1.52	11.80	1.80	12.60	1.94	13.40	2.09	15.05	2.38	16.70	2.69
	16	8.50	1.28	10.15	1.55	11.80	1.84	12.60	1.98	13.40	2.13	15.05	2.43	16.65	2.74
	18	8.50	1.30	10.15	1.58	11.80	1.87	12.60	2.02	13.40	2.17	15.05	2.48	16.45	2.82
	20	8.50	1.33	10.15	1.62	11.80	1.91	12.60	2.06	13.40	2.25	15.05	2.67	16.20	2.95
21	8.50	1.34	10.15	1.63	11.80	1.94	12.60	2.13	13.40	2.33	15.05	2.76	16.10	3.02	
23	8.50	1.37	10.15	1.69	11.80	2.08	12.60	2.28	13.40	2.50	15.05	2.96	15.85	3.16	

	25	8.50	1.44	10.15	1.81	11.80	2.22	12.60	2.44	13.40	2.67	15.05	3.17	15.65	3.30
	27	8.50	1.53	10.15	1.93	11.80	2.37	12.60	2.61	13.40	2.86	15.05	3.40	15.40	3.44
	29	8.50	1.63	10.15	2.05	11.80	2.53	12.60	2.78	13.40	3.06	14.90	3.55	15.20	3.58
	31	8.50	1.74	10.15	2.19	11.80	2.69	12.60	2.97	13.40	3.26	14.65	3.69	14.95	3.72
	33	8.50	1.84	10.15	2.33	11.80	2.87	12.60	3.17	13.40	3.48	14.45	3.83	14.75	3.86
	35	8.50	1.96	10.15	2.48	11.80	3.06	12.60	3.37	13.40	3.70	14.20	3.97	14.50	4.00
	37	8.50	2.08	10.15	2.63	11.80	3.26	12.60	3.59	13.40	3.95	13.95	4.11	14.30	4.14
	39	8.50	2.20	10.15	2.80	11.80	3.47	12.60	3.83	13.40	4.21	13.75	4.25	14.05	4.29
	41	8.50	2.28	10.15	2.93	11.80	3.59	12.60	3.93	13.40	4.23	13.65	4.36	13.96	4.39
	43	8.50	2.39	10.15	3.05	11.80	3.72	12.60	4.03	13.40	4.32	13.58	4.42	13.84	4.45
	45	8.50	2.54	10.15	3.21	11.80	3.87	12.60	4.16	13.40	4.44	13.51	4.46	13.62	4.51
	48	8.50	2.68	10.15	3.35	11.80	4.02	12.60	4.22	13.40	4.48	14.88	4.53	14.73	4.57
80%	-5	7.55	0.97	9.00	1.14	10.45	1.35	11.20	1.44	11.95	1.55	13.40	1.79	14.85	2.04
	-2	7.55	0.98	9.00	1.16	10.45	1.36	11.20	1.46	11.95	1.56	13.40	1.81	14.85	2.06
	0	7.55	1.00	9.00	1.17	10.45	1.38	11.20	1.48	11.95	1.59	13.40	1.83	14.85	2.09
	2	7.55	1.02	9.00	1.19	10.45	1.40	11.20	1.51	11.95	1.62	13.40	1.87	14.85	2.13
	4	7.55	1.03	9.00	1.21	10.45	1.43	11.20	1.54	11.95	1.65	13.40	1.90	14.85	2.16
	6	7.55	1.05	9.00	1.24	10.45	1.45	11.20	1.57	11.95	1.68	13.40	1.93	14.85	2.20
	8	7.55	1.07	9.00	1.27	10.45	1.48	11.20	1.60	11.95	1.72	13.40	1.96	14.85	2.24
	10	7.55	1.08	9.00	1.29	10.45	1.52	11.20	1.64	11.95	1.76	13.40	2.01	14.85	2.26
	12	7.55	1.10	9.00	1.31	10.45	1.55	11.20	1.67	11.95	1.79	13.40	2.04	14.85	2.31
	14	7.55	1.12	9.00	1.34	10.45	1.58	11.20	1.70	11.95	1.83	13.40	2.08	14.85	2.35
	16	7.55	1.13	9.00	1.36	10.45	1.61	11.20	1.73	11.95	1.86	13.40	2.12	14.85	2.39
	18	7.55	1.16	9.00	1.39	10.45	1.64	11.20	1.77	11.95	1.90	13.40	2.17	14.85	2.44
	20	7.55	1.18	9.00	1.42	10.45	1.67	11.20	1.80	11.95	1.93	13.40	2.25	14.85	2.61
	21	7.55	1.19	9.00	1.43	10.45	1.69	11.20	1.82	11.95	1.98	13.40	2.33	14.85	2.70
	23	7.55	1.21	9.00	1.46	10.45	1.77	11.20	1.94	11.95	2.11	13.40	2.49	14.85	2.90
	25	7.55	1.25	9.00	1.55	10.45	1.89	11.20	2.07	11.95	2.26	13.40	2.67	14.85	3.10
	27	7.55	1.33	9.00	1.65	10.45	2.01	11.20	2.21	11.95	2.41	13.40	2.85	14.85	3.32
	29	7.55	1.41	9.00	1.76	10.45	2.15	11.20	2.35	11.95	2.58	13.40	3.04	14.85	3.55
	31	7.55	1.50	9.00	1.87	10.45	2.28	11.20	2.51	11.95	2.75	13.40	3.25	14.60	3.69
	33	7.55	1.59	9.00	1.99	10.45	2.43	11.20	2.67	11.95	2.92	13.40	3.46	14.40	3.83
35	7.55	1.69	9.00	2.11	10.45	2.59	11.20	2.84	11.95	3.11	13.40	3.69	14.15	3.97	
37	7.55	1.79	9.00	2.24	10.45	2.75	11.20	3.03	11.95	3.32	13.40	3.93	13.95	4.10	
39	7.55	1.90	9.00	2.39	10.45	2.93	11.20	3.22	11.95	3.53	13.40	4.19	13.70	4.25	
41	7.55	1.94	9.00	2.41	10.45	2.97	11.20	3.31	11.95	3.59	13.40	4.30	13.62	4.32	
43	7.55	1.99	9.00	2.43	10.45	3.01	11.20	3.36	11.95	3.64	13.40	4.35	13.53	4.37	
45	7.55	2.05	9.00	2.46	10.45	3.07	11.20	3.43	11.95	3.71	13.40	4.39	13.36	4.44	
48	7.55	2.12	9.00	2.48	11.76	3.12	11.20	3.48	11.95	3.74	13.40	4.44	14.91	4.50	
70%	-5	6.60	0.86	7.90	1.01	9.15	1.15	9.80	1.23	10.45	1.31	11.70	1.50	13.00	1.73
	-2	6.60	0.87	7.90	1.02	9.15	1.15	9.80	1.25	10.45	1.34	11.70	1.52	13.00	1.75
	0	6.60	0.87	7.90	1.03	9.15	1.18	9.80	1.28	10.45	1.36	11.70	1.56	13.00	1.77
	2	6.60	0.88	7.90	1.04	9.15	1.20	9.80	1.30	10.45	1.38	11.70	1.59	13.00	1.80
	4	6.60	0.89	7.90	1.06	9.15	1.22	9.80	1.32	10.45	1.41	11.70	1.61	13.00	1.84
	6	6.60	0.91	7.90	1.08	9.15	1.25	9.80	1.37	10.45	1.45	11.70	1.64	13.00	1.88
	8	6.60	0.92	7.90	1.11	9.15	1.28	9.80	1.39	10.45	1.48	11.70	1.69	13.00	1.91
	10	6.60	0.94	7.90	1.13	9.15	1.31	9.80	1.42	10.45	1.52	11.70	1.72	13.00	1.94
	12	6.60	0.96	7.90	1.14	9.15	1.34	9.80	1.44	10.45	1.54	11.70	1.76	13.00	1.98
	14	6.60	0.98	7.90	1.17	9.15	1.36	9.80	1.46	10.45	1.57	11.70	1.79	13.00	2.01
	16	6.60	1.00	7.90	1.19	9.15	1.39	9.80	1.50	10.45	1.60	11.70	1.82	13.00	2.05
	18	6.60	1.01	7.90	1.21	9.15	1.42	9.80	1.52	10.45	1.63	11.70	1.86	13.00	2.09
	20	6.60	1.03	7.90	1.23	9.15	1.44	9.80	1.55	10.45	1.66	11.70	1.90	13.00	2.15
	21	6.60	1.04	7.90	1.24	9.15	1.45	9.80	1.57	10.45	1.68	11.70	1.92	13.00	2.23
	23	6.60	1.05	7.90	1.26	9.15	1.49	9.80	1.62	10.45	1.76	11.70	2.06	13.00	2.38
	25	6.60	1.08	7.90	1.31	9.15	1.58	9.80	1.73	10.45	1.88	11.70	2.20	13.00	2.55
	27	6.60	1.14	7.90	1.40	9.15	1.69	9.80	1.84	10.45	2.01	11.70	2.35	13.00	2.73
	29	6.60	1.21	7.90	1.49	9.15	1.79	9.80	1.96	10.45	2.13	11.70	2.51	13.00	2.91
	31	6.60	1.28	7.90	1.58	9.15	1.91	9.80	2.09	10.45	2.27	11.70	2.67	13.00	3.10
	33	6.60	1.36	7.90	1.68	9.15	2.03	9.80	2.22	10.45	2.42	11.70	2.85	13.00	3.31
35	6.60	1.44	7.90	1.78	9.15	2.16	9.80	2.36	10.45	2.58	11.70	3.03	13.00	3.53	
37	6.60	1.52	7.90	1.88	9.15	2.29	9.80	2.51	10.45	2.74	11.70	3.23	13.00	3.76	
39	6.60	1.61	7.90	2.00	9.15	2.43	9.80	2.67	10.45	2.91	11.70	3.43	13.00	4.00	
41	6.60	1.68	7.90	2.07	9.15	2.50	9.80	2.76	10.45	3.00	11.70	3.58	13.00	4.18	
43	6.60	1.82	7.90	2.21	9.15	2.61	9.80	2.90	10.45	3.09	11.70	3.71	13.00	4.31	

	45	6.60	1.86	7.90	2.26	9.15	2.66	9.80	2.95	10.45	3.24	11.70	3.91	13.00	4.48
	48	6.60	1.90	7.90	2.28	9.15	2.69	9.80	3.00	10.45	3.33	11.70	4.08	13.00	4.58
60%	-5	5.65	0.74	6.75	0.85	7.85	0.99	8.40	1.06	8.95	1.14	10.05	1.29	11.15	1.47
	-2	5.65	0.74	6.75	0.87	7.85	1.01	8.40	1.08	8.95	1.16	10.05	1.30	11.15	1.48
	0	5.65	0.75	6.75	0.88	7.85	1.03	8.40	1.09	8.95	1.18	10.05	1.32	11.15	1.50
	2	5.65	0.76	6.75	0.90	7.85	1.05	8.40	1.11	8.95	1.19	10.05	1.35	11.15	1.52
	4	5.65	0.79	6.75	0.92	7.85	1.07	8.40	1.12	8.95	1.21	10.05	1.37	11.15	1.54
	6	5.65	0.79	6.75	0.93	7.85	1.09	8.40	1.15	8.95	1.23	10.05	1.40	11.15	1.58
	8	5.65	0.81	6.75	0.95	7.85	1.11	8.40	1.17	8.95	1.26	10.05	1.43	11.15	1.61
	10	5.65	0.83	6.75	0.97	7.85	1.12	8.40	1.20	8.95	1.28	10.05	1.45	11.15	1.63
	12	5.65	0.84	6.75	0.98	7.85	1.14	8.40	1.22	8.95	1.30	10.05	1.48	11.15	1.66
	14	5.65	0.85	6.75	1.00	7.85	1.16	8.40	1.25	8.95	1.33	10.05	1.51	11.15	1.69
	16	5.65	0.86	6.75	1.02	7.85	1.18	8.40	1.27	8.95	1.35	10.05	1.53	11.15	1.72
	18	5.65	0.88	6.75	1.03	7.85	1.20	8.40	1.29	8.95	1.38	10.05	1.56	11.15	1.75
	20	5.65	0.89	6.75	1.05	7.85	1.22	8.40	1.31	8.95	1.41	10.05	1.59	11.15	1.79
	21	5.65	0.90	6.75	1.06	7.85	1.23	8.40	1.33	8.95	1.42	10.05	1.61	11.15	1.80
	23	5.65	0.91	6.75	1.08	7.85	1.26	8.40	1.35	8.95	1.44	10.05	1.67	11.15	1.92
	25	5.65	0.93	6.75	1.10	7.85	1.30	8.40	1.42	8.95	1.53	10.05	1.78	11.15	2.05
	27	5.65	0.96	6.75	1.17	7.85	1.39	8.40	1.51	8.95	1.63	10.05	1.90	11.15	2.19
	29	5.65	1.02	6.75	1.23	7.85	1.48	8.40	1.61	8.95	1.74	10.05	2.03	11.15	2.34
	31	5.65	1.08	6.75	1.31	7.85	1.57	8.40	1.71	8.95	1.85	10.05	2.16	11.15	2.49
	33	5.65	1.14	6.75	1.39	7.85	1.67	8.40	1.82	8.95	1.97	10.05	2.29	11.15	2.65
	35	5.65	1.21	6.75	1.47	7.85	1.77	8.40	1.93	8.95	2.09	10.05	2.44	11.15	2.82
	37	5.65	1.28	6.75	1.56	7.85	1.87	8.40	2.04	8.95	2.22	10.05	2.60	11.15	3.00
	39	5.65	1.35	6.75	1.65	7.85	1.99	8.40	2.17	8.95	2.36	10.05	2.76	11.15	3.19
	41	5.65	1.39	6.75	1.72	7.85	2.06	8.40	2.25	8.95	2.44	10.05	2.89	11.15	3.34
43	5.65	1.43	6.75	1.79	7.85	2.13	8.40	2.32	8.95	2.53	10.05	3.01	11.15	3.48	
45	5.65	1.50	6.75	1.88	7.85	2.22	8.40	2.41	8.95	2.66	10.05	3.14	11.15	3.68	
48	5.65	1.56	6.75	1.97	7.85	2.29	8.40	2.47	8.95	2.76	10.05	3.26	11.15	3.85	
50%	-5	4.73	0.64	5.65	0.74	6.55	0.85	7.00	0.89	7.45	0.94	8.35	1.07	9.30	1.15
	-2	4.73	0.64	5.65	0.75	6.55	0.86	7.00	0.90	7.45	0.96	8.35	1.08	9.30	1.17
	0	4.73	0.65	5.65	0.77	6.55	0.87	7.00	0.91	7.45	0.97	8.35	1.10	9.30	1.19
	2	4.73	0.66	5.65	0.78	6.55	0.89	7.00	0.93	7.45	0.98	8.35	1.10	9.30	1.21
	4	4.73	0.67	5.65	0.79	6.55	0.90	7.00	0.94	7.45	1.00	8.35	1.13	9.30	1.24
	6	4.73	0.68	5.65	0.80	6.55	0.91	7.00	0.96	7.45	1.02	8.35	1.15	9.30	1.28
	8	4.73	0.70	5.65	0.82	6.55	0.93	7.00	0.98	7.45	1.03	8.35	1.17	9.30	1.32
	10	4.73	0.71	5.65	0.83	6.55	0.94	7.00	1.00	7.45	1.06	8.35	1.20	9.30	1.34
	12	4.73	0.72	5.65	0.84	6.55	0.96	7.00	1.02	7.45	1.09	8.35	1.22	9.30	1.36
	14	4.73	0.73	5.65	0.85	6.55	0.97	7.00	1.04	7.45	1.10	8.35	1.24	9.30	1.38
	16	4.73	0.74	5.65	0.86	6.55	0.98	7.00	1.05	7.45	1.12	8.35	1.26	9.30	1.41
	18	4.73	0.75	5.65	0.87	6.55	1.00	7.00	1.07	7.45	1.14	8.35	1.28	9.30	1.43
	20	4.73	0.76	5.65	0.88	6.55	1.02	7.00	1.09	7.45	1.16	8.35	1.30	9.30	1.46
	21	4.73	0.77	5.65	0.89	6.55	1.03	7.00	1.10	7.45	1.17	8.35	1.32	9.30	1.47
	23	4.73	0.78	5.65	0.90	6.55	1.04	7.00	1.12	7.45	1.19	8.35	1.34	9.30	1.51
	25	4.73	0.79	5.65	0.92	6.55	1.06	7.00	1.14	7.45	1.23	8.35	1.41	9.30	1.61
	27	4.73	0.80	5.65	0.96	6.55	1.12	7.00	1.21	7.45	1.30	8.35	1.50	9.30	1.71
	29	4.73	0.85	5.65	1.01	6.55	1.19	7.00	1.29	7.45	1.39	8.35	1.60	9.30	1.83
	31	4.73	0.89	5.65	1.07	6.55	1.26	7.00	1.37	7.45	1.47	8.35	1.70	9.30	1.94
	33	4.73	0.95	5.65	1.13	6.55	1.34	7.00	1.45	7.45	1.56	8.35	1.80	9.30	2.07
	35	4.73	1.00	5.65	1.20	6.55	1.42	7.00	1.53	7.45	1.66	8.35	1.92	9.30	2.19
	37	4.73	1.05	5.65	1.27	6.55	1.50	7.00	1.62	7.45	1.76	8.35	2.03	9.30	2.33
	39	4.73	1.11	5.65	1.34	6.55	1.59	7.00	1.72	7.45	1.86	8.35	2.16	9.30	2.48
	41	4.73	1.16	5.65	1.39	6.55	1.64	7.00	1.80	7.45	1.94	8.35	2.27	9.30	2.59
43	4.73	1.24	5.65	1.49	6.55	1.70	7.00	1.88	7.45	1.99	8.35	2.39	9.30	2.71	
45	4.73	1.26	5.65	1.53	6.55	1.82	7.00	2.03	7.45	2.08	8.35	2.62	9.30	2.94	
48	4.73	1.29	5.65	1.57	6.55	1.92	7.00	2.15	7.45	2.17	8.35	2.83	9.30	3.16	

Note:

- 1, [redacted] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combinatio n (%) (Capacity index)	Outdoor Air temperature (°C DB)		Indoor temperature(°C WB)											
			16		18		20		21		22		24	
	°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
130%	-19.8	-20	9.97	2.94	9.92	3.14	9.88	3.36	9.88	3.46	9.83	3.56	9.83	3.77
	-18.8	-19	10.12	3.00	10.07	3.21	10.07	3.41	10.02	3.52	10.02	3.61	9.97	3.82
	-16.7	-17	10.51	3.14	10.46	3.34	10.41	3.54	10.41	3.64	10.41	3.73	10.36	3.93
	-13.7	-15	10.95	3.29	10.90	3.48	10.85	3.67	10.85	3.76	10.80	3.86	10.80	4.05
	-11.8	-13	11.39	3.44	11.39	3.62	11.34	3.80	11.29	3.89	11.29	3.98	11.24	4.16
	-9.8	-11	11.93	3.59	11.88	3.76	11.83	3.93	11.83	4.02	11.83	4.11	11.78	4.28
	-9.5	-10	12.22	3.66	12.17	3.83	12.12	4.00	12.12	4.08	12.08	4.17	12.08	4.33
	-8.5	-9.1	12.47	3.73	12.42	3.89	12.42	4.06	12.37	4.14	12.37	4.22	12.32	4.39
	-7	-7.6	12.91	3.84	12.91	4.00	12.86	4.15	12.86	4.24	12.81	4.31	12.76	4.47
	-5	-5.6	13.59	3.98	13.54	4.13	13.49	4.28	13.49	4.36	13.44	4.43	13.44	4.58
	-3	-3.7	14.23	4.11	14.18	4.26	14.18	4.40	14.13	4.47	14.13	4.54	14.08	4.68
	0	-0.7	15.35	4.31	15.35	4.45	15.30	4.58	15.30	4.62	15.25	4.71	15.25	4.84
	3	2.2	16.57	4.49	16.52	4.61	16.48	4.74	16.48	4.80	16.48	4.86	16.43	4.98
	5	4.1	17.40	4.60	17.35	4.72	17.35	4.84	17.31	4.89	17.31	4.95	17.26	5.07
	7	6	18.28	4.71	18.24	4.82	18.24	4.93	18.19	4.99	18.19	5.04	17.45	4.84
	120%	-19.8	-20	9.92	3.22	9.88	3.41	9.83	3.60	9.83	3.70	9.83	3.79	9.78
-18.8		-19	10.07	3.28	10.02	3.47	10.02	3.66	9.97	3.75	9.97	3.85	9.92	4.04
-16.7		-17	10.46	3.41	10.41	3.59	10.35	3.77	10.36	3.86	10.36	3.95	10.32	4.13
-13.7		-15	10.90	3.54	10.85	3.72	10.81	3.89	10.81	3.98	10.81	4.07	10.76	4.24
-11.8		-13	11.34	3.68	11.34	3.85	11.29	4.01	11.29	4.10	11.25	4.18	11.25	4.35
-9.8		-11	11.88	3.82	11.83	3.98	11.83	4.14	11.78	4.22	11.78	4.30	11.73	4.46
-9.5		-10	12.17	3.89	12.13	4.05	12.08	4.20	12.08	4.28	12.08	4.35	12.03	4.51
-8.5		-9.1	12.42	3.95	12.37	4.10	12.37	4.25	12.32	4.33	12.32	4.41	12.27	4.56
-7		-7.6	12.86	4.05	12.86	4.20	12.81	4.34	12.81	4.42	12.76	4.49	12.76	4.64
-5		-5.6	13.54	4.18	13.49	4.32	13.44	4.46	13.44	4.53	13.44	4.60	13.40	4.74
-3		-3.7	14.18	4.31	14.18	4.44	14.13	4.57	14.13	4.64	14.08	4.71	14.08	4.84
0		-0.7	15.30	4.49	15.30	4.61	15.25	4.73	15.25	4.80	15.20	4.86	15.20	4.98
3		2.2	16.53	4.66	16.48	4.77	16.48	4.88	16.43	4.94	16.43	5.00	16.08	4.97
5		4.1	17.36	4.76	17.31	4.87	17.31	4.98	17.26	5.03	17.26	5.08	16.08	4.67
7		6	18.24	4.86	18.24	4.96	18.19	5.06	17.89	4.99	17.31	4.79	16.08	4.39
110%		-19.8	-20	9.88	3.50	9.83	3.67	9.78	3.85	9.78	3.94	9.78	4.03	9.73
	-18.8	-19	10.02	3.56	9.97	3.73	9.97	3.90	9.97	3.99	9.92	4.07	9.92	4.25
	-16.7	-17	10.41	3.67	10.37	3.84	10.51	4.01	10.32	4.09	10.32	4.18	10.27	4.34
	-13.7	-15	10.85	3.80	10.81	3.96	10.76	4.12	10.76	4.20	10.76	4.28	10.71	4.44
	-11.8	-13	11.29	3.93	11.29	4.08	11.24	4.23	11.24	4.31	11.19	4.38	11.19	4.54
	-9.8	-11	11.83	4.05	11.78	4.20	11.78	4.34	11.73	4.42	11.73	4.49	11.73	4.64
	-9.5	-10	12.12	4.12	12.08	4.26	12.03	4.40	12.03	4.47	12.03	4.54	11.98	4.68
	-8.5	-9.1	12.37	4.17	12.32	4.31	12.32	4.45	12.27	4.52	12.27	4.59	12.27	4.19
	-7	-7.6	12.81	4.27	12.81	4.40	12.76	4.53	12.76	4.60	12.76	4.67	12.71	4.80
	-5	-5.6	13.49	4.39	13.44	4.52	13.40	4.64	13.40	4.71	13.40	4.77	13.35	4.90
	-3	-3.7	14.13	4.50	14.13	4.62	14.08	4.74	14.08	4.80	14.03	4.86	14.03	4.99
	0	-0.7	15.25	4.67	15.25	4.78	15.21	4.89	15.21	4.95	15.21	5.01	14.76	4.91
	3	2.2	16.48	4.82	16.43	4.93	16.43	5.03	16.38	5.08	15.84	4.87	14.76	4.47
	5	4.1	17.31	4.92	17.31	5.02	16.96	4.97	16.38	4.77	15.84	4.58	14.76	4.20
	7	6	18.19	5.01	18.04	5.04	16.96	4.67	16.38	4.48	15.84	4.31	14.76	3.95
	100%	-19.8	-20	9.83	3.78	9.78	3.94	9.78	4.10	9.73	4.18	9.73	4.26	9.68
-18.8		-19	9.97	3.83	9.97	3.99	9.92	4.14	9.92	4.22	9.88	4.31	9.88	4.46

	-16.7	-17	10.36	3.94	10.31	4.09	10.31	4.24	10.27	4.32	10.27	4.39	10.27	4.54
	-13.7	-15	10.80	4.05	10.76	4.20	10.71	4.34	10.71	4.42	10.71	4.49	10.66	4.64
	-11.8	-13	11.25	4.17	11.25	4.31	11.20	4.45	11.20	4.52	11.20	4.59	11.15	4.73
	-9.8	-11	11.78	4.28	11.73	4.42	11.73	4.55	11.73	4.62	11.68	4.68	11.68	4.81
	-9.5	-10	12.08	4.34	12.03	4.47	12.03	4.60	11.98	4.67	11.98	4.73	11.93	4.86
	-8.5	-9.1	12.32	4.39	12.27	4.52	12.27	4.65	12.27	4.71	12.22	4.78	12.22	4.90
	-7	-7.6	12.76	4.48	12.76	4.60	12.71	4.72	12.71	4.79	12.71	4.85	12.66	4.97
	-5	-5.6	13.44	4.59	13.39	4.71	13.39	4.82	13.35	4.88	13.35	4.94	13.30	5.06
	-3	-3.7	14.08	4.69	14.08	4.26	14.03	4.92	14.03	4.97	14.03	5.02	13.44	4.81
	0	-0.7	15.20	4.85	15.20	4.95	15.16	5.05	14.91	4.97	14.42	4.77	13.44	4.37
	3	2.2	16.43	4.99	16.38	5.08	15.40	4.70	14.91	4.52	14.42	4.34	13.44	3.98
	5	4.1	17.26	5.08	16.38	4.77	15.40	4.42	14.91	4.25	14.42	4.08	13.44	3.75
	7	6	17.36	4.82	16.38	4.48	15.40	4.16	14.91	4.00	14.42	3.85	13.44	3.54
	9	7.9	17.36	4.53	16.38	4.22	15.40	3.92	14.91	3.72	14.42	3.63	13.44	3.34
	11	9.8	17.36	4.26	16.38	3.98	15.40	3.70	14.91	3.55	14.42	3.42	13.44	3.15
	13	11.8	17.36	4.00	16.38	3.74	15.40	3.48	14.91	3.35	14.42	3.23	13.44	2.98
	15	13.7	17.36	3.78	16.38	3.53	15.40	3.28	14.91	3.17	14.42	3.05	13.44	2.82
90%	-19.8	-20	9.76	4.06	9.71	4.20	9.71	4.35	9.66	4.42	9.66	4.49	9.66	4.64
	-18.8	-19	9.91	4.11	9.91	4.25	9.86	4.39	9.86	4.46	9.86	4.53	9.81	4.67
	-16.7	-17	10.30	4.21	10.25	4.34	10.25	4.48	10.25	4.55	10.20	4.61	10.20	4.75
	-13.7	-15	10.74	4.31	10.69	4.44	10.69	4.57	10.64	4.64	10.64	4.70	10.64	4.83
	-11.8	-13	11.18	4.41	11.18	4.54	11.13	4.66	11.13	4.73	11.13	4.79	11.08	4.91
	-9.8	-11	11.71	4.52	11.71	4.64	11.66	4.75	11.66	4.81	11.66	4.88	11.61	5.00
	-9.5	-10	12.01	4.57	11.96	4.69	11.96	4.80	11.91	4.86	11.91	4.92	11.91	5.04
	-8.5	-9.1	12.25	4.62	12.25	4.73	12.20	4.85	12.20	4.90	12.20	4.96	12.05	5.01
	-7	-7.6	12.69	4.69	12.69	4.80	12.64	4.92	12.64	4.97	12.64	5.02	12.05	4.78
	-5	-5.6	13.37	4.80	13.32	4.90	13.32	5.00	13.27	5.06	12.93	4.90	12.05	4.49
	-3	-3.7	14.01	4.89	14.01	4.99	13.86	5.01	13.37	4.81	12.93	4.61	12.05	4.24
	0	-0.7	15.18	5.03	14.74	4.91	13.86	4.54	13.37	4.37	12.93	4.19	12.05	3.85
	3	2.2	15.62	4.79	14.74	4.46	13.86	4.14	13.37	3.98	12.93	3.83	12.05	3.52
	5	4.1	15.62	4.51	14.74	4.20	13.86	3.90	13.37	3.75	12.93	3.61	12.05	3.32
	7	6	15.62	4.24	14.74	3.95	13.86	3.67	13.37	3.54	12.93	3.40	12.05	3.14
9	7.9	15.62	3.99	14.74	3.72	13.86	3.46	13.37	3.34	12.93	3.21	12.05	2.97	
11	9.8	15.62	3.76	14.74	3.51	13.86	3.27	13.37	3.15	12.93	3.04	12.05	2.81	
13	11.8	15.62	3.54	14.74	3.31	13.86	3.08	13.37	2.98	12.93	2.87	12.05	2.65	
15	13.7	15.62	3.34	14.74	3.13	13.86	2.92	13.37	2.82	12.93	2.72	12.05	2.52	
80%	-19.8	-20	9.73	4.34	9.68	4.47	9.68	4.60	9.68	4.66	9.63	4.73	9.63	4.85
	-18.8	-19	9.88	4.38	9.88	4.51	9.83	4.64	9.83	4.70	9.83	4.76	9.78	4.89
	-16.7	-17	10.27	4.47	10.22	4.59	10.22	4.72	10.22	4.78	10.22	4.84	10.17	4.95
	-13.7	-15	10.71	4.57	10.66	4.68	10.66	4.80	10.66	4.85	10.61	4.91	10.61	5.03
	-11.8	-13	11.15	4.66	11.15	4.77	11.10	4.88	11.10	4.93	11.10	4.99	10.76	4.86
	-9.8	-11	11.68	4.75	11.68	4.86	11.64	4.96	11.64	5.01	11.54	5.00	10.76	4.59
	-9.5	-10	11.98	4.80	11.93	4.90	11.93	5.00	11.93	5.06	11.54	4.86	10.76	4.45
	-8.5	-9.1	12.22	4.84	11.36	4.94	12.17	5.04	11.93	4.93	11.54	4.73	10.76	4.33
	-7	-7.6	12.66	4.91	12.66	5.01	12.32	4.90	11.93	4.71	11.54	4.52	10.76	4.14
	-5	-5.6	13.35	5.00	13.10	4.97	12.32	4.60	11.93	4.42	11.54	4.25	10.76	3.90
	-3	-3.7	13.88	5.02	13.10	4.68	12.32	4.33	11.93	4.17	11.54	4.00	10.76	3.68
	0	-0.7	13.88	4.56	13.10	4.25	12.32	3.94	11.93	3.80	11.54	3.65	10.76	3.36
	3	2.2	13.88	4.15	13.10	3.87	12.32	3.60	11.93	3.47	11.54	3.34	10.76	3.08
	5	4.1	13.88	3.91	13.10	3.65	12.32	3.40	11.93	3.27	11.54	3.16	10.76	2.91
	7	6	13.88	3.68	13.10	3.45	12.32	3.21	11.93	3.10	11.54	2.98	10.76	2.76
9	7.9	13.88	3.48	13.10	3.25	12.32	3.03	11.93	2.92	11.54	2.82	10.76	2.61	
11	9.8	13.88	3.28	13.10	3.07	12.32	2.87	11.93	2.77	11.54	2.67	10.76	2.47	
13	11.8	13.88	3.10	13.10	2.90	12.32	2.71	11.93	2.61	11.54	2.52	10.76	2.34	
15	13.7	13.88	2.93	13.10	2.75	12.32	2.57	11.93	2.48	11.54	2.39	10.76	2.23	
70%	-19.8	-20	9.66	4.62	9.61	4.73	9.61	4.85	9.61	4.90	9.61	4.96	9.37	4.91
	-18.8	-19	9.80	4.66	9.80	4.77	9.76	4.88	9.76	4.93	9.76	4.99	9.37	4.80
	-16.7	-17	10.19	4.74	10.19	4.85	10.15	4.95	10.15	5.00	10.05	4.46	9.37	4.58
	-13.7	-15	10.63	4.82	10.58	4.92	10.58	5.02	10.39	4.95	10.05	4.75	9.37	4.35
	-11.8	-13	11.07	4.90	11.07	5.00	10.78	4.88	10.39	4.69	10.05	4.50	9.37	4.13
	-9.8	-11	11.61	4.98	11.46	4.98	10.78	4.61	10.39	4.43	10.05	4.25	9.37	3.91
	-9.5	-10	11.90	5.02	11.46	4.83	10.78	4.47	10.39	4.30	10.05	4.13	9.37	3.80
	-8.5	-9.1	12.15	5.05	11.46	4.70	10.78	4.35	10.39	4.19	10.05	4.02	9.37	3.70
-7	-7.6	12.15	4.82	11.46	4.49	10.78	4.17	10.39	4.01	10.05	3.85	9.37	3.54	
-5	-5.6	12.15	4.53	11.46	4.22	10.78	3.92	10.39	3.77	10.05	4.45	9.37	3.34	



	-3	-3.7	12.15	4.27	11.46	3.98	10.78	3.70	10.39	3.56	10.05	3.43	9.37	3.16
	0	-0.7	12.15	3.88	11.46	3.63	10.78	3.38	10.39	3.25	10.05	3.13	9.37	2.90
	3	2.2	12.15	3.55	11.46	3.32	10.78	3.10	10.39	2.98	10.05	2.87	9.37	2.66
	5	4.1	12.15	3.35	11.46	3.13	10.78	2.93	10.39	2.82	10.05	2.72	9.37	2.52
	7	6	12.15	3.17	11.46	2.97	10.78	2.77	10.39	2.67	10.05	2.58	9.37	2.39
	9	7.9	12.15	2.99	11.46	2.80	10.78	2.62	10.39	2.53	10.05	2.44	9.37	2.26
	11	9.8	12.15	2.83	11.46	2.65	10.78	2.48	10.39	2.40	10.05	2.32	9.37	2.15
	13	11.8	12.15	2.67	11.46	2.51	10.78	2.35	10.39	2.27	10.05	2.19	9.37	2.04
	15	13.7	12.15	2.53	11.46	2.38	10.78	2.23	10.39	2.16	10.05	2.09	9.37	1.94
60%	-19.8	-20	9.63	4.91	9.58	5.00	9.24	4.81	8.95	4.62	8.65	4.44	8.07	4.07
	-18.8	-19	9.78	4.94	9.78	5.03	9.24	4.71	8.95	4.52	8.65	4.34	8.07	3.98
	-16.7	-17	10.17	5.00	9.83	4.85	9.24	4.49	8.95	4.32	8.65	4.14	8.07	3.81
	-13.7	-15	10.41	4.95	9.83	4.60	9.24	4.27	8.95	4.11	8.65	3.94	8.07	3.62
	-11.8	-13	10.41	4.68	9.83	4.36	9.24	4.05	8.95	3.90	8.65	3.74	8.07	3.46
	-9.8	-11	10.41	4.42	9.83	4.12	9.24	3.83	8.95	3.68	8.65	3.54	8.07	3.27
	-9.5	-10	10.41	4.30	9.83	4.01	9.24	3.72	8.95	3.59	8.65	3.45	8.07	3.18
	-8.5	-9.1	10.41	4.19	9.83	3.91	9.24	3.63	8.95	3.50	8.65	3.36	8.07	3.10
	-7	-7.6	10.41	4.00	9.83	3.74	9.24	3.47	8.95	3.35	8.65	3.22	8.07	2.98
	-5	-5.6	10.41	3.77	9.83	3.52	9.24	3.28	8.95	3.16	8.65	3.04	8.07	2.81
	-3	-3.7	10.41	3.56	9.83	3.33	9.24	3.10	8.95	2.99	8.65	2.88	8.07	2.66
	0	-0.7	10.41	3.25	9.83	3.05	9.24	2.84	8.95	2.74	8.65	2.64	8.07	2.45
	3	2.2	10.41	2.98	9.83	2.80	9.24	2.61	8.95	2.52	8.65	2.44	8.07	2.26
	5	4.1	10.41	2.82	9.83	2.65	9.24	2.47	8.95	2.39	8.65	2.31	8.07	2.14
	7	6	10.41	2.67	9.83	2.51	9.24	2.34	8.95	2.27	8.65	2.19	8.07	2.04
9	7.9	10.41	2.53	9.83	2.38	9.24	2.23	8.95	2.16	8.65	2.08	8.07	1.94	
11	9.8	10.41	2.40	9.83	2.26	9.24	2.12	8.95	2.05	8.65	1.98	8.07	1.85	
13	11.8	10.41	2.27	9.83	2.14	9.24	2.01	8.95	1.95	8.65	1.88	8.07	1.76	
15	13.7	10.41	2.16	9.83	2.03	9.24	1.91	8.95	1.85	8.65	1.79	8.07	1.67	
50%	-19.8	-20	8.67	4.46	8.19	4.15	7.70	3.86	7.41	3.72	7.16	3.57	6.68	3.29
	-18.8	-19	8.67	4.36	8.19	4.07	7.70	3.78	7.41	3.64	7.16	3.50	6.68	3.23
	-16.7	-17	8.67	4.17	8.19	3.88	7.70	3.61	7.41	3.48	7.16	3.35	6.68	3.09
	-13.7	-15	8.67	3.97	8.19	3.70	7.70	3.44	7.41	3.32	7.16	3.19	6.68	2.95
	-11.8	-13	8.67	3.77	8.19	3.52	7.70	3.27	7.41	3.15	7.16	3.04	6.68	2.81
	-9.8	-11	8.67	3.57	8.19	3.33	7.70	3.11	7.41	2.99	7.16	2.88	6.68	2.67
	-9.5	-10	8.67	3.47	8.19	3.24	7.70	3.03	7.41	2.92	7.16	2.81	6.68	2.60
	-8.5	-9.1	8.67	3.38	8.19	3.17	7.70	2.95	7.41	2.85	7.16	2.74	6.68	2.54
	-7	-7.6	8.67	3.24	8.19	3.04	7.70	2.83	7.41	2.73	7.16	2.64	6.68	2.44
	-5	-5.6	8.67	3.06	8.19	2.87	7.70	2.68	7.41	2.59	7.16	2.50	6.68	2.31
	-3	-3.7	8.67	2.90	8.19	2.72	7.70	2.54	7.41	2.45	7.16	2.37	6.68	2.20
	0	-0.7	8.67	2.66	8.19	2.50	7.70	2.34	7.41	2.26	7.16	2.18	6.68	2.03
	3	2.2	8.67	2.45	8.19	2.30	7.70	2.16	7.41	2.09	7.16	2.01	6.68	1.88
	5	4.1	8.67	2.32	8.19	2.18	7.70	2.05	7.41	1.98	7.16	1.92	6.68	1.79
	7	6	8.67	2.20	8.19	2.07	7.70	1.95	7.41	1.89	7.16	1.83	6.68	1.71
9	7.9	8.67	2.09	8.19	1.97	7.70	1.85	7.41	1.80	7.16	1.74	6.68	1.63	
11	9.8	8.67	1.99	8.19	1.87	7.70	1.77	7.41	1.71	7.16	1.66	6.68	1.55	
13	11.8	8.67	1.89	8.19	1.78	7.70	1.68	7.41	1.63	7.16	1.58	6.68	1.48	
15	13.7	8.67	1.80	8.19	1.70	7.70	1.60	7.41	1.56	7.16	1.51	6.68	1.42	

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

MDV-V160W/DN1(B)

