R410A/R32

Commercial Air Conditioners

Engineering Data

Wall Mounted VRF IDU

MIH15GHN18

MIH22GHN18

MIH28GHN18

MIH36GHN18

MIH45GHN18

MIH56GHN18

MIH71GHN18

MIH80GHN18

Wall Mounted

1 Specifications

MIH15GHN18 / MIH22GHN18 / MIH28GHN18

Model			MIH15GHN18	MIH22GHN18	MIH28GHN18
Power supply			1 phase, 220-240V, 50/60Hz		
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
Sound power level		dB(A)	45/44/43/43/42/41/40	46/45/44/43/42/41/40	50/49/48/47/46/44/42
Unit	Net dimensions[5] (WxHxD)	mm	750×295×265		
	Packed dimensions (WxHxD)	mm	875×385×360		
	Net/Gross weight	kg	9/11.5	9/11.5	10/12.5
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:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
3. Fan motor speed and 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 in an anechoic chamber.
5. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

MIH36GHN18 / MIH45GHN18 / MIH56GHN18

Model			MIH36GHN18	MIH45GHN18	MIH56GHN18
Power supply			1 phase, 220-240V, 50/60Hz		
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
Sound power level		dB(A)	54/53/51/50/48/46/44	54/52/50/49/48/46/44	56/54/52/50/48/46/44
Unit	Net dimensions[5] (WxHxD)	mm	750×295×265	950×295×265	
	Packed dimensions (WxHxD)	mm	875×385×360	1075×385×360	
	Net/Gross weight	kg	10/12.5	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:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
3. Fan motor speed and 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 in an anechoic chamber.
5. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

MIH71GHN18 / MIH80GHN18

Model			MIH71GHN18	MIH80GHN18
Power supply			1 phase, 220-240V, 50/60Hz	
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)	44/42/40/38/36/34/32	45/43/41/39/37/35/32
Sound power level		dB(A)	58/56/54/52/50/48/46	60/57/55/53/50/48/46
Unit	Net dimensions[5] (WxHxD)	mm	1200×295×265	
	Packed dimensions (WxHxD)	mm	1315×385×360	
	Net/Gross weight	kg	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	mm	Φ9.52/Φ15.9	
	Drain pipe	mm	OD Φ16	

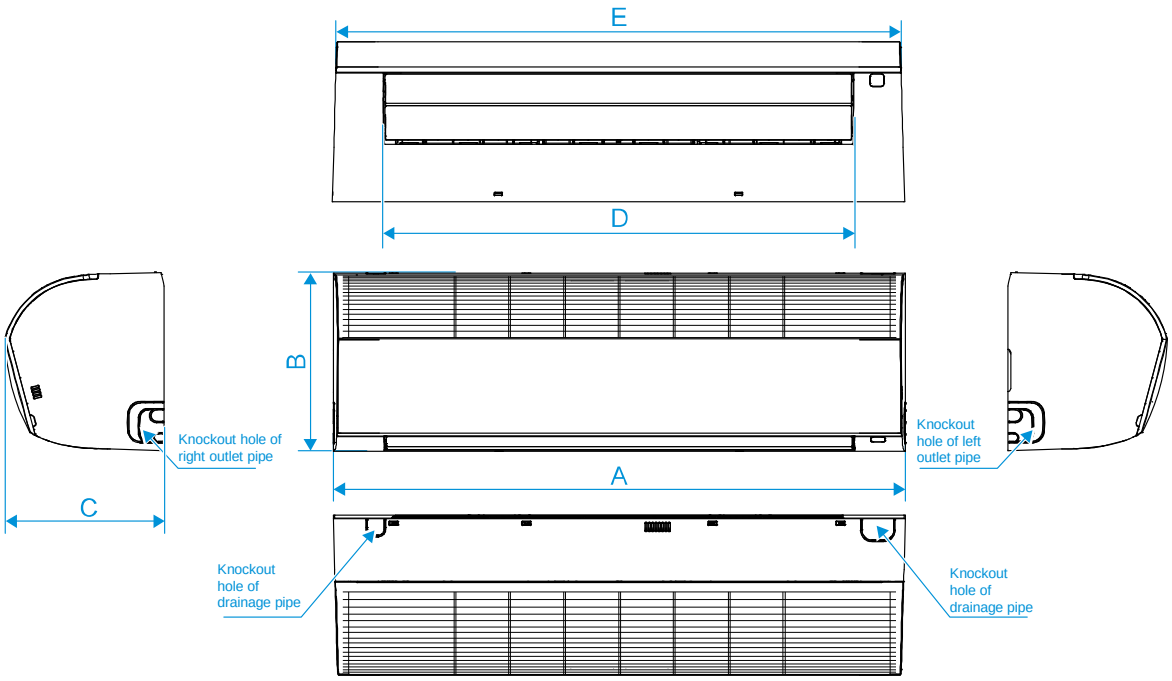
Notes:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
3. Fan motor speed and 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 in an anechoic chamber.
5. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

