R410A/R32

Commercial Air Conditioners

Engineering Data

New One-way Cassette VRF IDU

MIH18Q1HN18(A)

MIH22Q1HN18(A)

MIH28Q1HN18(A)

MIH36Q1HN18(A)

MIH45Q1HN18(A)

MIH56Q1HN18(A)

MIH71Q1HN18(A)

One-way Cassette

1 Specifications

MIH18Q1HN18(A) / MIH22Q1HN18(A) / MIH28Q1HN18(A) / MIH36Q1HN18(A)

Table 1.1: MIH18(22, 28,36)Q1HN18(A) specifications

Model			MIH18Q1HN18(A)	MIH22Q1HN18(A)	MIH28Q1HN18(A)	MIH36Q1HN18(A)
Power supply			1-phase, 220-240V, 50/60Hz			
Cooling[1]	Capacity	kW	1.8	2.2	2.8	3.6
		kBtu/h	6.1	7.5	9.6	12.3
	Power input	W	15	19	27	29
Heating[2]	Capacity	kW	2.2	2.6	3.2	4.0
		kBtu/h	7.5	8.9	10.9	13.6
	Power input	W	15	19	27	29
Fan motor	Type		DC			
	Number		1			
Indoor coil	Number of rows		2	2	2	3
	Tube pitch × row pitch	mm	18×10.72	18×10.72	18×10.72	18×10.72
	Fin spacing	mm	1.35	1.35	1.35	1.35
	Fin type		Hydrophilic aluminum			
	Tube OD and type	mm	Φ5 Inner-groove			
	Dimensions (L×H×W)	mm	530×216×21.44	530×216×21.44	730×216×21.44	730×216×32.16
	Number of circuits		1	1	4	6
Air flow rate[3]		m^3/h	300/283/266/250/233/216/200	400/375/350/325/300/275/250	550/516/483/450/416/383/350	
Sound pressure level[4]		dB(A)	28/27/26/25/24/23/23	32/30/29/28/27/26/25	33/31/30/29/27/26/25	36/34/33/32/30/29/28
Sound power level[4]		dB(A)	35/34/33/32/31/30/29	43/42/39/37/35/33/31	45/44/43/41/39/37/35	48/46/44/42/40/38/36
Main body	Net dimensions[5] (W×H×D)	mm	700×178×425		900×178×425	
	Net dimensions(no water tray)(W×H×D)	mm	700×130×425		900×130×425	
	Packed dimensions (W×H×D)	mm	880×225×510		1080×225×510	
	Net/Gross weight	kg	9.6/11.9		11.2/13.8	12.2/14.7
Panel	Net dimensions (W×H×D)	mm	980×64×475		1180×64×475	
	Packed dimensions (W×H×D)	mm	1070×100×560		1270×100×560	
	Net/Gross weight	kg	2.4/4.4		3/5.2	
Refrigerant type			R410A/R32			
Design pressure (H/L)		MPa	4.4/2.6			
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/Φ12.7			
	Drain pipe	mm	OD Φ25			

Notes:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5mwith zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5mwith zero level difference.
3. Air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in a anechoic chamber.
5. Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

MIH45Q1HN18(A) / MIH56Q1HN18(A) / MIH71Q1HN18(A)

Table 1.2: MIH45(56,71)Q1HN18(A) specifications

Model			MIH45Q1HN18(A)	MIH56Q1HN18(A)	MIH71Q1HN18(A)
Power supply			1-phase, 220-240V, 50/60Hz		
Cooling[1]	Capacity	kW	4.5	5.6	7.1
		kBtu/h	15.4	19.1	24.2
	Power input	W	30	40	52
Heating[2]	Capacity	kW	5.0	6.3	8.0
		kBtu/h	17.1	21.5	27.3
	Power input	W	30	40	52
Fan motor	Type		DC		
	Number		1		
Indoor coil	Number of rows		2	3	3
	Tube pitch × row pitch	mm	18×10.72	18×10.72	18×10.72
	Fin spacing	mm	1.35	1.35	1.35
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ5 Inner-groove		
	Dimensions (L×H×W)	mm	1030×216×21.44	1030×216×32.16	
	Number of circuits		6	6	6
Air flow rate[3]		m^3/h	850/791/733/675/616/558/500	1000/941/883/825/766/708/650	1050/1000/950/900/850/800/750
Sound pressure level[4]		dB(A)	39/37/36/35/34/33/32	45/43/42/40/39/37/36	47/45/44/43/42/41/40
Sound power level[4]		dB(A)	49/47/45/43/41/39/37	55/53/51/49/47/45/43	56/55/54/52/50/48/46
Main body	Net dimensions[5] (W×H×D)	mm	1200×178×425		
	Net dimensions(no water tray)(W×H×D)		1200×130×425		
	Packed dimensions (W×H×D)	mm	1280×225×510		
	Net/Gross weight	kg	14.3/17.7	15.5/18.8	
Panel	Net dimensions (W×H×D)	mm	1480×64×475		
	Packed dimensions (W×H×D)	mm	1570×100×560		
	Net/Gross weight	kg	3.8/6.5		
Refrigerant type			R410A/R32		
Design pressure (H/L)		MPa	4.4/2.6		
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/Φ12.7		Φ9.52/Φ15.9
	Drain pipe	mm	OD Φ25		

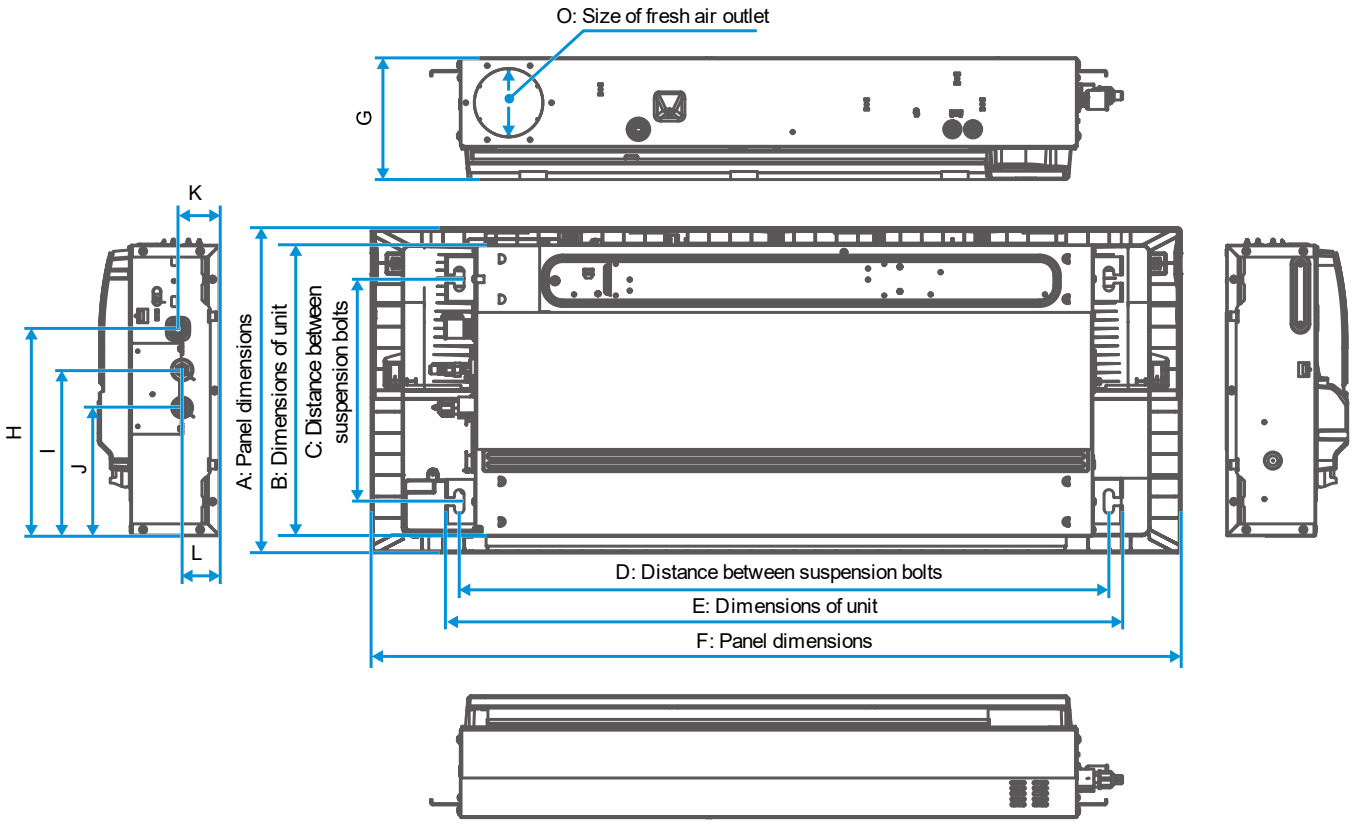
Notes:

