

Engineering Data

Wall Mounted VRF IDU



MIH15GN18

MIH45GN18

MIH22GN18

MIH56GN18

MIH28GN18

MIH71GN18

MIH36GN18

MIH80GN18

Wall Mounted

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1 Specifications

MIH15GN18 / MIH22GN18 / MIH28GN18

Model			MIH15GN18	MIH22GN18	MIH28GN18
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	1.5	2.2	2.8
		kBtu/h	5.1	7.5	9.6
	Power input	W	18	21	24
Heating ²	Capacity	kW	1.7	2.4	3.2
		kBtu/h	5.8	8.2	10.9
	Power input	W	18	21	24
Fan motor	Model		ZKSN-20-8-5L	ZKSN-20-8-5L	ZKSN-20-8-5L
	Type		DC		
Indoor coil	Number of rows		1	1	2&3
	Fin spacing	mm	1.3	1.3	1.33
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ7 Inner-groove		Φ5 Inner-groove
	Dimensions (L×H×W)	mm	530×170×95	530×170×95	530×170×95
	Number of circuits		2	2	6
Air flow rate ³		m ³ /h	460/440/420/400/380/360/340	500/470/440/410/390/370/340	540/510/470/430/400/370/340
Sound pressure level ⁴		dB(A)	32/31/30/30/29/28/27	33/32/31/30/29/28/27	35/34/33/32/31/30/28
Unit	Net dimensions ⁵ (W×H×D)		750×295×265		
	Packed dimensions (W×H×D)		875×385×360		
	Net/Gross weight		9/11	9/11	10/12
Refrigerant type			R410A/R32		
Throttle		Type	Electronic expansion valve		
Design pressure (H/L)		MPa	4.4/2.6		
Pipe connections	Liquid/Gas pipe		Φ6.35/Φ12.7		
	Drain pipe		OD Φ16		

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured in an anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

MIH36GN18 / MIH45GN18 / MIH56GN18

Model			MIH36GN18	MIH45GN18	MIH56GN18
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	3.6	4.5	5.6
		kBtu/h	12.3	15.4	19.1
	Power input	W	27	30	40
Heating ²	Capacity	kW	4.0	5.0	6.3
		kBtu/h	13.6	17.1	21.5
	Power input	W	27	30	40
Fan motor	Model		ZKSN-20-8-5L	ZKSN-20-8-5L	ZKSN-20-8-5L
	Type		DC		
Indoor coil	Number of rows		2&3		
	Fin spacing	mm	1.33		
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ5 Inner-groove		
	Dimensions (L×H×W)	mm	530×170×95	730×170×95	730×170×95
	Number of circuits		6	6	6
Air flow rate ³		m ³ /h	580/540/500/460/420/380/340	720/670/620/560/510/460/410	860/780/700/620/550/480/410
Sound pressure level ⁴		dB(A)	37/36/34/33/31/30/28	37/35/33/32/31/30/29	41/39/37/35/33/31/29
Unit	Net dimensions ⁵ (W×H×D)		750×295×265	950×295×265	
	Packed dimensions (W×H×D)		875×385×360	1075×385×360	
	Net/Gross weight		10/12	11.5/14	
Refrigerant type			R410A/R32		
Throttle		Type	Electronic expansion valve		
Design pressure (H/L)		MPa	4.4/2.6		
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/Φ12.7		
	Drain pipe	mm	OD Φ16		

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured in an anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

V8 VRF Indoor Units



MIH71GN18 / MIH80GN18

Model			MIH71GN18	MIH80GN18
Power supply			1 phase, 220-240V, 50Hz	
Cooling ¹	Capacity	kW	7.1	8.0
		kBtu/h	24.2	27.3
	Power input	W	50	65
Heating ²	Capacity	kW	8.0	9.0
		kBtu/h	27.3	30.7
	Power input	W	50	65
Fan motor	Model		ZKSN-50-8-17L	ZKSN-50-8-17L
	Type		DC	
Indoor coil	Number of rows		2&3	
	Fin spacing	mm	1.33	
	Fin type		Hydrophilic aluminum	
	Tube OD and type	mm	Φ5 Inner-groove	
	Dimensions (L×H×W)	mm	980×170×95	980×170×95
	Number of circuits		8	8
Air flow rate ³		m ³ /h	1220/1120/1030/940/850/750/ 660	1380/1260/1140/1020/900/780 /660
Sound pressure level ⁴		dB(A)	58/56/54/52/50/48/46	60/57/55/53/50/48/46
Unit	Net dimensions ⁵ (W×H×D)		1200×295×265	
	Packed dimensions (W×H×D)		1315×385×360	
	Net/Gross weight		15/18	
Refrigerant type			R410A/R32	
Throttle		Type	Electronic expansion valve	
Design pressure (H/L)		MPa	4.4/2.6	
Pipe connections	Liquid/Gas pipe		Φ9.52/Φ15.9	
	Drain pipe		OD Φ16	

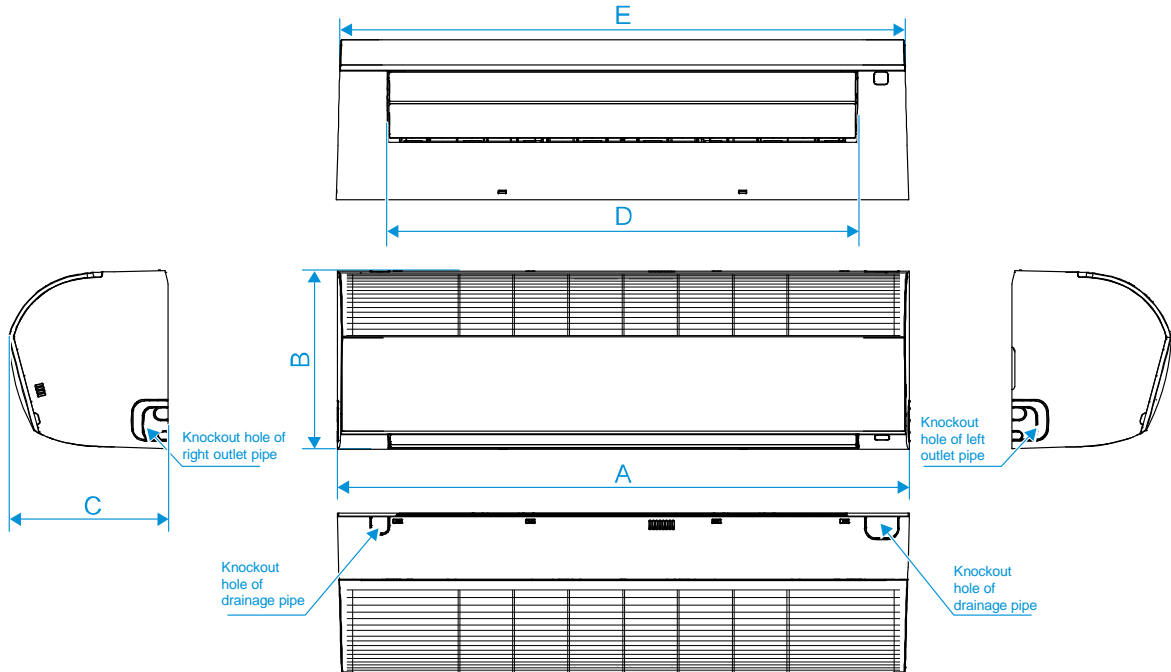
Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured in an anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