Cooling

Combina- tion (%) (Capacity index)	Outdoor tempe- rature (°C DB)	Indoor temperature(° C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	13.62	1.85	16.22	2.26	18.82	2.42	19.54	2.52	20.48	2.59	20.98	2.81	21.51	2.83
	-2	13.62	1.85	16.22	2.30	18.82	2.42	19.54	2.53	20.48	2.59	20.98	2.85	21.51	2.86
	0	13.62	1.88	16.22	2.34	18.82	2.51	19.54	2.67	20.48	2.74	20.98	2.88	21.51	2.90
	2	13.62	1.91	16.22	2.34	18.82	2.59	19.54	2.82	20.48	2.77	20.98	2.90	21.51	2.94
	4	13.62	1.96	16.22	2.39	18.82	2.68	19.54	2.83	20.48	2.80	20.98	2.90	21.51	3.00
	6	13.62	1.99	16.22	2.44	18.82	2.78	19.54	2.86	20.25	2.89	20.72	2.90	21.27	3.02
	8	13.62	2.04	16.22	2.49	18.82	2.92	19.54	2.99	20.00	2.99	20.50	3.90	21.00	3.05
	10	13.62	2.08	16.22	2.55	18.82	3.03	19.54	3.09	19.76	4.04	20.26	4.06	20.76	3.14
	12	13.62	2.12	16.22	2.60	18.82	3.09	19.26	4.03	19.54	4.06	19.98	4.07	20.48	3.16
	14	13.62	2.16	16.22	2.64	18.77	4.05	19.04	4.06	19.26	4.08	19.76	4.09	20.26	3.23
	16	13.62	2.20	16.22	2.70	18.54	4.06	18.77	4.08	18.99	4.10	19.49	4.12	19.98	3.28
	18	13.62	2.24	16.22	2.75	18.27	3.23	18.49	3.25	18.77	3.27	19.26	3.30	19.76	3.33
	20	13.62	2.29	16.22	2.93	17.99	3.39	18.27	3.41	18.49	3.42	18.99	3.45	19.49	3.49
	21	13.62	2.35	16.22	3.03	17.88	3.47	18.16	3.48	18.38	3.50	18.88	3.54	19.37	3.57
	23	13.62	2.52	16.22	3.25	17.66	3.62	17.88	3.64	18.10	3.66	18.60	3.70	19.10	3.73
	25	13.62	2.69	16.22	3.48	17.38	3.78	17.60	3.80	17.88	3.83	18.38	3.86	18.88	3.90
	27	13.62	2.88	16.22	3.73	17.16	3.94	17.38	3.97	17.60	3.98	18.10	4.03	18.60	4.07
	29	13.62	3.07	16.22	3.98	16.88	4.10	17.10	4.12	17.38	4.15	17.88	4.19	18.38	4.23
	31	13.62	3.28	16.16	4.22	16.61	4.26	16.88	4.29	17.10	4.31	17.60	4.36	18.10	4.40
	33	13.62	3.49	15.89	4.37	16.39	4.42	16.61	4.45	16.88	4.47	17.38	4.52	17.82	4.57
35	13.62	3.72	15.61	4.53	16.11	4.59	16.39	4.61	16.61	4.64	17.10	4.69	17.60	4.74	
37	13.62	3.96	15.39	4.70	15.89	4.75	16.11	4.78	16.39	4.81	16.83	4.86	17.33	4.92	
39	13.62	4.22	15.11	4.75	15.61	4.91	15.89	4.94	16.11	4.97	16.61	5.03	17.10	5.09	
41	13.62	4.44	14.96	4.79	15.45	4.96	15.72	4.99	15.94	5.02	16.44	5.04	16.45	5.13	
43	13.62	4.55	14.85	4.82	15.36	4.97	15.64	5.01	15.78	5.02	16.14	5.05	16.25	5.14	
45	13.62	4.78	14.75	4.86	15.20	5.02	15.48	5.04	15.55	5.05	15.71	5.06	15.93	5.24	
48	13.62	4.95	15.28	5.02	16.57	5.06	16.88	5.09	17.01	5.10	16.94	5.15	17.25	5.16	
120%	-5	12.57	1.78	14.95	2.16	17.38	2.56	18.60	2.79	19.49	2.91	19.93	3.00	20.37	3.08
	-2	12.57	1.80	14.95	2.18	17.38	2.58	18.60	2.80	19.49	2.94	19.93	3.02	20.37	3.09
	0	12.57	1.82	14.95	2.20	17.38	2.61	18.60	2.81	19.49	2.97	19.93	3.04	20.37	3.10
	2	12.57	1.82	14.95	2.22	17.38	2.63	18.60	2.84	19.49	2.98	19.93	3.06	20.37	3.10
	4	12.57	1.84	14.95	2.25	17.38	2.67	18.60	2.86	19.49	3.02	19.93	3.07	20.37	3.11
	6	12.57	1.86	14.95	2.27	17.38	2.70	18.60	2.90	19.49	3.05	19.93	3.10	20.37	3.12
	8	12.57	1.88	14.95	2.29	17.38	2.73	18.60	2.93	19.49	3.08	19.93	3.11	20.37	3.13
	10	12.57	1.90	14.95	2.32	17.38	2.76	18.60	2.98	19.49	3.08	19.93	3.12	20.37	3.15
	12	12.57	1.94	14.95	2.36	17.38	2.81	18.60	3.04	19.21	3.10	19.65	3.10	20.09	3.17
	14	12.57	1.97	14.95	2.41	17.38	2.87	18.60	3.10	18.93	3.12	19.43	3.14	19.87	3.21
	16	12.57	2.01	14.95	2.46	17.38	2.92	18.49	4.10	18.71	3.16	19.15	3.20	19.60	3.26
	18	12.57	2.05	14.95	2.51	17.38	3.02	18.21	3.23	18.43	3.24	18.88	3.27	19.37	3.30
	20	12.57	2.09	14.95	2.61	17.38	3.25	17.99	3.39	18.21	3.40	18.66	3.43	19.10	3.46
	21	12.57	2.11	14.95	2.70	17.38	3.37	17.82	3.47	18.05	3.48	18.54	3.51	18.99	3.55
	23	12.57	2.25	14.95	2.89	17.38	3.61	17.60	3.62	17.82	3.64	18.27	3.67	18.71	3.70
	25	12.57	2.41	14.95	3.09	17.10	3.76	17.33	3.78	17.55	3.80	18.05	3.83	18.49	3.87
	27	12.57	2.57	14.95	3.31	16.88	3.92	17.10	3.94	17.33	3.96	17.77	4.00	18.21	4.03
	29	12.57	2.74	14.95	3.53	16.61	4.08	16.83	4.10	17.05	4.12	17.49	4.16	17.99	4.20
	31	12.57	2.92	14.95	3.77	16.33	4.24	16.61	4.26	16.83	4.28	17.27	4.32	17.71	4.37
	33	12.57	3.11	14.95	4.02	16.11	4.40	16.33	4.42	16.55	4.44	16.99	4.49	17.44	4.53
35	12.57	3.31	14.95	4.29	15.83	4.56	16.05	4.58	16.33	4.61	16.77	4.65	17.22	4.70	
37	12.57	3.53	14.95	4.57	15.61	4.72	15.83	4.75	16.05	4.77	16.50	4.82	16.94	4.87	
39	12.57	3.75	14.89	4.82	15.33	4.88	15.56	4.91	15.78	4.93	16.27	4.99	16.72	5.04	
41	12.57	3.86	14.77	4.86	15.21	4.91	15.44	4.94	15.66	4.97	16.15	5.00	16.24	5.08	
43	12.57	3.91	14.69	4.89	15.09	4.94	15.31	4.96	15.54	4.99	15.87	5.02	15.98	5.18	
45	12.57	3.96	14.61	4.94	14.95	4.99	15.15	5.01	15.40	5.03	15.55	5.03	15.82	5.29	
48	14.56	3.99	16.78	4.99	17.10	5.03	17.28	5.05	17.65	5.07	17.74	5.05	18.09	5.36	
110%	-5	11.51	1.56	13.73	1.94	15.94	2.31	17.05	2.48	18.16	2.67	19.54	2.78	19.99	2.86
	-2	11.51	1.59	13.73	1.97	15.94	2.33	17.05	2.51	18.16	2.69	19.54	2.80	19.99	2.88
	0	11.51	1.60	13.73	1.98	15.94	2.35	17.05	2.53	18.16	2.72	19.54	2.83	19.99	2.91

	2	11.51	1.64	13.73	2.00	15.94	2.39	17.05	2.55	18.16	2.75	19.54	2.87	19.99	2.95
	4	11.51	1.67	13.73	2.02	15.94	2.41	17.05	2.58	18.16	2.80	19.54	2.91	19.99	2.98
	6	11.51	1.69	13.73	2.04	15.94	2.44	17.05	2.63	18.16	2.83	19.54	2.94	19.99	3.02
	8	11.51	1.70	13.73	2.07	15.94	2.46	17.05	2.65	18.16	2.86	19.54	2.96	19.99	3.05
	10	11.51	1.72	13.73	2.10	15.94	2.50	17.05	2.70	18.16	2.91	19.54	2.98	19.99	3.08
	12	11.51	1.76	13.73	2.14	15.94	2.55	17.05	2.75	18.16	2.96	19.32	3.03	19.71	3.12
	14	11.51	1.79	13.73	2.18	15.94	2.60	17.05	2.80	18.16	3.02	19.04	3.05	19.49	3.14
	16	11.51	1.82	13.73	2.22	15.94	2.64	17.05	2.86	18.16	3.08	18.82	3.09	19.21	3.18
	18	11.51	1.86	13.73	2.27	15.94	2.70	17.05	2.94	18.16	3.22	18.54	3.25	18.99	3.28
	20	11.51	1.89	13.73	2.31	15.94	2.86	17.05	3.16	17.88	3.38	18.32	3.41	18.71	3.44
	21	11.51	1.91	13.73	2.38	15.94	2.96	17.05	3.27	17.77	3.46	18.16	3.48	18.60	3.51
	23	11.51	2.00	13.73	2.55	15.94	3.17	17.05	3.51	17.49	3.61	17.94	3.65	18.32	3.68
	25	11.51	2.14	13.73	2.73	15.94	3.39	17.05	3.76	17.27	3.77	17.66	3.81	18.10	3.84
	27	11.51	2.28	13.73	2.92	15.94	3.63	16.77	3.92	17.00	3.93	17.44	3.97	17.83	4.00
	29	11.51	2.43	13.73	3.11	15.94	3.88	16.55	4.08	16.77	4.09	17.16	4.13	17.60	4.17
	31	11.51	2.59	13.73	3.32	15.94	4.14	16.28	4.23	16.50	4.25	16.94	4.29	17.33	4.33
	33	11.51	2.75	13.73	3.54	15.83	4.37	16.05	4.39	16.28	4.41	16.66	4.45	17.11	4.50
	35	11.51	2.93	13.73	3.77	15.56	4.53	15.78	4.55	16.00	4.58	16.39	4.62	16.83	4.66
	37	11.51	3.12	13.73	4.01	15.33	4.69	15.56	4.71	15.72	4.73	16.17	4.78	16.55	4.82
	39	11.51	3.31	13.73	4.28	15.06	4.85	15.28	4.87	15.50	4.90	15.89	4.95	16.33	5.00
	41	11.51	3.35	13.73	4.31	14.94	4.88	15.16	4.91	15.38	4.93	15.69	4.98	15.84	5.03
	43	11.51	3.38	13.73	4.37	14.82	4.92	15.04	4.94	15.26	4.97	15.55	5.00	15.60	5.13
	45	11.51	3.49	13.73	4.39	14.67	4.96	14.88	5.00	15.13	5.01	15.39	5.14	15.45	5.25
	48	12.61	3.61	15.04	4.76	15.83	5.00	16.04	5.04	16.38	5.06	16.58	5.15	16.70	5.31
100%	-5	10.46	1.42	12.46	1.71	14.50	2.03	15.50	2.18	16.50	2.36	18.54	2.69	19.60	2.81
	-2	10.46	1.44	12.46	1.73	14.50	2.06	15.50	2.22	16.50	2.40	18.54	2.73	19.60	2.83
	0	10.46	1.45	12.46	1.75	14.50	2.08	15.50	2.25	16.50	2.42	18.54	2.77	19.60	2.86
	2	10.46	1.48	12.46	1.77	14.50	2.10	15.50	2.28	16.50	2.45	18.54	2.81	19.60	2.91
	4	10.46	1.49	12.46	1.79	14.50	2.13	15.50	2.31	16.50	2.48	18.54	2.84	19.60	2.94
	6	10.46	1.51	12.46	1.83	14.50	2.16	15.50	2.35	16.50	2.51	18.54	2.88	19.60	2.98
	8	10.46	1.54	12.46	1.85	14.50	2.20	15.50	2.38	16.50	2.55	18.54	2.92	19.60	3.03
	10	10.46	1.56	12.46	1.89	14.50	2.24	15.50	2.42	16.50	2.60	18.54	2.97	19.60	3.08
	12	10.46	1.58	12.46	1.93	14.50	2.28	15.50	2.46	16.50	2.65	18.54	3.03	19.32	3.10
	14	10.46	1.61	12.46	1.96	14.50	2.32	15.50	2.51	16.50	2.70	18.54	3.09	19.10	3.14
	16	10.46	1.64	12.46	2.00	14.50	2.37	15.50	2.56	16.50	2.75	18.43	3.13	18.82	3.17
	18	10.46	1.68	12.46	2.03	14.50	2.41	15.50	2.61	16.50	2.81	18.21	3.23	18.60	3.25
	20	10.46	1.71	12.46	2.08	14.50	2.49	15.50	2.74	16.50	3.01	17.94	3.38	18.32	3.41
	21	10.46	1.72	12.46	2.10	14.50	2.58	15.50	2.84	16.50	3.11	17.83	3.46	18.21	3.49
	23	10.46	1.77	12.46	2.24	14.50	2.76	15.50	3.04	16.50	3.34	17.60	3.62	17.94	3.65
	25	10.46	1.88	12.46	2.39	14.50	2.95	15.50	3.26	16.50	3.58	17.33	3.78	17.71	3.81
	27	10.46	2.01	12.46	2.55	14.50	3.16	15.50	3.48	16.50	3.83	17.05	3.94	17.44	3.97
	29	10.46	2.14	12.46	2.72	14.50	3.37	15.50	3.72	16.44	4.06	16.83	4.10	17.22	4.13
	31	10.46	2.28	12.46	2.90	14.50	3.59	15.50	3.97	16.22	4.22	16.55	4.26	16.94	4.29
	33	10.46	2.42	12.46	3.09	14.50	3.83	15.50	4.24	15.94	4.38	16.33	4.42	16.72	4.46
35	10.46	2.57	12.46	3.28	14.50	4.09	15.50	4.52	15.67	4.54	16.05	4.58	16.44	4.62	
37	10.46	2.74	12.46	3.50	14.50	4.36	15.22	4.68	15.44	4.70	15.83	4.74	16.16	4.78	
39	10.46	2.91	12.46	3.72	14.50	4.64	15.00	4.84	15.17	4.86	15.56	4.90	15.94	4.95	
41	10.46	3.04	12.46	3.85	14.50	4.81	14.77	4.87	15.05	4.94	15.29	5.02	15.71	5.05	
43	10.46	3.18	12.46	3.99	14.50	4.89	14.54	4.93	14.94	4.98	15.38	5.05	15.43	5.11	
45	10.46	3.36	12.46	4.17	14.50	4.98	14.23	5.00	14.86	5.07	15.25	5.13	15.12	5.18	
48	10.84	3.51	12.90	4.31	15.02	4.99	14.13	5.05	15.37	5.16	14.83	5.18	15.32	5.23	
90%	-5	9.41	1.26	11.24	1.51	13.06	1.78	13.95	1.94	14.84	2.06	16.66	2.37	18.49	2.72
	-2	9.41	1.27	11.24	1.52	13.06	1.80	13.95	1.97	14.84	2.09	16.66	2.39	18.49	2.74
	0	9.41	1.29	11.24	1.54	13.06	1.83	13.95	1.99	14.84	2.11	16.66	2.42	18.49	2.76
	2	9.41	1.31	11.24	1.56	13.06	1.85	13.95	2.02	14.84	2.15	16.66	2.47	18.49	2.80
	4	9.41	1.33	11.24	1.58	13.06	1.88	13.95	2.05	14.84	2.17	16.66	2.51	18.49	2.84
	6	9.41	1.34	11.24	1.61	13.06	1.91	13.95	2.09	14.84	2.21	16.66	2.55	18.49	2.89
	8	9.41	1.37	11.24	1.65	13.06	1.95	13.95	2.11	14.84	2.25	16.66	2.60	18.49	2.92
	10	9.41	1.39	11.24	1.68	13.06	1.99	13.95	2.14	14.84	2.30	16.66	2.63	18.49	2.97
	12	9.41	1.42	11.24	1.71	13.06	2.02	13.95	2.18	14.84	2.35	16.66	2.68	18.49	3.02
	14	9.41	1.44	11.24	1.74	13.06	2.06	13.95	2.22	14.84	2.39	16.66	2.73	18.49	3.08
	16	9.41	1.47	11.24	1.77	13.06	2.10	13.95	2.27	14.84	2.44	16.66	2.78	18.43	3.13
	18	9.41	1.49	11.24	1.81	13.06	2.14	13.95	2.31	14.84	2.49	16.66	2.84	18.21	3.23
20	9.41	1.52	11.24	1.85	13.06	2.18	13.95	2.36	14.84	2.58	16.66	3.05	17.94	3.38	
21	9.41	1.54	11.24	1.86	13.06	2.22	13.95	2.44	14.84	2.67	16.66	3.16	17.83	3.46	

90%	23	9.41	1.57	11.24	1.94	13.06	2.38	13.95	2.61	14.84	2.86	16.66	3.39	17.55	3.62
	25	9.41	1.65	11.24	2.07	13.06	2.54	13.95	2.80	14.84	3.06	16.66	3.63	17.33	3.78
	27	9.41	1.75	11.24	2.21	13.06	2.71	13.95	2.98	14.84	3.27	16.66	3.89	17.05	3.93
	29	9.41	1.87	11.24	2.35	13.06	2.89	13.95	3.19	14.84	3.50	16.50	4.06	16.83	4.09
	31	9.41	1.99	11.24	2.50	13.06	3.08	13.95	3.40	14.84	3.73	16.22	4.22	16.55	4.26
	33	9.41	2.11	11.24	2.66	13.06	3.29	13.95	3.62	14.84	3.98	16.00	4.39	16.33	4.42
	35	9.41	2.24	11.24	2.83	13.06	3.50	13.95	3.86	14.84	4.24	15.72	4.54	16.05	4.58
	37	9.41	2.38	11.24	3.01	13.06	3.73	13.95	4.11	14.84	4.52	15.44	4.70	15.83	4.74
	39	9.41	2.52	11.24	3.20	13.06	3.97	13.95	4.38	14.84	4.81	15.22	4.87	15.56	4.90
	41	9.41	2.61	11.24	3.35	13.06	4.11	13.95	4.50	14.84	4.84	15.12	4.99	15.45	5.02
	43	9.41	2.73	11.24	3.49	13.06	4.26	13.95	4.61	14.84	4.94	15.04	5.06	15.32	5.10
	45	9.41	2.91	11.24	3.67	13.06	4.43	13.95	4.77	14.84	5.08	14.96	5.11	15.08	5.17
	48	9.41	3.07	11.24	3.84	13.06	4.60	13.95	4.83	14.84	5.13	16.48	5.18	16.31	5.24
	80%	-5	8.36	1.11	9.96	1.31	11.57	1.55	12.40	1.65	13.23	1.77	14.84	2.05	16.44
-2		8.36	1.12	9.96	1.32	11.57	1.56	12.40	1.67	13.23	1.79	14.84	2.07	16.44	2.36
0		8.36	1.14	9.96	1.34	11.57	1.58	12.40	1.69	13.23	1.82	14.84	2.10	16.44	2.39
2		8.36	1.16	9.96	1.36	11.57	1.60	12.40	1.72	13.23	1.85	14.84	2.14	16.44	2.44
4		8.36	1.18	9.96	1.38	11.57	1.63	12.40	1.76	13.23	1.89	14.84	2.18	16.44	2.47
6		8.36	1.20	9.96	1.42	11.57	1.66	12.40	1.80	13.23	1.92	14.84	2.21	16.44	2.51
8		8.36	1.23	9.96	1.45	11.57	1.70	12.40	1.83	13.23	1.96	14.84	2.24	16.44	2.56
10		8.36	1.24	9.96	1.48	11.57	1.74	12.40	1.88	13.23	2.01	14.84	2.30	16.44	2.59
12		8.36	1.26	9.96	1.50	11.57	1.77	12.40	1.91	13.23	2.05	14.84	2.34	16.44	2.64
14		8.36	1.28	9.96	1.54	11.57	1.80	12.40	1.94	13.23	2.09	14.84	2.38	16.44	2.69
16		8.36	1.30	9.96	1.56	11.57	1.84	12.40	1.98	13.23	2.13	14.84	2.43	16.44	2.74
18		8.36	1.32	9.96	1.59	11.57	1.88	12.40	2.02	13.23	2.17	14.84	2.48	16.44	2.79
20		8.36	1.35	9.96	1.62	11.57	1.91	12.40	2.06	13.23	2.21	14.84	2.57	16.44	2.98
21		8.36	1.36	9.96	1.63	11.57	1.93	12.40	2.08	13.23	2.26	14.84	2.66	16.44	3.09
23		8.36	1.38	9.96	1.67	11.57	2.02	12.40	2.22	13.23	2.42	14.84	2.85	16.44	3.32
25		8.36	1.43	9.96	1.77	11.57	2.16	12.40	2.37	13.23	2.58	14.84	3.05	16.44	3.55
27		8.36	1.52	9.96	1.89	11.57	2.30	12.40	2.53	13.23	2.76	14.84	3.26	16.44	3.80
29		8.36	1.61	9.96	2.01	11.57	2.46	12.40	2.69	13.23	2.95	14.84	3.48	16.44	4.06
31		8.36	1.71	9.96	2.14	11.57	2.61	12.40	2.87	13.23	3.14	14.84	3.72	16.16	4.22
33		8.36	1.82	9.96	2.27	11.57	2.78	12.40	3.06	13.23	3.34	14.84	3.96	15.94	4.38
35	8.36	1.93	9.96	2.42	11.57	2.96	12.40	3.25	13.23	3.56	14.84	4.22	15.67	4.54	
37	8.36	2.05	9.96	2.56	11.57	3.15	12.40	3.47	13.23	3.80	14.84	4.50	15.44	4.70	
39	8.36	2.17	9.96	2.74	11.57	3.35	12.40	3.69	13.23	4.04	14.84	4.79	15.17	4.86	
41	8.36	2.22	9.96	2.76	11.57	3.40	12.40	3.78	13.23	4.11	14.84	4.92	15.07	4.95	
43	8.36	2.28	9.96	2.78	11.57	3.45	12.40	3.85	13.23	4.17	14.84	4.97	14.98	5.00	
45	8.36	2.35	9.96	2.82	11.57	3.51	12.40	3.93	13.23	4.24	14.84	5.03	14.80	5.08	
48	8.36	2.42	9.96	2.84	13.02	3.57	12.40	3.98	13.23	4.28	14.84	5.08	16.51	5.15	
70%	-5	7.31	0.99	8.75	1.16	10.13	1.31	10.85	1.41	11.57	1.50	12.95	1.72	14.39	1.97
	-2	7.31	1.00	8.75	1.16	10.13	1.32	10.85	1.43	11.57	1.53	12.95	1.74	14.39	2.00
	0	7.31	1.00	8.75	1.18	10.13	1.35	10.85	1.46	11.57	1.56	12.95	1.78	14.39	2.03
	2	7.31	1.01	8.75	1.18	10.13	1.37	10.85	1.49	11.57	1.58	12.95	1.82	14.39	2.06
	4	7.31	1.02	8.75	1.21	10.13	1.40	10.85	1.51	11.57	1.62	12.95	1.85	14.39	2.11
	6	7.31	1.04	8.75	1.24	10.13	1.43	10.85	1.56	11.57	1.66	12.95	1.88	14.39	2.15
	8	7.31	1.05	8.75	1.27	10.13	1.47	10.85	1.59	11.57	1.69	12.95	1.93	14.39	2.19
	10	7.31	1.08	8.75	1.29	10.13	1.50	10.85	1.62	11.57	1.74	12.95	1.97	14.39	2.22
	12	7.31	1.10	8.75	1.31	10.13	1.54	10.85	1.65	11.57	1.77	12.95	2.01	14.39	2.26
	14	7.31	1.12	8.75	1.33	10.13	1.56	10.85	1.68	11.57	1.80	12.95	2.05	14.39	2.30
	16	7.31	1.14	8.75	1.36	10.13	1.59	10.85	1.71	11.57	1.83	12.95	2.08	14.39	2.35
	18	7.31	1.16	8.75	1.38	10.13	1.62	10.85	1.74	11.57	1.86	12.95	2.13	14.39	2.39
	20	7.31	1.18	8.75	1.41	10.13	1.65	10.85	1.77	11.57	1.90	12.95	2.17	14.39	2.46
	21	7.31	1.19	8.75	1.42	10.13	1.66	10.85	1.79	11.57	1.92	12.95	2.20	14.39	2.55
	23	7.31	1.21	8.75	1.44	10.13	1.70	10.85	1.85	11.57	2.02	12.95	2.36	14.39	2.73
	25	7.31	1.23	8.75	1.50	10.13	1.81	10.85	1.98	11.57	2.15	12.95	2.52	14.39	2.92
	27	7.31	1.30	8.75	1.60	10.13	1.93	10.85	2.11	11.57	2.30	12.95	2.69	14.39	3.12
	29	7.31	1.38	8.75	1.70	10.13	2.05	10.85	2.25	11.57	2.44	12.95	2.87	14.39	3.33
	31	7.31	1.46	8.75	1.80	10.13	2.19	10.85	2.39	11.57	2.60	12.95	3.06	14.39	3.55
	33	7.31	1.55	8.75	1.92	10.13	2.33	10.85	2.54	11.57	2.77	12.95	3.26	14.39	3.79
35	7.31	1.64	8.75	2.03	10.13	2.47	10.85	2.70	11.57	2.95	12.95	3.47	14.39	4.04	
37	7.31	1.74	8.75	2.16	10.13	2.63	10.85	2.87	11.57	3.14	12.95	3.70	14.39	4.30	
39	7.31	1.84	8.75	2.28	10.13	2.78	10.85	3.05	11.57	3.33	12.95	3.93	14.39	4.58	
41	7.31	1.92	8.75	2.37	10.13	2.87	10.85	3.15	11.57	3.43	12.95	4.09	14.39	4.78	
43	7.31	2.08	8.75	2.53	10.13	2.98	10.85	3.32	11.57	3.54	12.95	4.24	14.39	4.93	

	45	7.31	2.12	8.75	2.58	10.13	3.05	10.85	3.38	11.57	3.71	12.95	4.47	14.39	5.12
	48	7.31	2.18	8.75	2.61	10.13	3.08	10.85	3.43	11.57	3.81	12.95	4.67	14.39	5.24
60%	-5	6.26	0.84	7.47	0.98	8.69	1.14	9.30	1.21	9.91	1.31	11.13	1.47	12.34	1.69
	-2	6.26	0.85	7.47	0.99	8.69	1.16	9.30	1.23	9.91	1.32	11.13	1.49	12.34	1.70
	0	6.26	0.86	7.47	1.00	8.69	1.17	9.30	1.25	9.91	1.34	11.13	1.51	12.34	1.72
	2	6.26	0.88	7.47	1.03	8.69	1.20	9.30	1.27	9.91	1.36	11.13	1.55	12.34	1.74
	4	6.26	0.90	7.47	1.05	8.69	1.22	9.30	1.29	9.91	1.38	11.13	1.57	12.34	1.77
	6	6.26	0.91	7.47	1.07	8.69	1.24	9.30	1.31	9.91	1.41	11.13	1.60	12.34	1.81
	8	6.26	0.93	7.47	1.08	8.69	1.27	9.30	1.34	9.91	1.44	11.13	1.63	12.34	1.84
	10	6.26	0.94	7.47	1.11	8.69	1.29	9.30	1.38	9.91	1.47	11.13	1.66	12.34	1.86
	12	6.26	0.96	7.47	1.13	8.69	1.31	9.30	1.40	9.91	1.49	11.13	1.69	12.34	1.89
	14	6.26	0.97	7.47	1.14	8.69	1.33	9.30	1.43	9.91	1.52	11.13	1.72	12.34	1.93
	16	6.26	0.99	7.47	1.16	8.69	1.35	9.30	1.45	9.91	1.55	11.13	1.75	12.34	1.97
	18	6.26	1.00	7.47	1.18	8.69	1.38	9.30	1.47	9.91	1.58	11.13	1.78	12.34	2.00
	20	6.26	1.02	7.47	1.21	8.69	1.40	9.30	1.50	9.91	1.61	11.13	1.82	12.34	2.05
	21	6.26	1.03	7.47	1.21	8.69	1.41	9.30	1.52	9.91	1.62	11.13	1.84	12.34	2.06
	23	6.26	1.04	7.47	1.24	8.69	1.44	9.30	1.55	9.91	1.65	11.13	1.91	12.34	2.20
	25	6.26	1.06	7.47	1.25	8.69	1.49	9.30	1.62	9.91	1.75	11.13	2.04	12.34	2.34
	27	6.26	1.10	7.47	1.33	8.69	1.59	9.30	1.73	9.91	1.87	11.13	2.17	12.34	2.50
	29	6.26	1.16	7.47	1.41	8.69	1.69	9.30	1.84	9.91	1.99	11.13	2.32	12.34	2.67
	31	6.26	1.24	7.47	1.50	8.69	1.80	9.30	1.96	9.91	2.12	11.13	2.47	12.34	2.84
	33	6.26	1.30	7.47	1.59	8.69	1.91	9.30	2.08	9.91	2.25	11.13	2.63	12.34	3.03
	35	6.26	1.38	7.47	1.69	8.69	2.02	9.30	2.20	9.91	2.39	11.13	2.80	12.34	3.23
	37	6.26	1.46	7.47	1.78	8.69	2.14	9.30	2.34	9.91	2.54	11.13	2.97	12.34	3.44
	39	6.26	1.54	7.47	1.89	8.69	2.27	9.30	2.48	9.91	2.70	11.13	3.15	12.34	3.65
	41	6.26	1.59	7.47	1.97	8.69	2.35	9.30	2.58	9.91	2.80	11.13	3.30	12.34	3.82
43	6.26	1.64	7.47	2.05	8.69	2.44	9.30	2.66	9.91	2.90	11.13	3.44	12.34	3.99	
45	6.26	1.72	7.47	2.16	8.69	2.54	9.30	2.75	9.91	3.04	11.13	3.60	12.34	4.21	
48	6.26	1.78	7.47	2.25	8.69	2.62	9.30	2.83	9.91	3.16	11.13	3.73	12.34	4.40	
50%	-5	5.23	0.73	6.26	0.85	7.25	0.97	7.75	1.02	8.25	1.07	9.24	1.22	10.30	1.32
	-2	5.23	0.74	6.26	0.86	7.25	0.98	7.75	1.03	8.25	1.09	9.24	1.24	10.30	1.33
	0	5.23	0.75	6.26	0.88	7.25	1.00	7.75	1.05	8.25	1.11	9.24	1.26	10.30	1.36
	2	5.23	0.76	6.26	0.89	7.25	1.02	7.75	1.06	8.25	1.12	9.24	1.26	10.30	1.38
	4	5.23	0.77	6.26	0.90	7.25	1.03	7.75	1.07	8.25	1.15	9.24	1.29	10.30	1.42
	6	5.23	0.78	6.26	0.92	7.25	1.04	7.75	1.10	8.25	1.17	9.24	1.31	10.30	1.46
	8	5.23	0.80	6.26	0.93	7.25	1.06	7.75	1.12	8.25	1.18	9.24	1.34	10.30	1.51
	10	5.23	0.82	6.26	0.94	7.25	1.08	7.75	1.14	8.25	1.22	9.24	1.37	10.30	1.53
	12	5.23	0.82	6.26	0.96	7.25	1.10	7.75	1.16	8.25	1.24	9.24	1.39	10.30	1.55
	14	5.23	0.83	6.26	0.97	7.25	1.11	7.75	1.19	8.25	1.26	9.24	1.42	10.30	1.58
	16	5.23	0.85	6.26	0.98	7.25	1.13	7.75	1.21	8.25	1.28	9.24	1.44	10.30	1.61
	18	5.23	0.86	6.26	1.00	7.25	1.15	7.75	1.22	8.25	1.30	9.24	1.47	10.30	1.64
	20	5.23	0.87	6.26	1.01	7.25	1.16	7.75	1.24	8.25	1.33	9.24	1.49	10.30	1.67
	21	5.23	0.88	6.26	1.02	7.25	1.18	7.75	1.25	8.25	1.34	9.24	1.51	10.30	1.69
	23	5.23	0.89	6.26	1.04	7.25	1.19	7.75	1.28	8.25	1.36	9.24	1.53	10.30	1.72
	25	5.23	0.90	6.26	1.05	7.25	1.22	7.75	1.30	8.25	1.41	9.24	1.61	10.30	1.84
	27	5.23	0.92	6.26	1.10	7.25	1.29	7.75	1.39	8.25	1.49	9.24	1.72	10.30	1.96
	29	5.23	0.97	6.26	1.16	7.25	1.36	7.75	1.47	8.25	1.59	9.24	1.83	10.30	2.09
	31	5.23	1.02	6.26	1.22	7.25	1.44	7.75	1.57	8.25	1.69	9.24	1.94	10.30	2.22
	33	5.23	1.08	6.26	1.30	7.25	1.53	7.75	1.66	8.25	1.79	9.24	2.06	10.30	2.36
	35	5.23	1.15	6.26	1.37	7.25	1.62	7.75	1.75	8.25	1.89	9.24	2.19	10.30	2.51
	37	5.23	1.21	6.26	1.45	7.25	1.72	7.75	1.86	8.25	2.01	9.24	2.33	10.30	2.67
	39	5.23	1.27	6.26	1.53	7.25	1.82	7.75	1.97	8.25	2.13	9.24	2.47	10.30	2.83
	41	5.23	1.33	6.26	1.59	7.25	1.88	7.75	2.06	8.25	2.22	9.24	2.60	10.30	2.96
43	5.23	1.41	6.26	1.70	7.25	1.95	7.75	2.15	8.25	2.28	9.24	2.73	10.30	3.10	
45	5.23	1.45	6.26	1.75	7.25	2.08	7.75	2.32	8.25	2.38	9.24	2.99	10.30	3.36	
48	5.23	1.48	6.26	1.80	7.25	2.20	7.75	2.47	8.25	2.48	9.24	3.23	10.30	3.61	

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combination (%) (Capacity index)	Outdoor Air temperature (°C DB)		Indoor temperature(°C WB)											
			16		18		20		21		22		24	
	°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
130%	-19.8	-20	11.01	3.37	10.95	3.61	10.90	3.85	10.90	3.96	10.85	4.08	10.85	4.32
	-18.8	-19	11.17	3.44	11.12	3.68	11.12	3.91	11.06	4.03	11.06	4.14	11.01	4.38
	-16.7	-17	11.60	3.61	11.55	3.83	11.49	4.06	11.49	4.17	11.49	4.28	11.44	4.50
	-13.7	-15	12.09	3.77	12.04	3.99	11.98	4.21	11.98	4.31	11.93	4.42	11.93	4.64
	-11.8	-13	12.58	3.94	12.58	4.15	12.52	4.35	12.47	4.46	12.47	4.57	12.41	4.77
	-9.8	-11	13.17	4.11	13.11	4.31	13.06	4.51	13.06	4.61	13.06	4.71	13.01	4.91
	-9.5	-10	13.49	4.20	13.44	4.39	13.38	4.58	13.38	4.68	13.33	4.78	13.33	4.97
	-8.5	-9.1	13.76	4.27	13.71	4.46	13.71	4.65	13.65	4.75	13.65	4.84	13.60	5.03
	-7	-7.6	14.25	4.40	14.25	4.58	14.19	4.76	14.19	4.86	14.14	4.94	14.08	5.13
	-5	-5.6	15.00	4.57	14.95	4.74	14.89	4.91	14.89	5.00	14.84	5.08	14.84	5.25
	-3	-3.7	15.71	4.71	15.65	4.88	15.65	5.04	15.60	5.13	15.60	5.21	15.54	5.37
	0	-0.7	16.95	4.94	16.95	5.10	16.89	5.25	16.89	5.30	16.84	5.40	16.84	5.55
	3	2.2	18.29	5.15	18.24	5.29	18.19	5.43	18.19	5.50	18.19	5.58	18.13	5.71
	5	4.1	19.21	5.28	19.16	5.41	19.16	5.54	19.11	5.61	19.11	5.68	19.05	5.81
	7	6	20.18	5.40	20.13	5.53	20.13	5.66	20.08	5.72	20.08	5.78	19.27	5.55
	9	7.9	21.21	5.51	21.15	5.64	21.15	5.75	21.10	5.82	20.67	5.69	19.27	5.22
11	9.8	22.29	5.62	22.24	5.74	22.13	5.81	21.37	5.58	20.67	5.35	19.27	4.91	
13	11.8	23.48	5.73	23.42	5.84	22.13	5.45	21.37	5.23	20.67	5.02	19.27	4.61	
15	13.7	24.61	5.83	23.53	5.53	22.13	5.13	21.37	4.93	20.67	4.73	19.27	4.35	
120%	-19.8	-20	10.96	3.69	10.90	3.91	10.85	4.13	10.85	4.24	10.85	4.35	10.79	4.57
	-18.8	-19	11.12	3.76	11.06	3.98	11.06	4.19	11.01	4.30	11.01	4.41	10.96	4.63
	-16.7	-17	11.55	3.91	11.50	4.12	11.42	4.32	11.44	4.43	11.44	4.53	11.39	4.74
	-13.7	-15	12.04	4.06	11.98	4.26	11.93	4.46	11.93	4.57	11.93	4.66	11.87	4.86
	-11.8	-13	12.52	4.22	12.52	4.41	12.47	4.60	12.47	4.70	12.41	4.79	12.41	4.99
	-9.8	-11	13.11	4.38	13.06	4.56	13.06	4.75	13.01	4.84	13.01	4.93	12.95	5.11
	-9.5	-10	13.44	4.46	13.39	4.64	13.33	4.81	13.33	4.91	13.33	4.99	13.28	5.17
	-8.5	-9.1	13.71	4.53	13.65	4.70	13.65	4.88	13.60	4.96	13.60	5.06	13.55	5.23
	-7	-7.6	14.19	4.65	14.19	4.81	14.14	4.98	14.14	5.07	14.09	5.15	14.09	5.32
	-5	-5.6	14.95	4.79	14.90	4.96	14.84	5.12	14.84	5.20	14.84	5.28	14.79	5.43
	-3	-3.7	15.65	4.94	15.65	5.09	15.60	5.24	15.60	5.32	15.54	5.40	15.54	5.54
	0	-0.7	16.89	5.15	16.89	5.29	16.84	5.43	16.84	5.50	16.78	5.57	16.78	5.71
	3	2.2	18.24	5.34	18.19	5.47	18.19	5.60	18.13	5.67	18.13	5.73	17.76	5.70
	5	4.1	19.16	5.46	19.11	5.58	19.11	5.71	19.05	5.77	19.05	5.83	17.76	5.35
	7	6	20.13	5.57	20.13	5.69	20.08	5.80	19.75	5.72	19.11	5.49	17.76	5.04
	9	7.9	21.16	5.68	21.10	5.79	20.40	5.60	19.75	5.38	19.11	5.16	17.76	4.74
11	9.8	22.24	5.78	21.70	5.68	20.40	5.27	19.75	5.06	19.11	4.86	17.76	4.47	
13	11.8	23.04	5.72	21.70	5.33	20.40	4.94	19.75	4.75	19.11	4.57	17.76	4.20	
15	13.7	23.04	5.39	21.70	5.02	20.40	4.66	19.75	4.48	19.11	4.31	17.76	3.96	
110%	-19.8	-20	10.90	4.01	10.85	4.21	10.79	4.42	10.79	4.52	10.80	4.62	10.74	4.82
	-18.8	-19	11.06	4.08	11.01	4.27	11.01	4.47	11.01	4.57	10.96	4.67	10.96	4.87
	-16.7	-17	11.49	4.21	11.44	4.40	11.60	4.60	11.39	4.69	11.39	4.79	11.33	4.97
	-13.7	-15	11.98	4.36	11.93	4.54	11.87	4.72	11.87	4.81	11.87	4.91	11.82	5.09
	-11.8	-13	12.47	4.50	12.47	4.68	12.41	4.85	12.41	4.94	12.36	5.02	12.36	5.20
	-9.8	-11	13.06	4.65	13.01	4.81	13.01	4.98	12.95	5.07	12.95	5.15	12.95	5.32
	-9.5	-10	13.38	4.72	13.33	4.88	13.28	5.05	13.28	5.13	13.28	5.21	13.22	5.37
	-8.5	-9.1	13.65	4.78	13.60	4.94	13.60	5.10	13.55	5.19	13.55	5.27	13.55	4.80
	-7	-7.6	14.14	4.89	14.14	5.04	14.09	5.20	14.09	5.28	14.09	5.35	14.03	5.51
	-5	-5.6	14.90	5.03	14.84	5.18	14.79	5.32	14.79	5.40	14.79	5.47	14.73	5.62
	-3	-3.7	15.60	5.16	15.60	5.30	15.54	5.44	15.54	5.51	15.49	5.58	15.49	5.72
	0	-0.7	16.84	5.35	16.84	5.48	16.79	5.61	16.79	5.67	16.79	5.74	16.30	5.63
	3	2.2	18.19	5.53	18.13	5.65	18.13	5.77	18.08	5.82	17.49	5.59	16.30	5.12
	5	4.1	19.11	5.64	19.11	5.75	18.73	5.70	18.08	5.47	17.49	5.25	16.30	4.82
	7	6	20.08	5.74	19.91	5.78	18.73	5.35	18.08	5.14	17.49	4.94	16.30	4.53
	9	7.9	21.10	5.84	19.91	5.43	18.73	5.04	18.08	4.84	17.49	4.65	16.30	4.27
11	9.8	21.10	5.49	19.91	5.11	18.73	4.74	18.08	4.56	17.49	4.38	16.30	4.03	
13	11.8	21.10	5.15	19.91	4.79	18.73	4.45	18.08	4.29	17.49	4.12	16.30	3.80	
15	13.7	21.10	4.57	19.91	4.52	18.73	4.21	18.08	4.05	17.49	3.90	16.30	3.59	
100%	-19.8	-20	10.85	4.34	10.79	4.52	10.79	4.70	10.74	4.79	10.74	4.88	10.69	5.07
	-18.8	-19	11.01	4.39	11.01	4.57	10.95	4.75	10.95	4.84	10.90	4.94	10.90	5.12