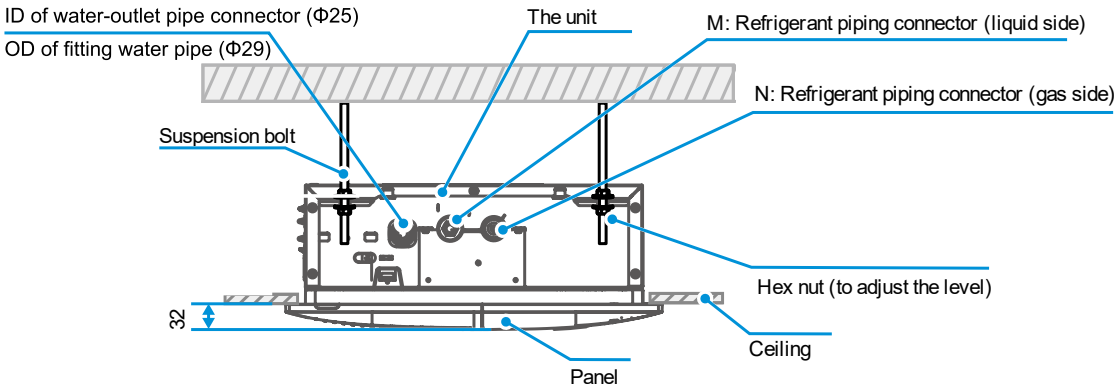
1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5mwith zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5mwith zero level difference.
3. Air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in a anechoic chamber.
5. Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

2 Dimensions

2.1 Unit Dimensions

Figure 2.1: Unit dimensions (unit: mm)





Capacity(kW)	A	B	C	D	E	F	G	H	I	J	K
kW ≤ 2.2	475	425	325	746	786	980	178	303	243	188	61
2.2 < kW ≤ 3.6	475	425	325	946	986	1180	178	303	243	188	61
3.6 < kW ≤ 7.1	475	425	325	1 246	1 286	1 480	178	303	243	188	61

Capacity(kW)	L	M	N	O							
kW ≤ 2.2	55	Φ12.7	Φ6.35	60							
2.2 < kW ≤ 3.6	55	Φ12.7	Φ6.35	60							
3.6 < kW ≤ 7.1	55	Φ15.9	Φ9.52	100							

3 Unit Placement

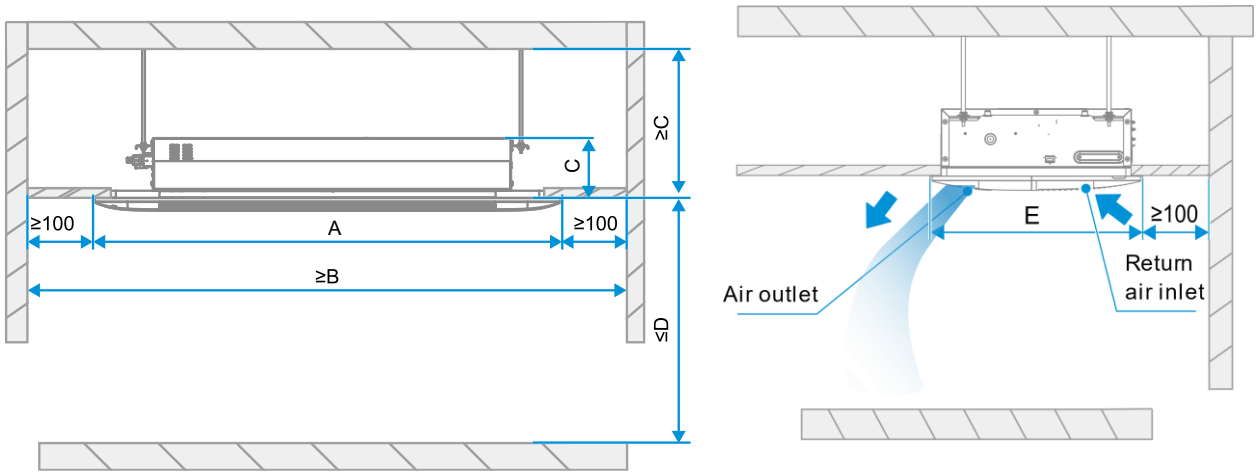
3.1 Placement Considerations

Unit placement should take account of the following considerations:

- Units should not be installed in the following locations:
  - Where exposure to direct radiation from a high-temperature heat source or to interference from a source of electromagnetic radiation may occur.
  - Where dust or dirt may affect heat exchangers.
  - Where exposure to oil or to corrosive or harmful gases, such as acidic or alkaline gases, may occur.
  - Where exposure to salinity may occur, such as seaside locations.
  - Where highly flammable materials are present.
  - Where exposure to oily air may occur, such as a kitchen.
  - Where exposure to very high humidity may occur, such as a laundry.
- Units should be installed in positions where:
  - The ceiling is horizontal and is able to bear the unit's weight.
  - There are no obstructions that could impede the airflow into and out of the unit.
  - The airflow out of the unit can reach throughout the room.
  - There is sufficient space for access during installation, servicing and maintenance.
  - The refrigerant piping and drain piping can be easily connected to the refrigerant piping and drain piping systems.
  - Short-circuit ventilation (where outlet air returns quickly to a unit's air inlet) will not occur.