2 Dimensions

2.1 Unit Dimensions

Figure 2.1: Wall mounted dimensions (unit: mm)



Model(kW)	A	B	C	D	E
1.5~3.6	750	295	265	581	736
4.5~5.6	950	295	265	781	936
7.1~8.0	1200	295	265	1025	1186

3 Unit Placement

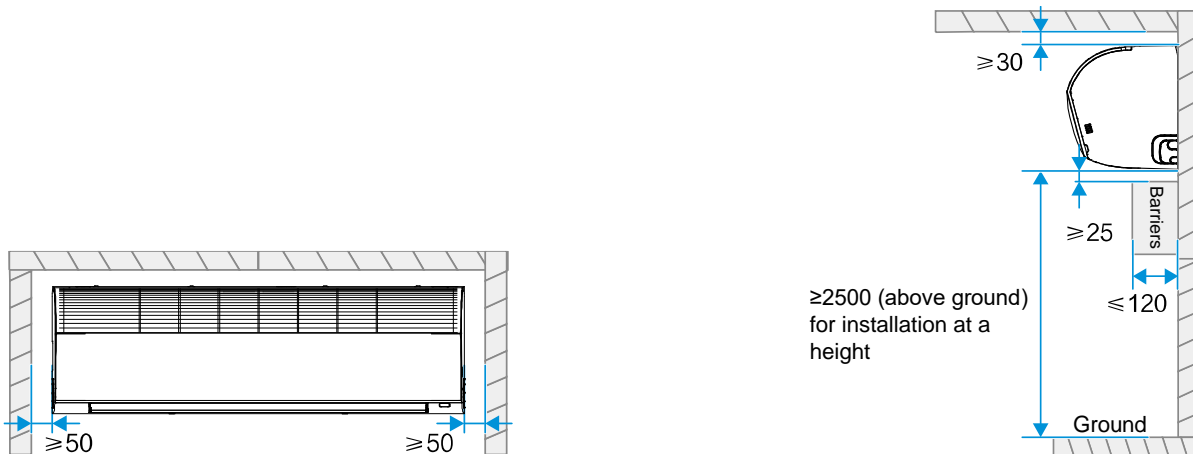
3.1 Placement Considerations

Unit placement should take account of the following considerations:

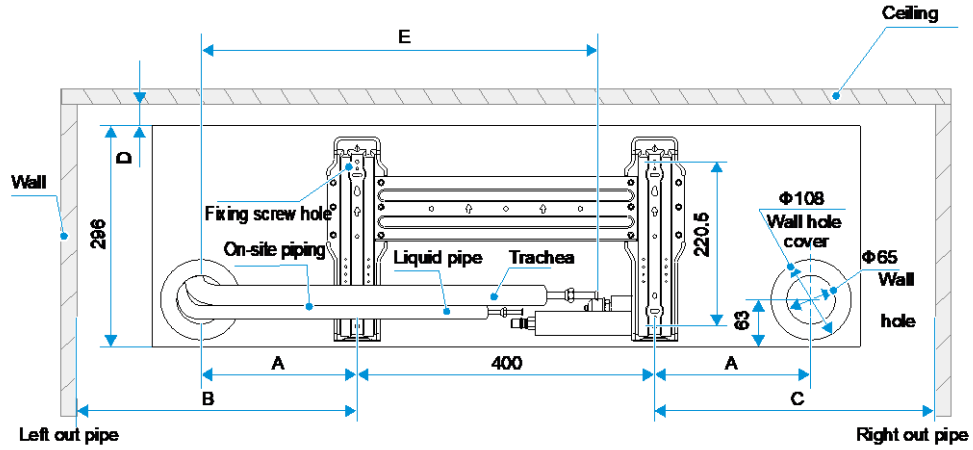
- Units should not be installed in the following locations:
 - A place filled with mineral oil, fumes or mist, like a kitchen.
 - A place where there are corrosive gases, such as acid or alkaline gases..
 - A place exposed to combustible gases and using volatile combustible gases such as diluent or gasoline.
 - A place where there is equipment emitting electromagnetic radiation.
 - A place where there is a high salt content in the air like a coast.
 - Do not use the air conditioner in an environment where an explosion may occur.
 - Places like in vehicles or cabin rooms.
 - Factories with major voltage fluctuations in the power supplies.
 - Other special environmental conditions.
- Units should be installed in positions where:
 - Ensure that the airflow in and out of the IDU is reasonably organized to form an air circulation in the room.
 - Ensure IDU maintenance space.
 - The nearer the drainage pipe and copper pipe are to the ODU, the lower the pipe cost is.
 - Prevent the air conditioner from blowing directly to the human body.
 - The closer the wiring to the power cabinet, the lower the wiring cost is.
 - Keep the air-conditioning return air away from the setting sun of the room.
 - Be careful not to interfere with the light tank, fire pipe, gas pipe and other facilities.
 - The IDU should not be lifted in the places like load-bearing beam and columns that affect the structural safety of the house.
 - The wired controller and the IDU should be in the same installation space; otherwise, the sampling point setting of the wired controller need to be changed.