	-16.7	-17	11.44	4.52	11.39	4.69	11.39	4.86	11.33	4.95	11.33	5.04	11.33	5.21
	-13.7	-15	11.93	4.65	11.87	4.81	11.82	4.98	11.82	5.07	11.82	5.15	11.77	5.31
	-11.8	-13	12.41	4.78	12.41	4.94	12.36	5.10	12.36	5.18	12.36	5.26	12.30	5.42
	-9.8	-11	13.01	4.91	12.95	5.07	12.95	5.22	12.95	5.30	12.90	5.37	12.90	5.52
	-9.5	-10	13.33	4.98	13.28	5.13	13.28	5.28	13.22	5.35	13.22	5.43	13.17	5.58
	-8.5	-9.1	13.60	5.04	13.55	5.18	13.55	5.33	13.55	5.40	13.49	5.48	13.49	5.62
	-7	-7.6	14.09	5.14	14.09	5.28	14.03	5.41	14.03	5.49	14.03	5.56	13.98	5.70
	-5	-5.6	14.84	5.27	14.79	5.40	14.79	5.53	14.73	5.59	14.73	5.66	14.68	5.80
	-3	-3.7	15.54	5.38	15.54	4.89	15.49	5.64	15.49	5.70	15.49	5.76	14.84	5.52
	0	-0.7	16.78	5.56	16.78	5.67	16.73	5.79	16.46	5.70	15.92	5.46	14.84	5.01
	3	2.2	18.13	5.72	18.08	5.82	17.00	5.39	16.46	5.18	15.92	4.97	14.84	4.57
	5	4.1	19.05	5.82	18.08	5.47	17.00	5.07	16.46	4.87	15.92	4.68	14.84	4.31
	7	6	19.16	5.53	18.08	5.14	17.00	4.77	16.46	4.59	15.92	4.41	14.84	4.06
	9	7.9	19.16	5.19	18.08	4.84	17.00	4.49	16.46	4.27	15.92	4.16	14.84	3.83
	11	9.8	19.16	4.89	18.08	4.56	17.00	4.24	16.46	4.08	15.92	3.92	14.84	3.62
	13	11.8	19.16	4.59	18.08	4.29	17.00	3.99	16.46	3.84	15.92	3.70	14.84	3.41
	15	13.7	19.16	4.33	18.08	4.05	17.00	3.77	16.46	3.63	15.92	3.49	14.84	3.23
90%	-19.8	-20	10.77	4.66	10.72	4.82	10.72	4.99	10.67	5.07	10.67	5.15	10.67	5.32
	-18.8	-19	10.94	4.71	10.94	4.87	10.88	5.04	10.88	5.12	10.88	5.20	10.83	5.36
	-16.7	-17	11.37	4.83	11.31	4.98	11.31	5.14	11.31	5.22	11.26	5.29	11.26	5.44
	-13.7	-15	11.85	4.94	11.80	5.09	11.80	5.24	11.74	5.31	11.74	5.39	11.74	5.54
	-11.8	-13	12.34	5.06	12.34	5.20	12.28	5.35	12.28	5.42	12.28	5.49	12.23	5.63
	-9.8	-11	12.93	5.18	12.93	5.32	12.87	5.45	12.87	5.52	12.87	5.59	12.82	5.73
	-9.5	-10	13.25	5.24	13.20	5.38	13.20	5.51	13.15	5.58	13.15	5.64	13.15	5.77
	-8.5	-9.1	13.52	5.30	13.52	5.43	13.47	5.56	13.47	5.62	13.47	5.69	13.31	5.74
	-7	-7.6	14.01	5.38	14.01	5.51	13.95	5.64	13.95	5.70	13.95	5.76	13.31	5.48
	-5	-5.6	14.76	5.50	14.71	5.62	14.71	5.74	14.65	5.80	14.28	5.62	13.31	5.15
	-3	-3.7	15.46	5.61	15.46	5.72	15.30	5.74	14.76	5.51	14.28	5.29	13.31	4.86
	0	-0.7	16.76	5.77	16.27	5.62	15.30	5.21	14.76	5.01	14.28	4.81	13.31	4.42
	3	2.2	17.24	5.49	16.27	5.12	15.30	4.75	14.76	4.57	14.28	4.39	13.31	4.04
	5	4.1	17.24	5.17	16.27	4.81	15.30	4.47	14.76	4.30	14.28	4.14	13.31	3.81
	7	6	17.24	4.86	16.27	4.53	15.30	4.21	14.76	4.06	14.28	3.90	13.31	3.60
9	7.9	17.24	4.58	16.27	4.27	15.30	3.97	14.76	3.83	14.28	3.69	13.31	3.40	
11	9.8	17.24	4.31	16.27	4.03	15.30	3.75	14.76	3.62	14.28	3.48	13.31	3.22	
13	11.8	17.24	4.06	16.27	3.80	15.30	3.54	14.76	3.41	14.28	3.29	13.31	3.04	
15	13.7	17.24	3.83	16.27	3.59	15.30	3.35	14.76	3.23	14.28	3.12	13.31	2.89	
80%	-19.8	-20	10.74	4.98	10.69	5.12	10.69	5.27	10.69	5.35	10.63	5.42	10.63	5.56
	-18.8	-19	10.90	5.02	10.90	5.17	10.85	5.31	10.85	5.39	10.85	5.46	10.79	5.61
	-16.7	-17	11.33	5.13	11.28	5.27	11.28	5.41	11.28	5.48	11.28	5.54	11.23	5.68
	-13.7	-15	11.82	5.23	11.77	5.36	11.77	5.50	11.77	5.56	11.71	5.63	11.71	5.77
	-11.8	-13	12.31	5.34	12.31	5.47	12.25	5.59	12.25	5.66	12.25	5.72	11.87	5.57
	-9.8	-11	12.90	5.45	12.90	5.57	12.84	5.69	12.84	5.75	12.74	5.74	11.87	5.26
	-9.5	-10	13.22	5.50	13.17	5.62	13.17	5.74	13.17	5.80	12.74	5.57	11.87	5.10
	-8.5	-9.1	13.49	5.55	12.54	5.67	13.44	5.78	13.17	5.65	12.74	5.42	11.87	4.97
	-7	-7.6	13.98	5.63	13.98	5.74	13.60	5.62	13.17	5.40	12.74	5.18	11.87	4.75
	-5	-5.6	14.73	5.73	14.46	5.70	13.60	5.28	13.17	5.07	12.74	4.87	11.87	4.47
	-3	-3.7	15.33	5.76	14.46	5.36	13.60	4.97	13.17	4.78	12.74	4.59	11.87	4.22
	0	-0.7	15.33	5.23	14.46	4.87	13.60	4.52	13.17	4.35	12.74	4.18	11.87	3.85
	3	2.2	15.33	4.76	14.46	4.44	13.60	4.13	13.17	3.98	12.74	3.83	11.87	3.53
	5	4.1	15.33	4.49	14.46	4.19	13.60	3.90	13.17	3.75	12.74	3.62	11.87	3.34
	7	6	15.33	4.22	14.46	3.95	13.60	3.68	13.17	3.55	12.74	3.42	11.87	3.16
9	7.9	15.33	3.99	14.46	3.73	13.60	3.47	13.17	3.35	12.74	3.23	11.87	2.99	
11	9.8	15.33	3.77	14.46	3.52	13.60	3.29	13.17	3.17	12.74	3.06	11.87	2.84	
13	11.8	15.33	3.55	14.46	3.33	13.60	3.11	13.17	3.00	12.74	2.89	11.87	2.68	
15	13.7	15.33	3.36	14.46	3.15	13.60	2.95	13.17	2.84	12.74	2.74	11.87	2.55	
70%	-19.8	-20	10.66	5.30	10.61	5.43	10.61	5.56	10.61	5.62	10.61	5.69	10.34	5.62
	-18.8	-19	10.82	5.35	10.82	5.47	10.77	5.59	10.77	5.66	10.77	5.72	10.34	5.51
	-16.7	-17	11.25	5.43	11.25	5.56	11.20	5.67	11.20	5.74	11.09	5.11	10.34	5.25
	-13.7	-15	11.74	5.53	11.68	5.64	11.68	5.76	11.47	5.67	11.09	5.44	10.34	4.99
	-11.8	-13	12.22	5.62	12.22	5.73	11.90	5.59	11.47	5.38	11.09	5.16	10.34	4.73
	-9.8	-11	12.82	5.71	12.65	5.71	11.90	5.28	11.47	5.08	11.09	4.88	10.34	4.48
	-9.5	-10	13.14	5.76	12.65	5.54	11.90	5.13	11.47	4.93	11.09	4.74	10.34	4.35
	-8.5	-9.1	13.41	5.79	12.65	5.39	11.90	4.99	11.47	4.80	11.09	4.61	10.34	4.24
-7	-7.6	13.41	5.53	12.65	5.15	11.90	4.78	11.47	4.60	11.09	4.42	10.34	4.06	
-5	-5.6	13.41	5.20	12.65	4.84	11.90	4.50	11.47	4.32	11.09	5.11	10.34	3.83	

	-3	-3.7	13.41	4.89	12.65	4.57	11.90	4.24	11.47	4.08	11.09	3.93	10.34	3.62
	0	-0.7	13.41	4.45	12.65	4.16	11.90	3.87	11.47	3.73	11.09	3.59	10.34	3.32
	3	2.2	13.41	4.07	12.65	3.81	11.90	3.55	11.47	3.42	11.09	3.30	10.34	3.05
	5	4.1	13.41	3.84	12.65	3.59	11.90	3.36	11.47	3.23	11.09	3.12	10.34	2.89
	7	6	13.41	3.63	12.65	3.40	11.90	3.17	11.47	3.06	11.09	2.95	10.34	2.74
	9	7.9	13.41	3.43	12.65	3.22	11.90	3.00	11.47	2.90	11.09	2.80	10.34	2.60
	11	9.8	13.41	3.25	12.65	3.04	11.90	2.85	11.47	2.75	11.09	2.66	10.34	2.47
	13	11.8	13.41	3.07	12.65	2.88	11.90	2.69	11.47	2.61	11.09	2.52	10.34	2.34
	15	13.7	13.41	2.91	12.65	2.73	11.90	2.56	11.47	2.48	11.09	2.39	10.34	2.23
60%	-19.8	-20	10.63	5.62	10.58	5.73	10.20	5.51	9.88	5.30	9.55	5.09	8.90	4.66
	-18.8	-19	10.79	5.66	10.79	5.77	10.20	5.40	9.88	5.18	9.55	4.97	8.90	4.57
	-16.7	-17	11.23	5.74	10.85	5.56	10.20	5.15	9.88	4.95	9.55	4.75	8.90	4.37
	-13.7	-15	11.50	5.67	10.85	5.28	10.20	4.89	9.88	4.71	9.55	4.52	8.90	4.16
	-11.8	-13	11.50	5.37	10.85	5.00	10.20	4.64	9.88	4.47	9.55	4.29	8.90	3.97
	-9.8	-11	11.50	5.07	10.85	4.73	10.20	4.39	9.88	4.22	9.55	4.06	8.90	3.75
	-9.5	-10	11.50	4.93	10.85	4.60	10.20	4.27	9.88	4.11	9.55	3.95	8.90	3.64
	-8.5	-9.1	11.50	4.80	10.85	4.48	10.20	4.16	9.88	4.01	9.55	3.85	8.90	3.56
	-7	-7.6	11.50	4.59	10.85	4.29	10.20	3.98	9.88	3.84	9.55	3.69	8.90	3.41
	-5	-5.6	11.50	4.32	10.85	4.04	10.20	3.76	9.88	3.62	9.55	3.49	8.90	3.23
	-3	-3.7	11.50	4.08	10.85	3.82	10.20	3.56	9.88	3.43	9.55	3.30	8.90	3.05
	0	-0.7	11.50	3.73	10.85	3.49	10.20	3.26	9.88	3.15	9.55	3.03	8.90	2.81
	3	2.2	11.50	3.42	10.85	3.21	10.20	3.00	9.88	2.89	9.55	2.79	8.90	2.59
	5	4.1	11.50	3.23	10.85	3.04	10.20	2.84	9.88	2.74	9.55	2.65	8.90	2.46
	7	6	11.50	3.06	10.85	2.87	10.20	2.69	9.88	2.60	9.55	2.51	8.90	2.34
9	7.9	11.50	2.90	10.85	2.73	10.20	2.55	9.88	2.47	9.55	2.38	8.90	2.22	
11	9.8	11.50	2.75	10.85	2.59	10.20	2.43	9.88	2.35	9.55	2.27	8.90	2.12	
13	11.8	11.50	2.60	10.85	2.45	10.20	2.30	9.88	2.23	9.55	2.16	8.90	2.01	
15	13.7	11.50	2.48	10.85	2.33	10.20	2.19	9.88	2.12	9.55	2.06	8.90	1.92	
50%	-19.8	-20	9.58	5.12	9.04	4.76	8.50	4.42	8.18	4.26	7.91	4.09	7.37	3.77
	-18.8	-19	9.58	5.01	9.04	4.66	8.50	4.34	8.18	4.17	7.91	4.01	7.37	3.70
	-16.7	-17	9.58	4.78	9.04	4.45	8.50	4.14	8.18	3.99	7.91	3.84	7.37	3.54
	-13.7	-15	9.58	4.55	9.04	4.24	8.50	3.95	8.18	3.80	7.91	3.66	7.37	3.38
	-11.8	-13	9.58	4.32	9.04	4.03	8.50	3.75	8.18	3.62	7.91	3.48	7.37	3.22
	-9.8	-11	9.58	4.09	9.04	3.82	8.50	3.56	8.18	3.43	7.91	3.31	7.37	3.06
	-9.5	-10	9.58	3.98	9.04	3.72	8.50	3.47	8.18	3.34	7.91	3.22	7.37	2.98
	-8.5	-9.1	9.58	3.88	9.04	3.63	8.50	3.38	8.18	3.26	7.91	3.15	7.37	2.91
	-7	-7.6	9.58	3.72	9.04	3.48	8.50	3.25	8.18	3.13	7.91	3.02	7.37	2.80
	-5	-5.6	9.58	3.51	9.04	3.29	8.50	3.07	8.18	2.97	7.91	2.86	7.37	2.65
	-3	-3.7	9.58	3.32	9.04	3.12	8.50	2.91	8.18	2.81	7.91	2.71	7.37	2.52
	0	-0.7	9.58	3.05	9.04	2.86	8.50	2.68	8.18	2.59	7.91	2.50	7.37	2.33
	3	2.2	9.58	2.81	9.04	2.64	8.50	2.47	8.18	2.39	7.91	2.31	7.37	2.16
	5	4.1	9.58	2.66	9.04	2.50	8.50	2.35	8.18	2.27	7.91	2.20	7.37	2.05
	7	6	9.58	2.53	9.04	2.38	8.50	2.24	8.18	2.16	7.91	2.09	7.37	1.96
9	7.9	9.58	2.40	9.04	2.26	8.50	2.12	8.18	2.06	7.91	1.99	7.37	1.86	
11	9.8	9.58	2.28	9.04	2.15	8.50	2.03	8.18	1.96	7.91	1.90	7.37	1.78	
13	11.8	9.58	2.17	9.04	2.04	8.50	1.93	8.18	1.87	7.91	1.81	7.37	1.70	
15	13.7	9.58	2.06	9.04	1.95	8.50	1.84	8.18	1.78	7.91	1.73	7.37	1.62	

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.



MDV-V180W/DN1

Cooling

Combination (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(°C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	15.37	2.17	18.31	2.64	21.25	2.83	22.06	2.95	23.12	3.03	23.69	3.30	24.28	3.32
	-2	15.37	2.17	18.31	2.70	21.25	2.83	22.06	2.97	23.12	3.03	23.69	3.34	24.28	3.35
	0	15.37	2.20	18.31	2.74	21.25	2.94	22.06	3.13	23.12	3.21	23.69	3.38	24.28	3.40
	2	15.37	2.24	18.31	2.75	21.25	3.04	22.06	3.31	23.12	3.25	23.69	3.41	24.28	3.45
	4	15.37	2.29	18.31	2.80	21.25	3.14	22.06	3.32	23.12	3.29	23.69	3.40	24.28	3.51
	6	15.37	2.34	18.31	2.86	21.25	3.26	22.06	3.35	22.87	3.39	23.40	3.40	24.02	3.54
	8	15.37	2.39	18.31	2.92	21.25	3.42	22.06	3.51	22.58	3.50	23.14	3.90	23.71	3.57
	10	15.37	2.44	18.31	2.99	21.25	3.55	22.06	3.63	22.31	4.04	22.87	4.06	23.44	3.68
	12	15.37	2.49	18.31	3.04	21.25	3.62	21.75	4.03	22.06	4.06	22.56	4.07	23.12	3.70
	14	15.37	2.54	18.31	3.10	21.19	4.05	21.50	4.06	21.75	4.08	22.31	4.09	22.87	3.78
	16	15.37	2.58	18.31	3.16	20.94	4.06	21.19	4.08	21.44	4.10	22.00	4.12	22.56	3.84
	18	15.37	2.63	18.31	3.23	20.62	3.79	20.87	3.81	21.19	3.83	21.75	3.86	22.31	3.90
	20	15.37	2.69	18.31	3.44	20.31	3.97	20.62	3.99	20.87	4.01	21.44	4.05	22.00	4.09
	21	15.37	2.76	18.31	3.56	20.19	4.06	20.50	4.09	20.75	4.11	21.31	4.15	21.87	4.19
	23	15.37	2.96	18.31	3.81	19.94	4.25	20.19	4.27	20.44	4.29	21.00	4.34	21.56	4.38
	25	15.37	3.16	18.31	4.09	19.62	4.44	19.87	4.46	20.19	4.49	20.75	4.53	21.31	4.57
	27	15.37	3.37	18.31	4.37	19.37	4.62	19.62	4.65	19.87	4.67	20.44	4.72	21.00	4.77
	29	15.37	3.60	18.31	4.67	19.06	4.81	19.31	4.84	19.62	4.86	20.19	4.91	20.75	4.96
	31	15.37	3.84	18.25	4.94	18.75	5.00	19.06	5.03	19.31	5.05	19.87	5.11	20.44	5.16
	33	15.37	4.09	17.94	5.13	18.50	5.19	18.75	5.21	19.06	5.24	19.62	5.30	20.12	5.36
35	15.37	4.36	17.62	5.31	18.19	5.38	18.50	5.41	18.75	5.44	19.31	5.50	19.87	5.56	
37	15.37	4.64	17.37	5.51	17.94	5.57	18.19	5.60	18.50	5.64	19.00	5.70	19.56	5.77	
39	15.37	4.94	17.06	5.56	17.62	5.76	17.94	5.79	18.19	5.83	18.75	5.89	19.31	5.96	
41	15.37	5.20	16.89	5.62	17.44	5.81	17.75	5.85	18.00	5.88	18.56	5.91	18.57	6.02	
43	15.37	5.33	16.76	5.65	17.35	5.83	17.66	5.87	17.82	5.89	18.23	5.92	18.35	6.03	
45	15.37	5.60	16.66	5.70	17.16	5.88	17.47	5.91	17.56	5.92	17.73	5.94	17.99	6.15	
48	15.37	5.80	17.25	5.88	18.71	5.94	19.06	5.97	19.21	5.99	19.13	6.04	19.47	6.06	
120%	-5	14.19	2.09	16.87	2.53	19.63	3.00	21.00	3.27	22.00	3.41	22.50	3.52	23.00	3.61
	-2	14.19	2.11	16.87	2.56	19.63	3.03	21.00	3.29	22.00	3.45	22.50	3.55	23.00	3.62
	0	14.19	2.13	16.87	2.58	19.63	3.06	21.00	3.30	22.00	3.48	22.50	3.57	23.00	3.63
	2	14.19	2.14	16.87	2.61	19.63	3.08	21.00	3.33	22.00	3.49	22.50	3.59	23.00	3.64
	4	14.19	2.16	16.87	2.64	19.63	3.13	21.00	3.36	22.00	3.54	22.50	3.60	23.00	3.65
	6	14.19	2.18	16.87	2.66	19.63	3.16	21.00	3.39	22.00	3.58	22.50	3.63	23.00	3.66
	8	14.19	2.20	16.87	2.69	19.63	3.21	21.00	3.44	22.00	3.61	22.50	3.64	23.00	3.68
	10	14.19	2.23	16.87	2.72	19.63	3.24	21.00	3.50	22.00	3.62	22.50	3.65	23.00	3.69
	12	14.19	2.27	16.87	2.77	19.63	3.30	21.00	3.56	21.69	3.63	22.19	3.63	22.69	3.72
	14	14.19	2.31	16.87	2.83	19.63	3.36	21.00	3.64	21.37	3.65	21.94	3.69	22.44	3.76
	16	14.19	2.36	16.87	2.89	19.63	3.43	20.87	4.10	21.12	3.71	21.62	3.75	22.12	3.82
	18	14.19	2.40	16.87	2.94	19.63	3.54	20.56	3.79	20.81	3.80	21.31	3.84	21.87	3.87
	20	14.19	2.45	16.87	3.06	19.63	3.81	20.31	3.97	20.56	3.99	21.06	4.02	21.56	4.06
	21	14.19	2.47	16.87	3.16	19.63	3.95	20.12	4.06	20.37	4.08	20.94	4.11	21.44	4.16
	23	14.19	2.64	16.87	3.39	19.63	4.23	19.88	4.24	20.12	4.26	20.62	4.31	21.12	4.34
	25	14.19	2.82	16.87	3.63	19.31	4.41	19.56	4.43	19.81	4.45	20.37	4.49	20.87	4.54
	27	14.19	3.01	16.87	3.88	19.06	4.59	19.31	4.62	19.56	4.64	20.06	4.69	20.56	4.73
29	14.19	3.21	16.87	4.14	18.75	4.78	19.00	4.81	19.25	4.83	19.75	4.88	20.31	4.92	
31	14.19	3.43	16.87	4.42	18.44	4.97	18.75	4.99	19.00	5.02	19.50	5.07	20.00	5.12	
33	14.19	3.65	16.87	4.71	18.19	5.16	18.44	5.19	18.69	5.21	19.19	5.26	19.69	5.31	
35	14.19	3.89	16.87	5.03	17.87	5.34	18.12	5.37	18.44	5.40	18.94	5.46	19.44	5.51	
37	14.19	4.14	16.87	5.36	17.62	5.54	17.87	5.56	18.12	5.59	18.62	5.65	19.13	5.71	

	39	14.19	4.40	16.81	5.66	17.31	5.72	17.56	5.76	17.81	5.79	18.37	5.85	18.88	5.91
	41	14.19	4.52	16.68	5.70	17.18	5.76	17.43	5.80	17.68	5.83	18.24	5.87	18.33	5.95
	43	14.19	4.59	16.59	5.74	17.04	5.80	17.29	5.82	17.54	5.85	17.92	5.88	18.05	6.07
	45	14.19	4.64	16.50	5.79	16.88	5.85	17.11	5.87	17.39	5.89	17.56	5.90	17.87	6.20
	48	16.44	4.68	18.95	5.86	19.30	5.90	19.51	5.92	19.92	5.94	20.03	5.92	20.43	6.28
110%	-5	13.00	1.83	15.50	2.27	18.00	2.71	19.25	2.91	20.50	3.13	22.06	3.26	22.56	3.36
	-2	13.00	1.86	15.50	2.30	18.00	2.74	19.25	2.94	20.50	3.16	22.06	3.29	22.56	3.37
	0	13.00	1.88	15.50	2.32	18.00	2.76	19.25	2.96	20.50	3.19	22.06	3.32	22.56	3.42
	2	13.00	1.92	15.50	2.34	18.00	2.80	19.25	2.99	20.50	3.23	22.06	3.37	22.56	3.46
	4	13.00	1.96	15.50	2.37	18.00	2.83	19.25	3.03	20.50	3.28	22.06	3.42	22.56	3.49
	6	13.00	1.98	15.50	2.39	18.00	2.86	19.25	3.08	20.50	3.31	22.06	3.45	22.56	3.54
	8	13.00	2.00	15.50	2.43	18.00	2.89	19.25	3.11	20.50	3.35	22.06	3.47	22.56	3.58
	10	13.00	2.02	15.50	2.46	18.00	2.93	19.25	3.16	20.50	3.41	22.06	3.50	22.56	3.61
	12	13.00	2.06	15.50	2.51	18.00	2.99	19.25	3.23	20.50	3.47	21.81	3.55	22.25	3.66
	14	13.00	2.10	15.50	2.56	18.00	3.04	19.25	3.29	20.50	3.54	21.50	3.58	22.00	3.68
	16	13.00	2.14	15.50	2.61	18.00	3.10	19.25	3.35	20.50	3.61	21.25	3.62	21.69	3.72
	18	13.00	2.18	15.50	2.66	18.00	3.16	19.25	3.44	20.50	3.78	20.94	3.81	21.44	3.84
	20	13.00	2.22	15.50	2.71	18.00	3.35	19.25	3.70	20.19	3.96	20.69	3.99	21.13	4.03
	21	13.00	2.24	15.50	2.79	18.00	3.47	19.25	3.84	20.06	4.06	20.50	4.09	21.00	4.12
	23	13.00	2.35	15.50	2.99	18.00	3.72	19.25	4.11	19.75	4.24	20.25	4.28	20.69	4.31
	25	13.00	2.51	15.50	3.20	18.00	3.98	19.25	4.41	19.50	4.42	19.94	4.46	20.44	4.50
	27	13.00	2.67	15.50	3.42	18.00	4.26	18.94	4.59	19.19	4.61	19.69	4.65	20.13	4.69
	29	13.00	2.85	15.50	3.65	18.00	4.55	18.69	4.78	18.94	4.80	19.38	4.84	19.88	4.89
	31	13.00	3.04	15.50	3.89	18.00	4.86	18.38	4.96	18.63	4.99	19.13	5.03	19.56	5.08
	33	13.00	3.23	15.50	4.15	17.88	5.12	18.12	5.15	18.38	5.17	18.81	5.22	19.31	5.27
	35	13.00	3.44	15.50	4.42	17.56	5.31	17.81	5.34	18.06	5.36	18.50	5.41	19.00	5.46
	37	13.00	3.66	15.50	4.71	17.31	5.50	17.56	5.52	17.75	5.55	18.25	5.61	18.69	5.66
	39	13.00	3.89	15.50	5.01	17.00	5.69	17.25	5.71	17.50	5.74	17.94	5.80	18.44	5.86
	41	13.00	3.93	15.50	5.05	16.87	5.73	17.12	5.75	17.37	5.78	17.71	5.84	17.88	5.90
43	13.00	3.97	15.50	5.12	16.73	5.77	16.98	5.79	17.23	5.82	17.55	5.86	17.61	6.02	
45	13.00	4.09	15.50	5.15	16.56	5.82	16.81	5.86	17.08	5.88	17.37	6.02	17.44	6.16	
48	14.24	4.24	16.98	5.59	17.88	5.86	18.11	5.91	18.49	5.94	18.71	6.04	18.86	6.22	
100%	-5	11.81	1.66	14.06	2.00	16.37	2.39	17.50	2.55	18.63	2.77	20.94	3.16	22.13	3.30
	-2	11.81	1.68	14.06	2.03	16.37	2.41	17.50	2.60	18.63	2.81	20.94	3.20	22.13	3.32
	0	11.81	1.70	14.06	2.05	16.37	2.44	17.50	2.63	18.63	2.84	20.94	3.25	22.13	3.35
	2	11.81	1.74	14.06	2.08	16.37	2.46	17.50	2.67	18.63	2.87	20.94	3.30	22.13	3.41
	4	11.81	1.75	14.06	2.10	16.37	2.50	17.50	2.71	18.63	2.90	20.94	3.33	22.13	3.45
	6	11.81	1.77	14.06	2.14	16.37	2.53	17.50	2.76	18.63	2.95	20.94	3.38	22.13	3.50
	8	11.81	1.81	14.06	2.17	16.37	2.58	17.50	2.79	18.63	2.99	20.94	3.43	22.13	3.56
	10	11.81	1.83	14.06	2.21	16.37	2.62	17.50	2.84	18.63	3.05	20.94	3.49	22.13	3.61
	12	11.81	1.86	14.06	2.26	16.37	2.67	17.50	2.89	18.63	3.11	20.94	3.55	21.81	3.64
	14	11.81	1.89	14.06	2.30	16.37	2.72	17.50	2.94	18.63	3.16	20.94	3.62	21.56	3.68
	16	11.81	1.93	14.06	2.34	16.37	2.78	17.50	3.00	18.63	3.23	20.81	3.66	21.25	3.72
	18	11.81	1.96	14.06	2.39	16.37	2.83	17.50	3.06	18.63	3.29	20.56	3.79	21.00	3.81
	20	11.81	2.00	14.06	2.44	16.37	2.91	17.50	3.21	18.63	3.53	20.25	3.96	20.69	4.00
	21	11.81	2.02	14.06	2.46	16.37	3.02	17.50	3.33	18.63	3.65	20.13	4.06	20.56	4.09
	23	11.81	2.07	14.06	2.62	16.37	3.24	17.50	3.56	18.63	3.91	19.87	4.24	20.25	4.28
	25	11.81	2.21	14.06	2.80	16.37	3.46	17.50	3.82	18.63	4.19	19.56	4.43	20.00	4.46
	27	11.81	2.36	14.06	2.99	16.37	3.70	17.50	4.09	18.63	4.49	19.25	4.61	19.69	4.66
	29	11.81	2.51	14.06	3.19	16.37	3.95	17.50	4.36	18.56	4.76	19.00	4.81	19.44	4.84
	31	11.81	2.67	14.06	3.40	16.37	4.21	17.50	4.66	18.31	4.95	18.69	4.99	19.12	5.04
	33	11.81	2.84	14.06	3.62	16.37	4.49	17.50	4.97	18.00	5.14	18.44	5.18	18.88	5.23
35	11.81	3.01	14.06	3.85	16.37	4.79	17.50	5.30	17.69	5.32	18.12	5.37	18.56	5.41	
37	11.81	3.21	14.06	4.10	16.37	5.11	17.19	5.49	17.44	5.51	17.87	5.56	18.25	5.61	
39	11.81	3.41	14.06	4.36	16.37	5.44	16.94	5.67	17.12	5.70	17.56	5.75	18.00	5.81	
41	11.81	3.57	14.06	4.52	16.37	5.63	16.67	5.71	16.99	5.79	17.26	5.89	17.74	5.93	

	43	11.81	3.72	14.06	4.68	16.37	5.74	16.41	5.78	16.87	5.84	17.36	5.92	17.43	5.99
	45	11.81	3.94	14.06	4.89	16.37	5.84	16.06	5.86	16.78	5.95	17.21	6.01	17.08	6.07
	48	12.23	4.11	14.57	5.06	16.96	5.85	15.95	5.92	17.35	6.06	16.74	6.08	17.30	6.13
90%	-5	10.62	1.47	12.69	1.77	14.75	2.08	15.75	2.27	16.75	2.42	18.81	2.78	20.88	3.18
	-2	10.62	1.49	12.69	1.78	14.75	2.11	15.75	2.30	16.75	2.45	18.81	2.81	20.88	3.22
	0	10.62	1.51	12.69	1.81	14.75	2.14	15.75	2.33	16.75	2.48	18.81	2.84	20.88	3.24
	2	10.62	1.53	12.69	1.83	14.75	2.16	15.75	2.37	16.75	2.52	18.81	2.90	20.88	3.29
	4	10.62	1.55	12.69	1.86	14.75	2.20	15.75	2.40	16.75	2.55	18.81	2.94	20.88	3.34
	6	10.62	1.57	12.69	1.89	14.75	2.24	15.75	2.45	16.75	2.59	18.81	2.99	20.88	3.39
	8	10.62	1.61	12.69	1.93	14.75	2.29	15.75	2.48	16.75	2.64	18.81	3.04	20.88	3.42
	10	10.62	1.64	12.69	1.97	14.75	2.33	15.75	2.51	16.75	2.70	18.81	3.08	20.88	3.48
	12	10.62	1.66	12.69	2.01	14.75	2.37	15.75	2.56	16.75	2.75	18.81	3.14	20.88	3.54
	14	10.62	1.69	12.69	2.04	14.75	2.41	15.75	2.61	16.75	2.80	18.81	3.20	20.88	3.61
	16	10.62	1.72	12.69	2.08	14.75	2.46	15.75	2.66	16.75	2.86	18.81	3.26	20.81	3.67
	18	10.62	1.75	12.69	2.12	14.75	2.51	15.75	2.71	16.75	2.91	18.81	3.33	20.56	3.79
	20	10.62	1.79	12.69	2.17	14.75	2.56	15.75	2.76	16.75	3.02	18.81	3.58	20.25	3.96
	21	10.62	1.80	12.69	2.19	14.75	2.60	15.75	2.86	16.75	3.13	18.81	3.71	20.13	4.06
	23	10.62	1.84	12.69	2.27	14.75	2.79	15.75	3.06	16.75	3.36	18.81	3.98	19.81	4.24
	25	10.62	1.94	12.69	2.43	14.75	2.98	15.75	3.28	16.75	3.59	18.81	4.26	19.56	4.43
	27	10.62	2.06	12.69	2.59	14.75	3.18	15.75	3.50	16.75	3.84	18.81	4.56	19.25	4.61
	29	10.62	2.19	12.69	2.76	14.75	3.39	15.75	3.74	16.75	4.10	18.62	4.76	19.00	4.80
	31	10.62	2.33	12.69	2.94	14.75	3.61	15.75	3.99	16.75	4.37	18.31	4.95	18.69	4.99
	33	10.62	2.47	12.69	3.12	14.75	3.86	15.75	4.25	16.75	4.66	18.06	5.14	18.44	5.18
	35	10.62	2.63	12.69	3.32	14.75	4.11	15.75	4.53	16.75	4.97	17.75	5.33	18.13	5.37
	37	10.62	2.79	12.69	3.53	14.75	4.37	15.75	4.82	16.75	5.30	17.44	5.51	17.87	5.56
	39	10.62	2.96	12.69	3.76	14.75	4.65	15.75	5.14	16.75	5.64	17.19	5.71	17.56	5.75
	41	10.62	3.06	12.69	3.93	14.75	4.82	15.75	5.27	16.75	5.68	17.07	5.85	17.44	5.89
43	10.62	3.21	12.69	4.10	14.75	4.99	15.75	5.41	16.75	5.80	16.98	5.93	17.29	5.98	
45	10.62	3.41	12.69	4.30	14.75	5.19	15.75	5.59	16.75	5.96	16.89	5.99	17.03	6.06	
48	10.62	3.60	12.69	4.50	14.75	5.39	15.75	5.66	16.75	6.01	18.60	6.07	18.41	6.14	
80%	-5	9.44	1.30	11.25	1.53	13.06	1.82	14.00	1.93	14.94	2.08	16.75	2.40	18.56	2.74
	-2	9.44	1.32	11.25	1.55	13.06	1.83	14.00	1.96	14.94	2.10	16.75	2.43	18.56	2.77
	0	9.44	1.34	11.25	1.57	13.06	1.85	14.00	1.98	14.94	2.14	16.75	2.46	18.56	2.81
	2	9.44	1.37	11.25	1.59	13.06	1.88	14.00	2.02	14.94	2.17	16.75	2.51	18.56	2.86
	4	9.44	1.39	11.25	1.62	13.06	1.92	14.00	2.07	14.94	2.21	16.75	2.56	18.56	2.90
	6	9.44	1.41	11.25	1.66	13.06	1.95	14.00	2.11	14.94	2.25	16.75	2.59	18.56	2.95
	8	9.44	1.44	11.25	1.70	13.06	1.99	14.00	2.15	14.94	2.30	16.75	2.63	18.56	3.01
	10	9.44	1.45	11.25	1.74	13.06	2.04	14.00	2.20	14.94	2.36	16.75	2.69	18.56	3.04
	12	9.44	1.47	11.25	1.76	13.06	2.08	14.00	2.24	14.94	2.41	16.75	2.74	18.56	3.09
	14	9.44	1.50	11.25	1.80	13.06	2.11	14.00	2.28	14.94	2.45	16.75	2.79	18.56	3.15
	16	9.44	1.52	11.25	1.83	13.06	2.16	14.00	2.32	14.94	2.49	16.75	2.85	18.56	3.21
	18	9.44	1.55	11.25	1.86	13.06	2.20	14.00	2.37	14.94	2.54	16.75	2.91	18.56	3.27
	20	9.44	1.58	11.25	1.90	13.06	2.24	14.00	2.41	14.94	2.59	16.75	3.01	18.56	3.50
	21	9.44	1.59	11.25	1.91	13.06	2.26	14.00	2.44	14.94	2.65	16.75	3.12	18.56	3.63
	23	9.44	1.62	11.25	1.96	13.06	2.37	14.00	2.60	14.94	2.84	16.75	3.34	18.56	3.89
	25	9.44	1.67	11.25	2.08	13.06	2.54	14.00	2.78	14.94	3.03	16.75	3.58	18.56	4.16
	27	9.44	1.78	11.25	2.21	13.06	2.70	14.00	2.96	14.94	3.24	16.75	3.82	18.56	4.46
	29	9.44	1.89	11.25	2.36	13.06	2.88	14.00	3.16	14.94	3.46	16.75	4.08	18.56	4.76
	31	9.44	2.01	11.25	2.51	13.06	3.06	14.00	3.36	14.94	3.69	16.75	4.36	18.25	4.95
	33	9.44	2.14	11.25	2.66	13.06	3.26	14.00	3.59	14.94	3.92	16.75	4.64	18.00	5.14
	35	9.44	2.26	11.25	2.84	13.06	3.47	14.00	3.81	14.94	4.18	16.75	4.95	17.69	5.32
	37	9.44	2.40	11.25	3.01	13.06	3.69	14.00	4.06	14.94	4.45	16.75	5.28	17.44	5.51
	39	9.44	2.54	11.25	3.21	13.06	3.93	14.00	4.32	14.94	4.74	16.75	5.62	17.12	5.70
	41	9.44	2.60	11.25	3.24	13.06	3.99	14.00	4.44	14.94	4.82	16.75	5.76	17.02	5.80
43	9.44	2.68	11.25	3.26	13.06	4.04	14.00	4.51	14.94	4.89	16.75	5.83	16.91	5.86	
45	9.44	2.75	11.25	3.30	13.06	4.12	14.00	4.61	14.94	4.97	16.75	5.90	16.70	5.96	