3.2 Space Requirements

Figure 3.1: One-way Cassette space requirements (unit: mm)



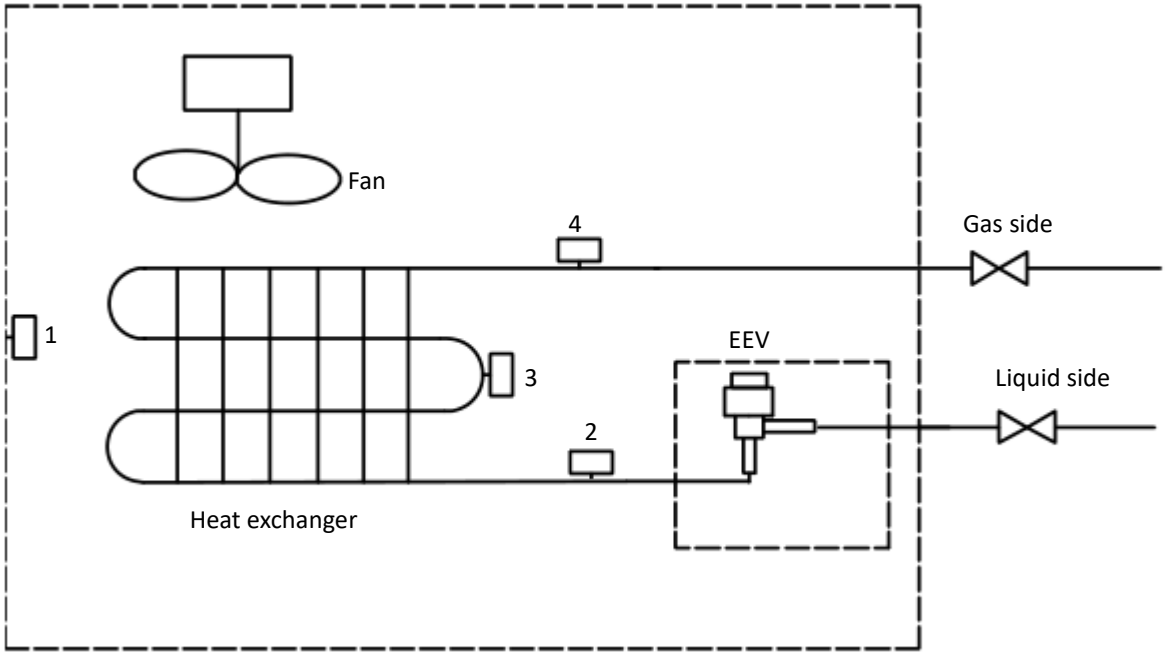
Capacity(kW)	A	B	C	D	E
kW ≤ 2.2	980	1 180	150	2 500	475
2.2 < kW ≤ 3.6	1 180	1 380	150	2 500	475
3.6 < kW ≤ 7.1	1 480	1 680	150	2 500	475

Notes:

1. No obstacles (chandelier etc.) in front of the air outlet.
2. Select a proper air supply angle range.

4 Piping Diagram

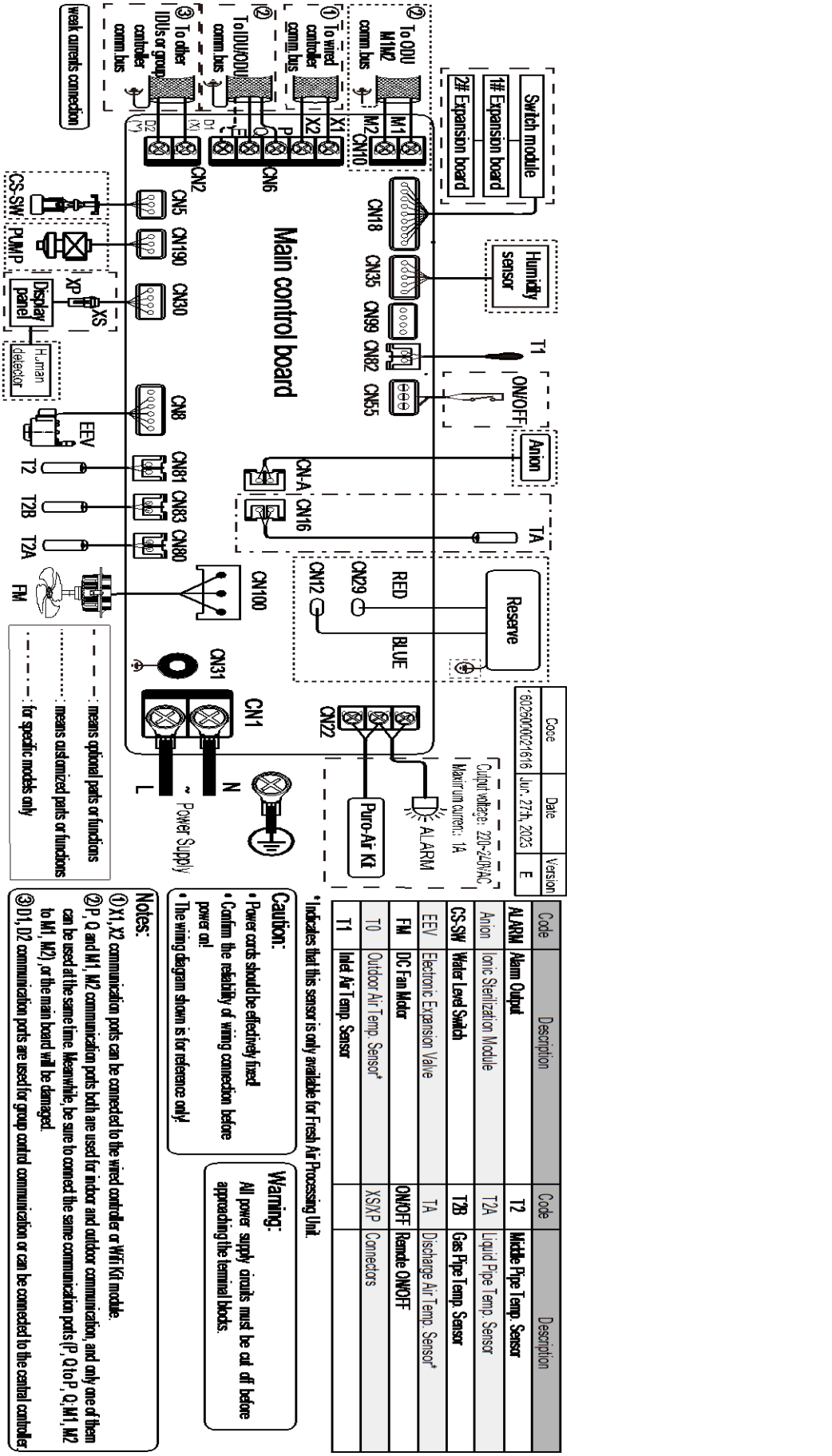
Figure 4.1: One-way Cassette piping diagram



Legend		
1	T1	Inlet Air Temp. Sensor
2	T2A	Liquid Pipe Temp. Sensor
3	T2	Middle Pipe Temp. Sensor
4	T2B	Gas Pipe Temp. Sensor
5	EEV	Electronic Expansion Valve
6	FAN	DC Fan Motor

5 Wiring Diagram

Figure5.1: MIH18Q1HN18(A)/MIH22Q1HN18(A)/MIH28Q1HN18(A)/MIH36Q1HN18(A)/MIH45Q1HN18(A)/MIH56Q1HN18(A)/ MIH71Q1HN18(A)



Code	Description	Code	Description
ALARM	Alarm Output	T2	Middle Pipe Temp. Sensor
Anion	Ionic Sterilization Module	T2A	Liquid Pipe Temp. Sensor
CS-SW	Water Level Switch	T2B	Gas Pipe Temp. Sensor
EEV	Electronic Expansion Valve	TA	Discharge Air Temp. Sensor*
FM	DC Fan Motor	ON/OFF	Remote ON/OFF
T0	Outdoor Air Temp. Sensor*	XS/XP	Connectors
T1	Indoor Air Temp. Sensor		