3.2 Space Requirements

Figure 3.1: Wall mounted space requirements (unit: mm)



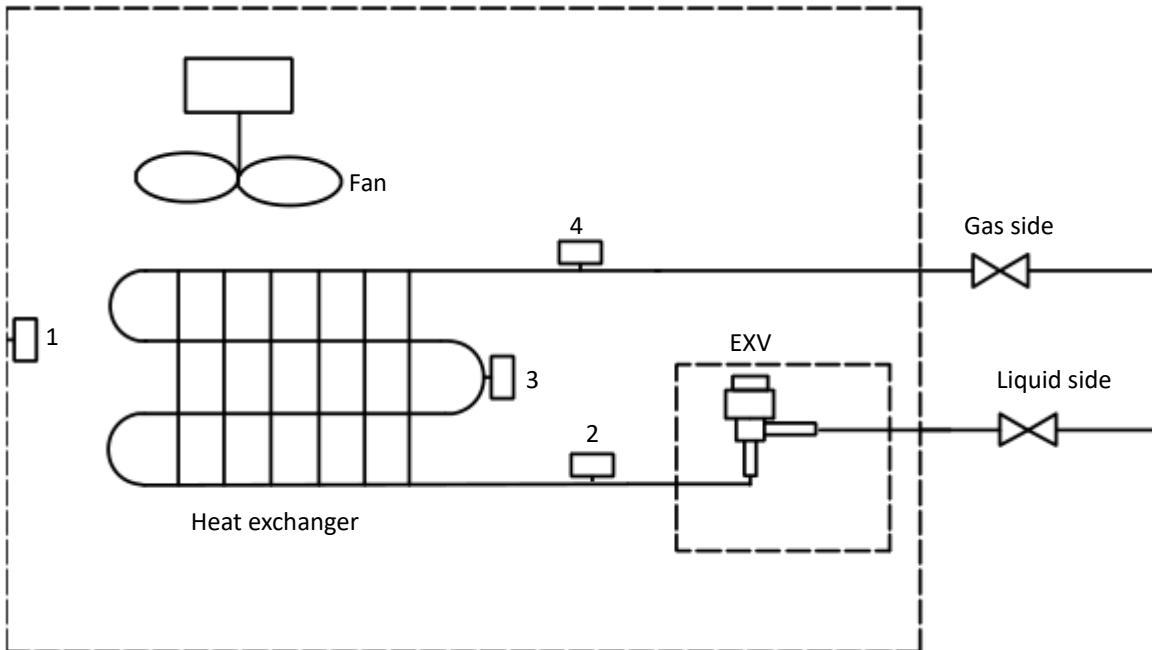
Positioning of mounting plate:



Distance(mm) Model(kW)	A	B	C	D	E	Reserved lengths for power and signal cables	
						Left out pipe	Right out pipe
1.5~3.6	100	≥ 225	≥ 225	≥ 30	230	≥ 1115	≥ 415
4.5~5.6	180	≥ 325	≥ 325	≥ 30	412	≥ 1315	≥ 415
7.1~8.0	220	≥ 375	≥ 375	≥ 30	400	≥ 1565	≥ 415

4 Piping Diagram

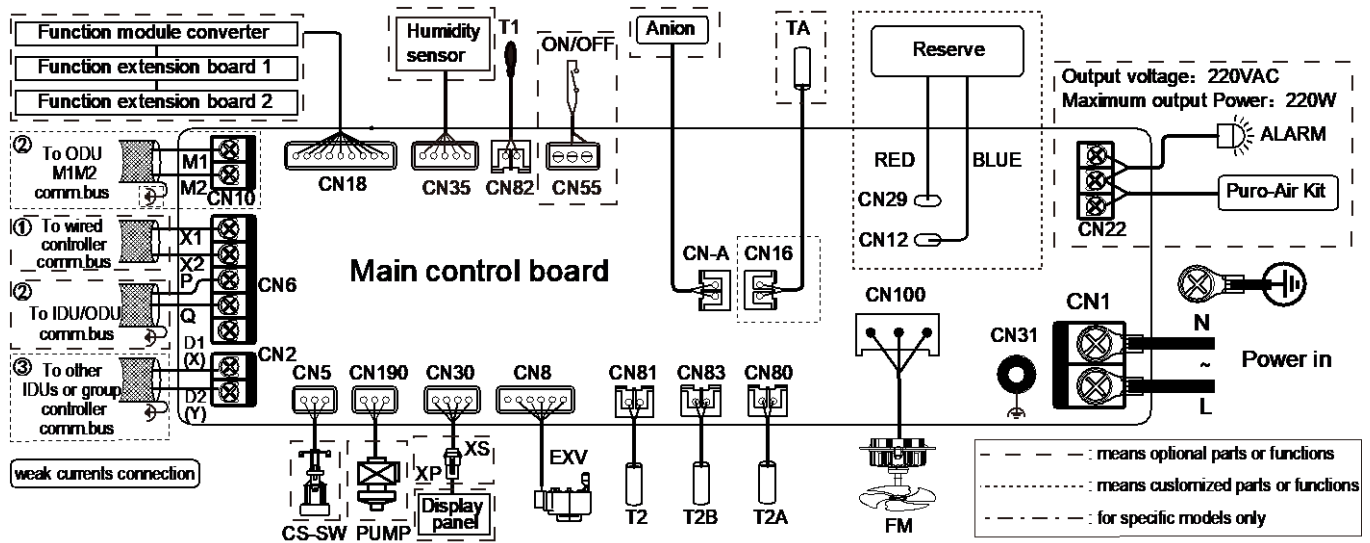
Figure 4.1: Wall mounted piping diagram



Legend		
1	T1	Indoor ambient temperature sensor
2	T2A	Indoor heat exchanger liquid side temperature sensor
3	T2	Indoor heat exchanger mid-point temperature sensor
4	T2B	Indoor heat exchanger gas side temperature sensor

5 Wiring Diagram

Figure 5.1: Wall mounted wiring diagram



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.
- Switch ENC1 (indoor unit capacity setting) is factory-set and its setting should normally not be changed. The only circumstances in which a switch ENC1 might need to be set in the field is when replacing a main PCB. When replacing a main PCB, ensure that the capacity setting on switch ENC1 on the new PCB is consistent with the unit capacity given on the unit's nameplate.