2 Dimensions

2.1 Unit Dimensions

Figure 2.1: Wall mounted dimensions (unit: mm)



Capacity(kW)	A	B	C	D	E
kW≤3.6	750	295	265	581	736
3.6<kW≤5.6	950	295	265	781	936
5.6<kW≤8.0	1200	295	265	1025	1186

3 Unit Placement

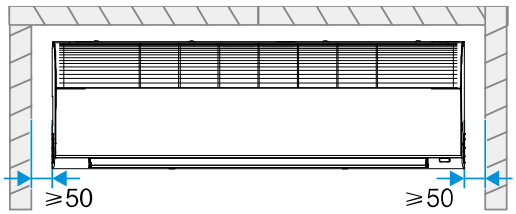
3.1 Placement Considerations

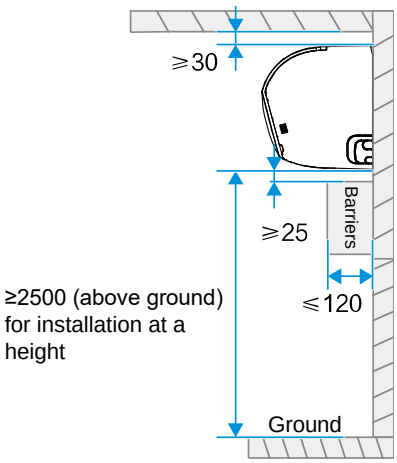
Unit placement should take account of the following considerations:

- 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.