Notes for installers and service engineers

Caution

- All installation, servicing and maintenance must be carried out by competent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation.
- Units should be grounded in accordance with all applicable legislation. Metal and other conductive components should be insulated in accordance with all applicable legislation.
- Power supply wiring should be securely fastened at the power supply terminals – loose power supply wiring would represent a fire risk.
- After installation, servicing or maintenance, the electric control box cover should be closed. Failing to close the electric control box cover risks fire or electric shock.
- The dotted lines indicate the field wiring or optional function.
- PQ and M1M2 communication ports both are used for indoor and outdoor communication, and only one of them can be used at a time. Meanwhile, be sure to connect the same communication ports (PQ to PQ; M1M2 to M1M2) in case of damage of the main control board.
- D1D2 communication ports are used for group control communication. When connecting the group controller, the D1D2 port of the indoor units that are to be group controlled must be connected in daisy chain, and the group controller must be connected to the X1X2 port of one of the indoor units in the group control, and set to group control mode. In addition, D1D2 communication ports can also be connected to the central controller.

6 Capacity Tables

6.1 Cooling Capacity Table

Table 6.1: One-way Cassette cooling capacity

Model	Indoor air temperature (°C WB/DB)													
	14/20		16/23		18/26		19/27		20/28		22/30		24/32	
	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
MIH18Q1HN18(A)	1.6	1.5	1.7	1.5	1.8	1.6	1.8	1.5	1.9	1.5	1.9	1.4	2.0	1.4
MIH22Q1HN18(A)	2.0	1.9	2.1	1.9	2.2	1.9	2.2	1.8	2.3	1.8	2.3	1.7	2.4	1.7
MIH28Q1HN18(A)	2.5	2.3	2.7	2.4	2.8	2.4	2.8	2.3	2.9	2.3	2.9	2.1	3.0	2.1
MIH36Q1HN18(A)	3.2	2.9	3.4	3.0	3.6	3.0	3.6	2.9	3.7	2.9	3.8	2.8	3.9	2.7
MIH45Q1HN18(A)	4.0	3.7	4.3	3.8	4.5	3.9	4.5	3.7	4.6	3.6	4.7	3.4	4.8	3.3
MIH56Q1HN18(A)	5.0	4.5	5.3	4.6	5.6	4.7	5.6	4.6	5.7	4.5	5.8	4.2	6.0	4.1
MIH71Q1HN18(A)	6.3	5.7	6.7	5.8	7.0	5.9	7.1	5.8	7.2	5.6	7.4	5.4	7.6	5.2

Abbreviations:
TC: Total capacity (kW)
SC: Sensible capacity(kW)

Notes:
1.Shaded cells indicate rating condition

6.2 Heating Capacity Table

Table 6.2: One-way Cassette heating capacity

Model	Indoor air temperature (°C DB)					
	16	18	20	21	22	24
	SHC	SHC	SHC	SHC	SHC	SHC
MIH18Q1HN18(A)	2.4	2.4	2.2	2.1	2.1	1.9
MIH22Q1HN18(A)	2.8	2.8	2.6	2.5	2.4	2.3
MIH28Q1HN18(A)	3.4	3.4	3.2	3.1	3.0	2.8
MIH36Q1HN18(A)	4.2	4.2	4.0	3.8	3.8	3.5
MIH45Q1HN18(A)	5.3	5.3	5.0	4.8	4.7	4.4
MIH56Q1HN18(A)	6.7	6.6	6.3	6.1	5.9	5.5
MIH71Q1HN18(A)	8.5	8.4	8.0	7.8	7.5	7.0

Abbreviations:
SHC: Sensible heating capacity(kW)

Notes:
1.Shaded cells indicate rating condition

7 Electrical Characteristics

Table 7.1: One-way Cassette electrical characteristics

Model name	Power supply						Indoor fan motors	
	Hz	Volts	Min. volts	Max. volts	MCA	MFA	Rated motor output (W)	FLA
MIH18Q1HN18(A)	50/60	220-240	198	242	0.19	15	15	0.16
MIH22Q1HN18(A)	50/60	220-240	198	242	0.20	15	19	0.20
MIH28Q1HN18(A)	50/60	220-240	198	242	0.30	15	27	0.21
MIH36Q1HN18(A)	50/60	220-240	198	242	0.31	15	29	0.22
MIH45Q1HN18(A)	50/60	220-240	198	242	0.32	15	30	0.23
MIH56Q1HN18(A)	50/60	220-240	198	242	0.40	15	40	0.25
MIH71Q1HN18(A)	50/60	220-240	198	242	0.50	15	52	0.26

Abbreviations:
MCA: Minimum Circuit Amps
MFA: Maximum Fuse Amps
FLA: Full Load Amps

8 Sound Levels

8.1 Overall

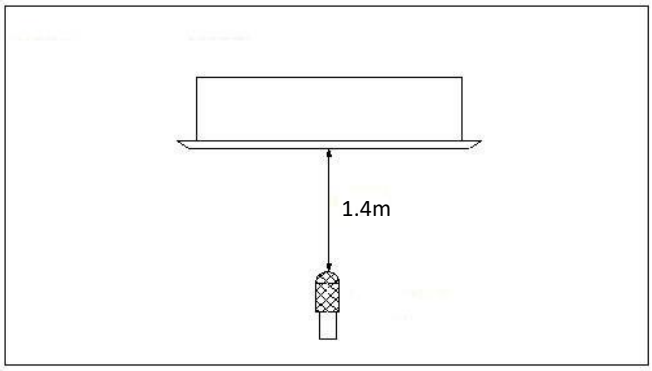
Table 8.1: One-way Cassette sound pressure levels[1]

Model name	Sound pressure levels dB(A)						
	SSH	SH	H	M	L	SL	SSL
MIH18Q1HN18(A)	28	27	26	25	24	23	23
MIH22Q1HN18(A)	32	30	29	28	27	26	25
MIH28Q1HN18(A)	33	31	30	29	27	26	25
MIH36Q1HN18(A)	36	34	33	32	30	29	28
MIH45Q1HN18(A)	39	37	36	35	34	33	32
MIH56Q1HN18(A)	45	43	42	40	39	37	36
MIH71Q1HN18(A)	47	45	44	43	42	41	40

Notes:

1. Sound pressure levels are measured 1.4m below the unit in a anechoic chamber. During in-situ operation, sound pressure levels may be higher as a result of ambient noise.