6 Capacity Tables

6.1 Cooling Capacity Table

Table 6.1: Wall mounted 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
MIH15GN18	1.4	1.3	1.5	1.3	1.5	1.2	1.5	1.1	1.6	1.1	1.6	1.0	1.6	0.9
MIH22GN18	2.0	1.9	2.1	1.8	2.2	1.8	2.2	1.7	2.3	1.6	2.3	1.5	2.4	1.4
MIH28GN18	2.5	2.2	2.7	2.3	2.8	2.2	2.8	2.1	2.9	2.0	2.9	1.8	3.0	1.7
MIH36GN18	3.2	2.9	3.4	2.9	3.6	2.8	3.6	2.7	3.7	2.6	3.8	2.4	3.9	2.2
MIH45GN18	4.0	3.7	4.3	3.6	4.5	3.5	4.5	3.3	4.6	3.2	4.7	2.9	4.8	2.7
MIH56GN18	5.0	4.6	5.3	4.6	5.6	4.5	5.6	4.2	5.7	4.0	5.8	3.7	6.0	3.4
MIH71GN18	6.3	5.8	6.7	5.7	7.0	5.6	7.1	5.3	7.2	5.1	7.4	4.6	7.6	4.3
MIH80GN18	7.1	6.5	7.6	6.5	7.9	6.3	8.0	6.0	8.1	5.7	8.3	5.2	8.5	4.8

Abbreviations:

TC: Total capacity (kW)

SC: Sensible capacity (kW)

Notes:

1. Shaded cells indicate rating condition

6.2 Heating Capacity Table

Table 6.2: Wall mounted heating capacity

Model	Indoor air temperature (°C DB)					
	16	18	20	21	22	24
	TC	TC	TC	TC	TC	TC
MIH15GN18	1.8	1.8	1.7	1.6	1.6	1.5
MIH22GN18	2.6	2.6	2.4	2.3	2.3	2.1
MIH28GN18	3.4	3.4	3.2	3.1	3.0	2.8
MIH36GN18	4.2	4.2	4.0	3.8	3.8	3.5
MIH45GN18	5.3	5.3	5.0	4.8	4.7	4.4
MIH56GN18	6.7	6.6	6.3	6.1	5.9	5.5
MIH71GN18	8.0	8.5	8.4	8.0	7.8	7.5
MIH80GN18	9.0	9.5	9.5	9.0	8.7	8.5

Abbreviations:

TC: Total capacity (kW)

Notes:

1. Shaded cells indicate rating condition

7 Electrical Characteristics

Table 7.1: Wall mounted electrical characteristics

Model	Power supply						Indoor fan motors	
	Hz	Volts	Min. volts	Max. volts	MCA	MFA	Rated motor output (kW)	FLA
MIH15GN18	50	220-240	198	264	0.28	15	18	0.22
MIH22GN18	50	220-240	198	264	0.29	15	21	0.23
MIH28GN18	50	220-240	198	264	0.36	15	24	0.29
MIH36GN18	50	220-240	198	264	0.39	15	27	0.31
MIH45GN18	50	220-240	198	264	0.41	15	30	0.33
MIH56GN18	50	220-240	198	264	0.51	15	40	0.33
MIH71GN18	50	220-240	198	264	0.69	15	50	0.55
MIH80GN18	50	220-240	198	264	0.98	15	65	0.78

Abbreviations:

MCA: Minimum Circuit Amps

MFA: Maximum Fuse Amps

FLA: Full Load Amps

8 Sound Levels

8.1 Overall

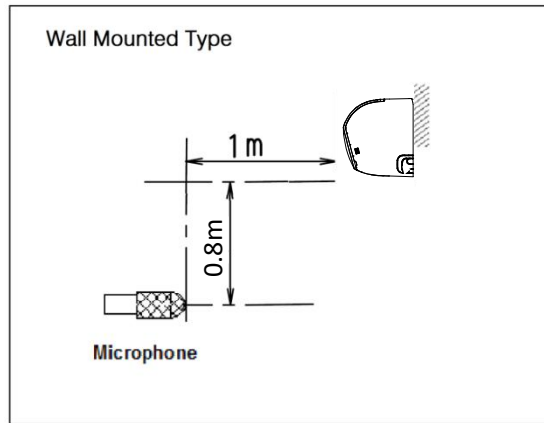
Table 8.1: Wall mounted sound pressure levels¹

Model name	Sound pressure levels dB(A)						
	SSH	SH	H	M	L	SL	SSL
MIH15GN18	32	31	30	30	29	28	27
MIH22GN18	33	32	31	30	29	28	27
MIH28GN18	35	34	33	32	31	30	28
MIH36GN18	37	36	34	33	31	30	28
MIH45GN18	37	35	33	32	31	30	29
MIH56GN18	41	39	37	35	33	31	29
MIH71GN18	58	56	54	52	50	48	46
MIH80GN18	60	57	55	53	50	48	46

Notes:

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

Figure 8.1: Wall mounted sound pressure level measurement



8.2 Octave Band Levels

Figure 8.2: MIH15GN18 octave band levels

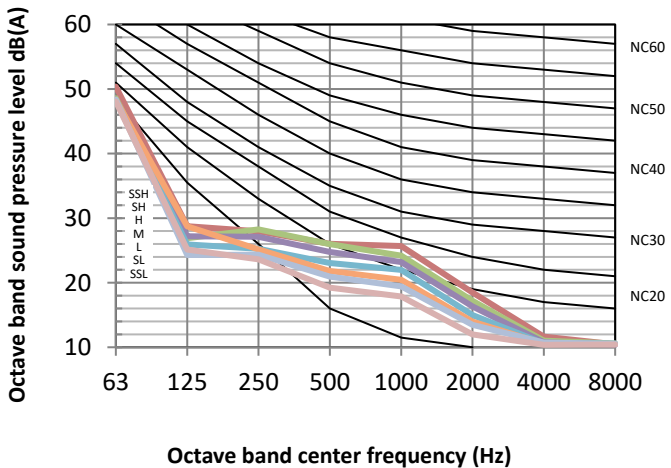


Figure 8.3: MIH22GN18 octave band levels

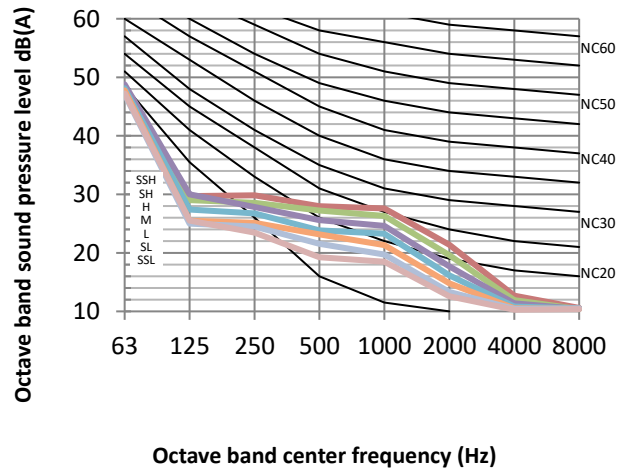


Figure 8.4: MIH28GN18 octave band levels

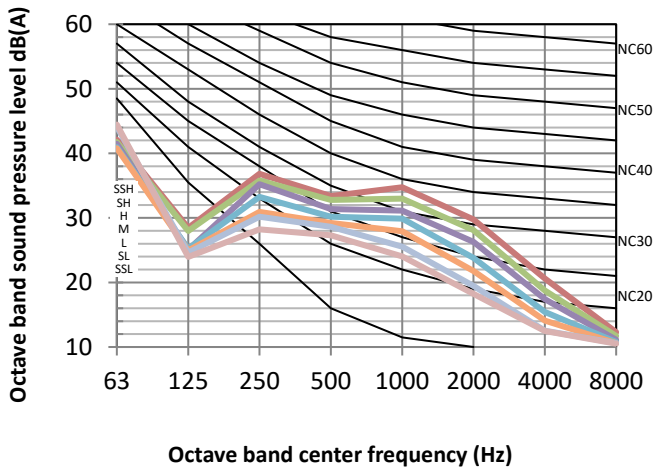


Figure 8.5: MIH36GN18 octave band levels

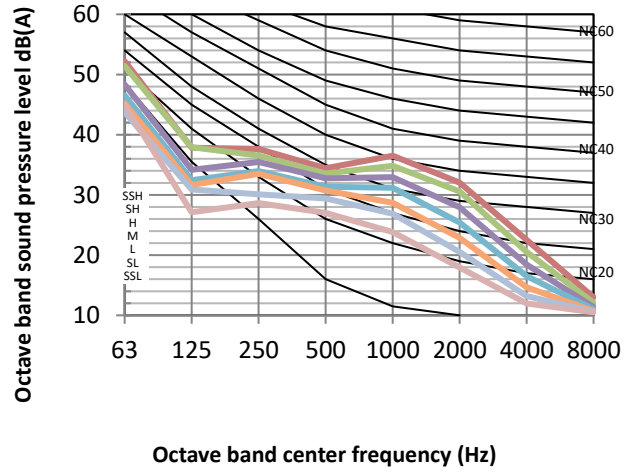


Figure 8.6: MIH45GN18 octave band levels

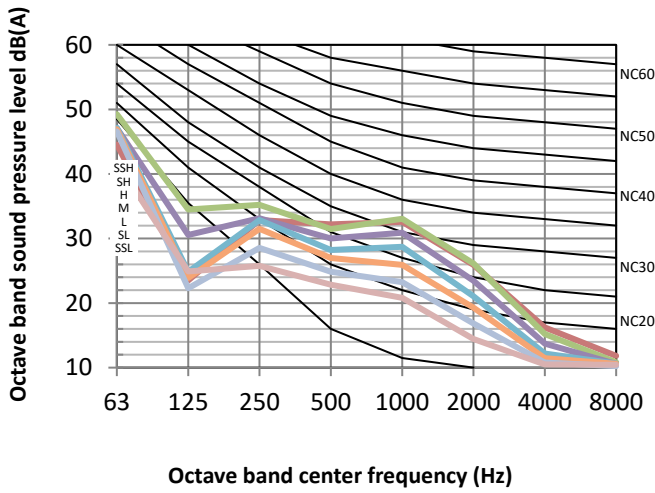
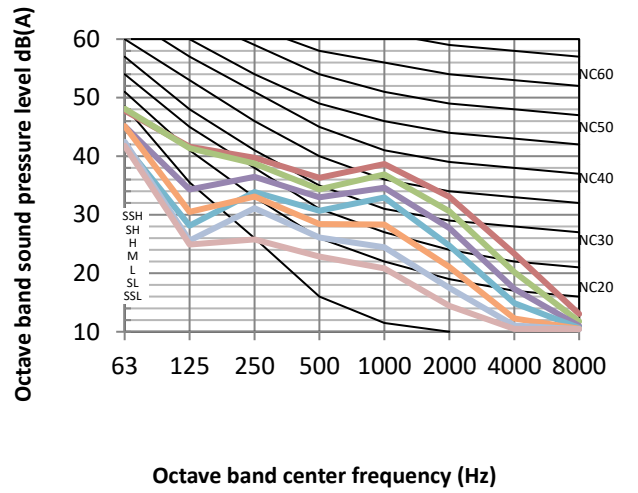


Figure 8.7: MIH56GN18 octave band levels



9 Temperature and Airflow Distributions

9.1 Simulate condition

Table 9.1: Wall mounted simulate condition

Model name	Room size (m)	Ceiling height (m)	Flow angle (Cooling/Heating)	Placing
MIH15GN18	4×4	2.7	58°/88°	Wall mounted
MIH22GN18	4.5×4.5	2.7	58°/88°	Wall mounted
MIH28GN18	5×5	2.7	58°/88°	Wall mounted
MIH36GN18	5.5×5.5	2.7	58°/88°	Wall mounted
MIH45GN18	6×6	2.7	58°/88°	Wall mounted
MIH56GN18	8×8	2.7	58°/88°	Wall mounted
MIH71GN18	8×8	2.7	58°/88°	Wall mounted
MIH80GN18	8×8	2.7	58°/88°	Wall mounted

Note:

- These figures 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 under the influence of air temperature conditions, ceiling height, cooling/heating load, obstacles, etc.