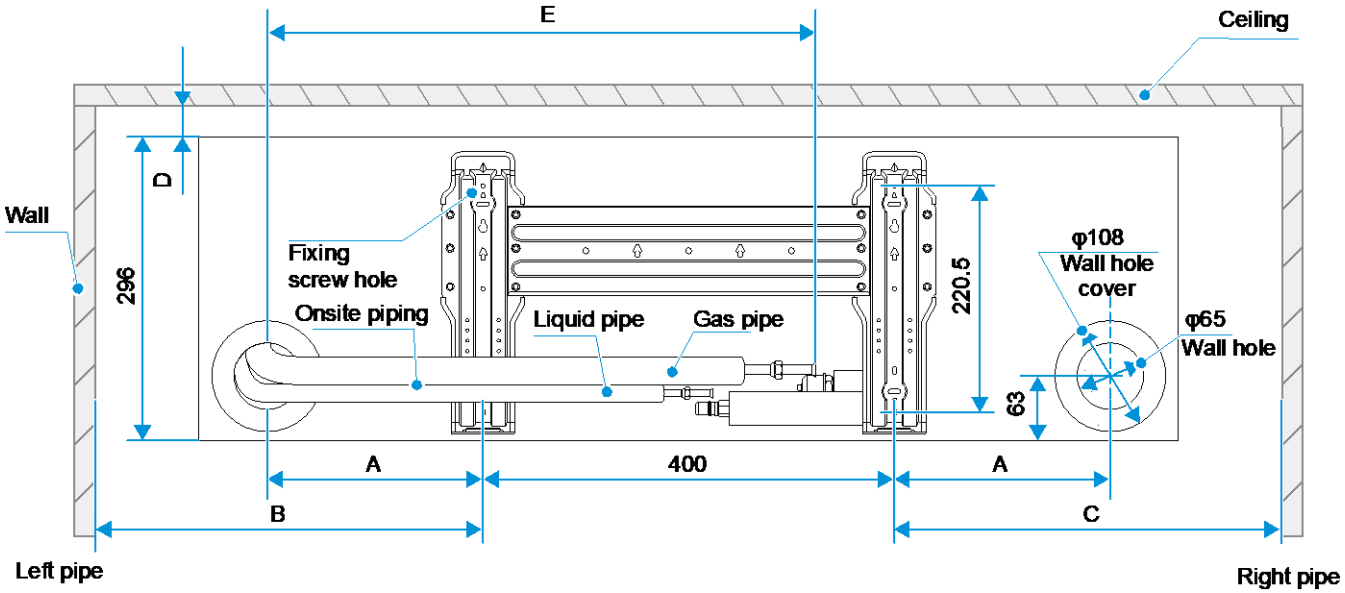
3.2 Space Requirements

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





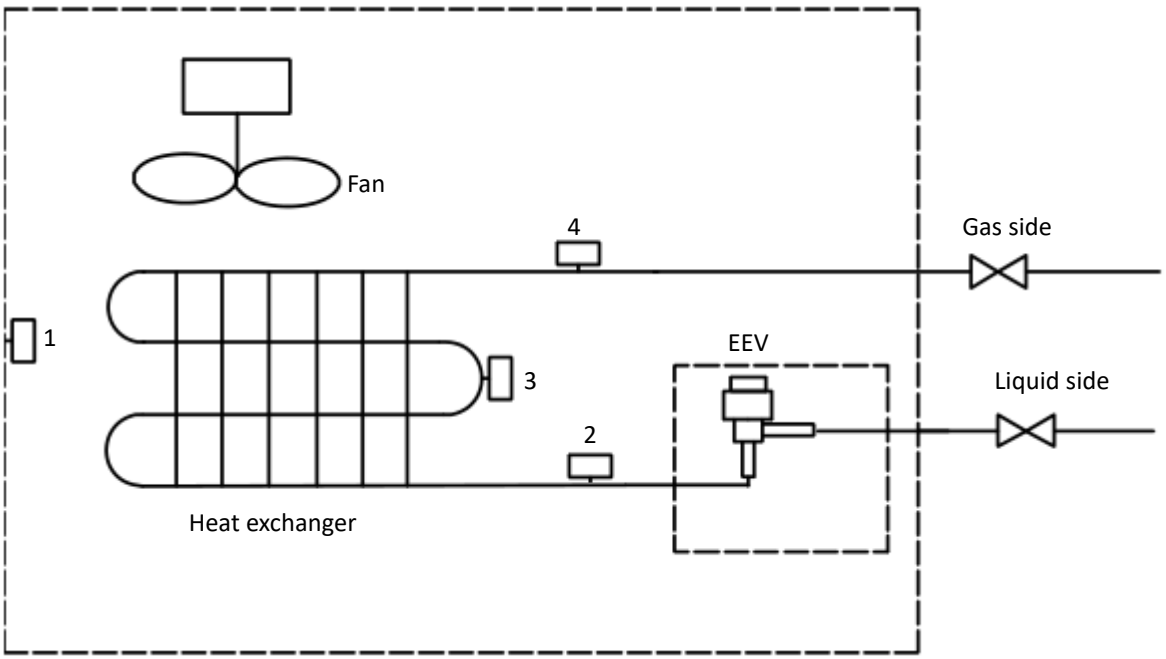
Positioning of mounting plate:



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

4 Piping Diagram

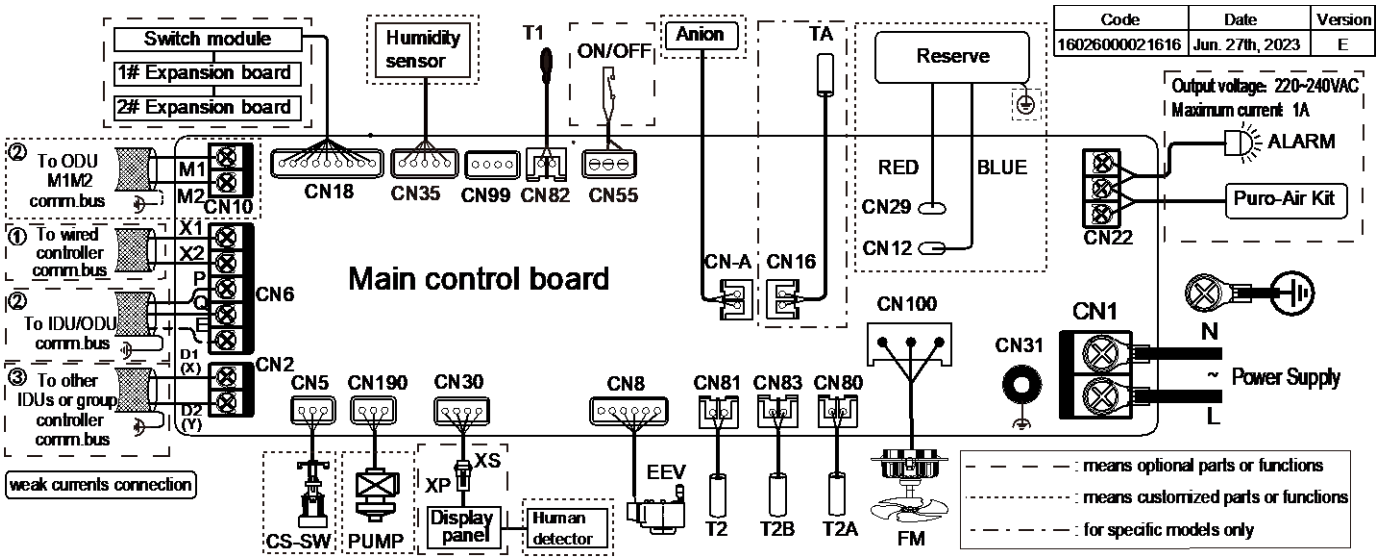
Figure 4.1: Wall mounted piping diagram



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 Wiring Diagram

Figure 5.1: Wall mounted wiring diagram



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	Inlet Air Temp. Sensor		

* Indicates that this sensor is only available for Fresh Air Processing Unit.

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.
- 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: 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
MIH15GHN18	1.4	1.4	1.5	1.4	1.5	1.4	1.5	1.3	1.6	1.3	1.6	1.2	1.6	1.1
MIH22GHN18	2.0	1.9	2.1	2.0	2.2	2.0	2.2	1.9	2.3	1.9	2.3	1.7	2.4	1.7
MIH28GHN18	2.5	2.4	2.7	2.5	2.8	2.5	2.8	2.4	2.9	2.4	2.9	2.2	3.0	2.1
MIH36GHN18	3.2	3.1	3.4	3.1	3.6	3.2	3.6	3.0	3.7	3.0	3.8	2.8	3.9	2.7
MIH45GHN18	4.0	3.7	4.3	3.8	4.5	3.8	4.5	3.7	4.6	3.6	4.7	3.4	4.8	3.3
MIH56GHN18	5.0	4.6	5.3	4.7	5.6	4.8	5.6	4.6	5.7	4.5	5.8	4.2	6.0	4.1
MIH71GHN18	6.3	5.9	6.7	6.0	7.0	6.0	7.1	5.9	7.2	5.7	7.4	5.4	7.6	5.2
MIH80GHN18	7.1	6.6	7.6	6.8	7.9	6.8	8.0	6.6	8.1	6.4	8.3	6.1	8.5	5.8

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
	SHC	SHC	SHC	SHC	SHC	SHC
MIH15GHN18	1.8	1.8	1.7	1.6	1.6	1.5
MIH22GHN18	2.6	2.6	2.4	2.3	2.3	2.1
MIH28GHN18	3.4	3.4	3.2	3.1	3.0	2.8
MIH36GHN18	4.2	4.2	4.0	3.8	3.8	3.5
MIH45GHN18	5.3	5.3	5.0	4.8	4.7	4.4
MIH56GHN18	6.7	6.6	6.3	6.1	5.9	5.5
MIH71GHN18	8.5	8.4	8.0	7.8	7.5	7.0
MIH80GHN18	9.5	9.5	9.0	8.7	8.5	7.8