Figure 8.1: One-way Cassette sound pressure level measurement



8.2 Octave Band Levels

Figure 8.2: MIH18Q1HN18(A) octave band levels

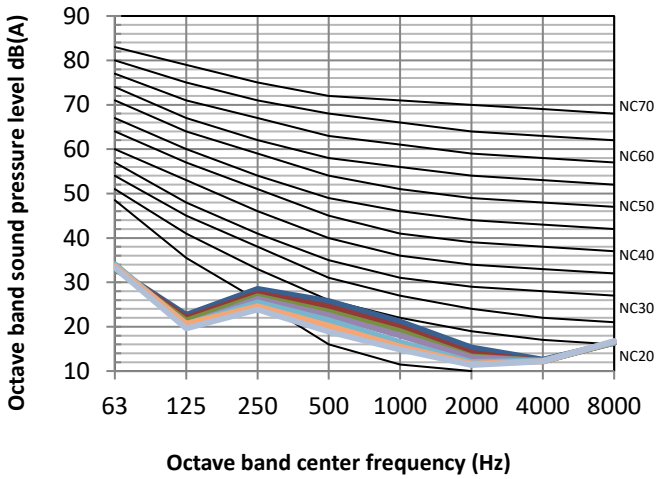


Figure 8.3: MIH22Q1HN18(A) octave band levels

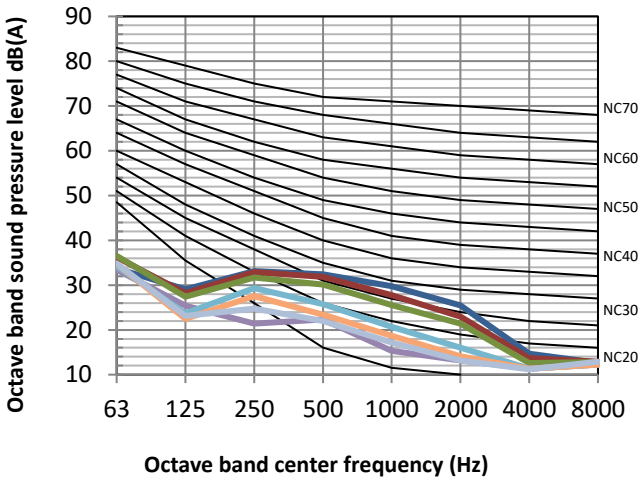


Figure 8.4: MIH28Q1HN18(A) octave band levels

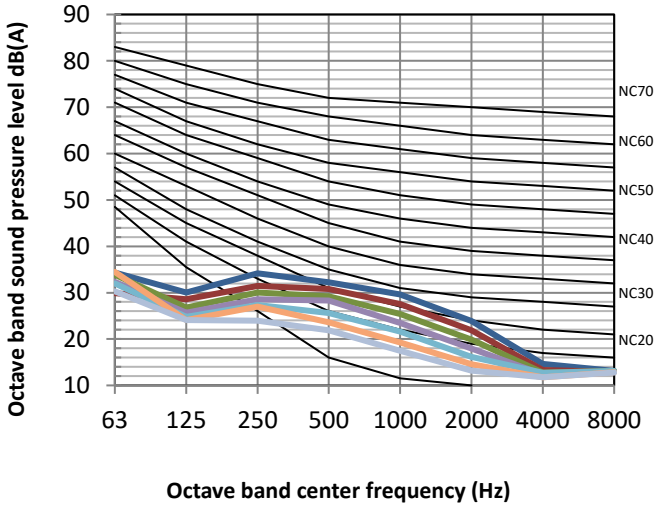


Figure 8.5: MIH36Q1HN18(A) octave band levels

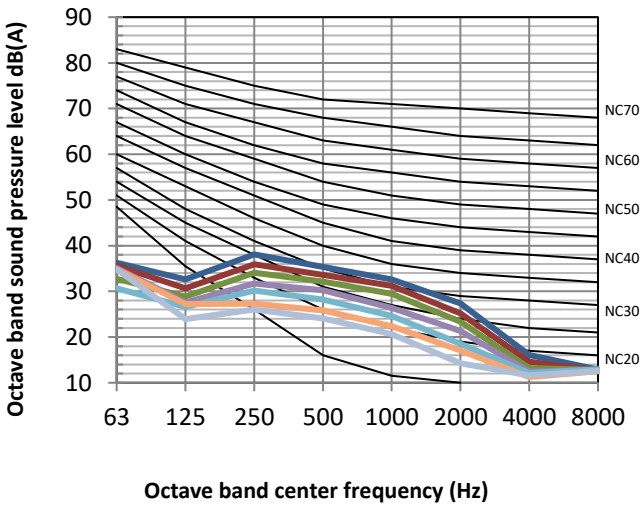


Figure 8.5: MIH45Q1HN18(A) octave band levels

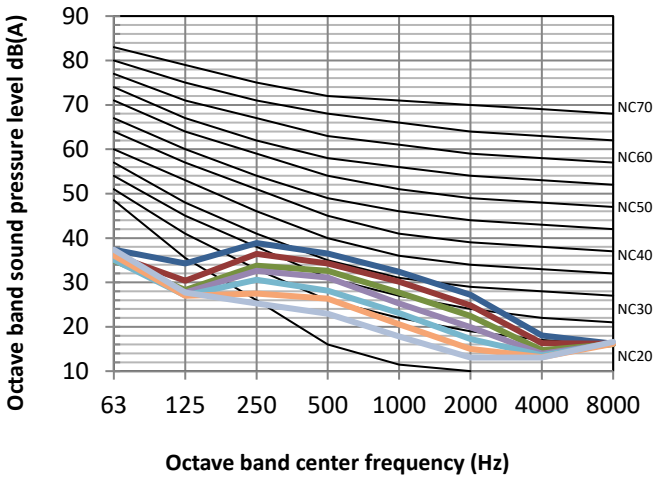


Figure 8.7: MIH56Q1HN18(A) octave band levels

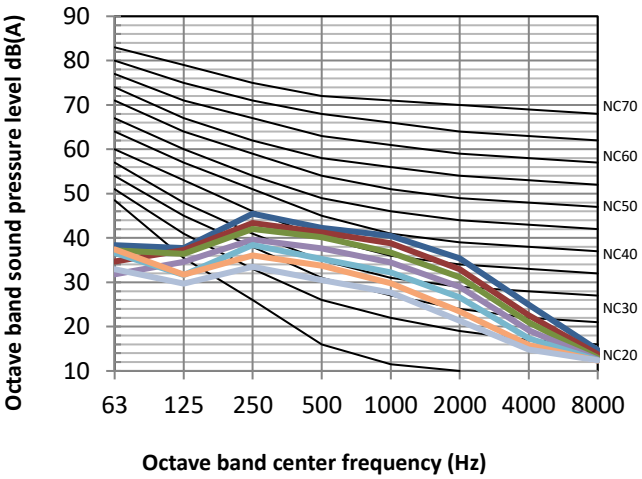
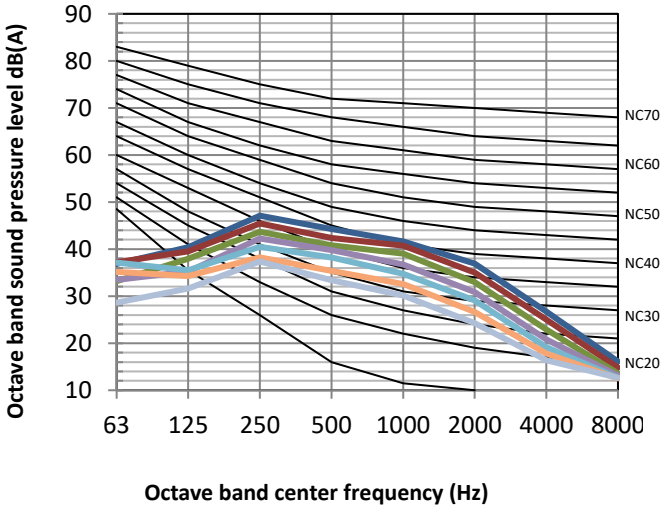


Figure 8.8: MIH71Q1HN18(A) octave band levels



9 Temperature and Airflow Distributions

9.1 Simulate condition

Table 9.1: One-way Cassette simulate condition

Model name	Room size (m)	Ceiling height (m)	Flow angle (Cooling/Heating)	Placing
MIH18Q1HN18(A)	6*6	2.5~3.5	30° /65°	Cassette
MIH22Q1HN18(A)	6*6	2.5~3.5	30° /65°	Cassette
MIH28Q1HN18(A)	6*6	2.5~3.5	30° /65°	Cassette
MIH36Q1HN18(A)	6*6	2.5~3.5	30° /65°	Cassette
MIH45Q1HN18(A)	8*8	2.5~3.5	30° /65°	Cassette
MIH56Q1HN18(A)	8*8	2.5~3.5	30° /65°	Cassette
MIH71Q1HN18(A)	8*8	2.5~3.5	30° /65°	Cassette

Note:

1. These figures and videos are based on software simulation. They show typical temperature and airflow distributions in the conditions above. In the actual installation, they may differ from these figures and videos under the influence of air temperature conditions, ceiling height, cooling/heating load, obstacles, etc.