	48	9.44	2.84	11.25	3.33	14.69	4.19	14.00	4.67	14.94	5.02	16.75	5.95	18.64	6.04
70%	-5	8.25	1.16	9.87	1.36	11.44	1.54	12.25	1.65	13.06	1.76	14.63	2.01	16.25	2.32
	-2	8.25	1.17	9.87	1.36	11.44	1.55	12.25	1.68	13.06	1.79	14.63	2.05	16.25	2.35
	0	8.25	1.17	9.87	1.38	11.44	1.58	12.25	1.71	13.06	1.82	14.63	2.09	16.25	2.38
	2	8.25	1.18	9.87	1.39	11.44	1.61	12.25	1.74	13.06	1.86	14.63	2.13	16.25	2.42
	4	8.25	1.20	9.87	1.42	11.44	1.64	12.25	1.78	13.06	1.90	14.63	2.17	16.25	2.47
	6	8.25	1.21	9.87	1.45	11.44	1.68	12.25	1.83	13.06	1.94	14.63	2.20	16.25	2.52
	8	8.25	1.24	9.87	1.49	11.44	1.72	12.25	1.86	13.06	1.98	14.63	2.27	16.25	2.57
	10	8.25	1.26	9.87	1.51	11.44	1.76	12.25	1.90	13.06	2.04	14.63	2.31	16.25	2.60
	12	8.25	1.29	9.87	1.54	11.44	1.80	12.25	1.94	13.06	2.07	14.63	2.36	16.25	2.65
	14	8.25	1.31	9.87	1.56	11.44	1.83	12.25	1.96	13.06	2.11	14.63	2.40	16.25	2.70
	16	8.25	1.34	9.87	1.59	11.44	1.86	12.25	2.01	13.06	2.15	14.63	2.44	16.25	2.75
	18	8.25	1.36	9.87	1.62	11.44	1.90	12.25	2.04	13.06	2.19	14.63	2.49	16.25	2.81
	20	8.25	1.38	9.87	1.65	11.44	1.94	12.25	2.08	13.06	2.23	14.63	2.54	16.25	2.89
	21	8.25	1.39	9.87	1.66	11.44	1.95	12.25	2.10	13.06	2.25	14.63	2.58	16.25	2.99
	23	8.25	1.41	9.87	1.69	11.44	1.99	12.25	2.17	13.06	2.36	14.63	2.76	16.25	3.20
	25	8.25	1.44	9.87	1.76	11.44	2.12	12.25	2.32	13.06	2.52	14.63	2.96	16.25	3.42
	27	8.25	1.53	9.87	1.88	11.44	2.26	12.25	2.47	13.06	2.69	14.63	3.16	16.25	3.66
	29	8.25	1.62	9.87	1.99	11.44	2.41	12.25	2.64	13.06	2.86	14.63	3.36	16.25	3.91
	31	8.25	1.71	9.87	2.11	11.44	2.56	12.25	2.80	13.06	3.05	14.63	3.59	16.25	4.16
	33	8.25	1.82	9.87	2.25	11.44	2.73	12.25	2.98	13.06	3.25	14.63	3.82	16.25	4.44
35	8.25	1.93	9.87	2.39	11.44	2.89	12.25	3.17	13.06	3.46	14.63	4.07	16.25	4.74	
37	8.25	2.04	9.87	2.53	11.44	3.08	12.25	3.36	13.06	3.68	14.63	4.34	16.25	5.04	
39	8.25	2.16	9.87	2.68	11.44	3.26	12.25	3.58	13.06	3.91	14.63	4.61	16.25	5.37	
41	8.25	2.25	9.87	2.77	11.44	3.36	12.25	3.70	13.06	4.03	14.63	4.80	16.25	5.61	
43	8.25	2.44	9.87	2.96	11.44	3.50	12.25	3.90	13.06	4.15	14.63	4.97	16.25	5.78	
45	8.25	2.49	9.87	3.03	11.44	3.57	12.25	3.96	13.06	4.35	14.63	5.24	16.25	6.01	
48	8.25	2.55	9.87	3.06	11.44	3.61	12.25	4.02	13.06	4.47	14.63	5.48	16.25	6.15	
60%	-5	7.06	0.99	8.44	1.15	9.81	1.33	10.50	1.42	11.19	1.54	12.56	1.72	13.94	1.98
	-2	7.06	0.99	8.44	1.16	9.81	1.36	10.50	1.44	11.19	1.55	12.56	1.75	13.94	1.99
	0	7.06	1.01	8.44	1.18	9.81	1.38	10.50	1.46	11.19	1.58	12.56	1.78	13.94	2.02
	2	7.06	1.03	8.44	1.20	9.81	1.40	10.50	1.49	11.19	1.60	12.56	1.81	13.94	2.04
	4	7.06	1.05	8.44	1.23	9.81	1.43	10.50	1.51	11.19	1.62	12.56	1.84	13.94	2.07
	6	7.06	1.07	8.44	1.25	9.81	1.46	10.50	1.54	11.19	1.65	12.56	1.88	13.94	2.12
	8	7.06	1.09	8.44	1.27	9.81	1.48	10.50	1.57	11.19	1.69	12.56	1.91	13.94	2.15
	10	7.06	1.11	8.44	1.30	9.81	1.51	10.50	1.61	11.19	1.72	12.56	1.95	13.94	2.19
	12	7.06	1.13	8.44	1.32	9.81	1.54	10.50	1.64	11.19	1.75	12.56	1.99	13.94	2.22
	14	7.06	1.14	8.44	1.34	9.81	1.56	10.50	1.67	11.19	1.79	12.56	2.02	13.94	2.26
	16	7.06	1.16	8.44	1.36	9.81	1.59	10.50	1.70	11.19	1.81	12.56	2.06	13.94	2.31
	18	7.06	1.18	8.44	1.39	9.81	1.61	10.50	1.73	11.19	1.85	12.56	2.09	13.94	2.35
	20	7.06	1.19	8.44	1.41	9.81	1.64	10.50	1.76	11.19	1.89	12.56	2.14	13.94	2.40
	21	7.06	1.21	8.44	1.42	9.81	1.66	10.50	1.78	11.19	1.90	12.56	2.16	13.94	2.42
	23	7.06	1.22	8.44	1.45	9.81	1.69	10.50	1.81	11.19	1.94	12.56	2.24	13.94	2.58
	25	7.06	1.24	8.44	1.47	9.81	1.75	10.50	1.90	11.19	2.06	12.56	2.39	13.94	2.75
	27	7.06	1.29	8.44	1.56	9.81	1.86	10.50	2.03	11.19	2.19	12.56	2.55	13.94	2.94
	29	7.06	1.36	8.44	1.66	9.81	1.99	10.50	2.16	11.19	2.34	12.56	2.72	13.94	3.14
	31	7.06	1.45	8.44	1.76	9.81	2.11	10.50	2.29	11.19	2.49	12.56	2.89	13.94	3.34
	33	7.06	1.53	8.44	1.86	9.81	2.24	10.50	2.44	11.19	2.64	12.56	3.08	13.94	3.56
35	7.06	1.62	8.44	1.98	9.81	2.37	10.50	2.59	11.19	2.81	12.56	3.28	13.94	3.79	
37	7.06	1.71	8.44	2.09	9.81	2.51	10.50	2.74	11.19	2.98	12.56	3.49	13.94	4.03	
39	7.06	1.81	8.44	2.21	9.81	2.66	10.50	2.91	11.19	3.16	12.56	3.70	13.94	4.29	
41	7.06	1.87	8.44	2.31	9.81	2.76	10.50	3.02	11.19	3.28	12.56	3.87	13.94	4.48	
43	7.06	1.92	8.44	2.41	9.81	2.86	10.50	3.11	11.19	3.39	12.56	4.04	13.94	4.67	
45	7.06	2.01	8.44	2.53	9.81	2.97	10.50	3.23	11.19	3.56	12.56	4.22	13.94	4.93	
48	7.06	2.09	8.44	2.64	9.81	3.07	10.50	3.31	11.19	3.70	12.56	4.37	13.94	5.16	
50%	-5	5.91	0.86	7.06	0.99	8.19	1.14	8.75	1.19	9.31	1.26	10.44	1.43	11.63	1.54

-2	5.91	0.86	7.06	1.01	8.19	1.15	8.75	1.21	9.31	1.28	10.44	1.45	11.63	1.56
0	5.91	0.88	7.06	1.03	8.19	1.17	8.75	1.23	9.31	1.30	10.44	1.47	11.63	1.59
2	5.91	0.89	7.06	1.04	8.19	1.19	8.75	1.24	9.31	1.32	10.44	1.48	11.63	1.62
4	5.91	0.90	7.06	1.06	8.19	1.21	8.75	1.26	9.31	1.35	10.44	1.52	11.63	1.66
6	5.91	0.92	7.06	1.08	8.19	1.22	8.75	1.29	9.31	1.37	10.44	1.54	11.63	1.71
8	5.91	0.94	7.06	1.09	8.19	1.24	8.75	1.32	9.31	1.39	10.44	1.57	11.63	1.77
10	5.91	0.96	7.06	1.11	8.19	1.26	8.75	1.34	9.31	1.43	10.44	1.61	11.63	1.79
12	5.91	0.96	7.06	1.12	8.19	1.29	8.75	1.36	9.31	1.46	10.44	1.64	11.63	1.82
14	5.91	0.98	7.06	1.14	8.19	1.30	8.75	1.39	9.31	1.48	10.44	1.66	11.63	1.86
16	5.91	0.99	7.06	1.15	8.19	1.32	8.75	1.41	9.31	1.50	10.44	1.69	11.63	1.89
18	5.91	1.01	7.06	1.17	8.19	1.34	8.75	1.44	9.31	1.53	10.44	1.72	11.63	1.92
20	5.91	1.02	7.06	1.19	8.19	1.36	8.75	1.46	9.31	1.56	10.44	1.75	11.63	1.96
21	5.91	1.03	7.06	1.20	8.19	1.38	8.75	1.47	9.31	1.57	10.44	1.77	11.63	1.98
23	5.91	1.04	7.06	1.21	8.19	1.40	8.75	1.50	9.31	1.60	10.44	1.80	11.63	2.02
25	5.91	1.06	7.06	1.24	8.19	1.43	8.75	1.53	9.31	1.65	10.44	1.89	11.63	2.16
27	5.91	1.08	7.06	1.29	8.19	1.51	8.75	1.63	9.31	1.75	10.44	2.01	11.63	2.30
29	5.91	1.14	7.06	1.36	8.19	1.60	8.75	1.73	9.31	1.86	10.44	2.14	11.63	2.45
31	5.91	1.20	7.06	1.44	8.19	1.69	8.75	1.84	9.31	1.98	10.44	2.28	11.63	2.61
33	5.91	1.27	7.06	1.52	8.19	1.80	8.75	1.94	9.31	2.10	10.44	2.42	11.63	2.77
35	5.91	1.34	7.06	1.61	8.19	1.90	8.75	2.06	9.31	2.22	10.44	2.57	11.63	2.94
37	5.91	1.41	7.06	1.70	8.19	2.01	8.75	2.18	9.31	2.36	10.44	2.73	11.63	3.13
39	5.91	1.49	7.06	1.79	8.19	2.13	8.75	2.31	9.31	2.50	10.44	2.89	11.63	3.32
41	5.91	1.55	7.06	1.87	8.19	2.21	8.75	2.41	9.31	2.61	10.44	3.05	11.63	3.48
43	5.91	1.66	7.06	2.00	8.19	2.28	8.75	2.52	9.31	2.67	10.44	3.20	11.63	3.63
45	5.91	1.70	7.06	2.05	8.19	2.44	8.75	2.72	9.31	2.79	10.44	3.51	11.63	3.94
48	5.91	1.74	7.06	2.11	8.19	2.58	8.75	2.89	9.31	2.91	10.44	3.79	11.63	4.24

Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under high temperature 42~48 degrees in cooling mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

Heating

Combination (%) (Capacity index)	Outdoor temperature (°C DB)	Indoor temperature(°C DB/WD)													
		DB:20.8, WB:14		DB:23.3, WB:16		DB:25.8, WB:18		DB:27, WB:19		DB:28.2, WB:20		DB:30.7, WB:22		DB:32, WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
130%	-5	16.69	2.04	19.88	2.49	23.07	2.67	23.95	2.78	25.10	2.86	25.72	3.11	26.36	3.13
	-2	16.69	2.04	19.88	2.54	23.07	2.67	23.95	2.80	25.10	2.86	25.72	3.15	26.36	3.16
	0	16.69	2.08	19.88	2.59	23.07	2.77	23.95	2.95	25.10	3.03	25.72	3.19	26.36	3.21
	2	16.69	2.12	19.88	2.59	23.07	2.87	23.95	3.12	25.10	3.06	25.72	3.21	26.36	3.25
	4	16.69	2.16	19.88	2.64	23.07	2.97	23.95	3.13	25.10	3.10	25.72	3.21	26.36	3.31
	6	16.69	2.21	19.88	2.70	23.07	3.08	23.95	3.16	24.82	3.20	25.40	3.21	26.07	3.34
	8	16.69	2.26	19.88	2.76	23.07	3.23	23.95	3.31	24.52	3.30	25.13	3.90	25.74	3.37
	10	16.69	2.30	19.88	2.82	23.07	3.35	23.95	3.42	24.22	4.04	24.83	4.06	25.45	3.47
	12	16.69	2.35	19.88	2.87	23.07	3.42	23.61	4.03	23.95	4.06	24.50	4.07	25.11	3.49
	14	16.69	2.39	19.88	2.92	23.00	4.05	23.34	4.06	23.61	4.08	24.22	4.09	24.83	3.57
	16	16.69	2.43	19.88	2.99	22.73	4.06	23.00	4.08	23.27	4.10	23.88	4.12	24.50	3.63
	18	16.69	2.48	19.88	3.05	22.39	3.57	22.66	3.59	23.00	3.61	23.61	3.65	24.22	3.68
	20	16.69	2.53	19.88	3.24	22.05	3.75	22.39	3.77	22.66	3.79	23.27	3.82	23.88	3.86
	21	16.69	2.60	19.88	3.36	21.92	3.83	22.26	3.85	22.53	3.88	23.14	3.92	23.75	3.95
	23	16.69	2.79	19.88	3.60	21.65	4.01	21.92	4.03	22.19	4.05	22.80	4.09	23.41	4.13
	25	16.69	2.98	19.88	3.85	21.31	4.18	21.58	4.21	21.92	4.23	22.53	4.27	23.14	4.31
	27	16.69	3.18	19.88	4.12	21.03	4.36	21.31	4.39	21.58	4.41	22.19	4.45	22.80	4.50
	29	16.69	3.40	19.88	4.41	20.70	4.54	20.97	4.56	21.31	4.59	21.92	4.64	22.53	4.68
	31	16.69	3.63	19.81	4.66	20.36	4.72	20.70	4.74	20.97	4.76	21.58	4.82	22.19	4.87
	33	16.69	3.86	19.47	4.84	20.08	4.89	20.36	4.92	20.70	4.95	21.31	5.00	21.85	5.05
35	16.69	4.12	19.13	5.01	19.75	5.07	20.08	5.10	20.36	5.13	20.97	5.19	21.58	5.24	
37	16.69	4.38	18.86	5.20	19.47	5.26	19.75	5.28	20.08	5.32	20.63	5.38	21.24	5.44	
39	16.69	4.66	18.52	5.25	19.13	5.43	19.47	5.47	19.75	5.50	20.36	5.56	20.97	5.63	
41	16.69	4.91	18.33	5.30	18.93	5.48	19.27	5.52	19.54	5.55	20.16	5.57	20.16	5.68	
43	16.69	5.03	18.20	5.33	18.83	5.50	19.17	5.54	19.34	5.56	19.79	5.58	19.92	5.69	
45	16.69	5.28	18.08	5.38	18.63	5.55	18.97	5.58	19.06	5.58	19.25	5.60	19.53	5.80	
48	16.69	5.47	18.73	5.55	20.31	5.60	20.69	5.63	20.86	5.65	20.76	5.70	21.14	5.71	
120%	-5	15.40	1.97	18.32	2.39	21.31	2.83	22.80	3.08	23.89	3.21	24.43	3.32	24.97	3.41
	-2	15.40	1.99	18.32	2.42	21.31	2.86	22.80	3.10	23.89	3.25	24.43	3.34	24.97	3.42
	0	15.40	2.01	18.32	2.43	21.31	2.89	22.80	3.11	23.89	3.28	24.43	3.36	24.97	3.42
	2	15.40	2.02	18.32	2.46	21.31	2.91	22.80	3.14	23.89	3.29	24.43	3.39	24.97	3.43
	4	15.40	2.04	18.32	2.49	21.31	2.95	22.80	3.17	23.89	3.34	24.43	3.40	24.97	3.44
	6	15.40	2.06	18.32	2.51	21.31	2.98	22.80	3.20	23.89	3.37	24.43	3.42	24.97	3.45
	8	15.40	2.08	18.32	2.53	21.31	3.03	22.80	3.24	23.89	3.41	24.43	3.44	24.97	3.47
	10	15.40	2.10	18.32	2.57	21.31	3.05	22.80	3.30	23.89	3.41	24.43	3.45	24.97	3.48
	12	15.40	2.14	18.32	2.61	21.31	3.11	22.80	3.36	23.55	3.42	24.09	3.43	24.63	3.51
	14	15.40	2.18	18.32	2.67	21.31	3.17	22.80	3.43	23.21	3.45	23.82	3.48	24.36	3.55
	16	15.40	2.22	18.32	2.72	21.31	3.23	22.66	4.10	22.94	3.50	23.48	3.54	24.02	3.60
	18	15.40	2.26	18.32	2.78	21.31	3.34	22.33	3.57	22.60	3.58	23.14	3.62	23.75	3.65
	20	15.40	2.31	18.32	2.88	21.31	3.60	22.05	3.75	22.33	3.76	22.87	3.79	23.41	3.83
	21	15.40	2.33	18.32	2.99	21.31	3.73	21.85	3.83	22.12	3.85	22.73	3.88	23.28	3.92
	23	15.40	2.49	18.32	3.20	21.31	3.99	21.58	4.00	21.85	4.02	22.39	4.06	22.94	4.10
	25	15.40	2.66	18.32	3.42	20.97	4.16	21.24	4.18	21.51	4.20	22.12	4.24	22.66	4.28
	27	15.40	2.84	18.32	3.66	20.70	4.33	20.97	4.36	21.24	4.38	21.78	4.42	22.33	4.46
29	15.40	3.03	18.32	3.91	20.36	4.51	20.63	4.53	20.90	4.56	21.44	4.60	22.05	4.64	
31	15.40	3.23	18.32	4.17	20.02	4.69	20.36	4.71	20.63	4.74	21.17	4.78	21.71	4.83	

	33	15.40	3.44	18.32	4.45	19.75	4.87	20.02	4.89	20.29	4.91	20.83	4.97	21.37	5.01
	35	15.40	3.67	18.32	4.74	19.41	5.04	19.68	5.07	20.02	5.09	20.56	5.15	21.10	5.20
	37	15.40	3.90	18.32	5.05	19.14	5.22	19.41	5.25	19.68	5.28	20.22	5.33	20.76	5.39
	39	15.40	4.15	18.25	5.34	18.80	5.40	19.07	5.43	19.34	5.46	19.95	5.52	20.49	5.57
	41	15.40	4.26	18.11	5.38	18.65	5.44	18.92	5.47	19.19	5.50	19.80	5.53	19.90	5.61
	43	15.40	4.33	18.01	5.41	18.50	5.47	18.77	5.49	19.04	5.52	19.46	5.55	19.59	5.73
	45	15.40	4.38	17.91	5.46	18.32	5.52	18.58	5.54	18.88	5.56	19.06	5.57	19.40	5.85
	48	17.85	4.41	20.57	5.52	20.96	5.57	21.18	5.58	21.63	5.60	21.75	5.59	22.18	5.93
110%	-5	14.11	1.72	16.83	2.15	19.54	2.56	20.90	2.75	22.26	2.96	23.95	3.07	24.50	3.17
	-2	14.11	1.76	16.83	2.17	19.54	2.58	20.90	2.78	22.26	2.98	23.95	3.10	24.50	3.18
	0	14.11	1.77	16.83	2.19	19.54	2.60	20.90	2.79	22.26	3.01	23.95	3.13	24.50	3.22
	2	14.11	1.81	16.83	2.21	19.54	2.64	20.90	2.82	22.26	3.05	23.95	3.18	24.50	3.26
	4	14.11	1.85	16.83	2.23	19.54	2.67	20.90	2.86	22.26	3.09	23.95	3.22	24.50	3.29
	6	14.11	1.87	16.83	2.26	19.54	2.69	20.90	2.90	22.26	3.13	23.95	3.26	24.50	3.34
	8	14.11	1.88	16.83	2.29	19.54	2.72	20.90	2.93	22.26	3.16	23.95	3.28	24.50	3.38
	10	14.11	1.91	16.83	2.32	19.54	2.76	20.90	2.99	22.26	3.21	23.95	3.30	24.50	3.41
	12	14.11	1.95	16.83	2.37	19.54	2.82	20.90	3.05	22.26	3.28	23.68	3.35	24.16	3.45
	14	14.11	1.98	16.83	2.41	19.54	2.87	20.90	3.10	22.26	3.34	23.34	3.38	23.89	3.48
	16	14.11	2.02	16.83	2.46	19.54	2.92	20.90	3.16	22.26	3.40	23.07	3.42	23.55	3.51
	18	14.11	2.06	16.83	2.51	19.54	2.99	20.90	3.25	22.26	3.57	22.73	3.59	23.28	3.63
	20	14.11	2.10	16.83	2.56	19.54	3.16	20.90	3.49	21.92	3.74	22.46	3.77	22.94	3.80
	21	14.11	2.12	16.83	2.63	19.54	3.28	20.90	3.62	21.78	3.83	22.26	3.85	22.80	3.89
	23	14.11	2.22	16.83	2.82	19.54	3.51	20.90	3.88	21.44	4.00	21.99	4.04	22.46	4.07
	25	14.11	2.37	16.83	3.02	19.54	3.75	20.90	4.16	21.17	4.17	21.65	4.21	22.19	4.25
	27	14.11	2.52	16.83	3.23	19.54	4.02	20.56	4.33	20.83	4.35	21.38	4.39	21.85	4.43
	29	14.11	2.69	16.83	3.44	19.54	4.29	20.29	4.51	20.56	4.53	21.04	4.57	21.58	4.61
	31	14.11	2.86	16.83	3.67	19.54	4.58	19.95	4.68	20.22	4.70	20.77	4.74	21.24	4.79
	33	14.11	3.05	16.83	3.92	19.41	4.83	19.68	4.86	19.95	4.88	20.43	4.93	20.97	4.97
35	14.11	3.24	16.83	4.17	19.07	5.01	19.34	5.03	19.61	5.06	20.09	5.11	20.63	5.16	
37	14.11	3.45	16.83	4.44	18.80	5.19	19.07	5.21	19.27	5.24	19.82	5.29	20.29	5.34	
39	14.11	3.67	16.83	4.73	18.46	5.36	18.73	5.39	19.00	5.42	19.48	5.47	20.02	5.53	
41	14.11	3.70	16.83	4.77	18.31	5.40	18.58	5.43	18.86	5.46	19.23	5.51	19.42	5.56	
43	14.11	3.74	16.83	4.83	18.17	5.44	18.44	5.47	18.71	5.49	19.06	5.53	19.12	5.68	
45	14.11	3.86	16.83	4.86	17.98	5.49	18.25	5.53	18.54	5.54	18.86	5.68	18.94	5.81	
48	15.46	4.00	18.43	5.27	19.41	5.53	19.66	5.57	20.08	5.60	20.32	5.70	20.48	5.87	
100%	-5	12.83	1.57	15.27	1.89	17.78	2.25	19.00	2.41	20.22	2.62	22.73	2.98	24.02	3.11
	-2	12.83	1.59	15.27	1.92	17.78	2.28	19.00	2.46	20.22	2.65	22.73	3.02	24.02	3.13
	0	12.83	1.61	15.27	1.94	17.78	2.30	19.00	2.49	20.22	2.68	22.73	3.07	24.02	3.17
	2	12.83	1.64	15.27	1.96	17.78	2.33	19.00	2.52	20.22	2.71	22.73	3.11	24.02	3.22
	4	12.83	1.65	15.27	1.98	17.78	2.36	19.00	2.56	20.22	2.74	22.73	3.14	24.02	3.25
	6	12.83	1.67	15.27	2.02	17.78	2.39	19.00	2.60	20.22	2.78	22.73	3.19	24.02	3.30
	8	12.83	1.71	15.27	2.05	17.78	2.43	19.00	2.63	20.22	2.83	22.73	3.24	24.02	3.36
	10	12.83	1.73	15.27	2.09	17.78	2.47	19.00	2.68	20.22	2.88	22.73	3.29	24.02	3.40
	12	12.83	1.75	15.27	2.13	17.78	2.52	19.00	2.72	20.22	2.93	22.73	3.35	23.68	3.43
	14	12.83	1.79	15.27	2.17	17.78	2.57	19.00	2.78	20.22	2.99	22.73	3.42	23.41	3.47
	16	12.83	1.82	15.27	2.21	17.78	2.62	19.00	2.83	20.22	3.05	22.60	3.46	23.07	3.51
	18	12.83	1.85	15.27	2.25	17.78	2.67	19.00	2.88	20.22	3.11	22.33	3.57	22.80	3.60
	20	12.83	1.89	15.27	2.30	17.78	2.75	19.00	3.03	20.22	3.33	21.98	3.74	22.46	3.77
21	12.83	1.91	15.27	2.32	17.78	2.85	19.00	3.14	20.22	3.44	21.85	3.83	22.33	3.86	
23	12.83	1.95	15.27	2.47	17.78	3.05	19.00	3.36	20.22	3.69	21.58	4.00	21.98	4.04	
25	12.83	2.08	15.27	2.64	17.78	3.27	19.00	3.61	20.22	3.96	21.24	4.18	21.71	4.21	

	27	12.83	2.22	15.27	2.82	17.78	3.49	19.00	3.85	20.22	4.23	20.90	4.35	21.38	4.39
	29	12.83	2.37	15.27	3.01	17.78	3.73	19.00	4.12	20.15	4.49	20.63	4.54	21.10	4.57
	31	12.83	2.52	15.27	3.21	17.78	3.98	19.00	4.39	19.88	4.67	20.29	4.71	20.76	4.75
	33	12.83	2.68	15.27	3.42	17.78	4.24	19.00	4.69	19.54	4.85	20.02	4.89	20.49	4.93
	35	12.83	2.84	15.27	3.63	17.78	4.52	19.00	5.00	19.20	5.02	19.68	5.07	20.15	5.11
	37	12.83	3.03	15.27	3.87	17.78	4.82	18.66	5.18	18.93	5.20	19.41	5.25	19.82	5.29
	39	12.83	3.21	15.27	4.11	17.78	5.13	18.39	5.35	18.59	5.38	19.07	5.42	19.54	5.48
	41	12.83	3.36	15.27	4.26	17.78	5.32	18.10	5.39	18.45	5.46	18.74	5.55	19.26	5.59
	43	12.83	3.51	15.27	4.41	17.78	5.41	17.82	5.45	18.32	5.51	18.85	5.59	18.92	5.65
	45	12.83	3.71	15.27	4.61	17.78	5.51	17.44	5.53	18.22	5.61	18.69	5.67	18.54	5.73
	48	13.28	3.88	15.81	4.77	18.41	5.52	17.32	5.59	18.84	5.71	18.18	5.73	18.78	5.78
90%	-5	11.54	1.39	13.78	1.67	16.01	1.97	17.10	2.14	18.19	2.28	20.42	2.62	22.66	3.00
	-2	11.54	1.40	13.78	1.68	16.01	1.99	17.10	2.17	18.19	2.31	20.42	2.65	22.66	3.03
	0	11.54	1.42	13.78	1.70	16.01	2.02	17.10	2.20	18.19	2.34	20.42	2.68	22.66	3.06
	2	11.54	1.44	13.78	1.73	16.01	2.04	17.10	2.23	18.19	2.38	20.42	2.73	22.66	3.10
	4	11.54	1.47	13.78	1.75	16.01	2.08	17.10	2.26	18.19	2.41	20.42	2.78	22.66	3.15
	6	11.54	1.49	13.78	1.79	16.01	2.11	17.10	2.31	18.19	2.45	20.42	2.82	22.66	3.20
	8	11.54	1.51	13.78	1.82	16.01	2.16	17.10	2.34	18.19	2.49	20.42	2.87	22.66	3.23
	10	11.54	1.54	13.78	1.86	16.01	2.20	17.10	2.37	18.19	2.55	20.42	2.91	22.66	3.28
	12	11.54	1.57	13.78	1.89	16.01	2.24	17.10	2.41	18.19	2.59	20.42	2.96	22.66	3.34
	14	11.54	1.60	13.78	1.93	16.01	2.28	17.10	2.46	18.19	2.64	20.42	3.02	22.66	3.40
	16	11.54	1.62	13.78	1.96	16.01	2.32	17.10	2.51	18.19	2.70	20.42	3.08	22.60	3.46
	18	11.54	1.65	13.78	2.00	16.01	2.36	17.10	2.55	18.19	2.75	20.42	3.14	22.33	3.57
	20	11.54	1.68	13.78	2.05	16.01	2.41	17.10	2.61	18.19	2.85	20.42	3.38	21.99	3.74
	21	11.54	1.70	13.78	2.06	16.01	2.45	17.10	2.70	18.19	2.95	20.42	3.50	21.85	3.83
	23	11.54	1.73	13.78	2.14	16.01	2.63	17.10	2.89	18.19	3.17	20.42	3.75	21.51	4.00
	25	11.54	1.83	13.78	2.29	16.01	2.81	17.10	3.09	18.19	3.38	20.42	4.02	21.24	4.18
	27	11.54	1.94	13.78	2.44	16.01	3.00	17.10	3.30	18.19	3.62	20.42	4.30	20.90	4.35
	29	11.54	2.07	13.78	2.60	16.01	3.20	17.10	3.52	18.19	3.87	20.22	4.49	20.63	4.53
	31	11.54	2.20	13.78	2.77	16.01	3.41	17.10	3.76	18.19	4.12	19.88	4.67	20.29	4.71
	33	11.54	2.33	13.78	2.94	16.01	3.64	17.10	4.01	18.19	4.40	19.61	4.85	20.02	4.89
35	11.54	2.48	13.78	3.13	16.01	3.87	17.10	4.27	18.19	4.69	19.27	5.03	19.68	5.07	
37	11.54	2.63	13.78	3.33	16.01	4.12	17.10	4.55	18.19	5.00	18.93	5.20	19.41	5.24	
39	11.54	2.79	13.78	3.54	16.01	4.39	17.10	4.84	18.19	5.32	18.66	5.38	19.07	5.42	
41	11.54	2.89	13.78	3.70	16.01	4.55	17.10	4.97	18.19	5.36	18.53	5.52	18.94	5.55	
43	11.54	3.02	13.78	3.86	16.01	4.71	17.10	5.10	18.19	5.47	18.44	5.59	18.78	5.64	
45	11.54	3.22	13.78	4.06	16.01	4.90	17.10	5.27	18.19	5.62	18.33	5.65	18.49	5.71	
48	11.54	3.40	13.78	4.24	16.01	5.08	17.10	5.34	18.19	5.67	20.20	5.73	19.99	5.79	
80%	-5	10.25	1.22	12.21	1.45	14.18	1.71	15.20	1.82	16.22	1.96	18.19	2.27	20.15	2.59
	-2	10.25	1.24	12.21	1.46	14.18	1.73	15.20	1.85	16.22	1.98	18.19	2.29	20.15	2.61
	0	10.25	1.26	12.21	1.48	14.18	1.75	15.20	1.87	16.22	2.02	18.19	2.32	20.15	2.65
	2	10.25	1.29	12.21	1.50	14.18	1.77	15.20	1.91	16.22	2.05	18.19	2.37	20.15	2.70
	4	10.25	1.31	12.21	1.53	14.18	1.81	15.20	1.95	16.22	2.09	18.19	2.41	20.15	2.73
	6	10.25	1.33	12.21	1.57	14.18	1.84	15.20	1.99	16.22	2.13	18.19	2.45	20.15	2.78
	8	10.25	1.36	12.21	1.60	14.18	1.88	15.20	2.03	16.22	2.17	18.19	2.48	20.15	2.84
	10	10.25	1.37	12.21	1.64	14.18	1.93	15.20	2.08	16.22	2.22	18.19	2.54	20.15	2.86
	12	10.25	1.39	12.21	1.66	14.18	1.96	15.20	2.12	16.22	2.27	18.19	2.59	20.15	2.92
	14	10.25	1.42	12.21	1.70	14.18	1.99	15.20	2.15	16.22	2.31	18.19	2.63	20.15	2.97
	16	10.25	1.44	12.21	1.73	14.18	2.03	15.20	2.19	16.22	2.35	18.19	2.69	20.15	3.03
	18	10.25	1.46	12.21	1.76	14.18	2.08	15.20	2.24	16.22	2.40	18.19	2.74	20.15	3.09
	20	10.25	1.49	12.21	1.79	14.18	2.12	15.20	2.28	16.22	2.45	18.19	2.84	20.15	3.30



	21	10.25	1.50	12.21	1.81	14.18	2.14	15.20	2.30	16.22	2.50	18.19	2.95	20.15	3.42
	23	10.25	1.53	12.21	1.85	14.18	2.24	15.20	2.45	16.22	2.68	18.19	3.15	20.15	3.67
	25	10.25	1.58	12.21	1.96	14.18	2.39	15.20	2.62	16.22	2.86	18.19	3.38	20.15	3.93
	27	10.25	1.68	12.21	2.09	14.18	2.55	15.20	2.80	16.22	3.05	18.19	3.61	20.15	4.20
	29	10.25	1.79	12.21	2.22	14.18	2.72	15.20	2.98	16.22	3.26	18.19	3.85	20.15	4.49
	31	10.25	1.89	12.21	2.37	14.18	2.89	15.20	3.17	16.22	3.48	18.19	4.11	19.81	4.67
	33	10.25	2.01	12.21	2.51	14.18	3.08	15.20	3.38	16.22	3.70	18.19	4.38	19.54	4.85
	35	10.25	2.14	12.21	2.68	14.18	3.27	15.20	3.60	16.22	3.94	18.19	4.67	19.20	5.02
	37	10.25	2.26	12.21	2.84	14.18	3.48	15.20	3.83	16.22	4.20	18.19	4.98	18.93	5.20
	39	10.25	2.40	12.21	3.03	14.18	3.71	15.20	4.08	16.22	4.47	18.19	5.30	18.59	5.38
	41	10.25	2.45	12.21	3.05	14.18	3.76	15.20	4.19	16.22	4.55	18.19	5.44	18.48	5.47
	43	10.25	2.53	12.21	3.08	14.18	3.81	15.20	4.26	16.22	4.61	18.19	5.50	18.36	5.53
	45	10.25	2.60	12.21	3.12	14.18	3.89	15.20	4.35	16.22	4.69	18.19	5.56	18.14	5.62
	48	10.25	2.68	12.21	3.14	15.95	3.95	15.20	4.41	16.22	4.73	18.19	5.62	20.23	5.70
70%	-5	8.96	1.09	10.72	1.28	12.42	1.45	13.30	1.56	14.18	1.66	15.88	1.90	17.64	2.18
	-2	8.96	1.10	10.72	1.29	12.42	1.46	13.30	1.59	14.18	1.69	15.88	1.93	17.64	2.21
	0	8.96	1.11	10.72	1.30	12.42	1.49	13.30	1.62	14.18	1.72	15.88	1.97	17.64	2.24
	2	8.96	1.11	10.72	1.31	12.42	1.51	13.30	1.65	14.18	1.75	15.88	2.01	17.64	2.28
	4	8.96	1.13	10.72	1.34	12.42	1.55	13.30	1.68	14.18	1.79	15.88	2.04	17.64	2.33
	6	8.96	1.15	10.72	1.37	12.42	1.59	13.30	1.73	14.18	1.83	15.88	2.08	17.64	2.38
	8	8.96	1.17	10.72	1.41	12.42	1.62	13.30	1.76	14.18	1.87	15.88	2.14	17.64	2.42
	10	8.96	1.19	10.72	1.43	12.42	1.66	13.30	1.79	14.18	1.92	15.88	2.18	17.64	2.45
	12	8.96	1.22	10.72	1.45	12.42	1.70	13.30	1.83	14.18	1.95	15.88	2.22	17.64	2.50
	14	8.96	1.24	10.72	1.48	12.42	1.73	13.30	1.85	14.18	1.99	15.88	2.26	17.64	2.55
	16	8.96	1.26	10.72	1.50	12.42	1.76	13.30	1.89	14.18	2.03	15.88	2.30	17.64	2.59
	18	8.96	1.28	10.72	1.53	12.42	1.79	13.30	1.93	14.18	2.06	15.88	2.35	17.64	2.65
	20	8.96	1.30	10.72	1.56	12.42	1.83	13.30	1.96	14.18	2.10	15.88	2.40	17.64	2.72
	21	8.96	1.31	10.72	1.57	12.42	1.84	13.30	1.98	14.18	2.12	15.88	2.43	17.64	2.82
	23	8.96	1.33	10.72	1.60	12.42	1.88	13.30	2.05	14.18	2.23	15.88	2.61	17.64	3.02
	25	8.96	1.36	10.72	1.66	12.42	2.00	13.30	2.19	14.18	2.38	15.88	2.79	17.64	3.23
	27	8.96	1.44	10.72	1.77	12.42	2.14	13.30	2.33	14.18	2.54	15.88	2.98	17.64	3.45
	29	8.96	1.53	10.72	1.88	12.42	2.27	13.30	2.49	14.18	2.70	15.88	3.17	17.64	3.69
	31	8.96	1.62	10.72	1.99	12.42	2.42	13.30	2.64	14.18	2.88	15.88	3.38	17.64	3.93
	33	8.96	1.72	10.72	2.12	12.42	2.57	13.30	2.81	14.18	3.07	15.88	3.61	17.64	4.19
35	8.96	1.82	10.72	2.25	12.42	2.73	13.30	2.99	14.18	3.26	15.88	3.84	17.64	4.47	
37	8.96	1.92	10.72	2.39	12.42	2.90	13.30	3.17	14.18	3.47	15.88	4.09	17.64	4.76	
39	8.96	2.04	10.72	2.53	12.42	3.08	13.30	3.38	14.18	3.69	15.88	4.35	17.64	5.07	
41	8.96	2.12	10.72	2.62	12.42	3.17	13.30	3.49	14.18	3.80	15.88	4.53	17.64	5.29	
43	8.96	2.30	10.72	2.80	12.42	3.30	13.30	3.68	14.18	3.91	15.88	4.69	17.64	5.46	
45	8.96	2.35	10.72	2.86	12.42	3.37	13.30	3.74	14.18	4.11	15.88	4.94	17.64	5.67	
48	8.96	2.41	10.72	2.88	12.42	3.40	13.30	3.80	14.18	4.22	15.88	5.17	17.64	5.80	
60%	-5	7.67	0.93	9.16	1.08	10.65	1.26	11.40	1.34	12.15	1.45	13.64	1.63	15.13	1.87
	-2	7.67	0.94	9.16	1.10	10.65	1.28	11.40	1.36	12.15	1.46	13.64	1.65	15.13	1.88
	0	7.67	0.95	9.16	1.11	10.65	1.30	11.40	1.38	12.15	1.49	13.64	1.68	15.13	1.90
	2	7.67	0.97	9.16	1.14	10.65	1.32	11.40	1.40	12.15	1.51	13.64	1.71	15.13	1.93
	4	7.67	1.00	9.16	1.16	10.65	1.35	11.40	1.42	12.15	1.53	13.64	1.74	15.13	1.95
	6	7.67	1.00	9.16	1.18	10.65	1.37	11.40	1.45	12.15	1.56	13.64	1.77	15.13	2.00
	8	7.67	1.02	9.16	1.20	10.65	1.40	11.40	1.48	12.15	1.59	13.64	1.80	15.13	2.03
	10	7.67	1.04	9.16	1.23	10.65	1.42	11.40	1.52	12.15	1.62	13.64	1.84	15.13	2.06
	12	7.67	1.06	9.16	1.25	10.65	1.45	11.40	1.55	12.15	1.65	13.64	1.87	15.13	2.10
	14	7.67	1.08	9.16	1.27	10.65	1.47	11.40	1.58	12.15	1.68	13.64	1.91	15.13	2.14

	16	7.67	1.09	9.16	1.29	10.65	1.50	11.40	1.60	12.15	1.71	13.64	1.94	15.13	2.18
	18	7.67	1.11	9.16	1.31	10.65	1.52	11.40	1.63	12.15	1.75	13.64	1.97	15.13	2.22
	20	7.67	1.13	9.16	1.33	10.65	1.55	11.40	1.66	12.15	1.78	13.64	2.01	15.13	2.26
	21	7.67	1.14	9.16	1.34	10.65	1.56	11.40	1.68	12.15	1.79	13.64	2.03	15.13	2.28
	23	7.67	1.15	9.16	1.37	10.65	1.59	11.40	1.71	12.15	1.83	13.64	2.12	15.13	2.43
	25	7.67	1.17	9.16	1.39	10.65	1.65	11.40	1.79	12.15	1.94	13.64	2.26	15.13	2.59
	27	7.67	1.22	9.16	1.48	10.65	1.76	11.40	1.91	12.15	2.07	13.64	2.41	15.13	2.77
	29	7.67	1.29	9.16	1.56	10.65	1.87	11.40	2.03	12.15	2.20	13.64	2.57	15.13	2.96
	31	7.67	1.37	9.16	1.66	10.65	1.99	11.40	2.16	12.15	2.34	13.64	2.73	15.13	3.15
	33	7.67	1.44	9.16	1.76	10.65	2.11	11.40	2.30	12.15	2.49	13.64	2.90	15.13	3.36
	35	7.67	1.53	9.16	1.87	10.65	2.24	11.40	2.44	12.15	2.65	13.64	3.09	15.13	3.57
	37	7.67	1.62	9.16	1.97	10.65	2.37	11.40	2.59	12.15	2.81	13.64	3.29	15.13	3.80
	39	7.67	1.70	9.16	2.09	10.65	2.51	11.40	2.74	12.15	2.98	13.64	3.49	15.13	4.04
	41	7.67	1.76	9.16	2.18	10.65	2.60	11.40	2.85	12.15	3.09	13.64	3.65	15.13	4.23
	43	7.67	1.81	9.16	2.27	10.65	2.70	11.40	2.94	12.15	3.20	13.64	3.81	15.13	4.41
	45	7.67	1.90	9.16	2.39	10.65	2.81	11.40	3.05	12.15	3.36	13.64	3.98	15.13	4.65
	48	7.67	1.97	9.16	2.49	10.65	2.90	11.40	3.13	12.15	3.49	13.64	4.13	15.13	4.87
50%	-5	6.41	0.81	7.67	0.94	8.89	1.08	9.50	1.13	10.11	1.19	11.33	1.35	12.62	1.46
	-2	6.41	0.82	7.67	0.95	8.89	1.09	9.50	1.14	10.11	1.21	11.33	1.37	12.62	1.47
	0	6.41	0.83	7.67	0.97	8.89	1.11	9.50	1.16	10.11	1.22	11.33	1.39	12.62	1.50
	2	6.41	0.84	7.67	0.98	8.89	1.13	9.50	1.17	10.11	1.24	11.33	1.40	12.62	1.53
	4	6.41	0.85	7.67	1.00	8.89	1.14	9.50	1.19	10.11	1.27	11.33	1.43	12.62	1.57
	6	6.41	0.86	7.67	1.01	8.89	1.15	9.50	1.21	10.11	1.29	11.33	1.45	12.62	1.61
	8	6.41	0.88	7.67	1.03	8.89	1.17	9.50	1.24	10.11	1.31	11.33	1.48	12.62	1.67
	10	6.41	0.90	7.67	1.04	8.89	1.19	9.50	1.26	10.11	1.35	11.33	1.52	12.62	1.69
	12	6.41	0.91	7.67	1.06	8.89	1.21	9.50	1.29	10.11	1.37	11.33	1.54	12.62	1.72
	14	6.41	0.92	7.67	1.07	8.89	1.23	9.50	1.31	10.11	1.39	11.33	1.57	12.62	1.75
	16	6.41	0.94	7.67	1.08	8.89	1.25	9.50	1.33	10.11	1.42	11.33	1.60	12.62	1.78
	18	6.41	0.95	7.67	1.10	8.89	1.27	9.50	1.35	10.11	1.44	11.33	1.62	12.62	1.81
	20	6.41	0.96	7.67	1.12	8.89	1.29	9.50	1.37	10.11	1.47	11.33	1.65	12.62	1.85
	21	6.41	0.97	7.67	1.13	8.89	1.30	9.50	1.39	10.11	1.48	11.33	1.67	12.62	1.87
	23	6.41	0.98	7.67	1.15	8.89	1.32	9.50	1.42	10.11	1.51	11.33	1.70	12.62	1.91
	25	6.41	1.00	7.67	1.17	8.89	1.35	9.50	1.44	10.11	1.56	11.33	1.79	12.62	2.03
	27	6.41	1.02	7.67	1.21	8.89	1.42	9.50	1.54	10.11	1.65	11.33	1.90	12.62	2.17
	29	6.41	1.07	7.67	1.28	8.89	1.51	9.50	1.63	10.11	1.76	11.33	2.02	12.62	2.31
	31	6.41	1.13	7.67	1.35	8.89	1.60	9.50	1.73	10.11	1.87	11.33	2.15	12.62	2.46
	33	6.41	1.20	7.67	1.44	8.89	1.70	9.50	1.83	10.11	1.98	11.33	2.28	12.62	2.61
35	6.41	1.27	7.67	1.52	8.89	1.79	9.50	1.94	10.11	2.10	11.33	2.43	12.62	2.78	
37	6.41	1.33	7.67	1.60	8.89	1.90	9.50	2.05	10.11	2.22	11.33	2.57	12.62	2.95	
39	6.41	1.41	7.67	1.69	8.89	2.01	9.50	2.18	10.11	2.36	11.33	2.73	12.62	3.13	
41	6.41	1.47	7.67	1.76	8.89	2.08	9.50	2.28	10.11	2.46	11.33	2.87	12.62	3.28	
43	6.41	1.56	7.67	1.89	8.89	2.15	9.50	2.38	10.11	2.52	11.33	3.02	12.62	3.42	
45	6.41	1.60	7.67	1.93	8.89	2.30	9.50	2.56	10.11	2.63	11.33	3.31	12.62	3.72	
48	6.41	1.64	7.67	1.99	8.89	2.43	9.50	2.73	10.11	2.75	11.33	3.58	12.62	4.00	

## Note:

- 1, [ ] is tested under our standard condition.
- 2, Avoid to run the outdoor unit under low temperature from -15 to -20 degrees when selecting heating mode.
- 3, The above table shows the average value of conditions may operate.
- 4, It is recommended to connect less than 130%.