9.2 Airflow distributions (unit: m/s)

Figure 9.1: MIH15GN18 cooling at 300S

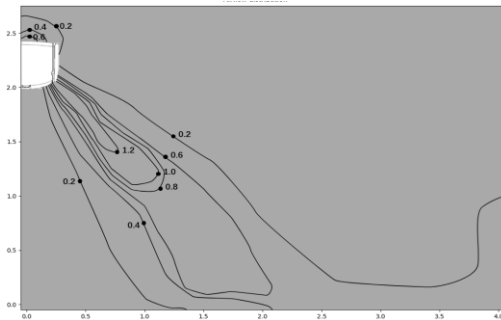


Figure 9.2: MIH15GN18 heating at 300S

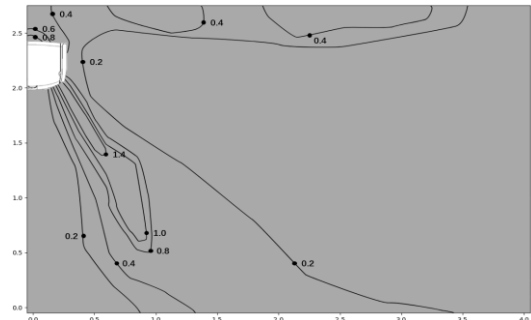


Figure 9.3: MIH22GN18 cooling at 300S

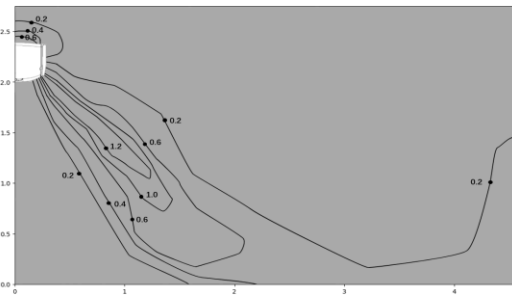


Figure 9.4: MIH22GN18 heating at 300S

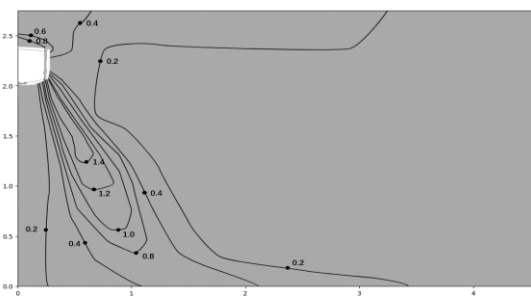


Figure 9.5: MIH28GN18 cooling at 300S

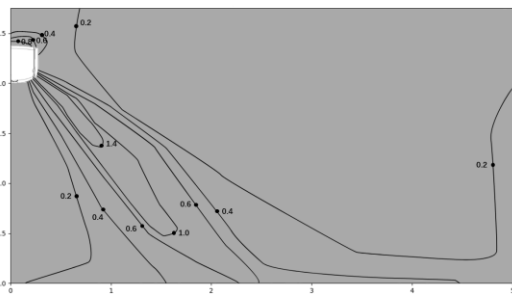
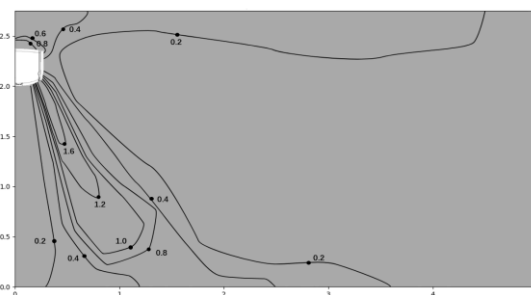