9.2 Airflow distributions (unit: m/s)

Figure 9.1: MIH18Q1HN18(A) cooling at 300S

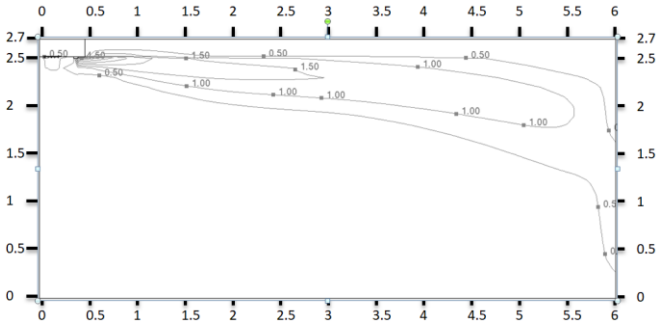


Figure 9.2: MIH18Q1HN18(A) heating at 300S

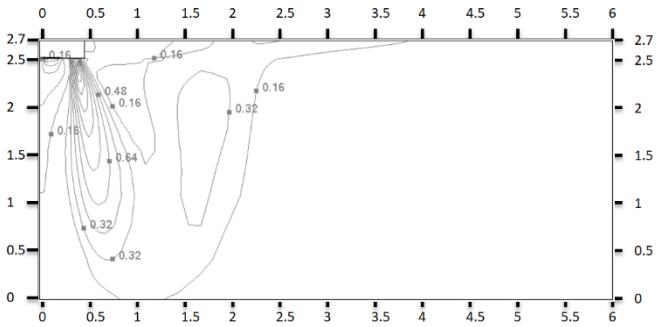


Figure 9.3: MIH22Q1HN18(A) cooling at 300S

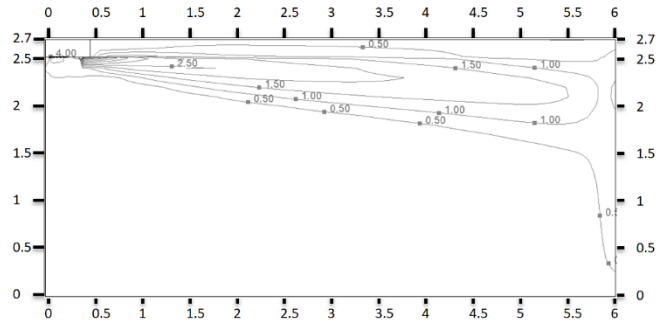


Figure 9.4: MIH22Q1HN18(A) heating at 300S

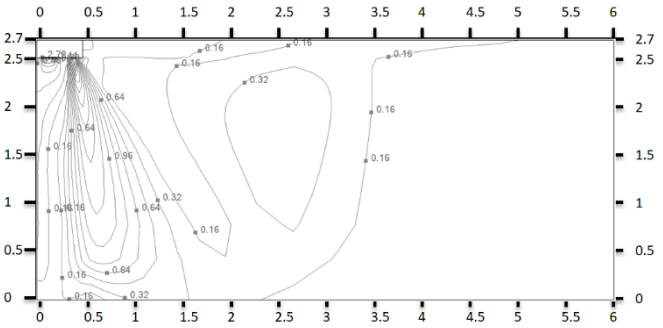


Figure 9.5: MIH28Q1HN18(A) cooling at 300S

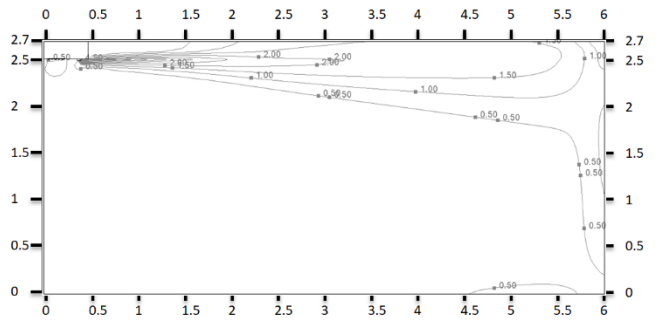


Figure 9.6: MIH28Q1HN18(A) heating at 300S

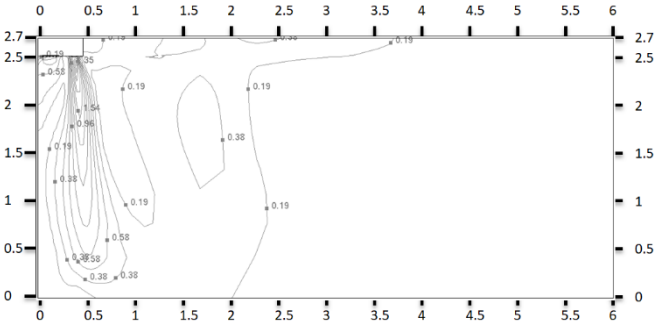


Figure 9.7: MIH36Q1HN18(A) cooling at 300S

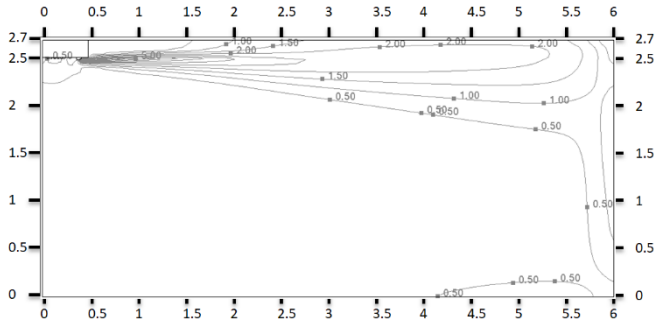


Figure 9.8: MIH36Q1HN18(A) heating at 300S

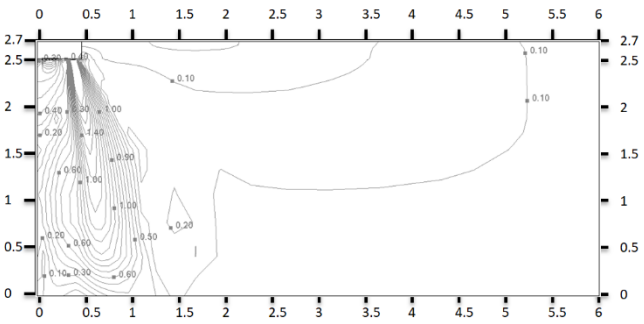


Figure 9.9: MIH45Q1HN18(A) cooling at 300S

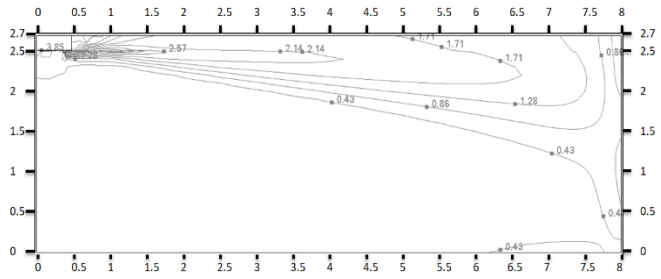


Figure 9.10: MIH45Q1HN18(A) heating at 300S

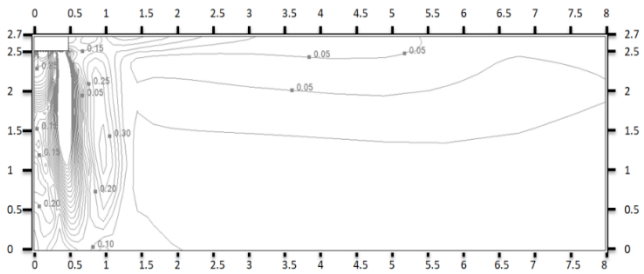


Figure 9.11: MIH56Q1HN18(A) cooling at 300S

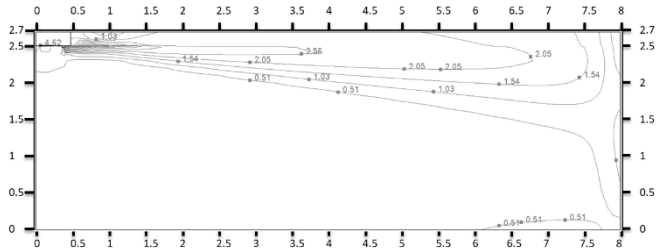


Figure 9.12: MIH56Q1HN18(A) heating at 300S

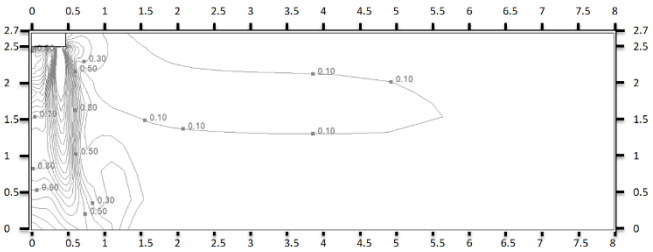


Figure 9.13: MIH71Q1HN18(A) cooling at 300S

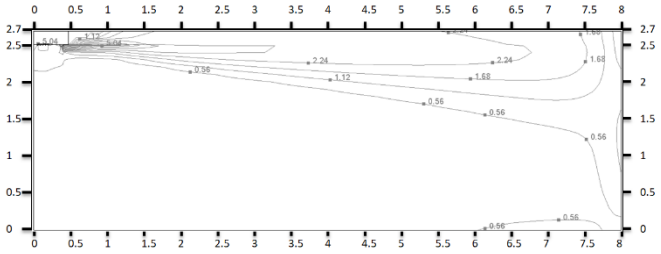
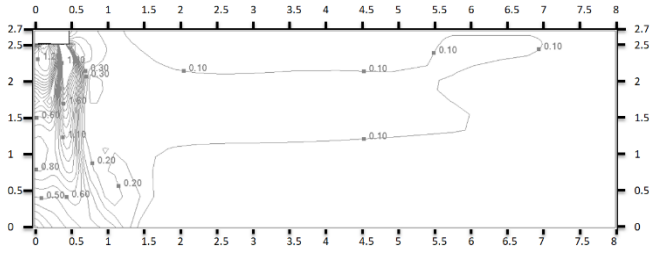