## 8. Electric Characteristics

Model	Outdoor Unit				Power Supply		Compressor	OFM	
	Hz	Voltage	Min.	Max.	TOCA	MFA	RLA	kW	FLA
MDV-V80W/DN1	50	220-240 V	198V	253V	22	30A	9.7	0.17	1.7
MDV-V105W/DN1	50	220-240 V	198V	253V	22	30A	9.7	0.17	1.7
MDV-V120W/DN1	50	220-240 V	198V	253V	30	40A	13.5	0.2	1.8
MDV-V140W/DN1	50	220-240 V	198V	253V	30	40A	13.5	0.2	1.8
MDV-V160W/DN1(B)	50	220-240 V	198V	254V	30	63A	16.1	0.2	1.8
MDV-V180W/DN1	50	220-240 V	198V	254V	32	63A	16.1	0.2	1.8

**Remark:**

TOCA: Total Over-current Amps. (A)

MFA: Max. Fuse Amps. (A)

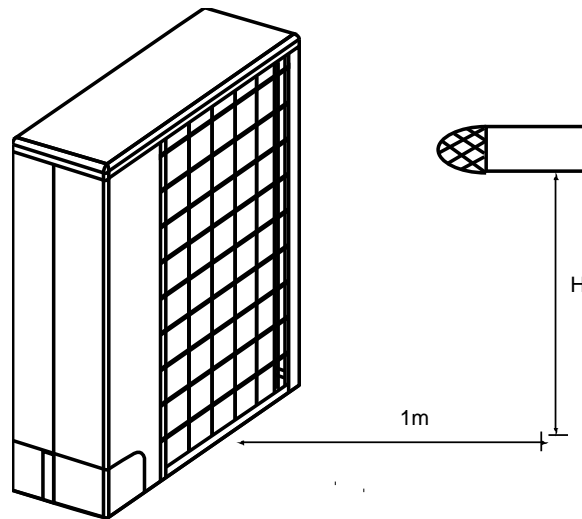
RLA: Rated Locked Amps. (A)

OFM: Outdoor Fan Motor.

FLA: Full Load Amps. (A)

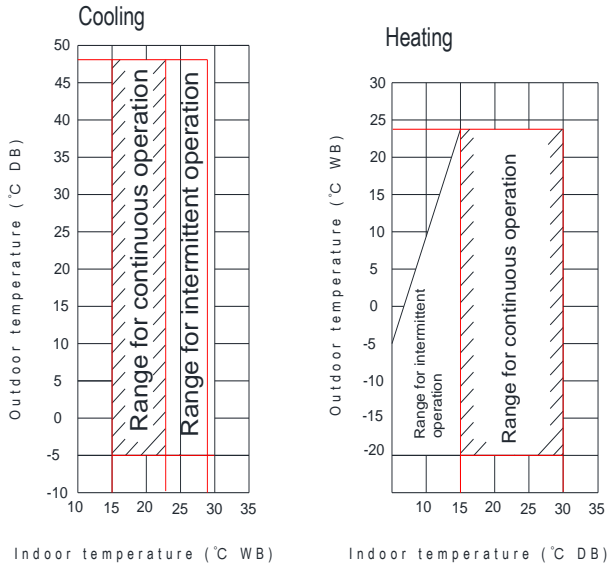
KW: Rated Motor Output (kW)

## 9. Sound Levels



Model	Noise level dB(A)	Height (m)
MDV-V80W/DN1	56	1.0
MDV-V105W/DN1	57	1.0
MDV-V120W/DN1	57	1.2
MDV-V140W/DN1	57	1.2
MDV-V160W/DN1(B)	57	1.2
MDV-V180W/DN1	59	1.2

# 10.Operation Limits



**Notes:**

1. If the system is running in cooling mode, when the ambient temperature is lower than -5°C or higher than 48°C, the units will stop running for protection control.
2. These figures base on the operation conditions between indoor units and outdoor units:  
Equivalent pipe length is 5m, and height difference is 0m.

**Precaution:**

The indoor relative humidity should be lower than 80%. If the air conditioner works in an environment with a relative humidity higher than mentioned above, the surface of the air conditioner may condensate. In this case, it is recommended to set the air speed of the indoor unit to high.

# Part 3 Installation

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# 1. Precautions

- Ensure that all Local, National and International regulations are satisfied.
- Read this "PRECAUTIONS" carefully before Installation.
- The precautions described below include the important Items regarding safety.
- Observe them without fail.
- After the installation work, perform a trial operation to check for any problem.
- Follow the Owner's Manual to explain how to use and maintain the unit to the customer.
- Turn off the main power supply switch (or breaker) before maintenance the unit.
- Ask the customer that the Installation Manual and the Owner's manual should be kept together.

## Caution 1:

The characteristics of R410A refrigerant are hydrophilic, oxidizing membrane or oil, and its pressure is approx.1.6 times higher than that of refrigerant R22. Accompanied with the new refrigerant, refrigerating oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle.

To prevent charging an incorrect refrigerant and refrigerating oil, the sizes of connecting sections of charging port of the main unit and installation tools are charged from those for the conventional refrigerant.

Accordingly the exclusive tools are required for the new refrigerant (R410A).

For connecting pipes, use new and clean pipes designed for R410A, and please care so that water or dust does not enter. Moreover, do not use the existing piping because there are problems with pressure-resistance force and impurity in it.

## Caution 2:

This unit must be connected to the main power supply by means of a switch with a contact separation of at least 3 mm. The installation fuse must be used for the power supply line of this conditioner.

## Caution 3:

Ask an authorized dealer or qualified installation professional to install/maintain the air conditioner. Inappropriate installation may result in water leakage, electric shock or fire.

Turn off the main power supply switch or breaker before attempting any electrical work. Make sure all power switches are off. Failure to do so may cause electric shock.

Connect the connecting cable correctly. If the connecting cable is connected in a wrong way, electric parts may be damaged.

When moving the air conditioner for the installation into another place, be very careful not to enter any gaseous matter other than the specified refrigerant into the refrigeration cycle.

If air or any other gas is mixed in refrigerant, the gas pressure in the refrigeration cycle becomes abnormally high and it may resultantly causes pipe burst and injuries on persons.

Do not modify this unit by removing any of the safety guards or by by-passing any of the safety inter lock switches. Exposure of unit to water or other moisture before installation may cause a short circuit of electrical parts.

Do not store it in a wet basement or expose to rain or water. After unpacking the unit, examine it carefully if there are possible damage.

Do not install in a place that might increase the vibration of the unit. To avoid personal injury (with sharp edges) be careful when handling parts.

Perform installation work properly according to the Installation Manual.

Inappropriate installation may result in water leakage, electric shock or fire.

When the air conditioner is installed in a small room, provide appropriate measures to ensure that the concentration of refrigerant leakage occur in the room does not exceed the critical level.

If refrigerant gas has leaked during the installation work, ventilate the room immediately.

If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.

After the installation work, confirm that refrigerant gas does not leak.

If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas might generate.

Install the air conditioner securely in a location where the base can sustain the weight adequately.

Perform the specified installation work to guard against an earthquake.

If the air conditioner is not installed appropriately, accidents may occur due to the falling unit.

Electrical work must be performed by a qualified electrician in accordance with the Installation Manual.

Make sure the air conditioner uses an exclusive power supply. An insufficient power supply capacity or inappropriate installation may cause fire. Use the specified cables for wiring connect the terminals securely fix.

To prevent external forces applied to the terminals from affecting the terminals.

Be sure to provide grounding. Do not connect ground wires to gas pipes, water pipes, lightning rods or ground wires for telephone cables.





Conform to the regulations of the local electric company when wiring the power supply. Inappropriate grounding may cause electric shock

Do not install the air conditioner in a location subject to a risk of exposure to a combustible gas.

If a combustible gas leaks, and stays around the unit, a fire may occur.

## 2. Accessories

Please check whether the following fittings are of full scope. If there are some spare fittings, please keep them carefully.

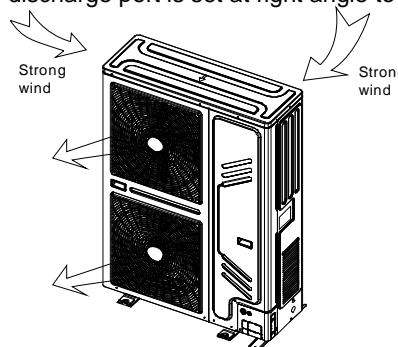
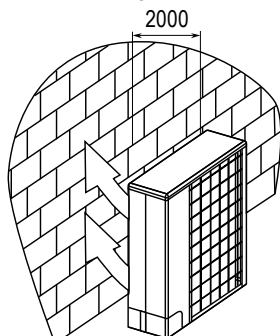
	NAME	SHAPE	QUANTITY
INSTALLATION FITTINGS	Outdoor unit installation manual		1
	Outdoor unit owner's manual		1
	Indoor unit owner's manual		1
	Outflow connecting tube		1



### 3. Outdoor unit installation

#### 3.1 Installation space selection

- Install the outdoor unit at a place where discharge air is not blocked. When an outdoor unit is installed in a place that is always exposed
- To a strong wind like a coast or on the high store of a building, secure a normal fan operation by using a duct or a wind shield.
- When installing the outdoor unit in a place that is constantly exposed to a strong wind such as the upper stairs or rooftop of a building, apply the windproof measures referring to the following examples.
- Install the unit so that its discharge port faces to the wall of the building. Keep a distance 2000mm or more between the unit and the wall surface.
- Supposing the wind direction during the operation season of the discharge port is set at right angle to the wind direction.

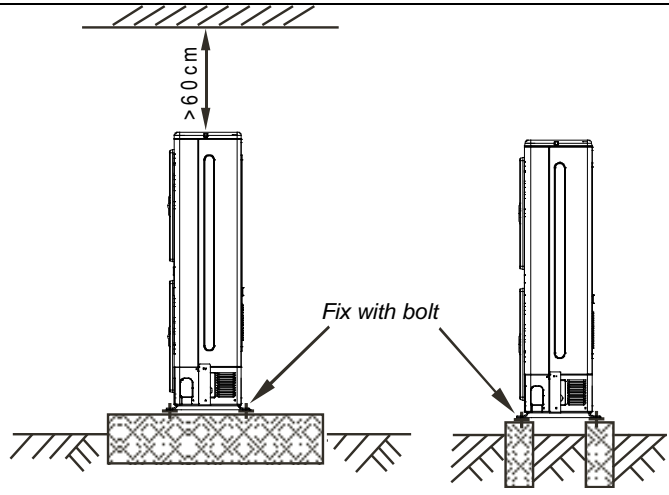


- Do not install the unit in a place full of machine oil.
- Do not install the unit in a place full of sulphuric gas.
  - Do not install the unit in a place where high frequency radio waves are likely to be generated as from audio equipment, welders, and medical equipment.

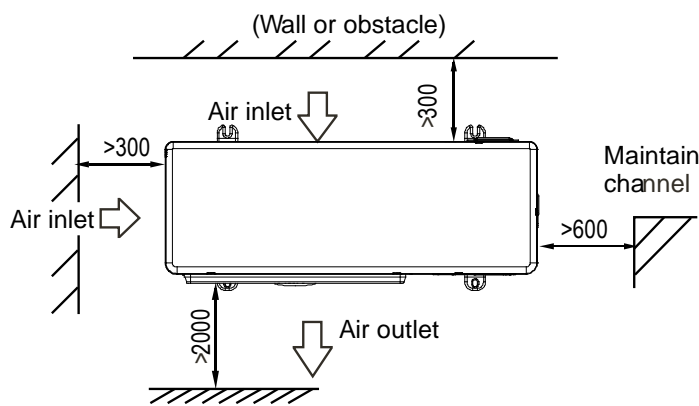
#### 3.2 Installation space (unit: mm)

Please keep away from the following place, or malfunction of the machine may be caused:

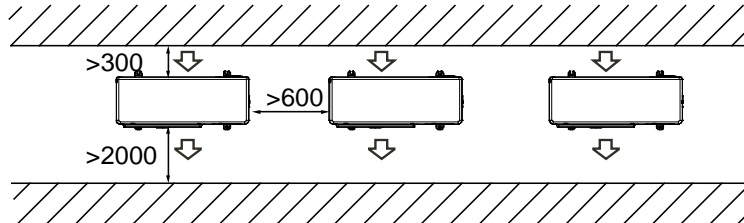
- There is combustible gas leakage.
- There is much oil (including engine oil) ingredient.
- There is salty air surrounding(near the coast)
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring)
- A place the heat air expelled out from the outdoor unit can reach your neighbor's window.
- A place that the noise interferes your neighbors' everyday life.
- A place that is too weak to bear the weight of the unit .
- Uneven place.
- Insufficient ventilation place.
- Near a private power station or high frequency equipment.
- Install indoor unit, outdoor unit, power cord and connecting wire at least 1m away from TV set or radio to prevent noise or picture interference.



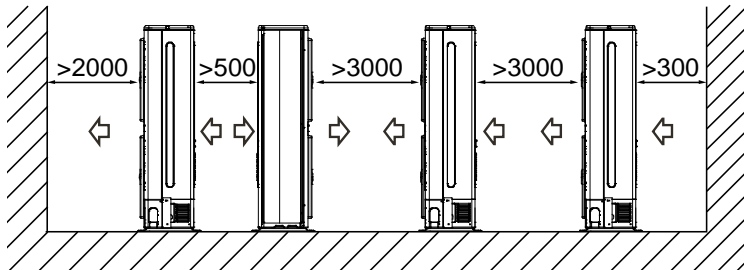
Single unit installation



Parallel connect two units or above



Parallel connect the front with rear sides

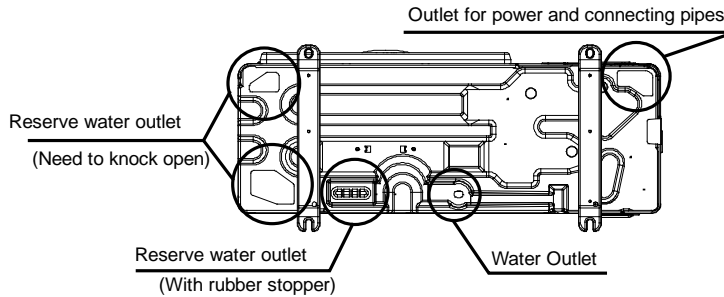


All the pictures in this manual are for explanation purpose only. They might be slightly different from the air conditioner you purchased (depending on model).The actual shape shall prevail.

**3.3 Water Outlet**

**Four condensed water outlets on the chassis for selection display as the follow figure:**

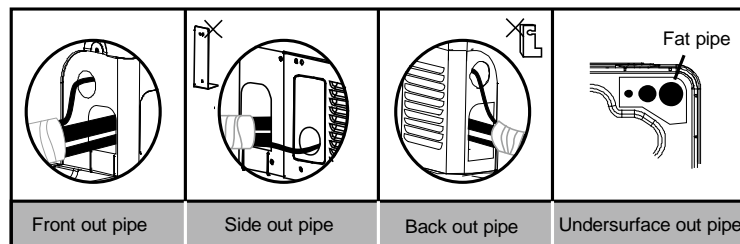
While installing the outdoor unit, pay attention to the installation place and the drainage pattern; if it's installed at the alpine zone, the frozen condensed water will block up the water outlet, please pull out the rubber stopper of the reserve water outlet. If that still fails to satisfy for the water draining, please knock open the other two water outlets, and keep the water can drain in time. Pay attention to the knock the reserve water outlet from outside to inside, and it will be beyond repair after knocking open, please pay attention to the installation place, lest cause the inconvenience. Please do the moth proofing for the knocked out hole, to avoid the pest processing into and destroy the components.



## 4. Piping installation

### 4.1 Piping connection

Various piping and wiring patterns can be selected, such as out from the front, the back, the side, and undersurface, etc. (The follow display the locations of several piping and wiring knock-off interfaces)



Cautions:

Side out pipe: please remove the L-shape metal plate, otherwise cannot wiring.

Back out pipe: Please wipe off the piping support rubber blanket beside the inner outlet pipe cover of the machine while back side getting out pipes.

Undersurface outlet pipe: the knock out should from inside to outside, and then piping and wiring through this.

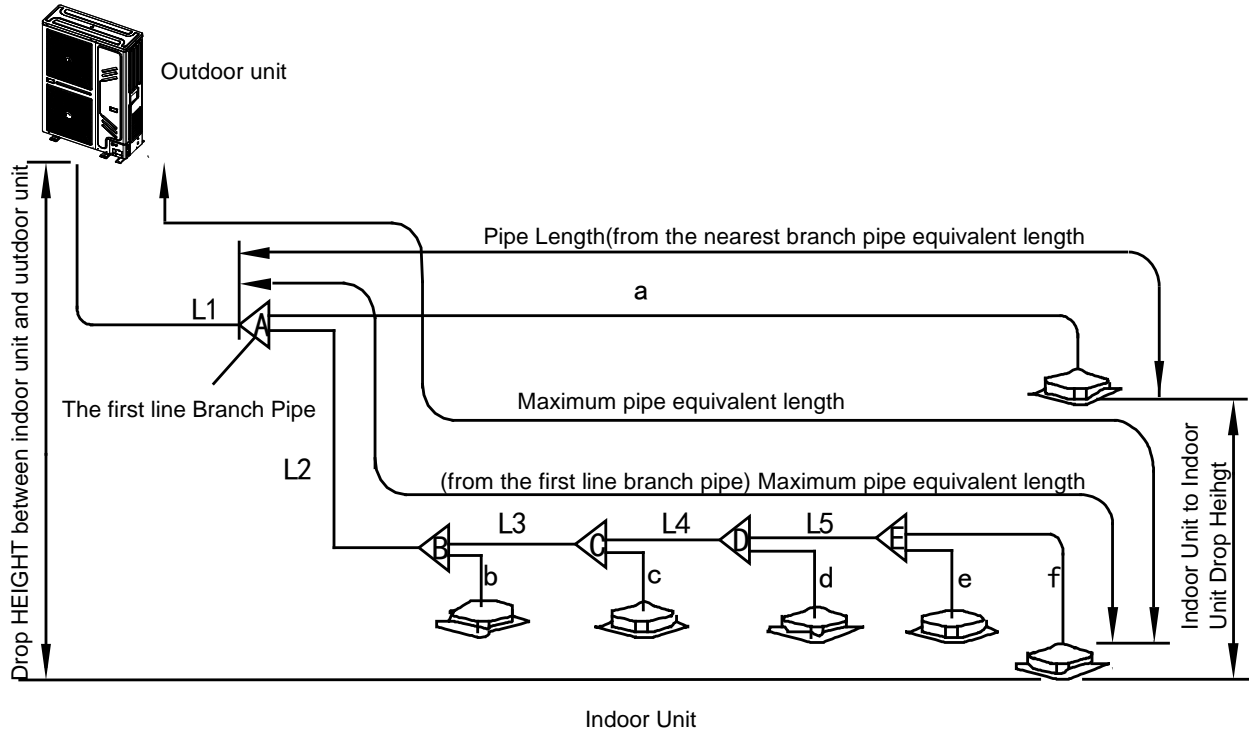
Pay attention to the piping the fat connecting pipe should out from the largest hole, otherwise the pipes will be rubbed. Please do the moth proofing for the knocked out hole, to avoid the pest processing into and destroy the components.

### 4.2 Allowable length and level difference of refrigerant pipe

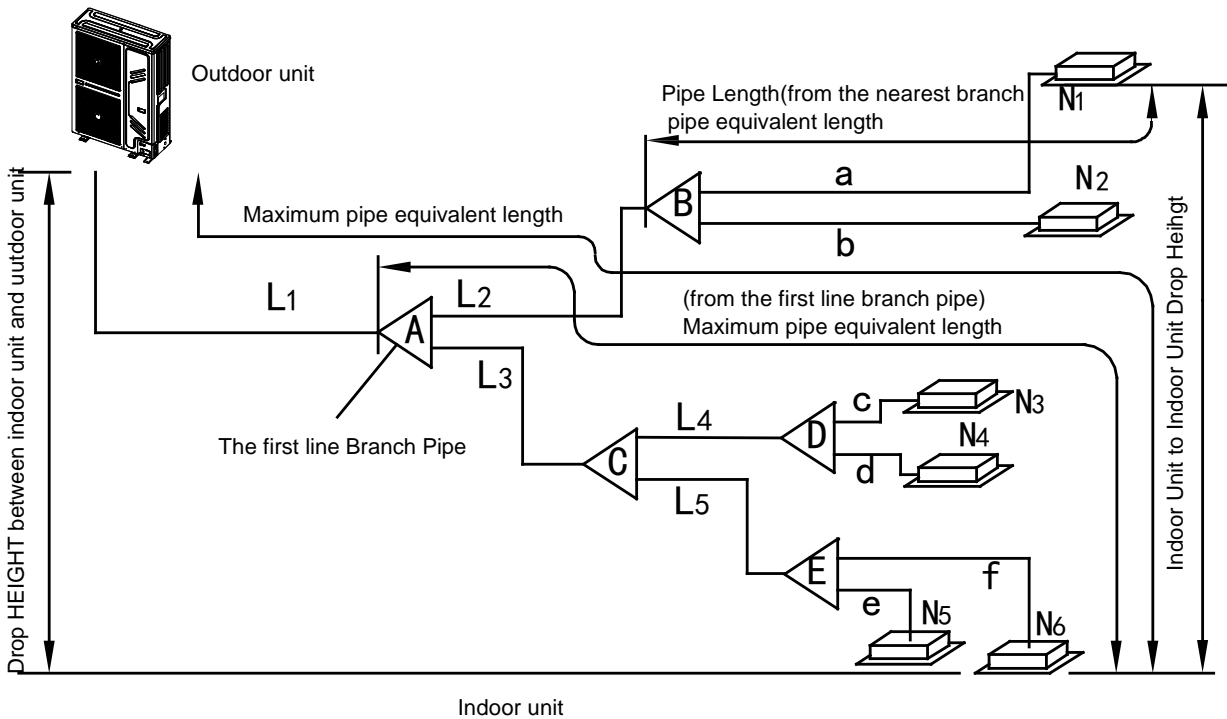
		Permitted value	Piping	
Pipe Length	Total Pipe Length(Actual)	≤100m	L1+L2+L3+L4+L5+a+b+c+d+e+f	
	Maximum Piping(L)	Actual Length	≤45m(80/105 model)	L1+L2+L3+L4+L5+f(The first connecting method) or L1+L3+L5+f(The second connecting method)
		Equivalent Length	≤60m(120~160 model)	
			≤50m(80/105 model)	
			≤70m(120~180 model)	
	Pipe Length (from the first branch to the furthest IDU)	≤20m	L2+L3+L4+L5+f(The first connecting method) or L3+L5+f(The second connecting method)	
	Pipe Length(IDU to the nearest branch)	≤15m	a,b,c,d,e,f	
Level difference	Level difference between IDU~ODU	Outdoor Unit Up	≤30m	----
		Indoor Unit Down	≤20m	----
	Level difference between IDU~IDU	≤8m	----	

Note: When the total equivalent piping length of liquid + gas side is  $\geq 90\text{m}$ , it must increase the size of air side main pipe. Besides, according to the distance of refrigerant pipe and the over matched state of indoor unit, when the capacity is decreasing it still can increase the gas side main pipe size.

The first connecting method

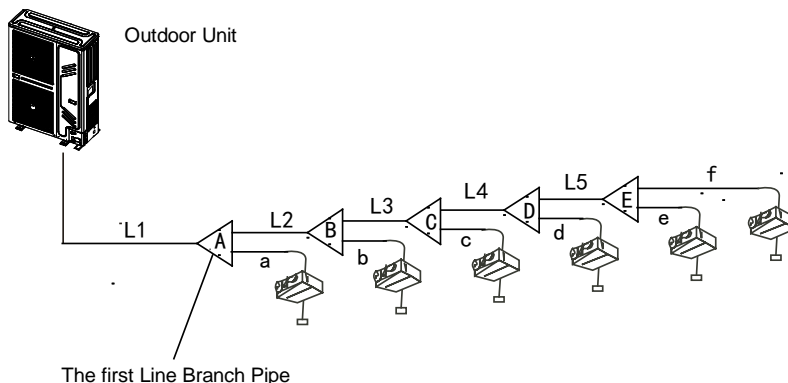


● The second connect method



### 4.3 Refrigerant pipe selection

The first connecting method



The second connecting method

<p>Outdoor Unit(Take Model 160 for example)</p> <p>indoor Units</p> <p>The first Line Branch Pipe</p> <p>Pipe definition</p>	<p>Pipe connecting position</p>	<p>Code</p>
<p>Main pipe</p>	<p>The pipe between outdoor units to the first branch of indoor unit.</p>	<p>L1</p>
<p>The main pipes of indoor unit</p>	<p>The pipe after the first branch does not direct connect with the indoor unit.</p>	<p>L2~L5</p>
<p>The branch pipes of indoor unit</p>	<p>The pipe after the branch connects with the indoor unit.</p>	<p>a,b,c,d,e,f</p>
<p>Indoor unit branch pipes components</p>	<p>The pipes connect with the main pipe, the branch pipe and the main pipe of indoor unit.</p>	<p>A,B,C,D,E</p>

Note: The distance between the first branch to the last indoor unit is more than 15m, choose the second connecting method. The pipe between the indoor units to the closest branch must be less than 15m.

**Table 1: Indoor unit branch pipes selection (a~f)**

A: Capacity of indoor units (kW)

A (kW)	Gas Side(Φ)	Liquid Side(Φ)
Wall mounted 1.5~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Wall mounted 5.6	15.9(Flaring nut)	9.53(Flaring nut)
Four way cassette type 2.2~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Four way cassette type 5.6~8.0	15.9(Flaring nut)	9.5(Flaring nut)
One way cassette type 1.8~4.5	12.7(Flaring nut)	6.4(Flaring nut)
One way cassette type 5.6	15.9(Flaring nut)	9.5(Flaring nut)
Low static pressure 1.8~4.5	12.7(Flaring nut)	6.4(Flaring nut)

Low static pressure 5.6	15.9(Flaring nut)	9.53(Flaring nut)
Thin duct type 7.1	12.7(Flaring nut)	6.4(Flaring nut)
A5 duct type 2.2~4.5	12.7(Flaring nut)	6.4(Flaring nut)
A5 duct type 5.6~8.0	15.9(Flaring nut)	9.53(Flaring nut)
A5 duct type 9.0~14.0	15.9(Flaring nut)	9.53(Flaring nut)
Console Type 2.2~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Two-way Cassette Type 2.2~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Two-way Cassette Type 5.6~7.1	15.9(Flaring nut)	9.53(Flaring nut)
Ceiling And Floor Type 3.6~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Ceiling And Floor Type 5.6~16.0	15.9(Flaring nut)	9.53(Flaring nut)
Expose And Concealed Floor-standing type 2.2~4.5	12.7(Flaring nut)	6.4(Flaring nut)
Expose And Concealed Floor-standing type 5.6~8.0	15.9(Flaring nut)	9.53(Flaring nut)

Note: The maximum length of the branch pipe should not be longer than 15m.

**Table 2: Indoor unit main pipes selection (L1~L5)**

Total capacity of downstream indoor units (kW)	Main pipe size(mm)		Branch Pipe
	Gas pipe	Liquid pipe	
A<16.6	Φ15.9	Φ9.53	FQZHN-01D
16.6≤A<23	Φ19.1	Φ9.53	FQZHN-01D

**Table 3: Main pipes selection (L1)**

Total capacity of outdoor units (kW)	When the equivalent length of all liquid and air pipes < 90m			When the equivalent length of all liquid and air pipes ≥ 90m		
	gas side (mm)	liquid side (mm)	The first line branch pipe	gas side (mm)	liquid side (mm)	The first line branch pipe
A<16	Φ15.9	Φ9.53	FQZHN-01D	Φ19.1	Φ9.53	FQZHN-01D
16≤A<23	Φ19.1	Φ9.53	FQZHN-01D	Φ22.2	Φ9.53	FQZHN-02D

Note: Main pipe L1 can be selected from table 2 and table 3, the larger size should be finally selected.

The straight distance between copper pipe turning and the contiguous branch pipe is at least 0.5m.

The straight distance between the contiguous branch pipes is at least 0.5m.

The straight distance which the branch pipes connected to the indoor unit is at least 0.5m.

**Table 4: Outdoor unit pipe connection**

MODEL	Piping side	Outdoor unit pipe connection (mm)	
		Gas Side	Liquid Side
80 model		Φ15.9	Φ9.53
105 model		Φ15.9	Φ9.53
120 model		Φ15.9	Φ9.53
140 model		Φ15.9	Φ9.53
160 model		Φ19.1	Φ9.53
180 model		Φ19.1	Φ9.53

Outdoor Unit	Maximum Quantity of Indoor unit	Total Capacity of Indoor unit
80 model	4	45%~130%
105 model	5	45%~130%
120 model	6	45%~130%
140 model	6	45%~130%
160 model	7	45%~130%
180 model	9	45%~130%

If ODU connect only one IDU, the capacity of IDU should be not more than ODU.

If ODU connect more than one IDU, the capacity of each IDU should be not more than 8kW for refrigerant uniform distribution.

When capacity of indoor unit greater than the sum of 100%, capacity of indoor unit will be attenuated.

When capacity of indoor unit greater than or equal to the sum of 120%, in order to ensure the effectiveness of machine, and then try to open the indoor units at different time.

**4.4 Remove Dirt or Water in the Piping**

Make sure there is no any dirt or water before connecting the piping to the outdoor units.

Wash the piping with high pressure nitrogen, never use refrigerant of outdoor unit.

**4.5 Airtight Test**

Charge pressured nitrogen after connecting indoor/outdoor unit piping to do airtight test.

Cautions:

1. Pressured nitrogen [4.3MPa (44kg/cm<sup>3</sup>) for R410A] should be used in the airtight test.
2. Tighten high pressure/low pressure valves before applying pressured nitrogen.
3. Apply pressure from air vent mouth on the high pressure/low pressure valves.
4. The high pressure/low pressure valves are closed when applying pressured nitrogen.
5. The airtight test should never be used any oxygen, flammable gas or poisonous gas.

**4.6 Vacuum**

Using vacuum pump to do the vacuum and never using refrigerant to expel the air.

Vacuum should be done from both liquid side and gas side simultaneously.

**4.7 Additional refrigerant charge**

Calculate the added refrigerant according to the diameter and the length of the liquid side pipe of the outdoor unit/indoor unit connection.

Liquid Side Piping Diameter	Refrigerant to be Added Perimeter Piping
Φ6.4	0.023kg
Φ9.53	0.060kg
Φ12.7	0.120kg
Φ15.9	0.180kg
Φ19.1	0.270kg
Φ22.2	0.380kg

Note: Additional refrigerant volume of branch pipe is 0.1kg per item (Consider the liquid side of divergent pipe only)

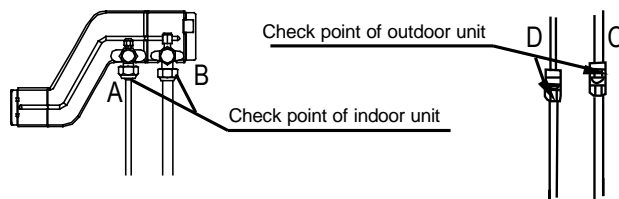
**4.8 Leak detection**

Use soap water or leak detector to check every joint whether leaks or not.

Note: A is low pressure side stop valve.

B is high pressure side stop valve.

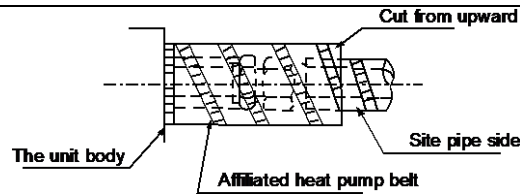
C and D are connecting pipes interface of indoor and outdoor units.



**4.9 Heat insulation**

Do the heat insulation to the pipes of air side and liquid side separately. The temperature of the pipes of air side and liquid side when cooling, for avoiding condensation please do the heat insulation fully.

- The air side pipe should use closed cell foamed insulation material, which the fire-retardant is B1 grade and the heat resistance over 120°C.
- When the external diameter of copper pipe ≤ Φ12.7mm, the thickness of the insulating layer at least more than 15mm; When the external diameter of copper pipe ≥ Φ15.9mm, the thickness of the insulating layer at least more than 20mm.
- Please use attached heat-insulating materials to do the heat insulation without clearance for the connecting parts of the indoor unit pipes.



## 5. Electric Wiring Installations

### 5.1 Highlights of electrical installation

- 1) Please separately design the special power of indoor units and outdoor units.
- 2) The power adopts special circuit, and installs creepage protector and manual switch.
- 3) The indoor units' power, creepage protector and manual switch connecting to the same outdoor unit must be general. All indoor units must be the same circuit, and must simultaneously on or off; otherwise, system life will seriously effect, and appear the situation not to solve.
- 4) The communication line between indoor units and outdoor units please use 3 core shielded wiring, while don't use the multi core wiring without shielded affect, for the interference is reduced each other
- 5) Purchased wiring, parts and materials should be in compliance with the local and national regulations.
- 6) All field wiring construction should be finished by qualified electrician.
- 7) Air conditioning equipment should be grounded according to the relevant local and national electrical regulations.
- 8) Current leakage protection switch should be installed (select current leakage breaker in light of the 1.5-2 times of total loading rated current.)
- 9) When connecting wiring and wire holder, use cable clamp to fix and make sure no exposure.
- 10) Refrigerant piping system and wiring system of indoor and outdoor unit belongs to the different system.
- 11) Do not connect the power wire to the terminal of signal wire.
- 12) When power wire is parallel with signal wire, put wires to their own wire tube and remain proper gap (the current capacity of power wire is: 10A below 300mm, 50A below 500mm).
- 13) Voltage discrepancy of power wire terminal (side of power transformer) and end voltage (side of unit) should be less than 2%. If its length could not be shortened, thicken the power wire. Voltage discrepancy between phases shall not pass 2% rated value and Current discrepancy between highest and lowest phase should be less than 3% rated value.

### 5.2 Selection of wiring

1. The selection of wiring area shall in accordance with the requirements below:
    - 1) Voltage loss of wire shall meet the requirement of terminal voltage for normal operation and startup.
    - 2) The wiring current-carrying capacity determined by installed method and environment is not less than the largest current of unit.
    - 3) Conductor shall ensure the stability of movement and heating.
    - 4) The conductor's smallest sectional area should satisfy the requirement of mechanical strength.
- When earth protection line (shortly called PE line) is made of material the same as phase line, the smallest sectional area of PE line should be in accordance with the regulation below:

Sectional area of core to phase lines(mm)	Smallest sectional area of PE line(mm)
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	S/2

### 5.3 Distribution highlights of distribution wiring

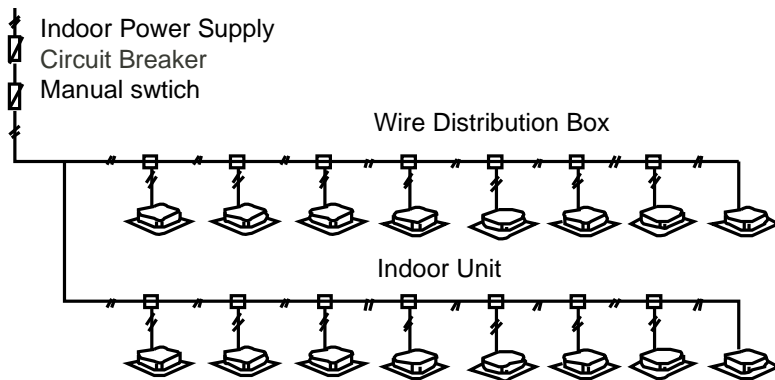
1. When distributing wiring, select wirings with different colors for phase line, zero line and protection earth according to relevant regulations.
2. The power wire and control wire of concealed engineering is prohibited to bind together with refrigerant piping. It is necessary to pass through wire tube and be distributed separately, and the gap between control line and power wire should be 500mm at least.
3. When distributing wiring by passing through pipe, the following should be paid attention to:
  - 1) Metal wire tube could be used in indoor and outdoor, but it is not suitable to the place with acid – alkali corrosion.
  - 2) Plastic wire tube is generally used in indoor and place with corrosion, but it is not suitable to situation with mechanical damage.



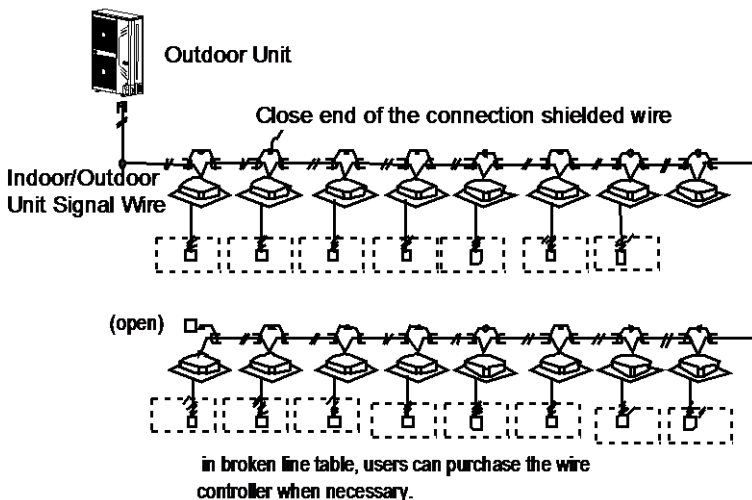
- 3) The wiring through pipe shall not be in the form with ends jointing. If there must be joint, connection box should be installed at the corresponding place.
- 4) The wiring with different voltage should not pass through the same wire tube.
- 5) Total sectional area of wiring through wire tube shall not exceed 40% valid area of stuffing tube.
- 6) Fixing point of wire tube support shall follow the standard below:

Normal diameter of wire tube mm	Largest gap between fixed points of wire tube	
	Metal pipe	Plastic pipe
15~20	1.5m	1m
25~32	2m	1.5m
40~50	2.5m	2m

**5.4 Indoor unit power supply wiring**



**5.5 Indoor/Outdoor unit signal wire wiring**  
**Indoor/Outdoor unit signal wire wiring**



**Note:**

- Refrigerant piping system, indoor unit-indoor unit connection signal wires and indoor unit-outdoor unit connection signal wire are in the same system.
- When power cord is parallel with signal wire, please put them into separate wire distribution pipes, and leave a proper distance. (Reference distance: It is 300mm when current capacity of power cord is less than 10A, or 500mm when 50A).

**CAUTION**

- Please select power source for indoor unit and outdoor unit respectively
- The power supply has specified branch circuit with leakage protector and manual switch.

Indoor unit connect with power supply which is 220-240V~50Hz. Outdoor unit connect with power supply which is 220-240V~ 50Hz (Please set all the indoor unit power supply of one system into the same circuit. It should turn on or shut down the unit at the same time, otherwise, the service life would affect seriously, even the unit may not turn on.)

- Please put the connective wire system between indoor unit and outdoor unit with the refrigerant system together.
- Use 3-core screened wire as indoor and outdoor control wire.
- The installation should comply with relevant national electric standard.
- Power wiring should be engaged by professional electrician.

## 6. Outdoor Unit Wiring

### The Specification of Power

Table 6-1

Capacity		80/105 model	120~140 model	160 model	180 model
Outdoor Unit power	Phase	1 phase	1 phase	1 phase	1 phase
	Voltage and Frequency	220-240V~ 1Ph 50Hz	220-240V~ 1Ph 50Hz	220-240V~ 1Ph 50Hz	220-240V~ 1Ph 50Hz
	Power Wiring(mm <sup>2</sup> )	3-core X4.0	3-core X4.0	3-core X4.0	3-core X4.0
Circuit Breaker/Fuse (A)		30	40	63	63
Indoor unit/Outdoor unit Signal wire (Weak electric signal) (mm <sup>2</sup> )		3-core shielded wire 3X0.75			

#### CAUTION

A disconnection device having an air gap contact separation in all active conductors should be incorporated in the fixed wiring according to the National Wiring Regulation.