Figure 9.6: MIH28GN18 heating at 300S



V8 VRF Indoor Units



Figure 9.7: MIH36GN18 cooling at 300S

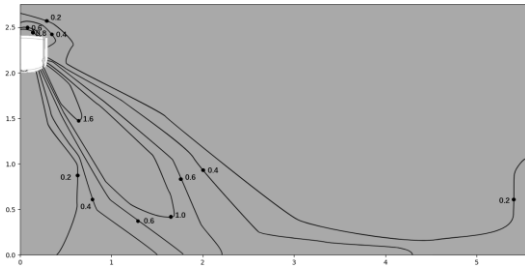


Figure 9.8: MIH36GN18 heating at 300S

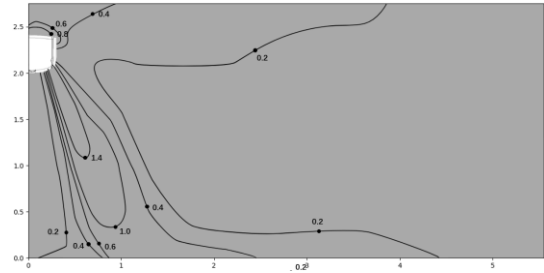


Figure 9.9: MIH45GN18 cooling at 300S

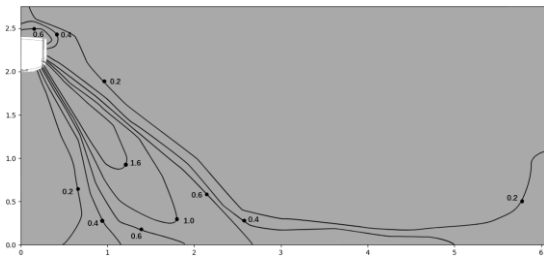


Figure 9.10: MIH45GN18 heating at 300S

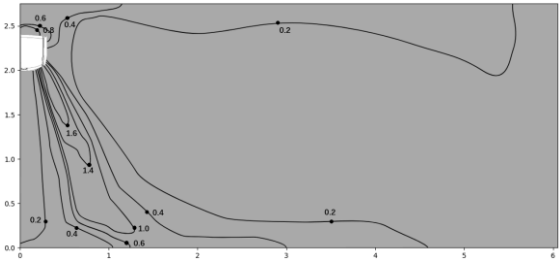


Figure 9.11: MIH56GN18 cooling at 300S

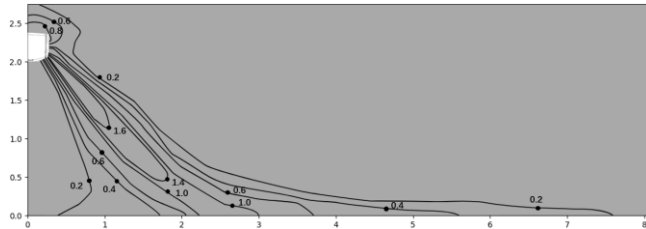


Figure 9.12: MIH56GN18 heating at 300S

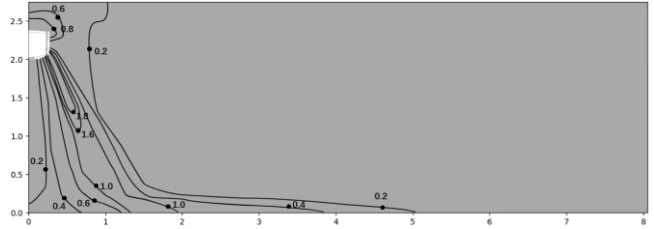


Figure 9.13: MIH71GN18 cooling at 300S

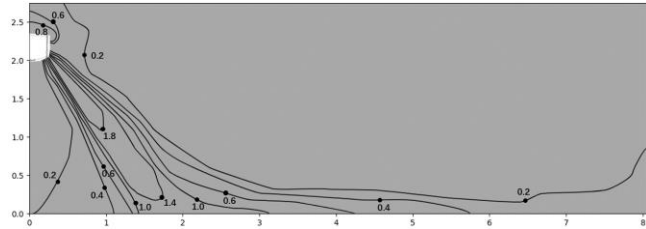


Figure 9.14: MIH71GN18 heating at 300S

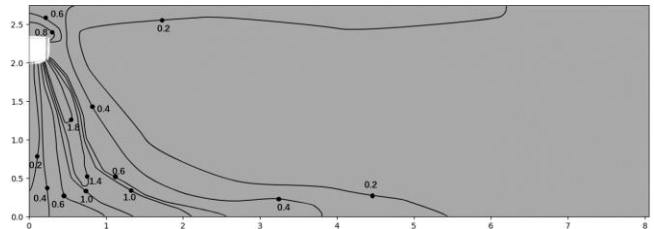


Figure 9.15: MIH80GN18 cooling at 300S

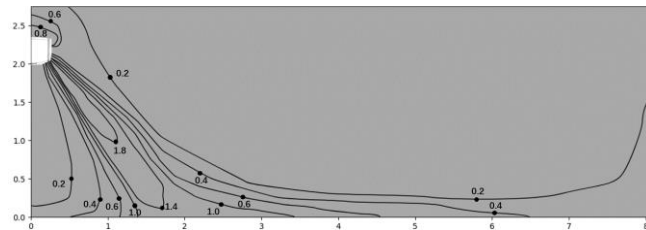
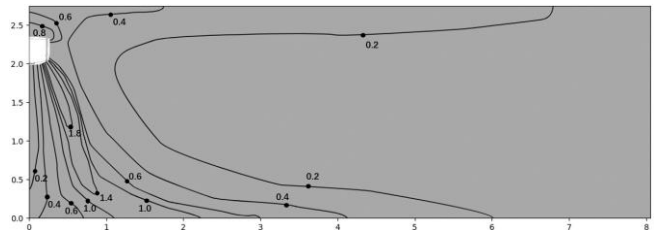