Figure 9.14: MIH71Q1HN18(A) heating at 300S



9.3 Temperature distributions (unit: °C)

Figure 9.15: MIH18Q1HN18(A) cooling at 300S

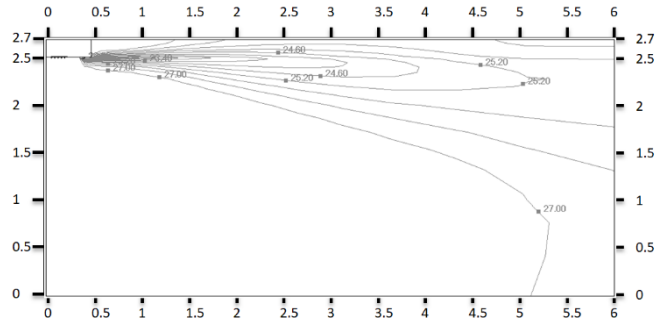


Figure 9.16: MIH18Q1HN18(A) heating at 300S

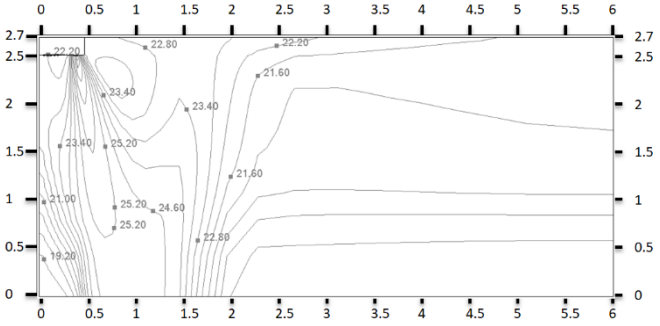


Figure 9.17: MIH22Q1HN18(A) cooling at 300S

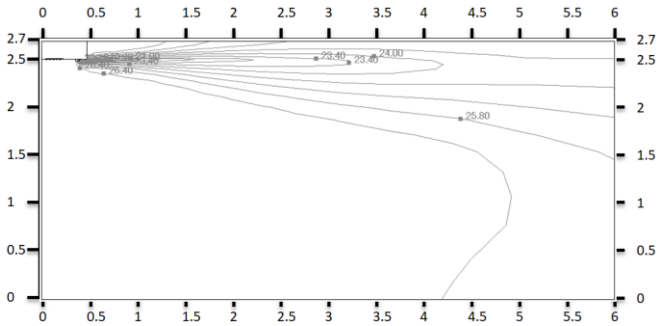


Figure 9.18: MIH22Q1HN18(A) heating at 300S

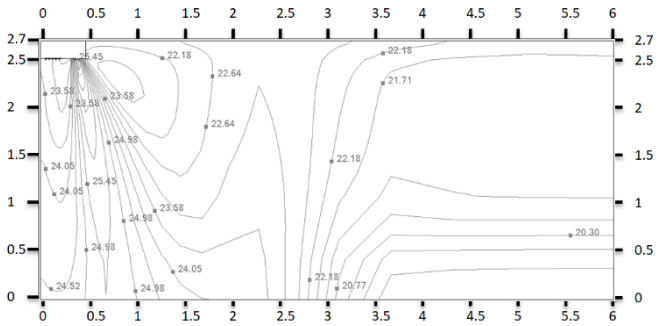


Figure 9.19: MIH28Q1HN18(A) cooling at 300S

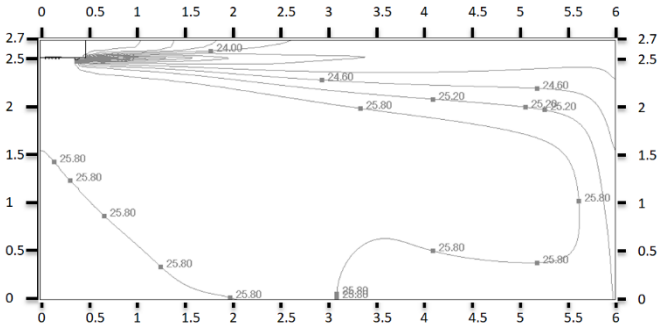


Figure 9.20: MIH28Q1HN18(A) heating at 300S

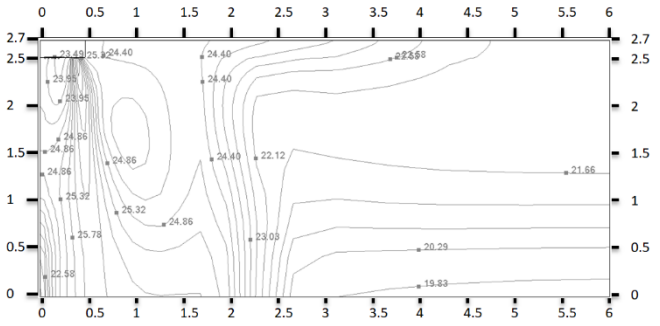


Figure 9.21: MIH36Q1HN18(A) cooling at 300S

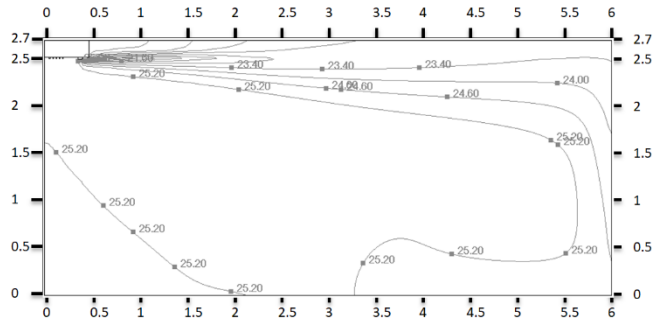


Figure 9.22: MIH36Q1HN18(A) heating at 300S

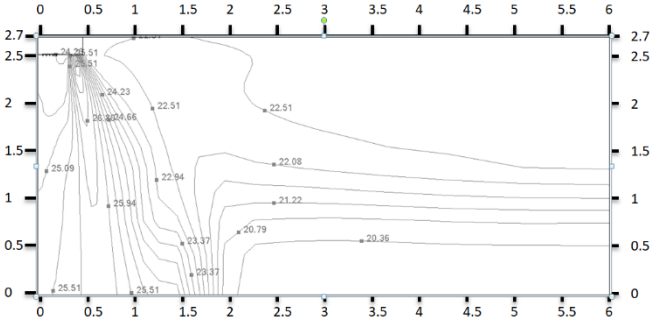