#### Caution:

- Employ an electrical engineer for wiring.
- Complete wiring according to national electrical standards.
- To reduce interference, use a three-core shielded twisted pair as the outdoor unit signal cable. Do not use a multi-core cable.
- Incorporate the outdoor unit and indoor unit connection wiring system and refrigerant pipe system for the same system.
- The power supply, electric leakage protectors, and manual switches of the indoor units that connect to the same outdoor unit must be universal. Use the same loop for the indoor unit power. Connect to the same outdoor unit must be universal. Use the same loop for the indoor unit power supplies in the same system. Power on/off at the same time.
- If the power supply uses a branch loop, install an electricity leakage protector and a manual switch.
- Design a dedicated power supply for the indoor unit and outdoor unit.

#### Indoor/Outdoor Unit Signal Wire

Connect the wire according to their numbers.

Wrong connection may cause malfunction.

#### Wiring Connection

Seal the wiring connection with the insulation material, or the condensing dew will be caused.

#### NOTE

The air-conditioners can connect with Central Control Monitor (CCM). Before operation, please wiring correctly and set system.

## 7. Test Running

Operate according to “key points for test running” on the electric control box cover.

### CAUTION

- Test running cannot start until the outdoor unit has been connected to the power for 12hours.
- Test running cannot start until all the valves are affirmed open.
- Never make the test running if the machine has malfunction.
- Make sure the communication between the indoor unit and outdoor unit is normal before test running.

## 8. Precautions on Refrigerant Leakage

This air conditioner (A/C) adopts innocuous and nonflammable refrigerant. The locating room of the A/C should be big enough that any refrigerant leakage is unable to reach critical thickness. So certain essential action can be taken on time.

### Refrigerant critical thickness: 0.44[kg/m<sup>3</sup>] for R410A.

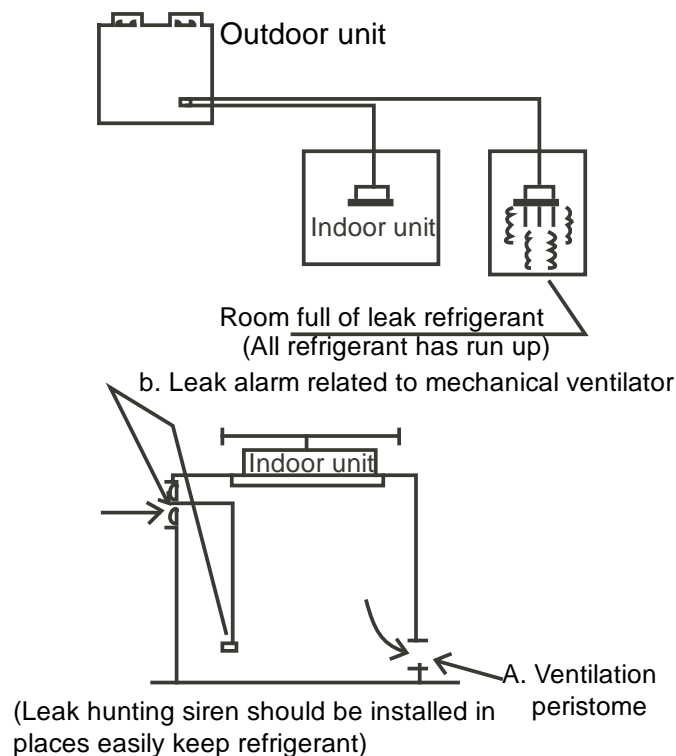
Confirm the critical thickness through follow steps, and take necessary actions.

1. Calculate the sum of the charge volume (A[kg]) Total Refrigerant volume of 10HP=factory refrigerant volume + super addition
2. Calculate the indoor cubage (B[m<sup>3</sup>]) (as the minimum cubage.)
3. Calculate the refrigerant thickness

$$\frac{A[\text{kg}]}{B[\text{m}^3]} \leq \text{critical thickness}$$

Counter measure against over high thickness

1. Install mechanical ventilator to reduce the refrigerant thickness under critical level. (ventilate regularly)
2. Install leak alarm facility related to mechanical ventilator if you cannot regularly ventilate.



### NOTE

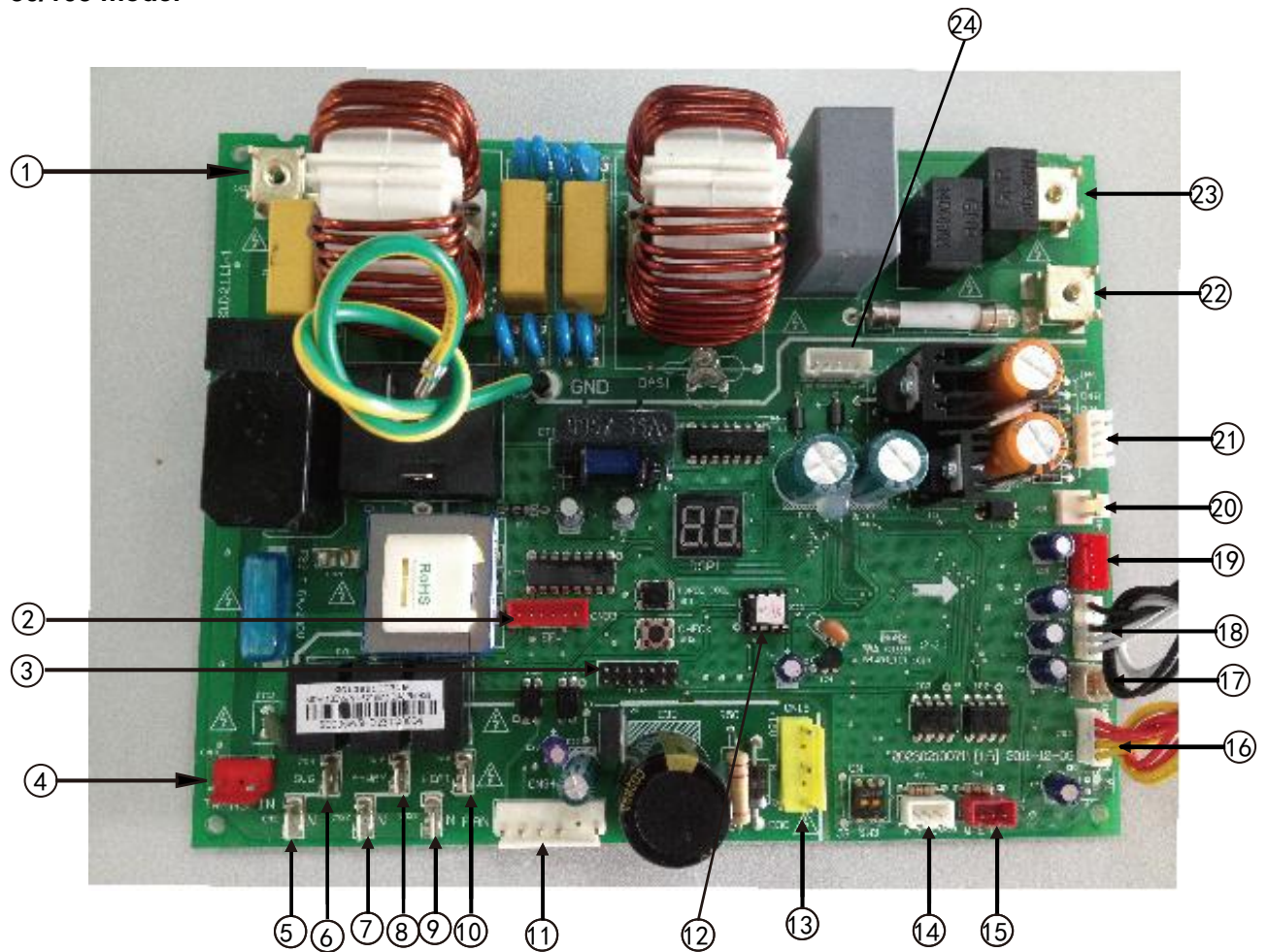
Please press “cool” button to carry out refrigerant recycling process. Keep the low pressure above 0.2MPa; otherwise compressor may be burnt out.

# Part 4 Troubleshooting

<b>1. PCB ports instructions .....</b>	<b>89</b>
<b>2. PCB parts instructions .....</b>	<b>93</b>
<b>3. Function setting dial switches instructions.....</b>	<b>96</b>
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<b>5. PCB Introduction.....</b>	<b>98</b>
<b>6. Error code table.....</b>	<b>100</b>
<b>7. Troubleshooting .....</b>	<b>102</b>

# 1. PCB ports instructions

80/105 model

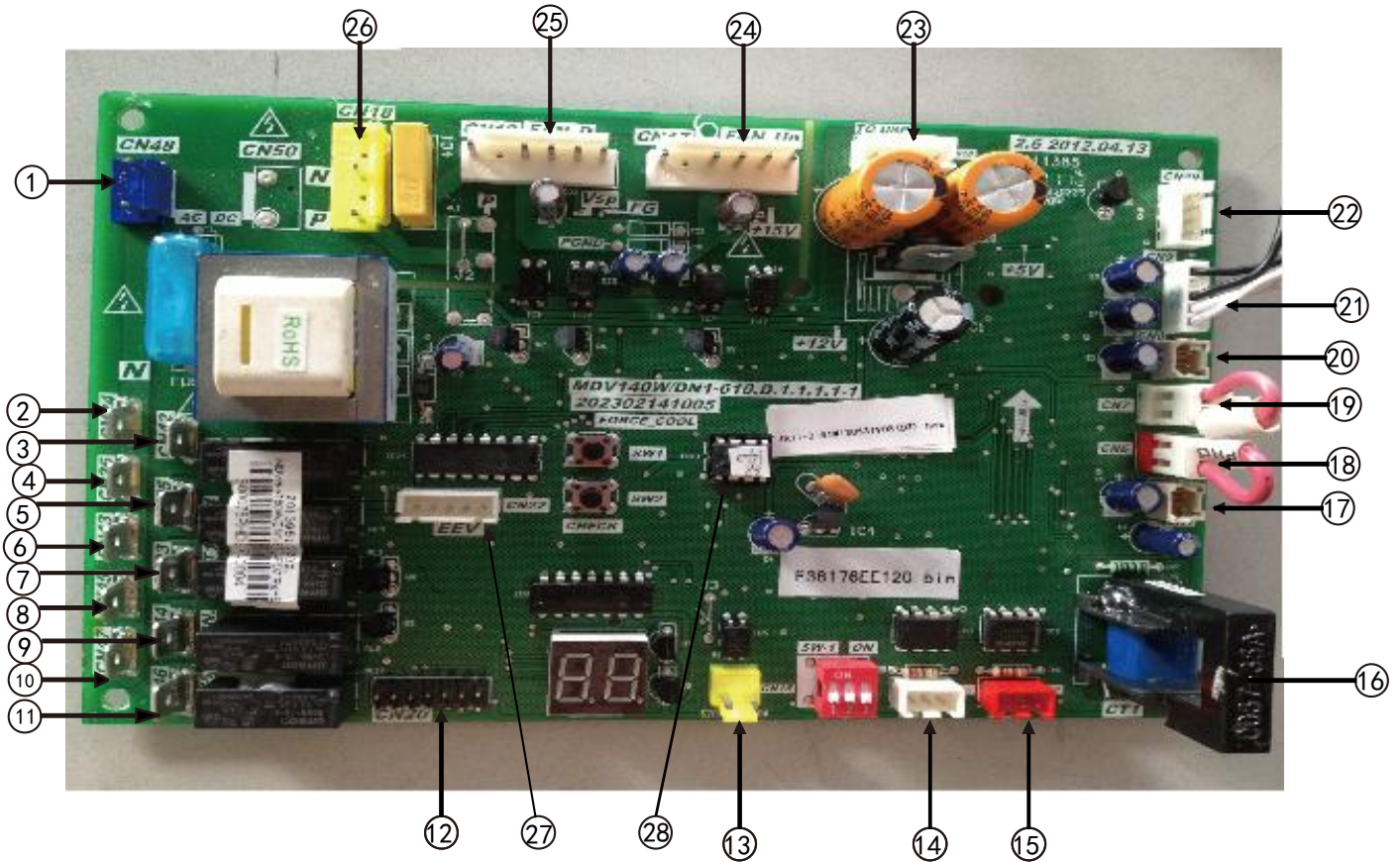


PCB ports instruction

No.	Content	Port voltage
1 CN27	PCB power supply output port	220V
2 CN33	EXV download output port	The first pin on the left: DC12V
3 CN32	Online programmable port	/
4 CN19	Reserved	/
5 CN21	Load output port	220V
6 CN14	Load output port (SV6)	0V or 220V
7 CN22	Load output port	220V
8 CN15	Load output port (4-way valve)	0V or 220V
9 CN23	Load output port	220V
10 CN16	Load output port	0V or 220V
11 CN34	Signal output of outdoor fan port	DC380V +15V
12	EEPROM port	/
13 CN18	Power supply of outdoor fan port	DC380V +15V
14 CN30	Communication port between indoor units	DC2.5~5V
15 CN29	Communication port between outdoor unit and indoor unit	DC2.5~5V
16 CN13	Signal input port of system low pressure & high pressure detect switch	DC0~5V (in dynamic change)
17 CN8	Discharge temperature detection port of the inverter compressor	DC0~5V (in dynamic change)
18 CN9	Outdoor temperature & condenser coil temperature detection port	DC0~5V (in dynamic change)
19 CN49	Communication port between PCB and PFC module	The first pin on the left: DC12V
20 CN31	Reserved	/
21 CN24	Reserved	/
22 CN11	Power input port	220V
23 CN10	Power input port	220V
24 CN17	Communication port between PCB and IPM module	The first pin on the right: DC12V; the second pin on the right:5V



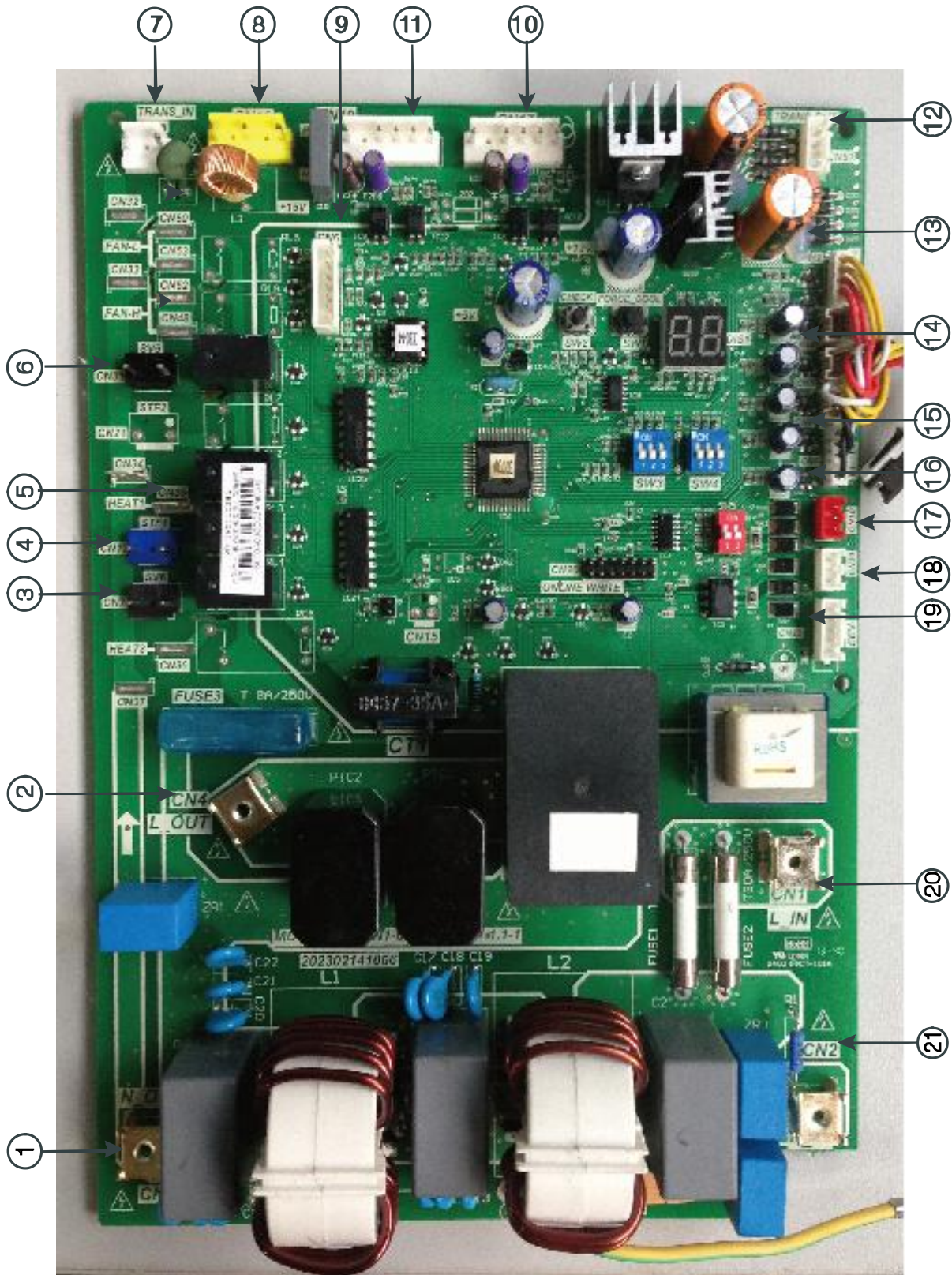
120~160 model



PCB ports instruction

No.	Content	Port voltage
1 CN48	AC Power Input	AC 220V
2 CN24	Load output port	AC 220V
3 CN42	Load output port(single way valve)	AC 220V
4 CN26	Load output port	AC 220V
5 CN25	Load output port(4-way valve)	AC 220V
6 CN43	Load output port	AC 220V
7 CN23	Load output port(crankcase heating)	AC 220V
8 CN45	Load output port	AC 220V
9 CN44	Load output port	AC 220V
10 CN47	Load output port	AC 220V
11 CN46	Load output port(single way valve)	AC 220V
12 CN20	Online Programmable Port	DC 5V
13	Night Mode	/
14 CN11	Communication port between indoor units	DC 5V
15 CN10	Communication port between indoor unit and outdoor unit	DC 5V
16	Signal input port of AC input current	/
17 CN1	Detect port of radiation fin	DC 5V
18 CN6	Signal input port of system low pressure detect switch	/
19 CN7	Signal input port of system high pressure detect switch	/
20	Discharge temperature detect port of converter compressor	DC 5V
21 CN8	Detect port of ambient temperature	DC 5V
21 CN8	Detect port of condenser temperature	DC 5V
22 CN49	The port of PFC control	DC 12V
23 CN16	Communication port between mainboard 1 and mainboard 2 (mainboard 1 & 2 refers to the wiring diagram)	DC 5V
24 CN17	DC fan1 port	DC 380V
25 CN19	DC fan 2 port	DC 380V
26 CN18	Transformer voltage detect port	DC 380V
27 CN22	EEV driving port	DC 12V
28	EEPROM Port	DC 5V

180 model



PCB ports instruction

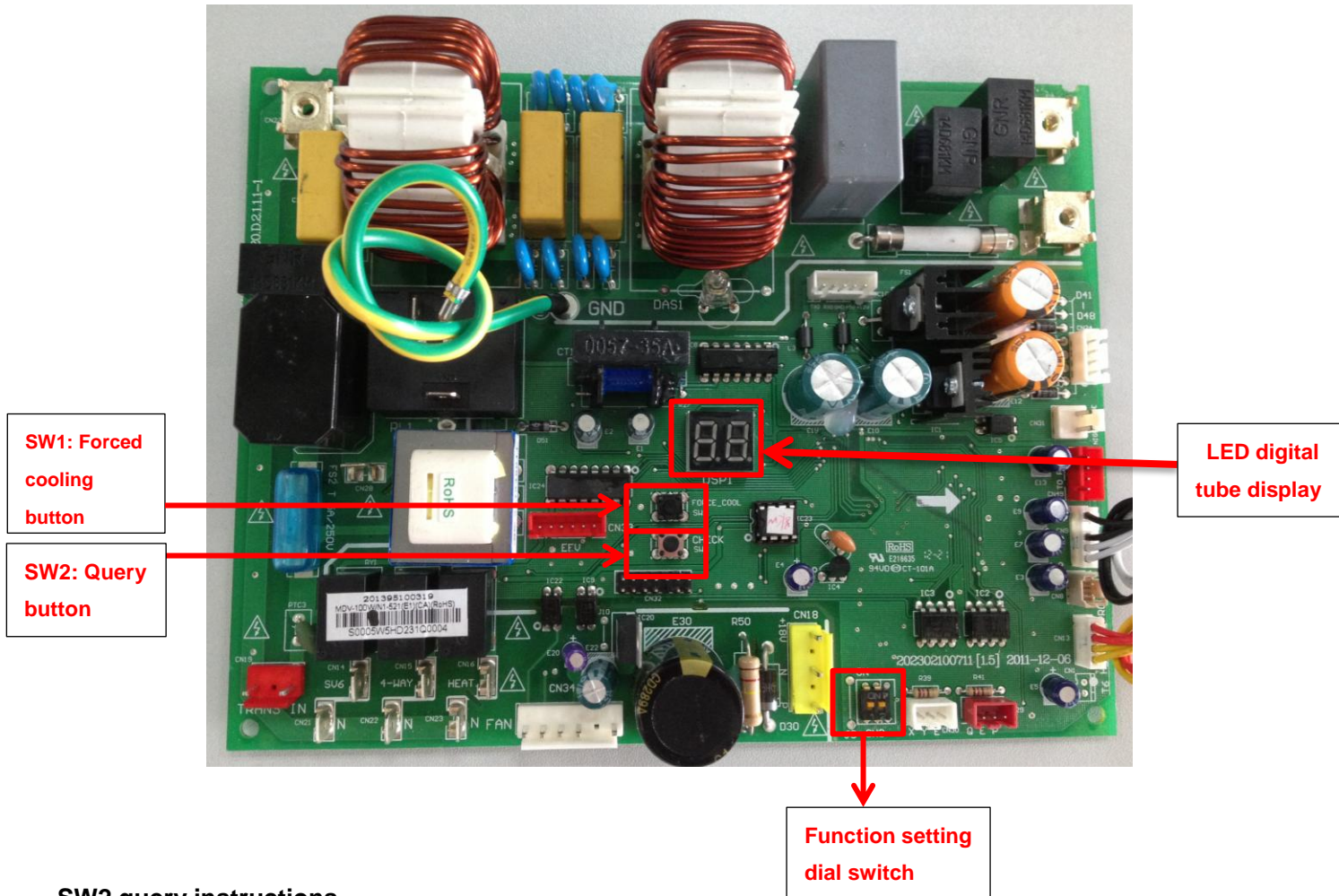
No.	Content	Port voltage
1 CN3	PCB power supply output port	220V
2 CN4	PCB power supply output port	220V
3 CN7	Load output port (SV6)	0V or 220V
4 CN13	Load output port(4-way valve STF1)	AC 220V
5 CN35	Load output port(crankcase heating)	AC 220V
6 CN31	Load output port(single way valve)	AC 220V

7 CN26	Transformer voltage detect input port	DC 380V
8 CN18	Power supply of outdoor fan port	DC380V +15V
9 CN6	Communication port between mainboard 1 and mainboard 2 (mainboard 1 & 2 refers to the wiring diagram)	DC 5V
10 CN17	DC fan 1 port(fan up)	DC 380V
11 CN19	DC fan 2 port(fan down)	DC 380V
12 CN51	Transformer voltage detect output port	DC 380V
13 CN12	High/ low pressure detect switch	DC 5V
14 CN24	Heat sink temperature sensor T6	DC0~5V (in dynamic change)
15 CN8	Compressor discharge temperature sensor T5	DC0~5V (in dynamic change)
16 CN9	T3,T4 temperature sensor	DC0~5V (in dynamic change)
17 CN10	Communication port between indoor unit and outdoor unit	DC 5V
18 CN30	Communication port between indoor units	DC2.5~5V
19 CN22	EEV driving port	DC 12V
20 CN1	Power input port	220V
21 CN2	Power input port	220V



## 2. PCB parts instructions

### 80/105 model



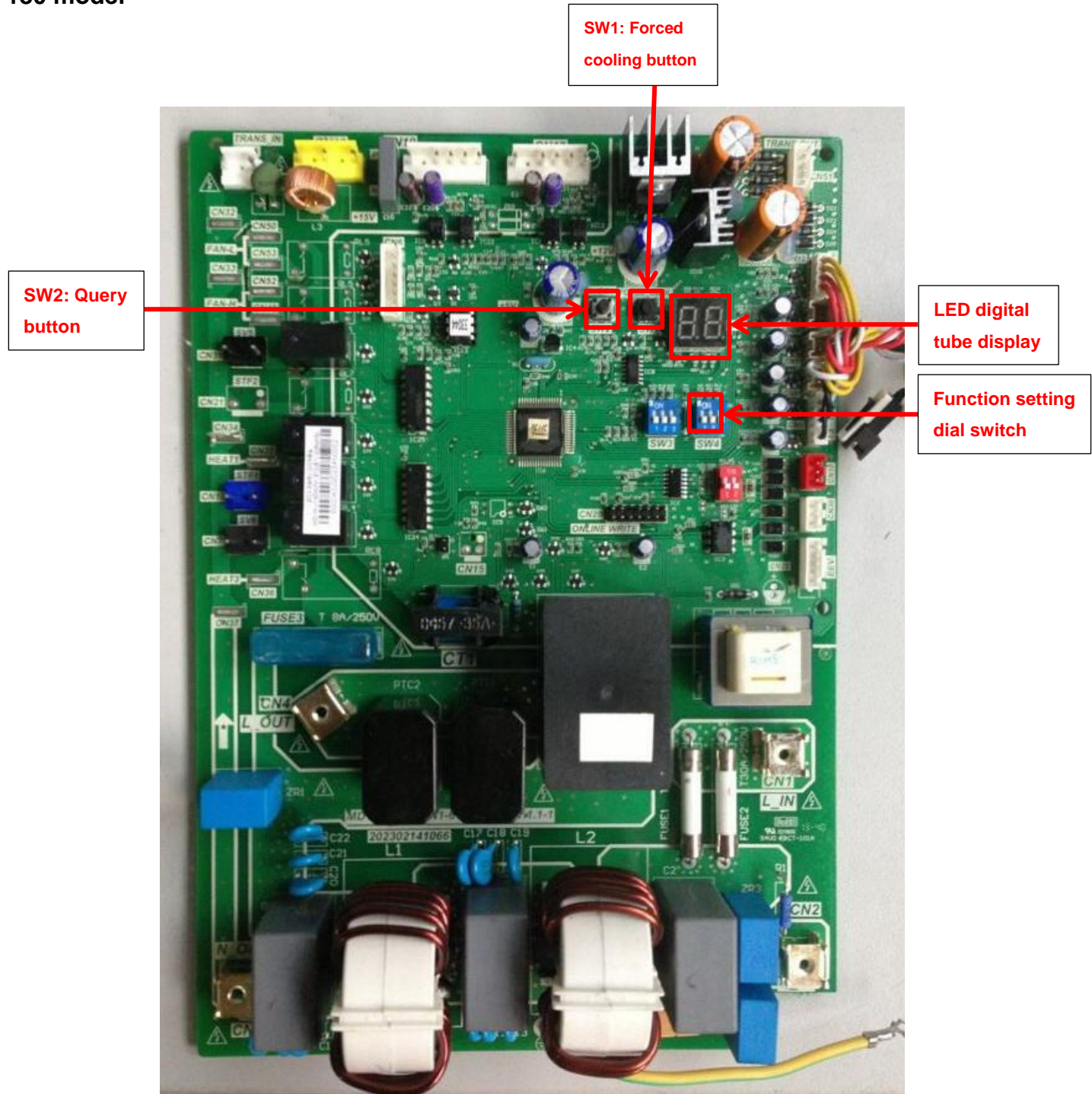
### SW2 query instructions

No.	Content	Note
1	Normal display	Frequency will display when running, quantities of indoor unit will display when standby.
2	Operating mode	0—Standby; 2—Cooling; 3—Heating; 4—Forced cooling
3	Operating fan speed level	0—Power off
4	The total required capacity of the indoor unit	---
5	The required capacity of the revised outdoor unit	---
6	T3 piping temperature	Actual value
7	T4 environment temperature	Actual value
8	T5 discharge temperature	Actual value(if it is more than one hundred, it will be only display the hundreds' digit and the tens' digit)
9	The surface temperature of the cooling fin	----
10	EXV opening degree	Actual Value=Display value*8
11	Current value	Actual value
12	Voltage AD value	Actual value
13	T2 average temperature	Actual value
14	Total quantities of the indoor units	Actual value
15	The quantities of the operating indoor units	Actual value
16	Model Type	8KW: 8; 10KW: 10
17	Priority mode	Reserved
18	Version of the program	----
19	The last malfunction or protection code	If there is no malfunction or protection code, it will display "nn".
20	Display "--"	----





**180 model**



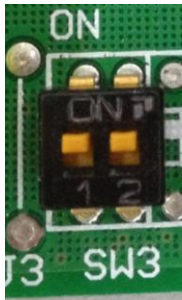
**SW2 query instructions**

No.	Content	Note
0	Normal display	Frequency will display when running, quantities of indoor unit will display when standby.
1	Operating mode	0—Standby; 2—Cooling; 3—Heating; 4—Forced cooling
2	Operating fan speed level	0—Power off
3	The total required capacity of the indoor unit	---
4	The required capacity of the revised outdoor unit	---
5	T3 piping temperature	Actual value
6	T4 environment temperature	Actual value
7	T5 discharge temperature	Actual value(if it is more than one hundred, it will be only display the hundreds' digit and the tens' digit)
8	The surface temperature of the cooling fin	----
9	EXV opening degree	Actual Value=Display value*8
10	Current value	Actual value
11	Voltage AD value	Actual value

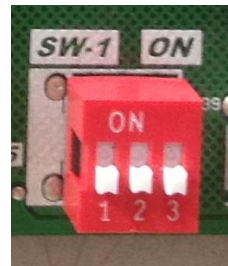
12	T2 average temperature	Actual value
13	Total quantities of the indoor units	Actual value
14	The quantities of the operating indoor units	Actual value
15	Model Type	8KW: 8; 10KW: 10
16	Priority mode	Reserved
17	Version of the program	----
18	The last malfunction or protection code	If there is no malfunction or protection code, it will display "nn".
19	Display "--"	----

### 3. Function setting dial switches instructions

#### 80/105 model



#### 120~160 model



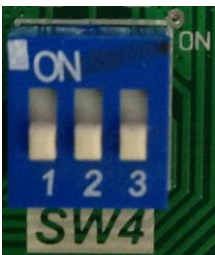
#### SW3 definition: Auto Addressing Dial

SW3		
1	ON	Obtain network address automatically
	OFF	Obtain network address manually
2	ON	Revocation indoor unit network address
	OFF	/

#### SW-1 definition: Auto Addressing Dial

SW-1		
1	ON	Obtain network address automatically
	OFF	Obtain network address manually
2	ON	Revocation indoor unit network address
	OFF	/
3	ON	Reserved
	OFF	

#### 180 model



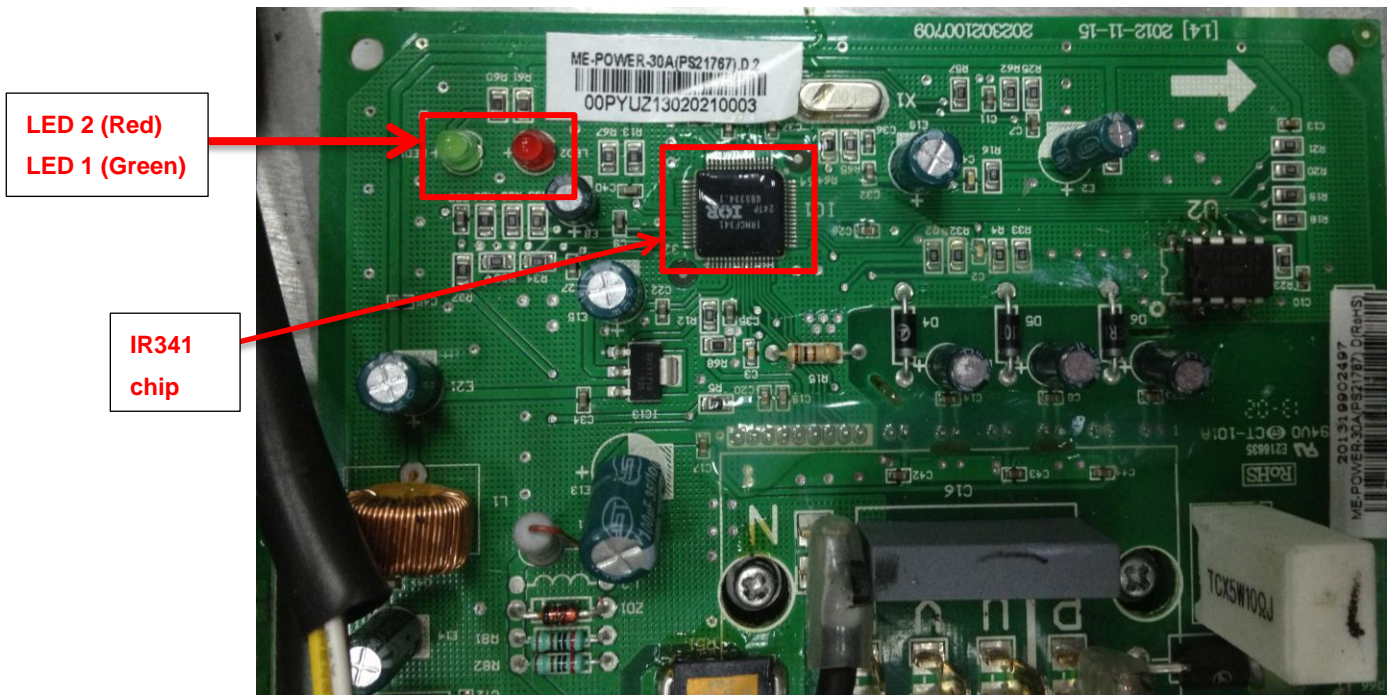
#### SW4 definition: Auto Addressing Dial

SW3		
1	ON	Obtain network address automatically
	OFF	Obtain network address manually
2	ON	Revocation indoor unit network address
	OFF	/

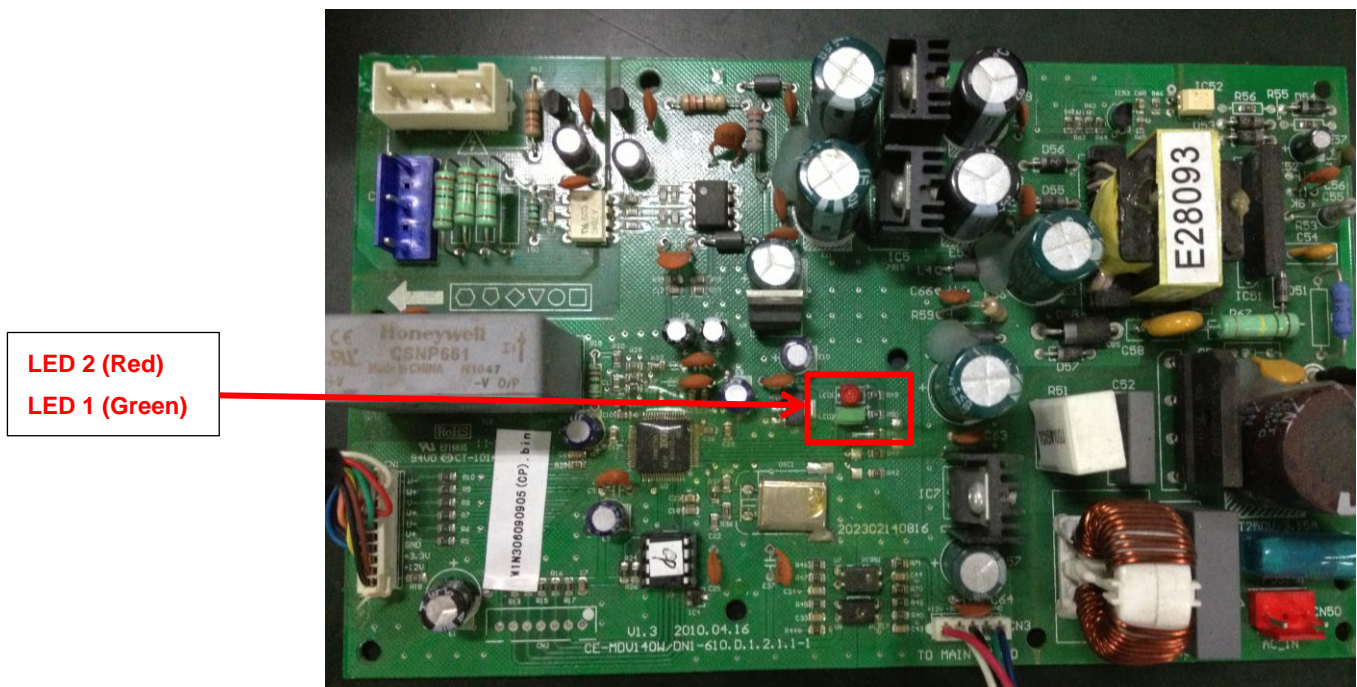


### 4. LED on PCB instructions

The lamp on the 80/105 model, refers to the following picture



The lamp on the 120~160 model, refers to the following picture

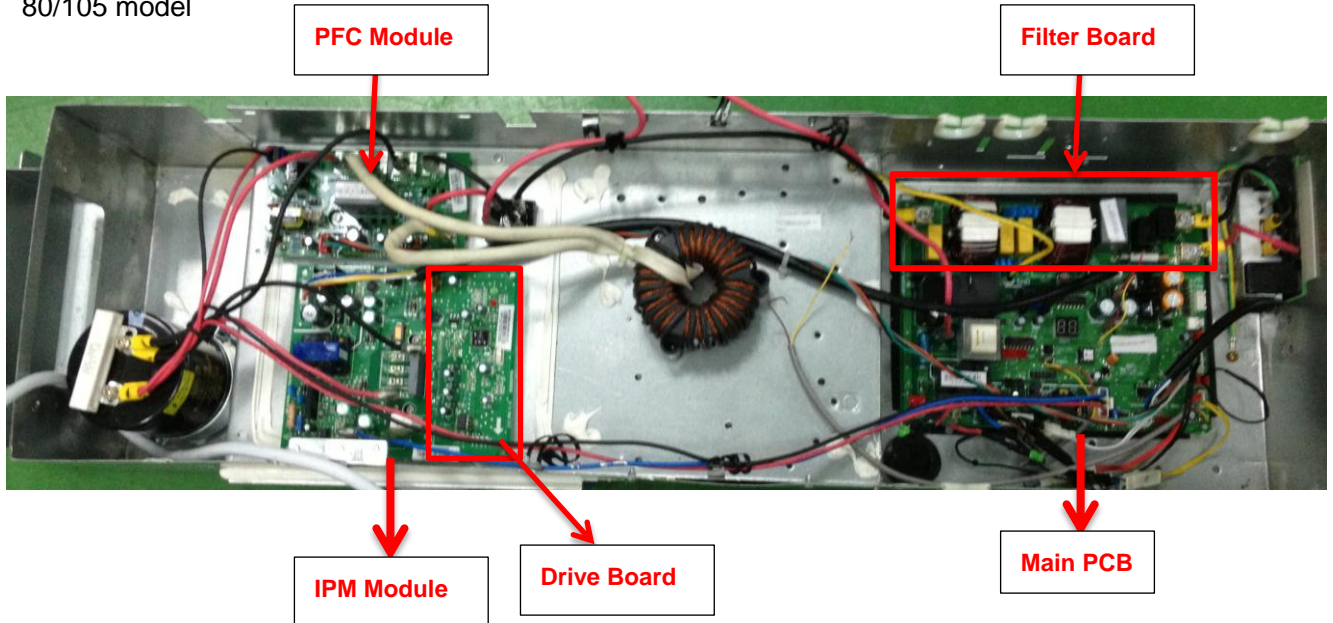


**LED1:** Malfunction indicator lamp of inverter module. The lamp will be off if the system running is normal. And it will be on if the inverter module is faulty and the error code will display on digital tube.