Figure 9.16: MIH80GN18 heating at 300S



9.3 Temperature distributions

Figure 9.17: MIH15GN18 cooling at 300S

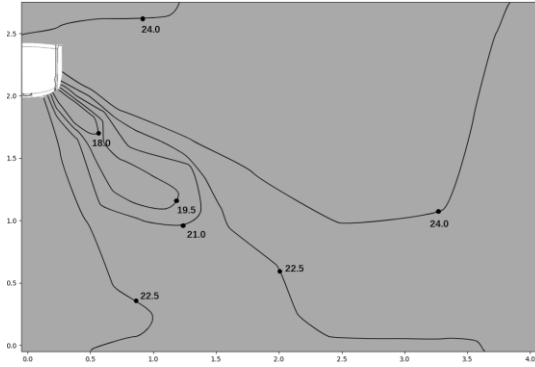


Figure 9.19: MIH22GN18 cooling at 300S

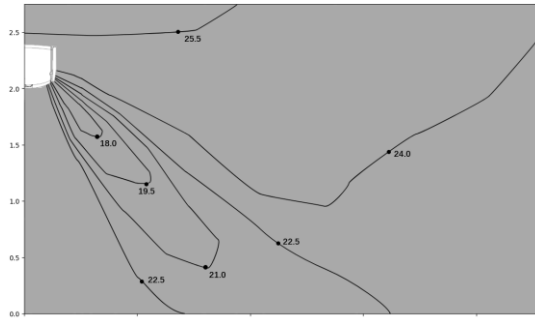


Figure 9.21: MIH28GN18 cooling at 300S

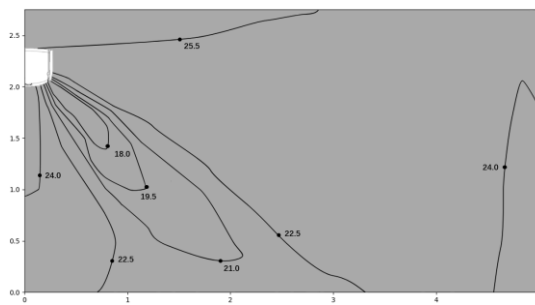


Figure 9.23: MIH36GN18 cooling at 300S

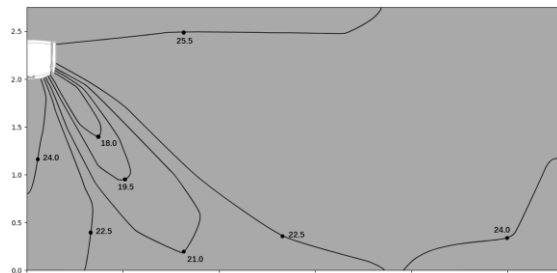


Figure 9.25: MIH45GN18 cooling at 300S

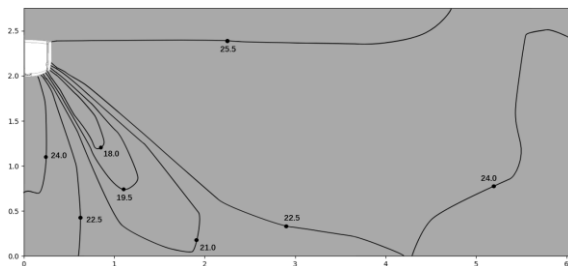


Figure 9.18: MIH15GN18 heating at 300S

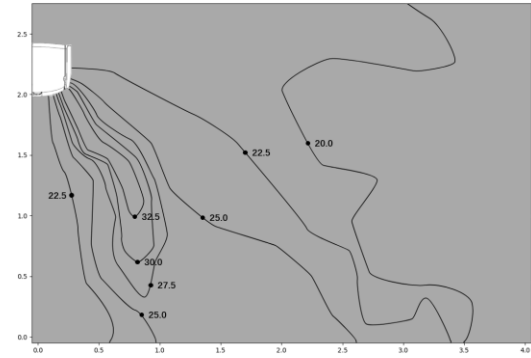


Figure 9.20: MIH22GN18 heating at 300S

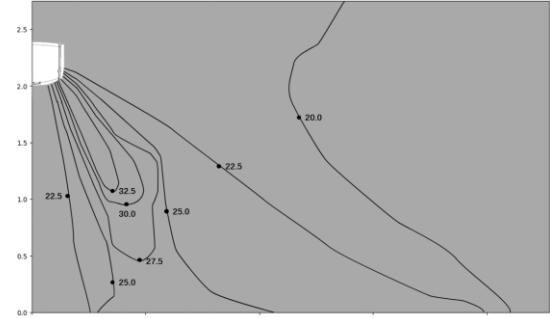


Figure 9.22: MIH28GN18 heating at 300S

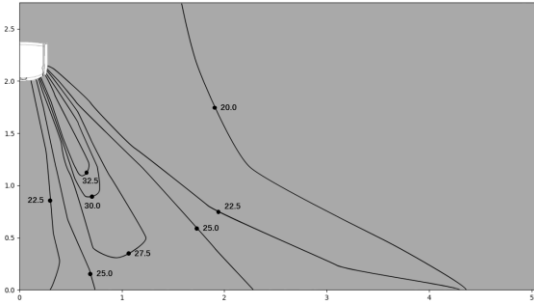


Figure 9.24: MIH36GN18 heating at 300S

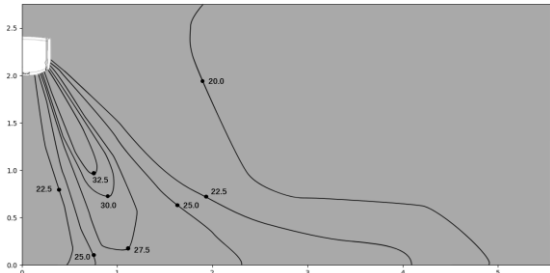
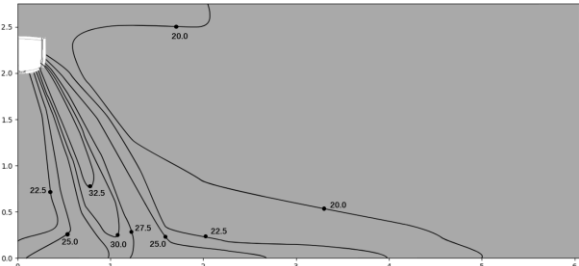


Figure 9.26: MIH45GN18 heating at 300S



V8 VRF Indoor Units



Figure 9.27: MIH56GN18 cooling at 300S

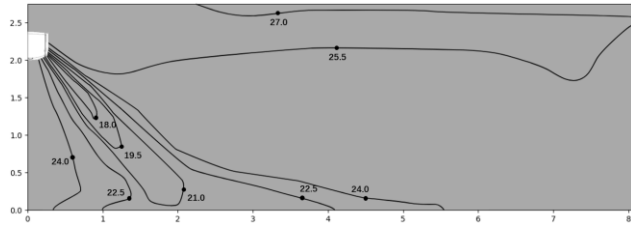


Figure 9.28: MIH56GN18 heating at 300S

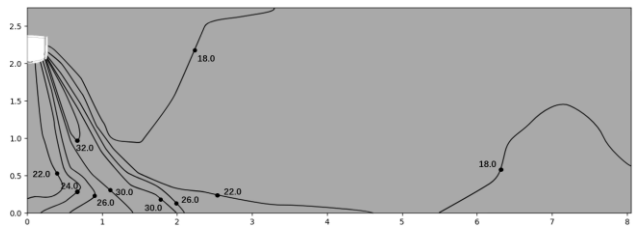


Figure 9.29: MIH71GHN18 cooling at 300S

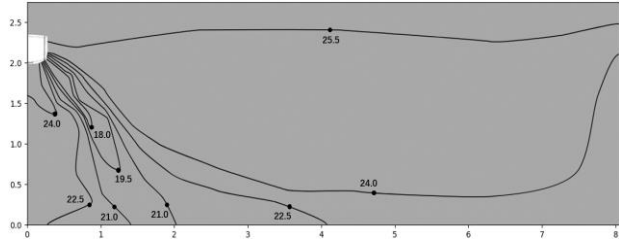
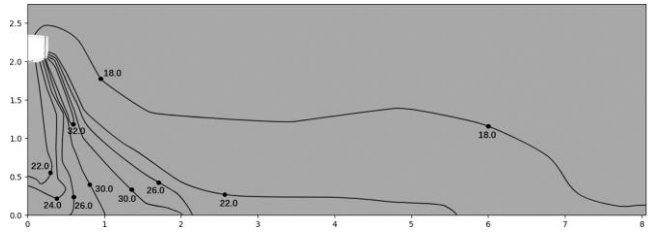


Figure 9.30: MIH56GHN18 heating at 300S



Midea Building Technologies Division
Midea Group

Add.: Midea Headquarters Building, 6 Midea Avenue, Shunde, Foshan, Guangdong, China

Postal code: 528311

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