Figure 9.23: MIH45Q1HN18(A) cooling at 300S

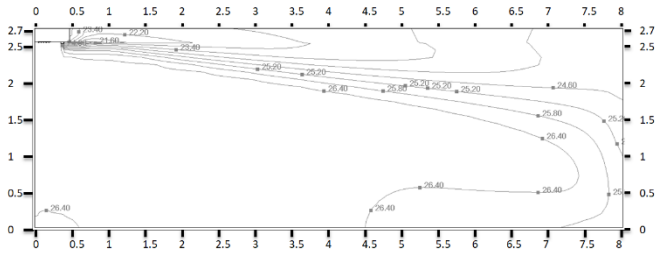


Figure 9.24: MIH45Q1HN18(A) heating at 300S

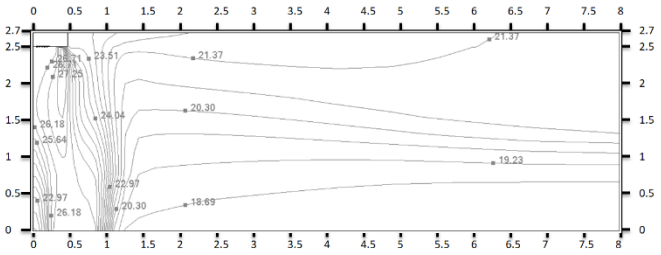


Figure 9.25: MIH56Q1HN18(A) cooling at 300S

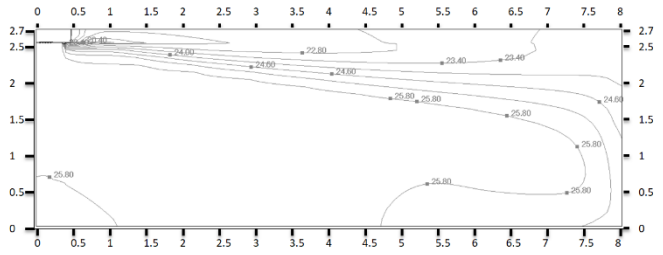


Figure 9.26: MIH56Q1HN18(A) heating at 300S

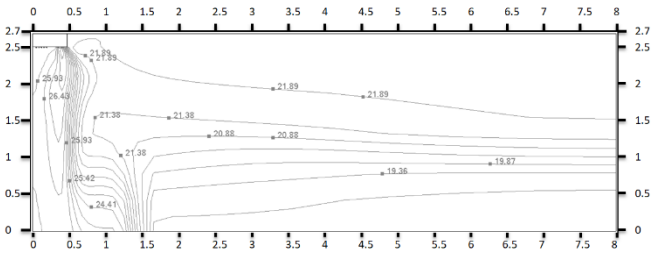


Figure 9.27: MIH71Q1HN18(A) cooling at 300S

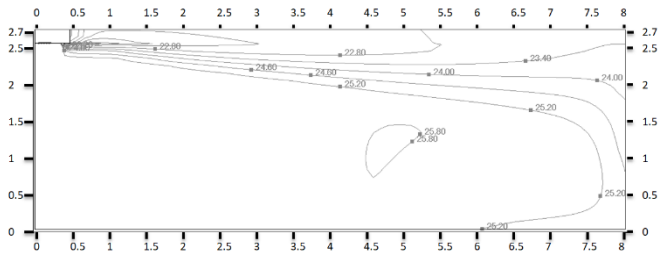
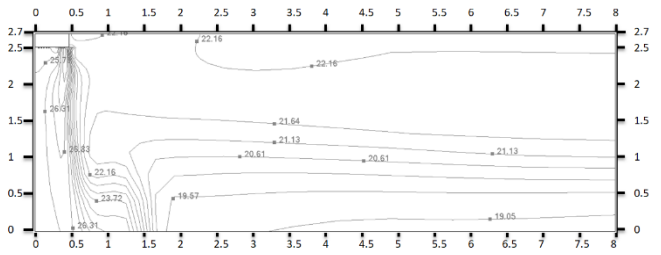


Figure 9.28: MIH71Q1HN18(A) heating at 300S



T-V8Q1NH
Ver. 2024-06

Midea Building Technologies Division
Midea Group

Add.: Midea Headquarters Building, 6 Midea Avenue, Shunde, Foshan, Guangdong, China
Postal code: 528311
mbt.midea.com/global /www.midea-group.com / ics.midea.com