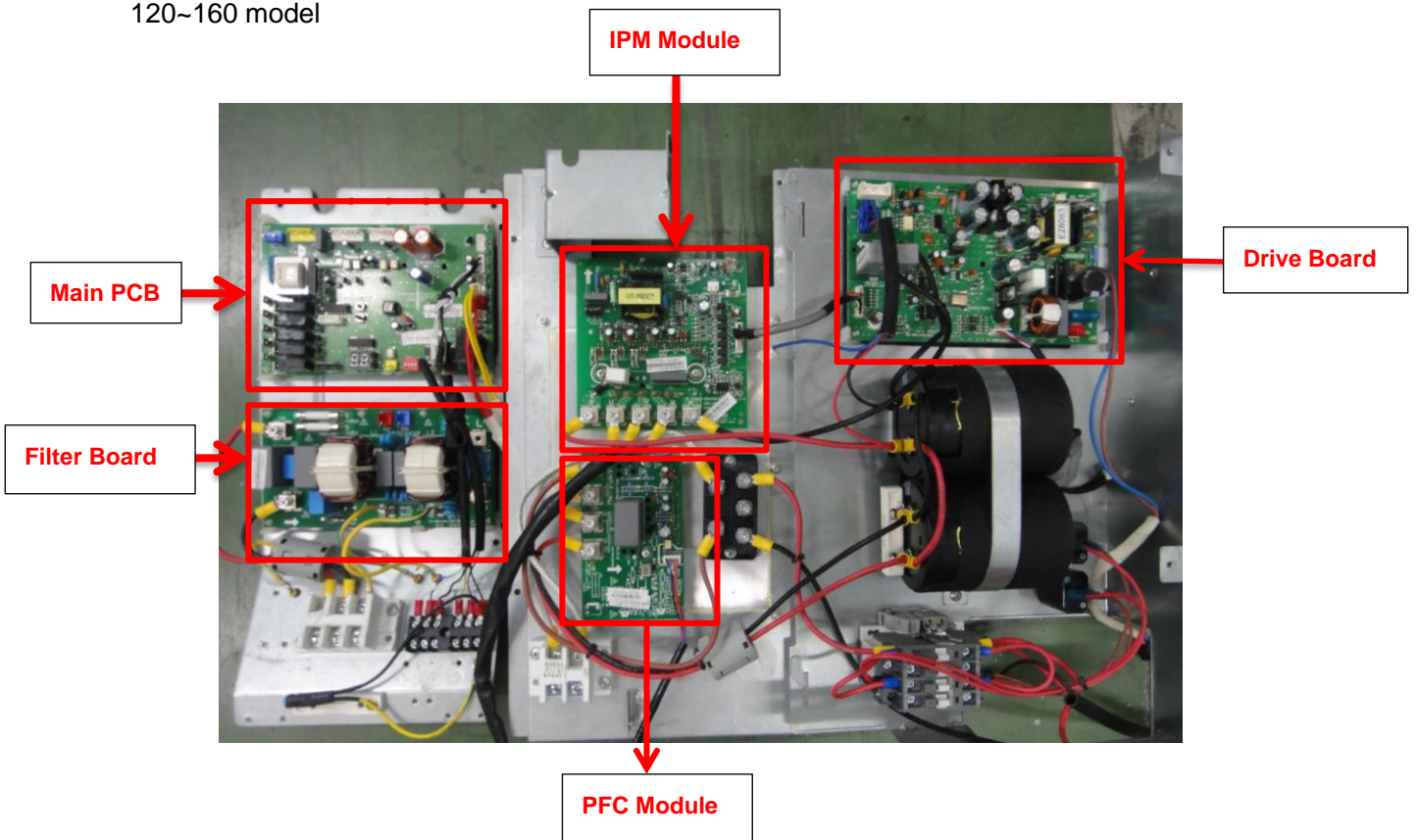
**LED2:** Running indicator lamp of inverter module. The lamp will be on if the system running is normal.

### 5. PCB Introduction

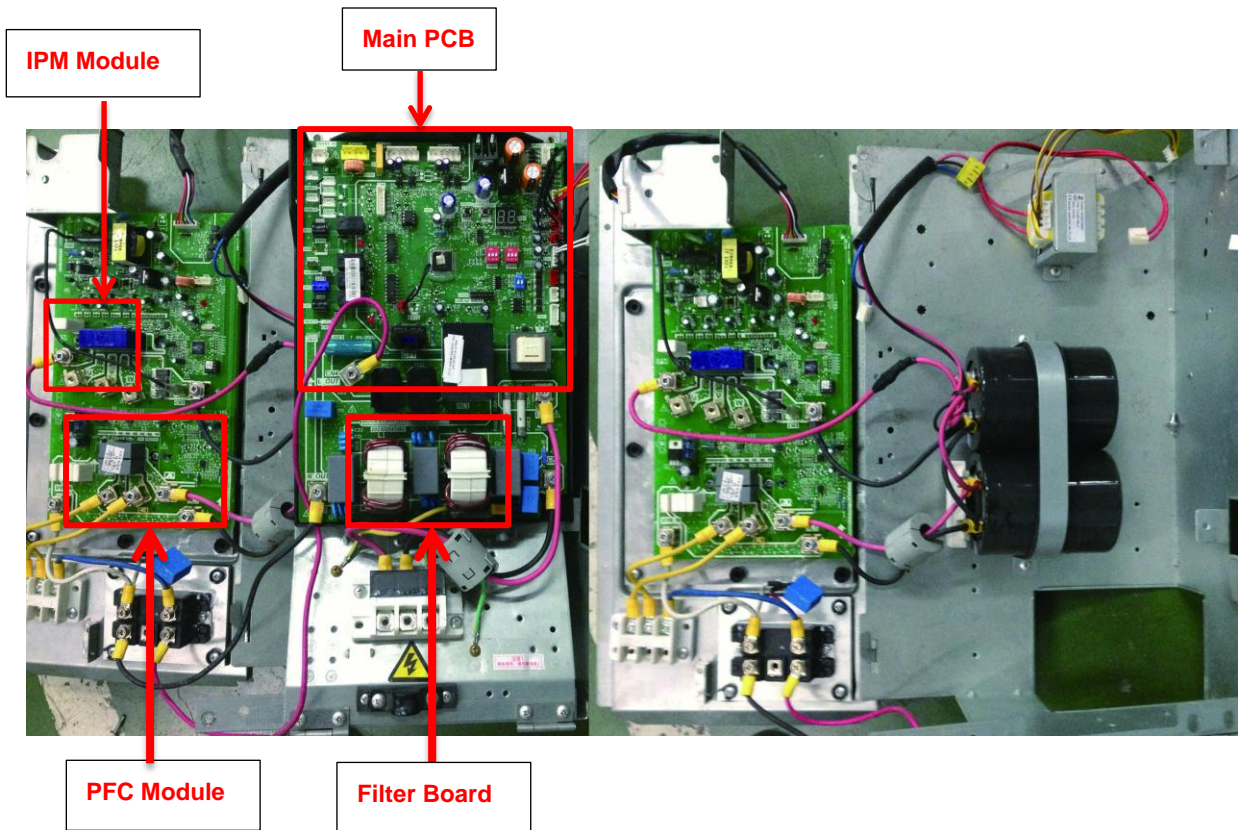
80/105 model



120~160 model







## 6. Error code table

Error code	Content	Note
H0	Communication malfunction between IR341 and main control board	80/105/180 model
E3		120~160 model
E2	Communication malfunction between the indoor chip and outdoor chip.	All models
E4	Pipe temperature T3& ambient temperature T4 sensor malfunction	All models
E5	Outdoor unit voltage protection	All models
E6	DC fan malfunction	All models
E7	Discharge temperature sensor malfunction	80/105/180 model
E9	EEPROM malfunction	80/105/180 model
E0		120~160 model
EA	A fan in the A region run for more than 5 minutes in Heat mode	80/105/180 model
E7		120~160 model
Eb	There are two times E6 fault in 10 minutes (recovery after power off)	80/105/180 model
E8		120~160 model
P1	High pressure protection	All models
P2	Low pressure protection	All models
P3	Compressor current protection	All models
P4	Compressor discharge temperature protection	All models
P5	Condenser T3 high temperature protection	All models
P6	Modules protection	All models
PE	Evaporator high temperature protection	80/105/180 model
P7		120~160 model
P8	Typhoon protection	All models
L0	Module malfunction	80/105/180 model
L1	DC generatrix low voltage protection	80/105/180 model
L2	DC generatrix high voltage protection	80/105/180 model
L4	MCE malfunction	80/105/180 model
L5	Zero speed protection	80/105/180



		model
L7	Wrong phase protection	80/105/180 model
L8	Frequency difference in one second >15Hz protection	80/105/180 model
L9	Frequency difference between setting speed and running speed more than 15Hz protection	80/105/180 model

Note: P6 display on digital tube automatically, L0~L9 these error codes will display on digital tube only through check button .

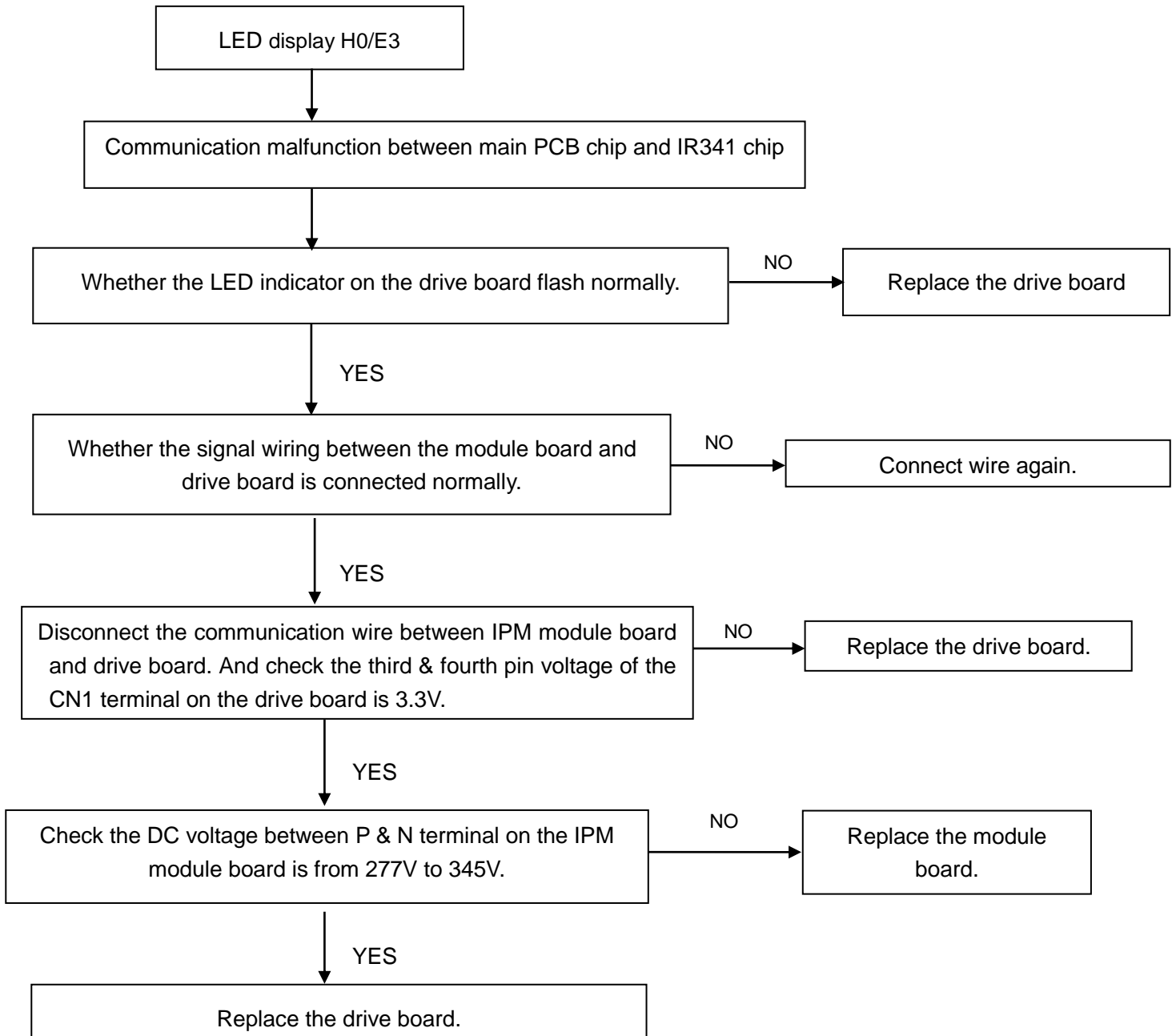
## 7. Troubleshooting

### 7.1 H0/E3: Communication malfunction between IR341 and main chip on the main PCB.

(H0 is for 80/105/180 model, E3 is for 120~160 model.)

IR341 chip: it is used for inverter compressor drive.

0537 chip: it is used for control the communication between indoor unit and outdoor unit, and the communication between outdoors.

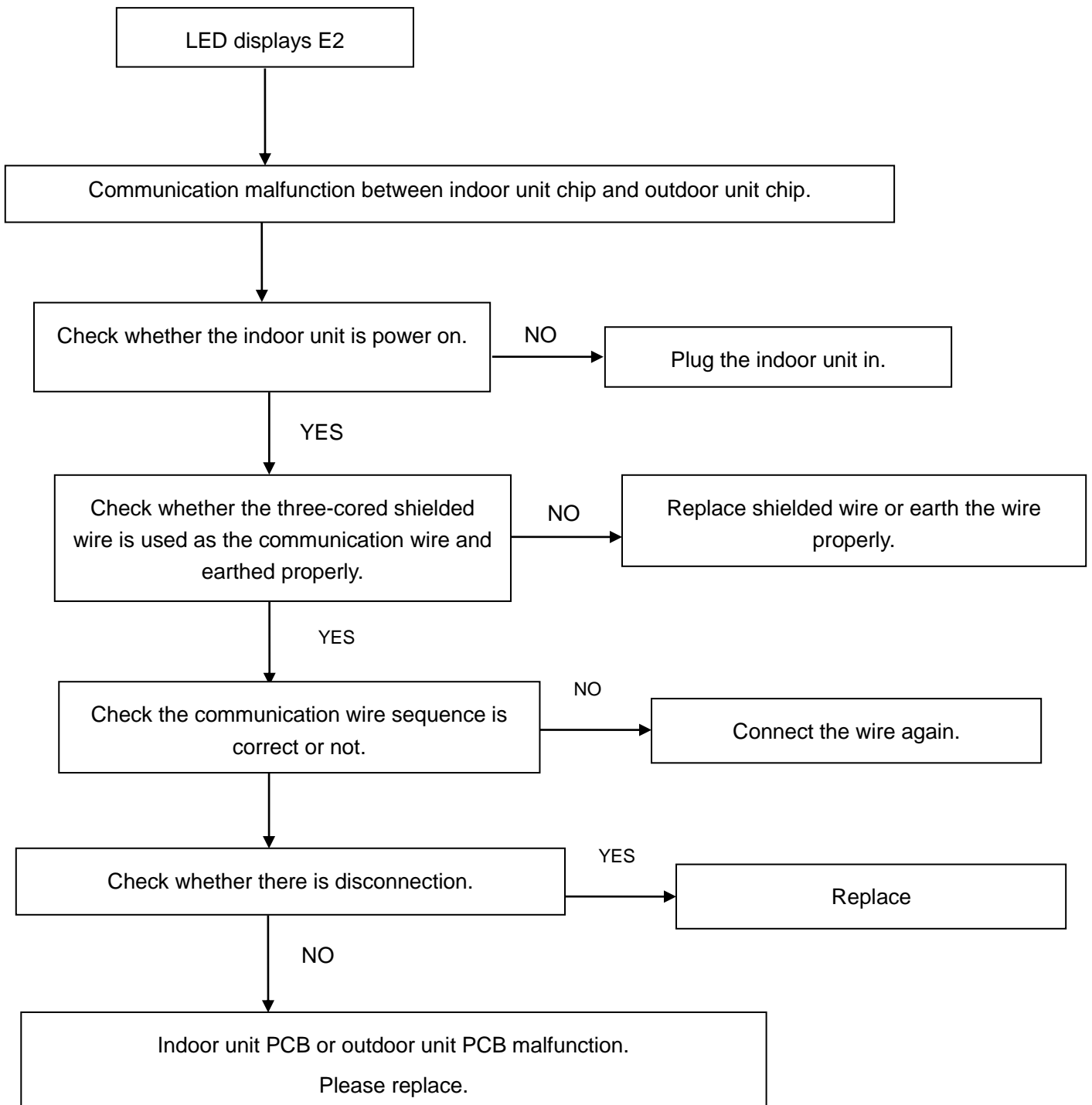


#### Note:

1. The main PCB chip 0537 is on the opposite side of the main PCB.
2. IR341 chip is on the IPM module.



**7.2 E2: Communication malfunction between indoor chip and outdoor chip.(for all models)**



**Note:**

1. Press indoor unit’s receiver button for 5 seconds, the indoor unit’s communication address code is displayed; press it for 10 seconds, power code is displayed. Check each unit’s address code.

Codes are as follows:

Director light	Running	Timer	Fan/defend cold fan	Warning
Code	8	4	2	1

Address	0	1	2	3	4	5	6	7	8	9
Capacity (×100W)	22	28	36	45	56	71	80	90	112	140

HP	0.8	1.0	1.2	1.6	2.0	2.5	3.0	3.2	4.0	5.0
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

For example:

Press the button for 5 seconds:

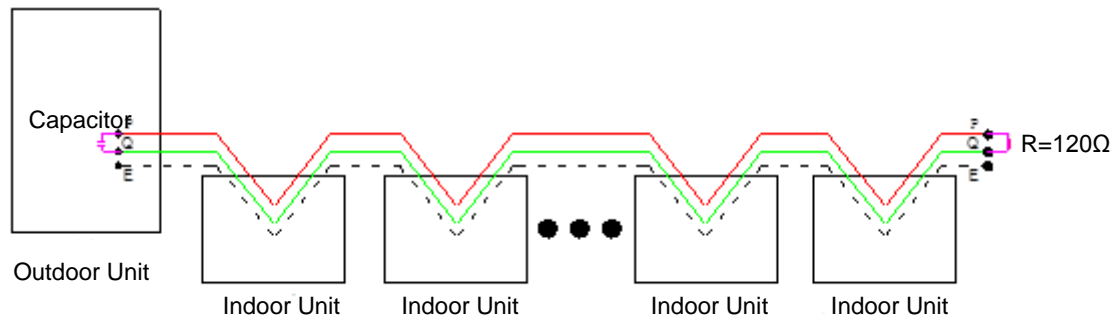
If the “running” and “warning” lights are normally on, that means the address code is  $9=(8+1)$

If the lights are blink, the address code should plus 16, so the address code is  $25=16+(8+1)$

Press the button for 10 seconds:

If the “timer” and “warning” lights are normally on, that means the capacity code is  $5=(4+1)$  and the capacity of indoor unit is  $71 \times 100W(2.5HP)$ .

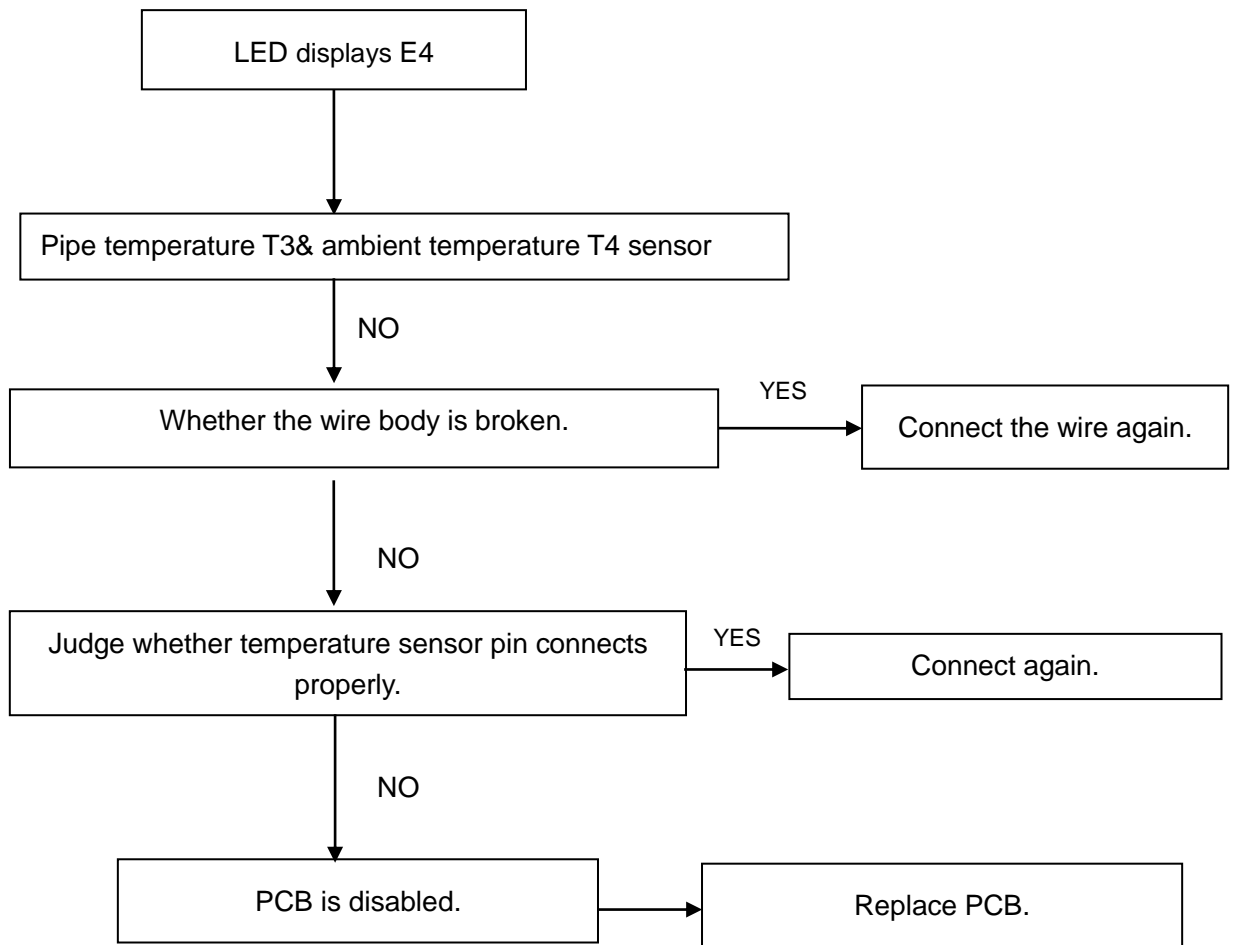
2. If the signal is weak, connect a  $120\Omega$  resistor between P and Q of the farthest indoor unit, or connect a  $0.5-1.5\mu F$  capacitor between P and Q of outdoor unit. Installation refers to the following picture:



Note:

Communication wires should be shield wire and indoor units should be connected in series.

### 7.3 E4: Pipe temperature T3& ambient temperature T4 sensor malfunction (for all models)



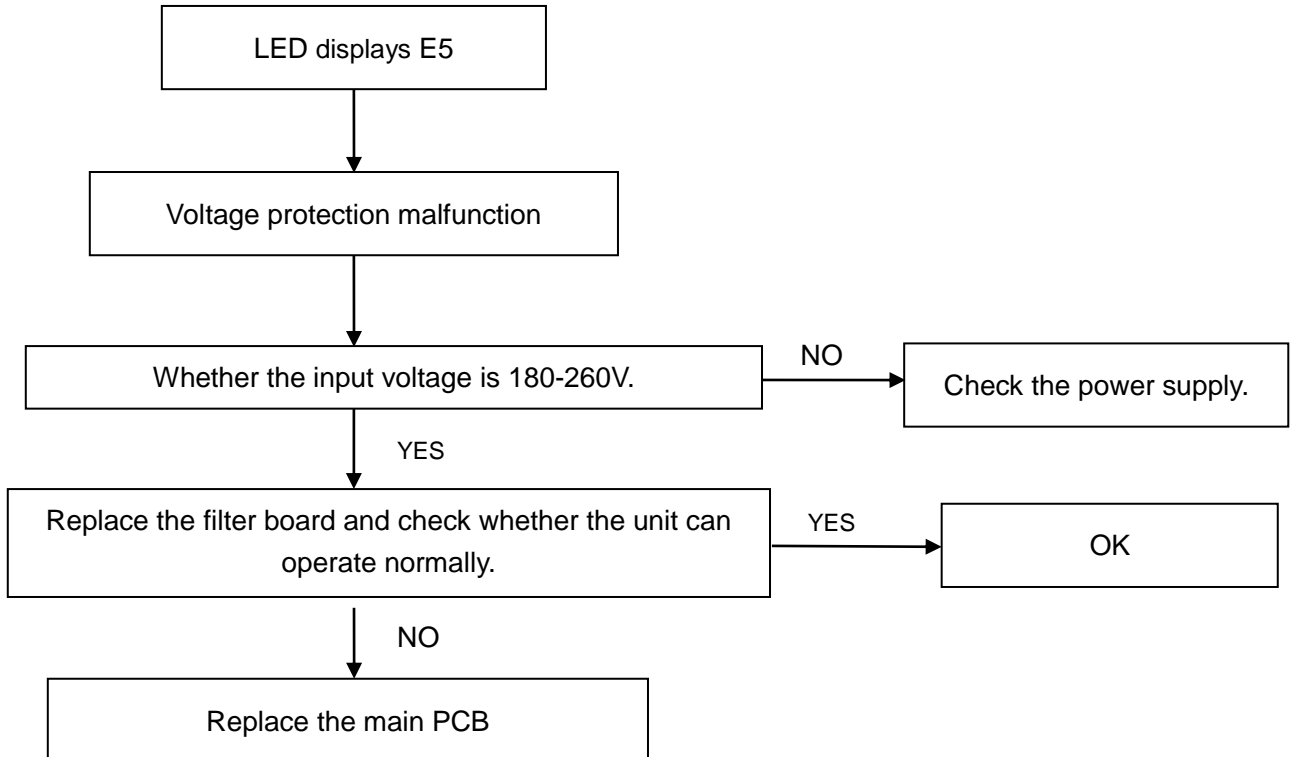
Case: There is no display on PCB of one system, and the problem still exists after replacing PCB. Voltage values on measuring plate (such as 220V, 5V, 12V, etc.) are normal; after measuring resistance value of sensor, find that T4 thermo-bulb is earth-continuity, and further discover that the thermal cable of T4 sensor is punched by bolt, as follows:



T4 sensor is worn out and connected with sheet metal



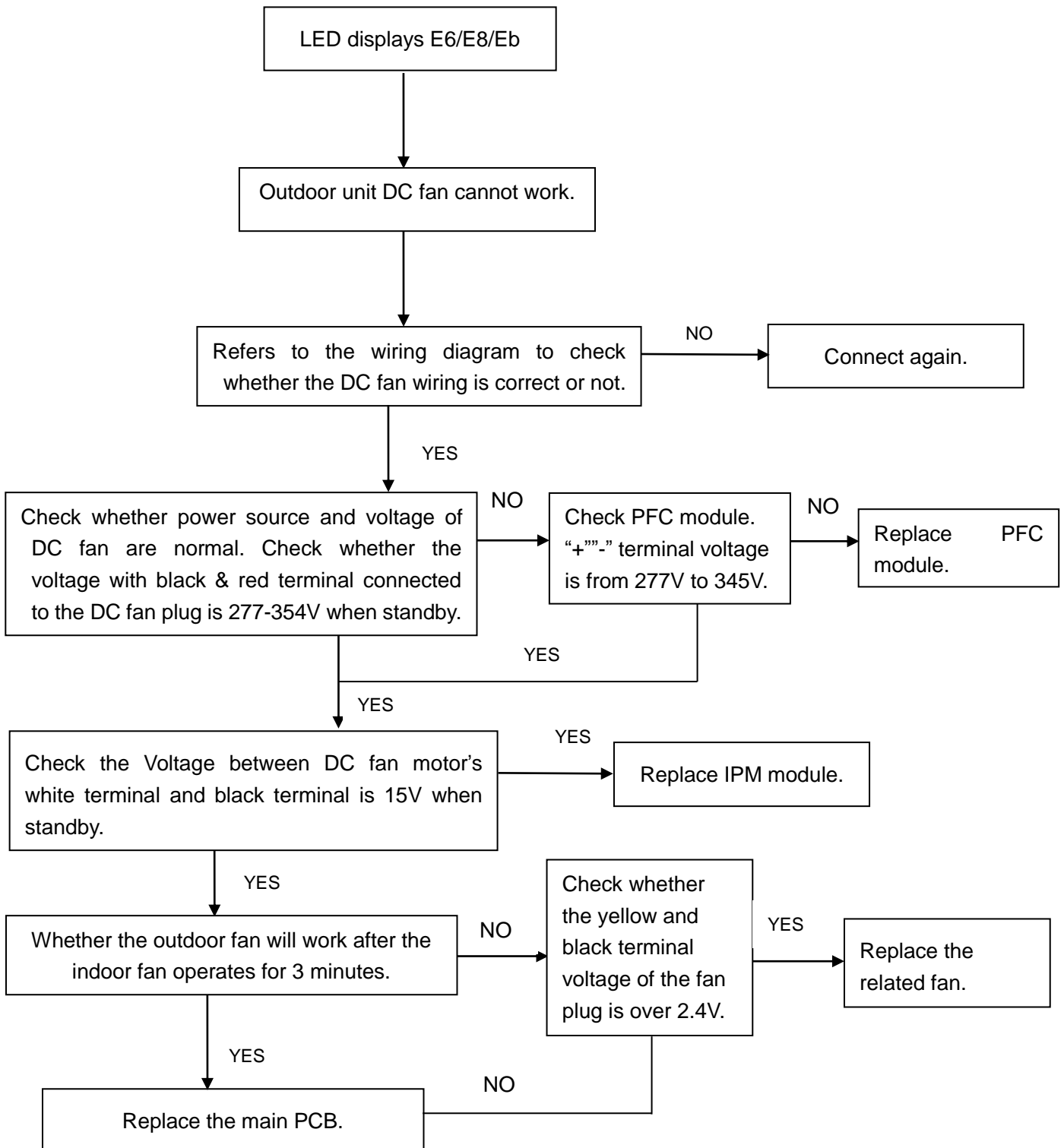
After being reconnected, the system becomes normal

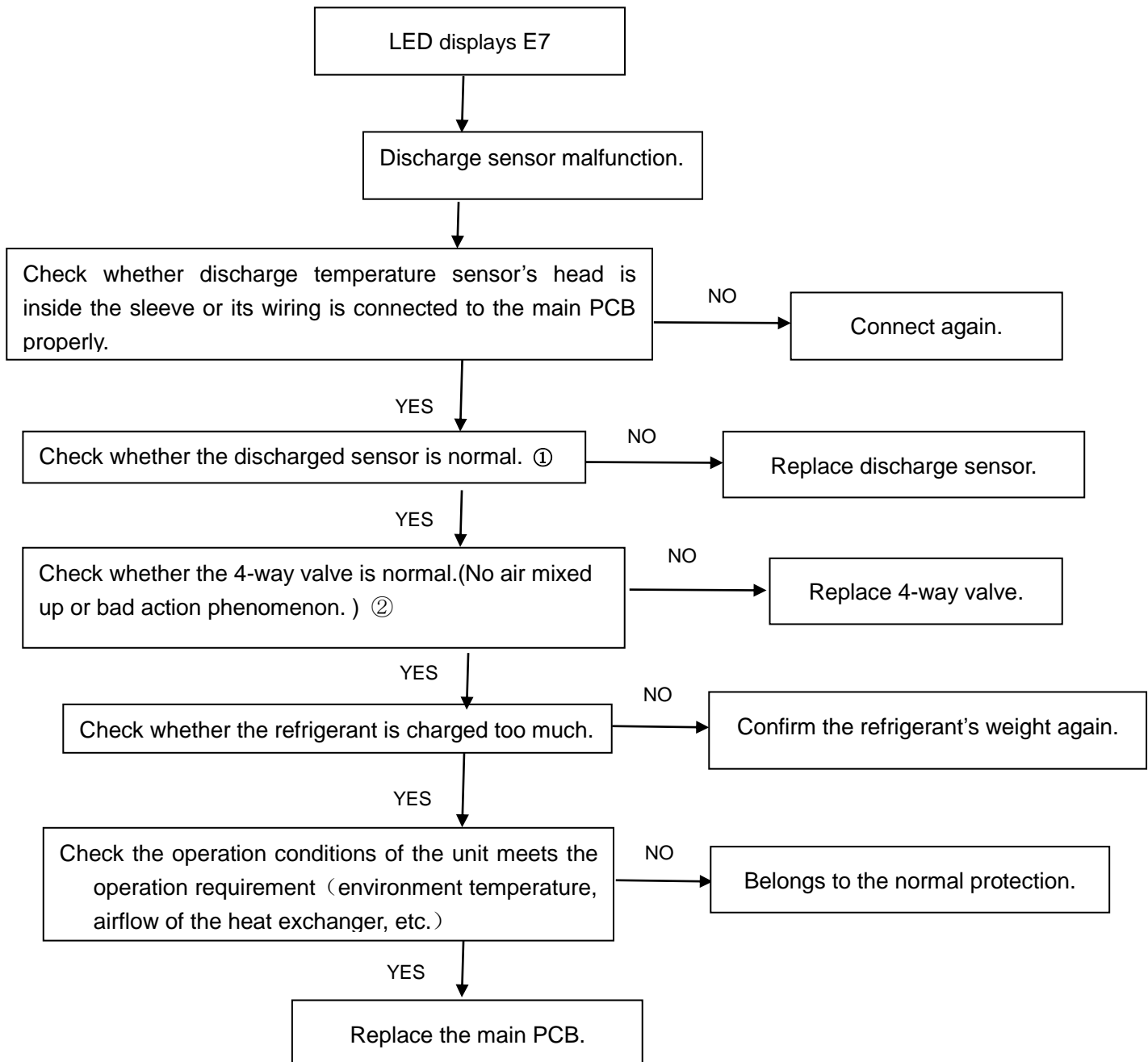
**7.4 E5: Voltage protection malfunction (for all models)**

**7.5 E6/E8/Eb: DC Fan Malfunction**

**(E6 is for all models, Eb is for 80/105/180 model, E8 is for 120~160 model)**

If the system display twice E6 in 10 minutes, the system will stop and display E8/Eb. When the system displays E8/Eb, the system can resume only by restarting the machine. At this time, malfunction should be disposed promptly to avoid further damage.



**7.6 E7: Discharge Temperature Sensor Malfunction (only for 80/105/180 models.)****1. How to check whether the sensor is normal①:**

Using a multi-meter to measure resistance, if the resistance is too small, the sensor is short circuit, if the resistance in certain temperature is not consistent with attached table 2, the sensor is damaged.

**2. The phenomenon of the system contains air or nitrogen②:**

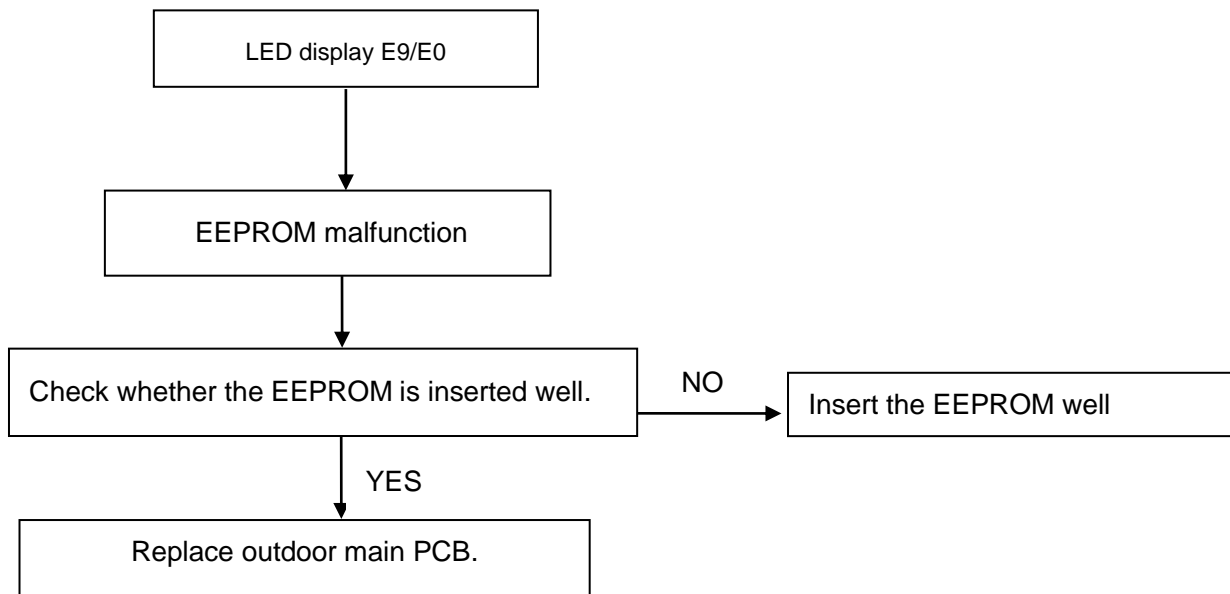
The high pressure is higher than normal value, current is larger than normal value, discharge temperature is higher than normal value, compressor makes noise, pressure meter do not display steady.



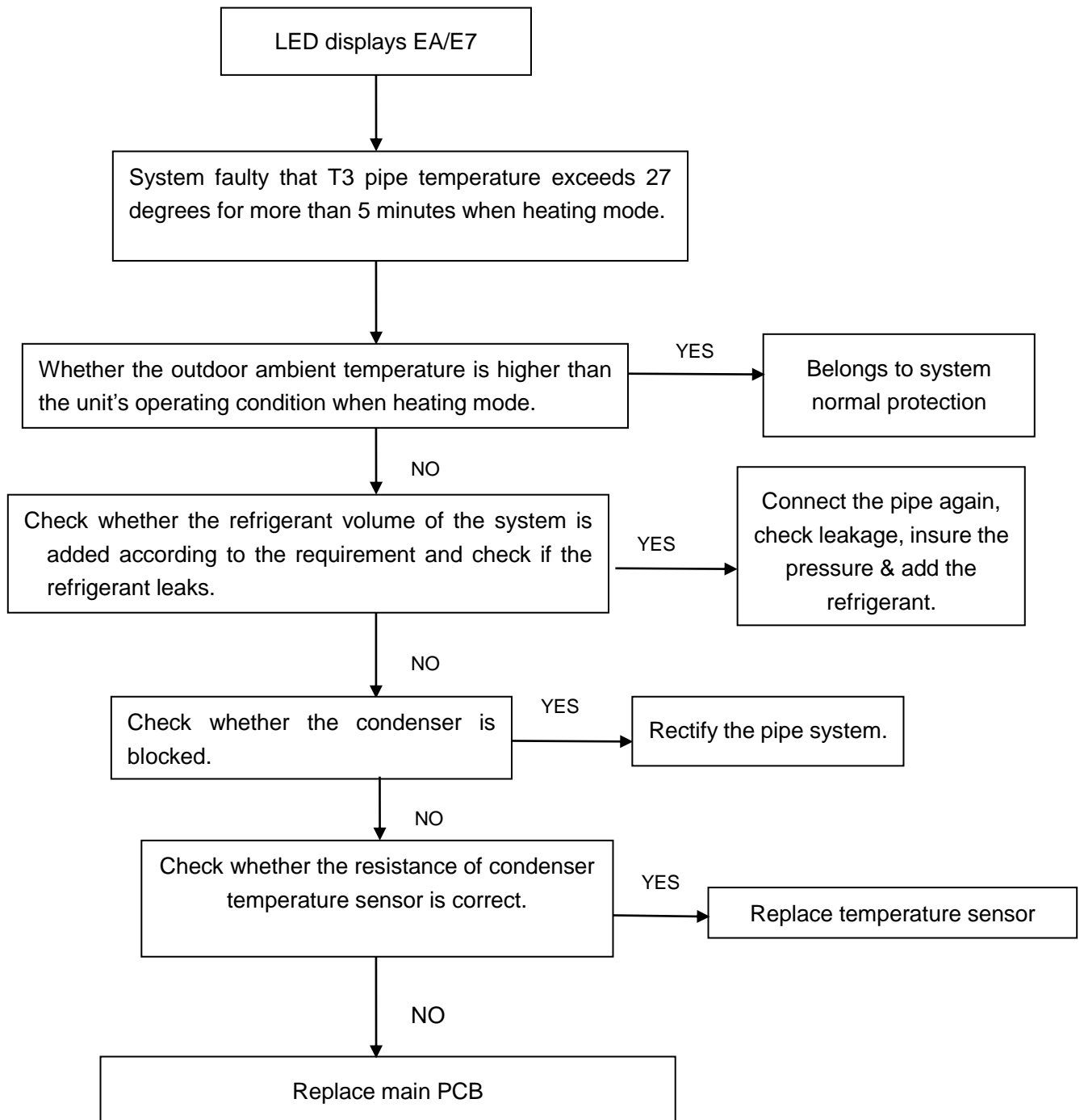
**7.7 E9/E0: EEPROM malfunction (E9 is for 80/105/180 model, E0 is for 120~160 model)**

The malfunction may be caused by two reasons:

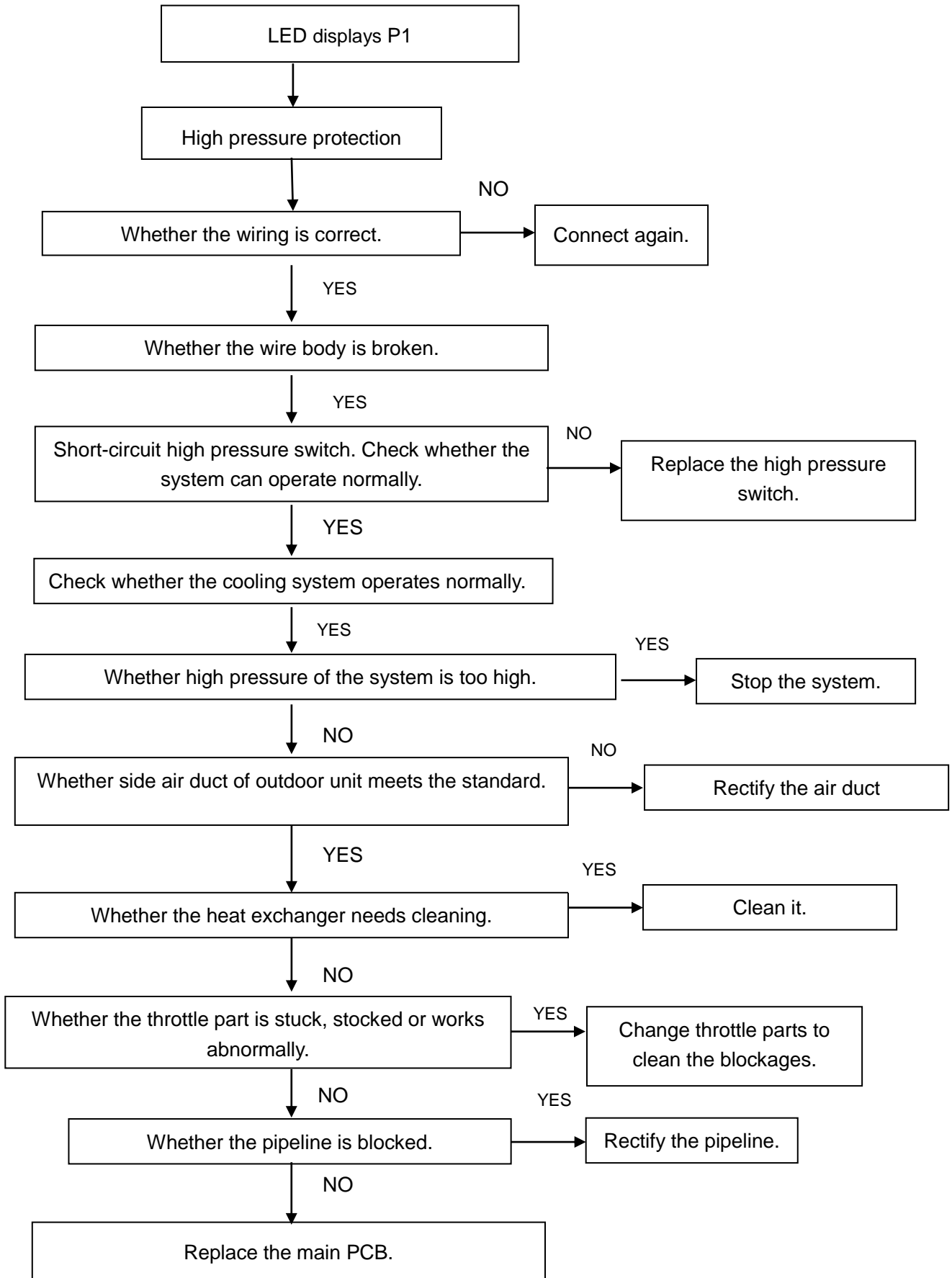
1) The EEPROM is not inserted well; 2) Outdoor main board is broken.



**7.8 EA/E7:** T3 pipe temperature exceeds 27 degrees for more than 5 minutes when heating mode.  
**(EA is for 8/105/180 model, E7 is for 120~160 model)**

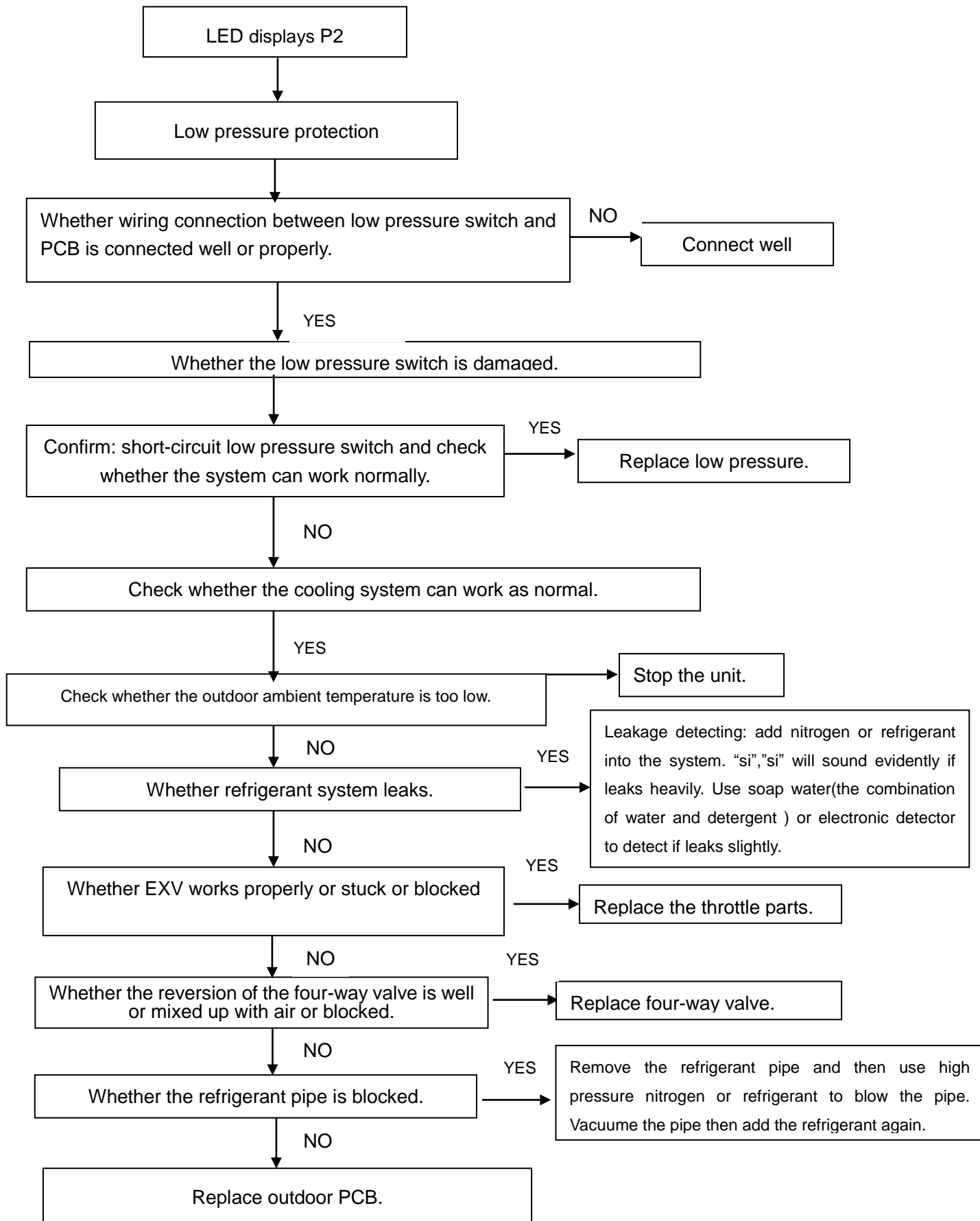


**7.9 P1: High pressure protection (for all models)**



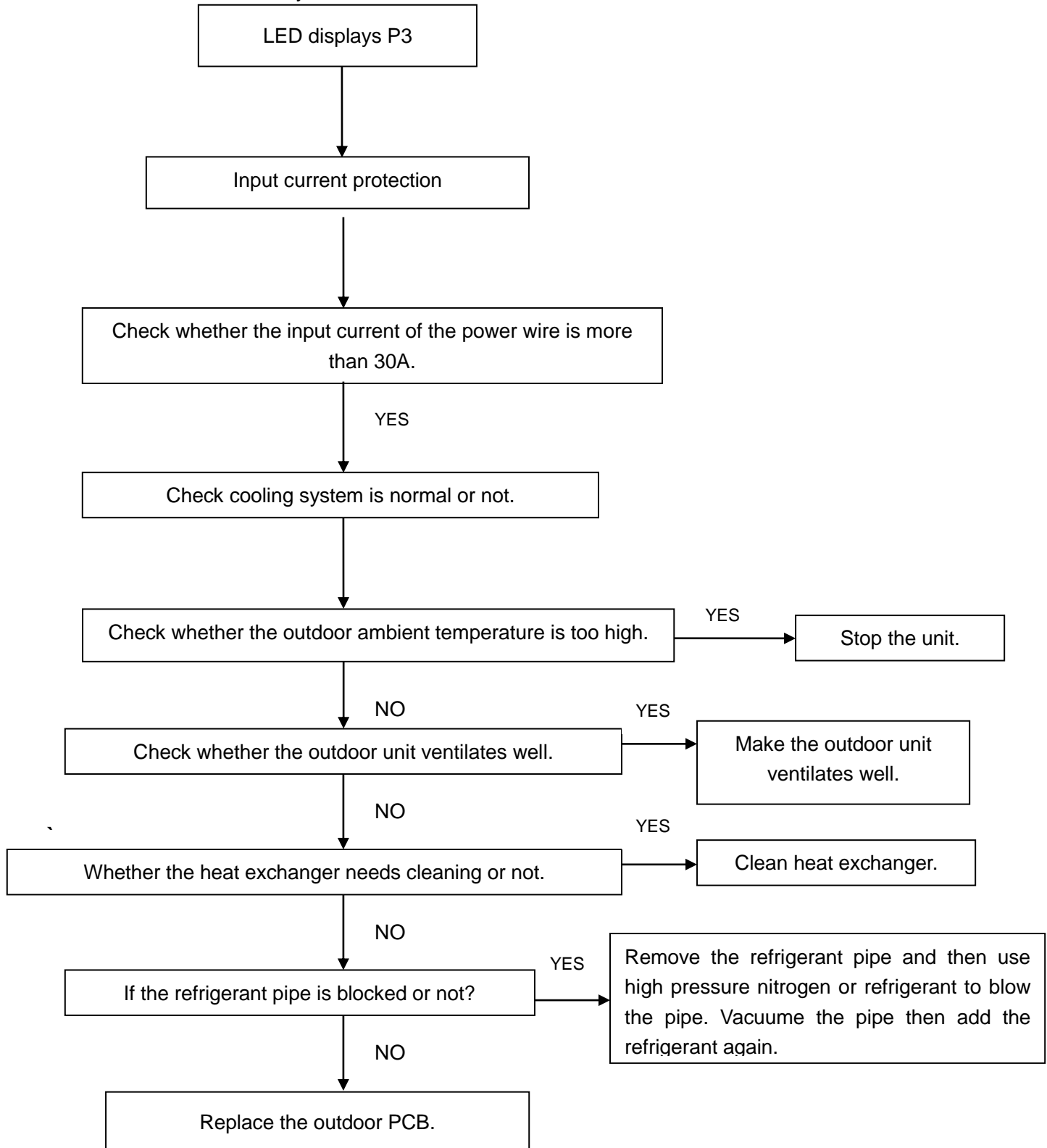
**7.10 P2: Low pressure protection (for all models)**

When the pressure is lower than 0.05MPa, the system will display P2 protection, the ODU in standby. When the pressure is higher than 0.15MPa, P2 disappears and resumes normal operation.



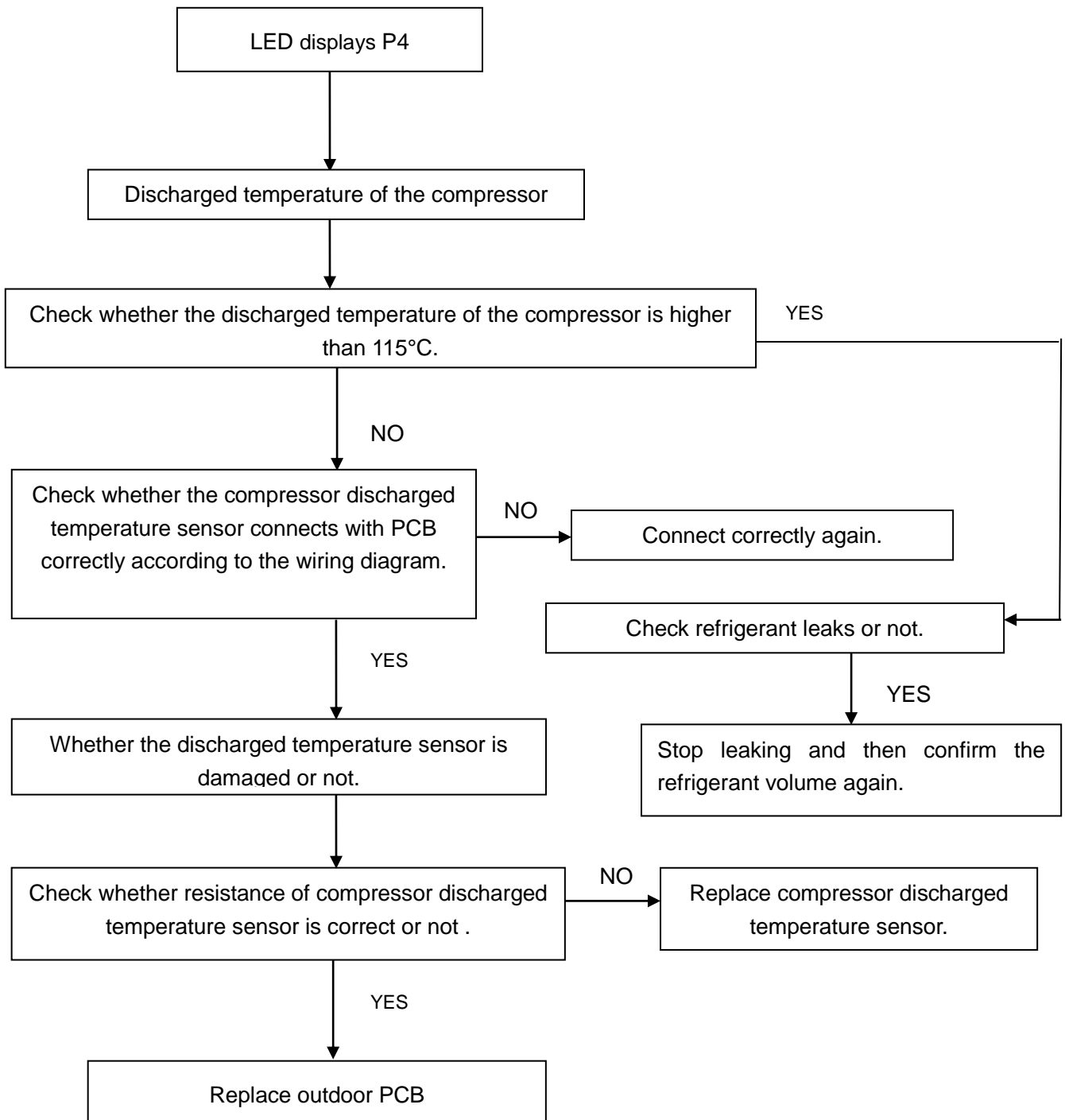
**7.11 P3: Compressor current protection (for all models)**

It will protect when input current is more than 30A. It will recover when input current is less than 30A. It will recover automatically.



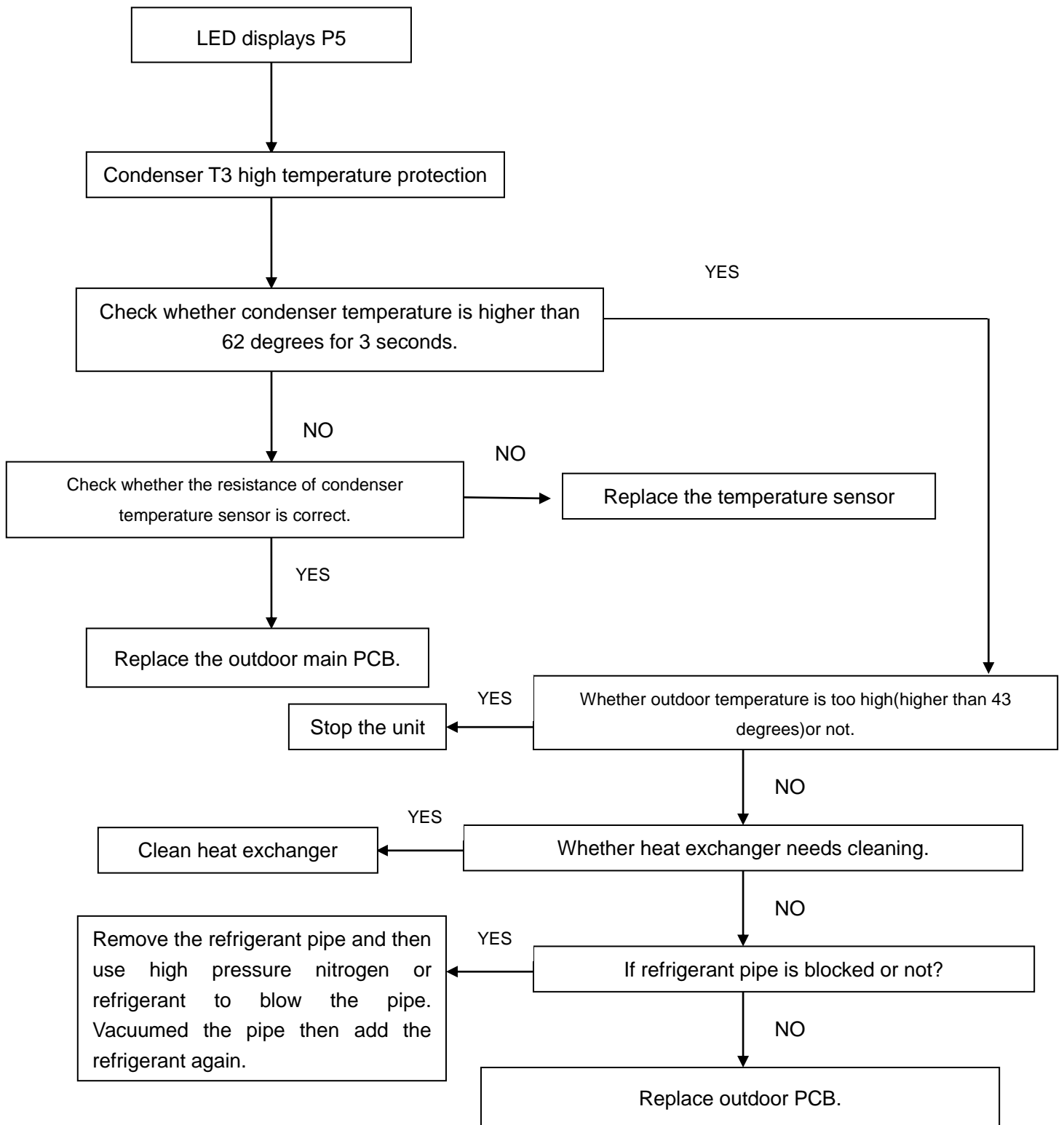
**7.12 P4: Compressor discharged temperature protection (for all models)**

When the discharged temperature of the compressor is higher than 115°C, the unit will stop running. When the discharged temperature of the compressor is lower than 90°C, the unit resumes normal operation automatically.



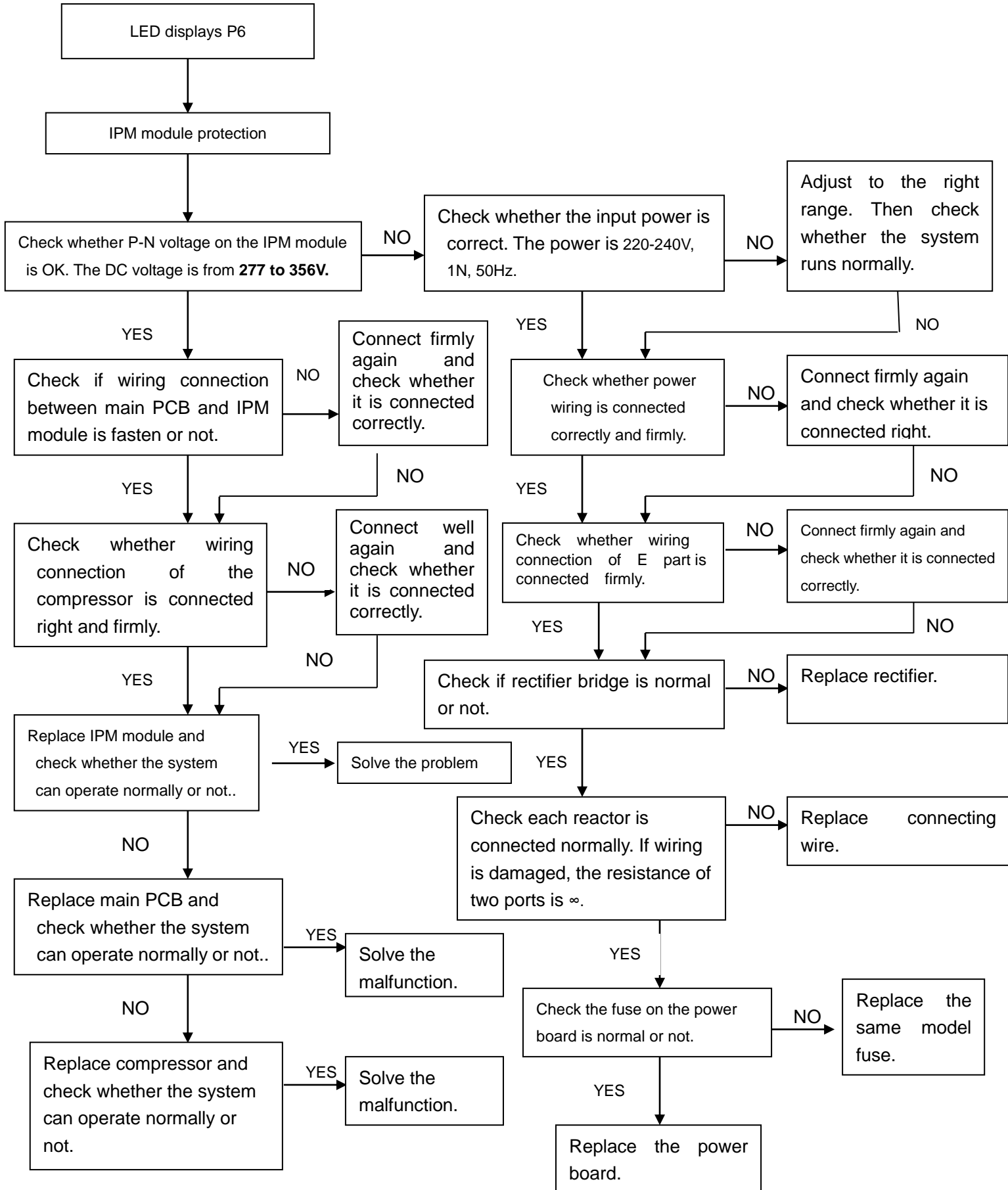
**7.13 P5: Condenser high temperature protection (for all models)**

When condenser temperature is higher than 62 degrees for 3 seconds, the unit will stop operating. When pipe temperature outside is lower than 52 degrees, the unit will resume operate.



**7.14 P6: IPM Module protection**

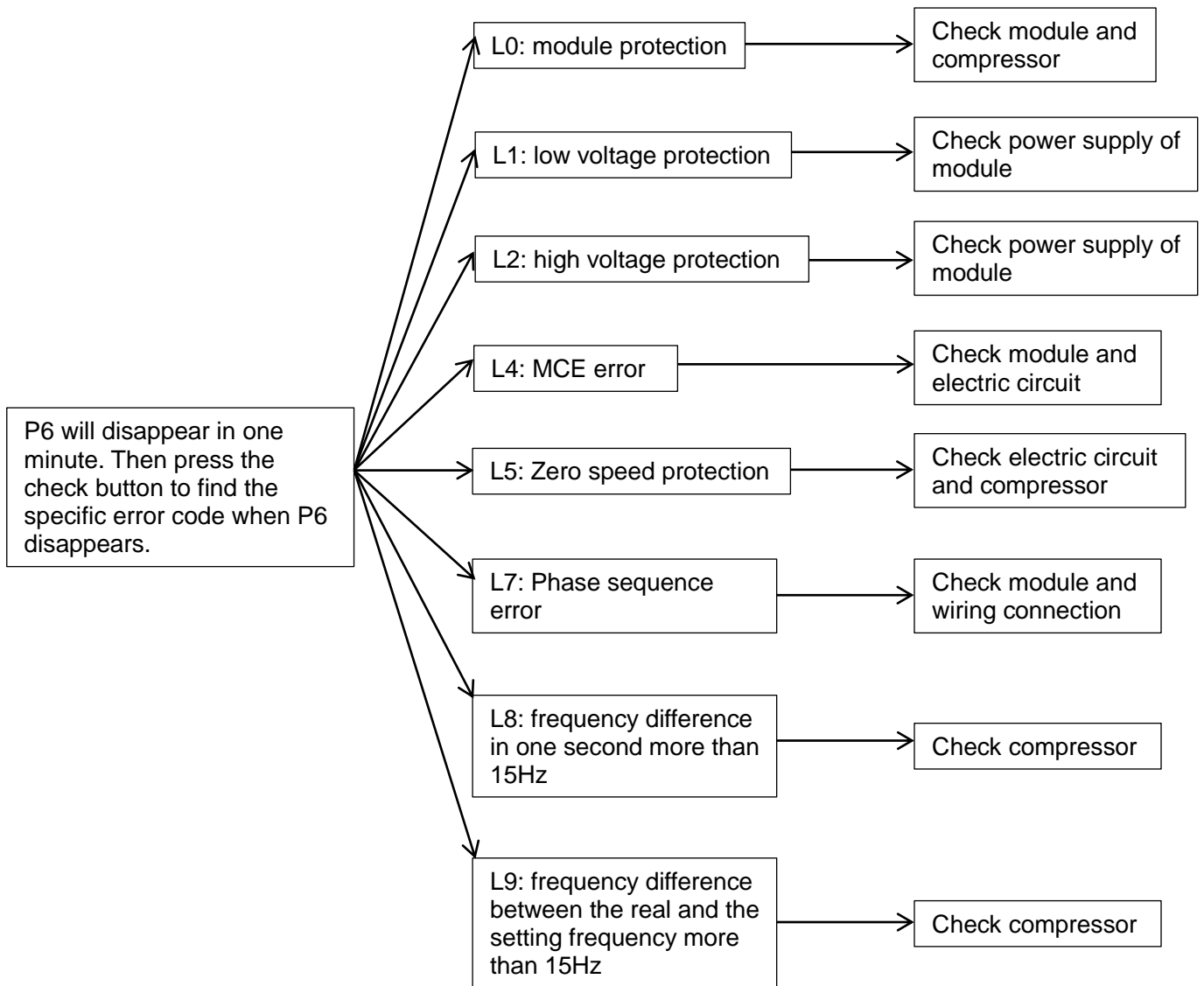
The following explanation is for 80/105 model.



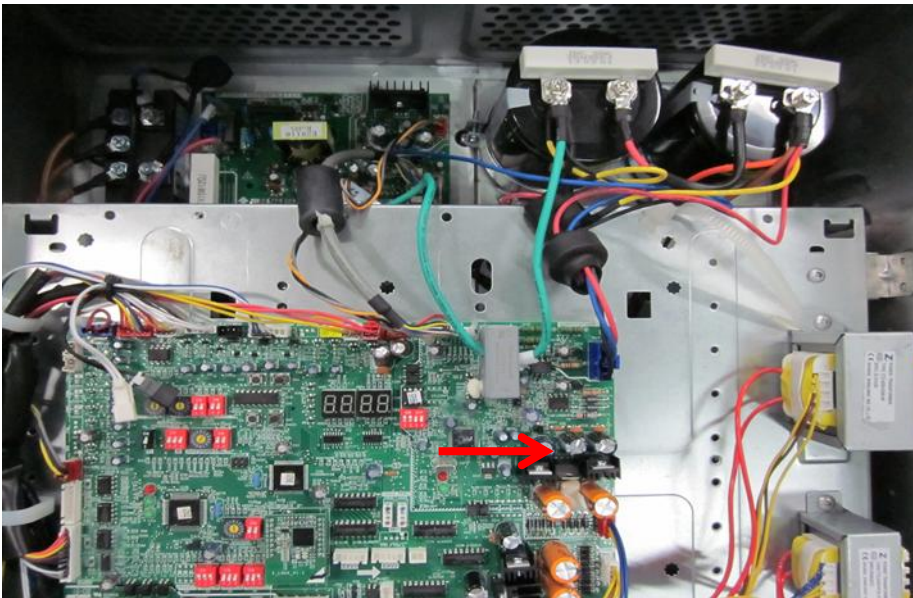


**P6: Module protection**

P6 code can display on digital tube automatically. L0~L9 these error codes will display on digital tube only through check button. L0~L9 is only display on the 80/105 model but not on 120~160 model.



## DC generatrix check

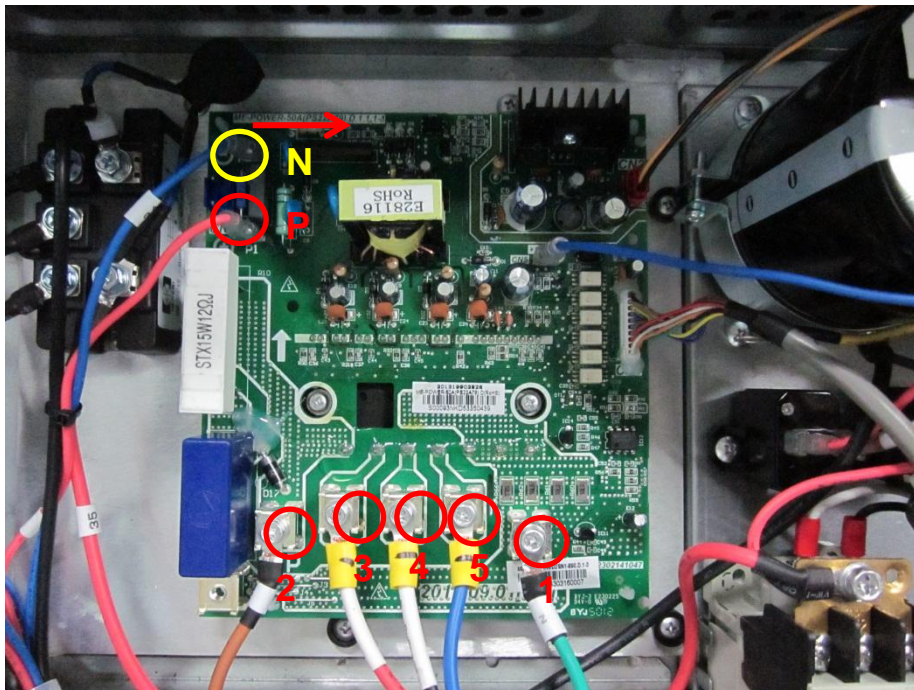


Direction of the current in DC supply wire is running through the inductor should be the same as the direction of arrow marked on the inductor

Check the voltage of DC generatrix, the normal value should be 296 to 324V. If the value is less than 296V, go to next step.

- 1) Check the wiring connection of rectifier circuit, find out any loose in the circuit, and check the filter board, single-phase rectifier stack, and three-phase rectifier stack. Note DC and AC switch in the measurement.
- 2) If none of the above works, replace the PCB.

## Module check



- 1) DC voltage between P and N should be 296V to 324V.
- 2) DC voltage between 1 and 2 should be 510V to 580V.
- 3) First adjust multi-meter to diode position, put the red pen on the 1 point (N terminal), put black pen on the 3 or 4 or 5 point, the value should be approximate 0.378, if the value is 0, the IPM is broken. And then change the red pen to the 2 point (P terminal), the value should be infinity, if the value is 0, the IPM is broken.

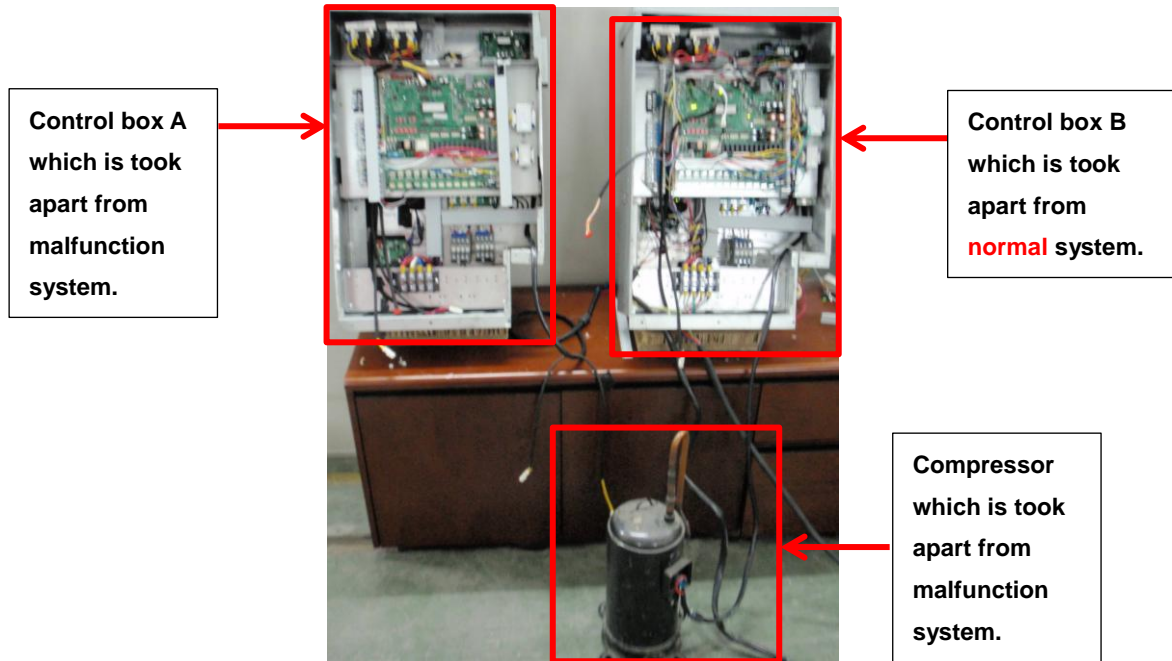
### 7.14.1 L0/L8/L9 troubleshooting

**Step 1:** Replace the modular with correctly wire connection and start the system, if system is still malfunction, then go to step2 to check the compressor.

**Step 2:** Take out the compressor from the malfunction system, short-circuit the suction and the discharge, vacuum dry and charge 0.3kg~0.4kg R410A, and then connect the U,V,W terminals to control box B which is took apart from normal system.

If the compressor start normally, that means compressor is OK, control box A is malfunction, then check the inverter module.

If the compressor could not start normally, that means the compressor is malfunction, the go to step 3 to check the compressor.



**Step 3:** Check the compressor

Measure the resistance between each two of U, V, W terminals, all the resistance should be the same and equal to 0.9~5 Ohms. (Fig. A and Fig. B)

Measure the resistance between each of U, V, W terminals to ground (Fig. C), all the resistance should be the same and trend to be infinity (Fig. D), otherwise the compressor has been malfunction, needs to be replaced.



Fig. A



Fig. B



Fig. C

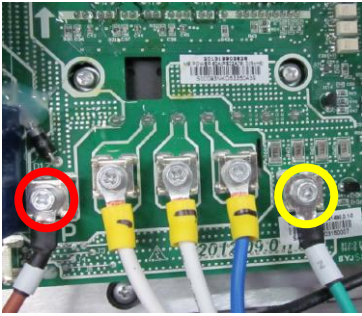


Fig. D



### 7.14.2 L1/L4 troubleshooting

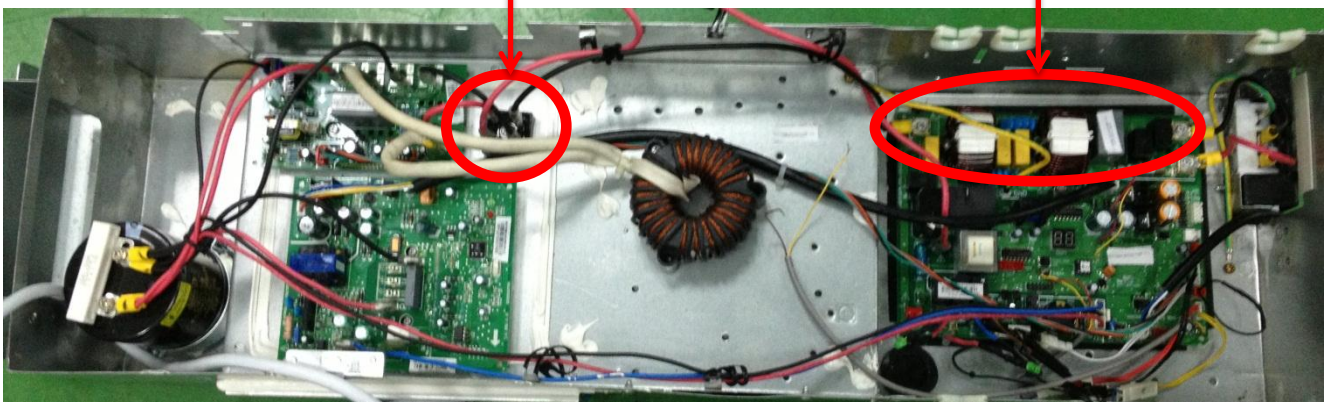
Step 1: Check the DC voltage between P and N terminal, the normal value should be 510V~580V, if the voltage is lower than 510V, go to step 2.



Step 2: Check whether the wires of rectifier circuit are loose or not. If wires are loosen, fasten the wires. If wires are OK, replace the PCB.

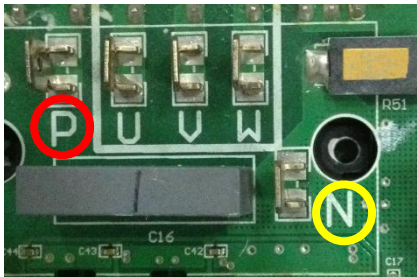
1-Phase rectifier stack

Filter board



### 7.14.3 L2 troubleshooting

Step 1: Check the DC voltage between P and N terminal, the normal value should be 510V~580V, if the voltage is higher than 580V, go to step 2



Step 2: Check the voltage between the capacitor, the normal value should be 510V±30V or 310V±30V, if not in the range then the PCB has malfunction, it needs to be replaced.



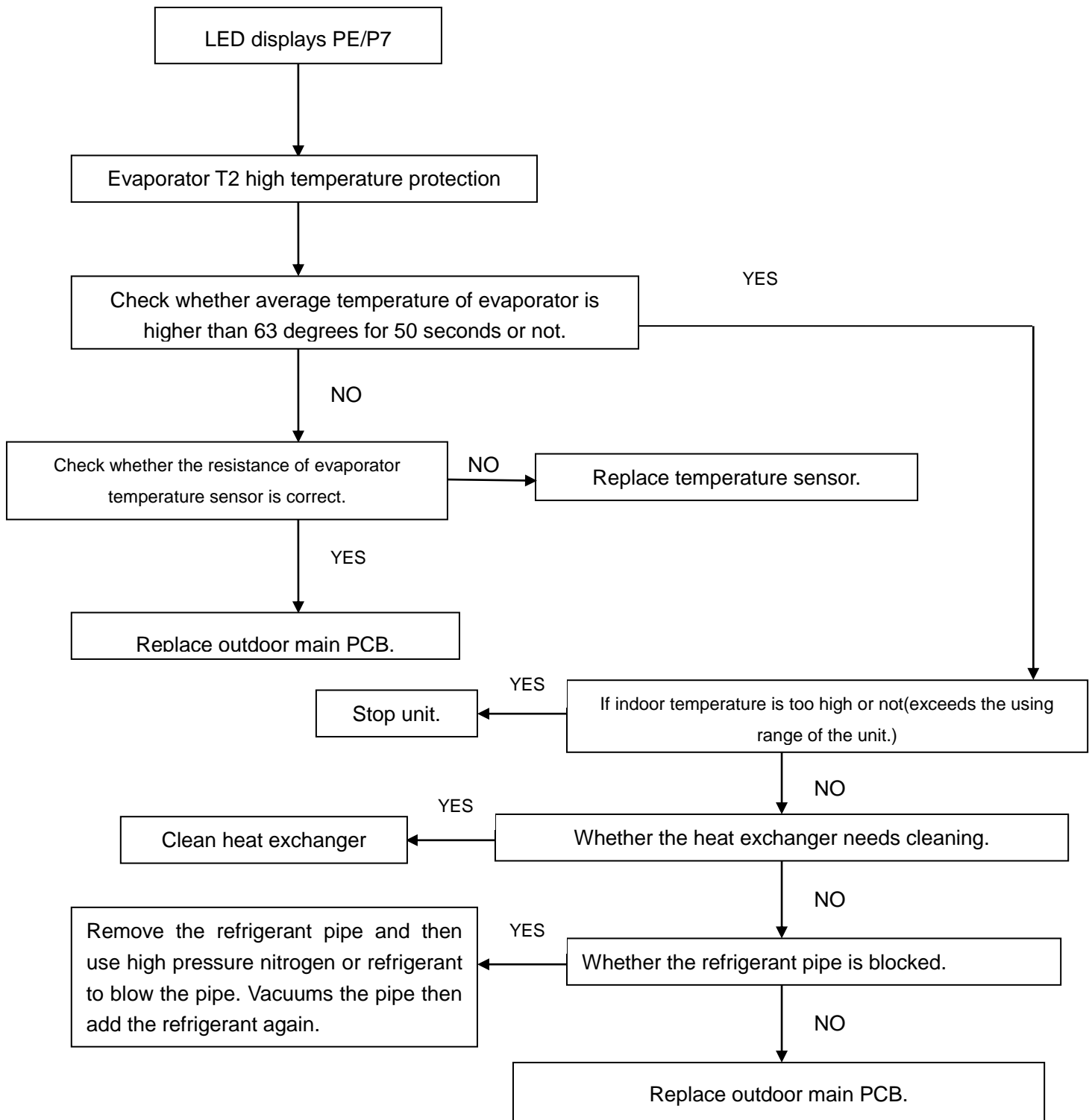
Turn the measure range of the meter to 1kV and measure the voltage between two electrolytic capacitors



**7.15 PE/P7 malfunction: Evaporator T2 high temperature protection**

**(PE is for 8/105/180 model, P7 is for 120~160 model)**

When the middle average temperature of the evaporator is higher than 63 degrees for 50 seconds, the unit will stop operating. When pipe temperature is lower than 50 degrees, the unit will resume running.



**7.16 P8: Typhoon protection (for all models)**