Abbreviations:
SHC: Sensible Heat Capacity

Notes:
1.Shaded cells indicate rating condition

7 Electrical Characteristics

Table 7.1: Wall mounted electrical characteristics

Model	Power supply						Indoor Fan Motor	
	Hz	Volts	Min. volts	Max. volts	MCA	MFA	Rated motor output (W)	FLA
MIH15GHN18	50/60	220-240	198	264	0.28	15	20	0.22
MIH22GHN18	50/60	220-240	198	264	0.29	15	20	0.23
MIH28GHN18	50/60	220-240	198	264	0.36	15	20	0.29
MIH36GHN18	50/60	220-240	198	264	0.39	15	20	0.31
MIH45GHN18	50/60	220-240	198	264	0.41	15	20	0.33
MIH56GHN18	50/60	220-240	198	264	0.51	15	20	0.41
MIH71GHN18	50/60	220-240	198	264	0.69	15	50	0.55
MIH80GHN18	50/60	220-240	198	264	0.98	15	50	0.78

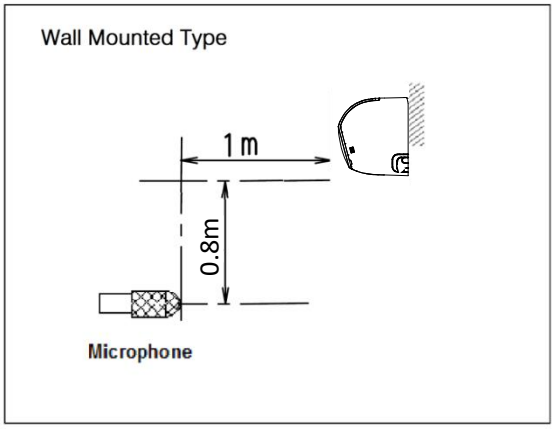
Abbreviations:
MCA: Minimum Circuit Amps
MFA: Maximum Fuse Amps
FLA: Full Load Amps

8 Sound Levels

8.1 Overall

Model name	Sound pressure levels dB(A)						
	SSH	SH	H	M	L	SL	SSL
MIH15GHN18	32	31	30	30	29	28	27
MIH22GHN18	33	32	31	30	29	28	27
MIH28GHN18	35	34	33	32	31	30	28
MIH36GHN18	37	36	34	33	31	30	28
MIH45GHN18	37	35	33	32	31	30	29
MIH56GHN18	41	39	37	35	33	31	29
MIH71GHN18	44	42	40	38	36	34	32
MIH80GHN18	45	43	41	39	37	35	32

Figure 8.1: Wall mounted sound pressure level measurement



8.2 Octave Band Levels

Figure 8.2: MIH15GHN18 octave band levels

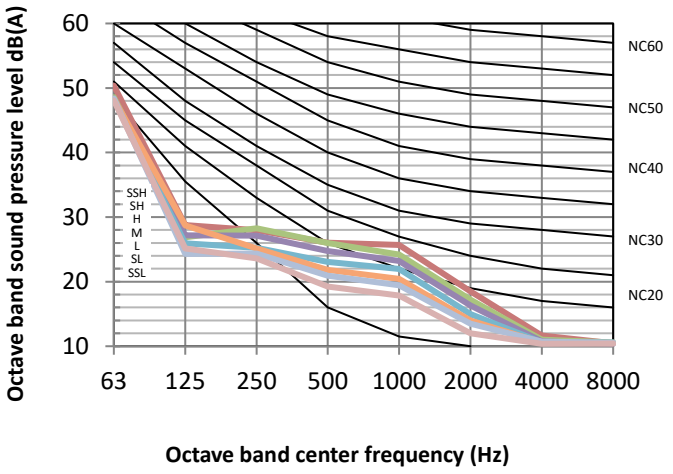


Figure 8.3: MIH22GHN18 octave band levels

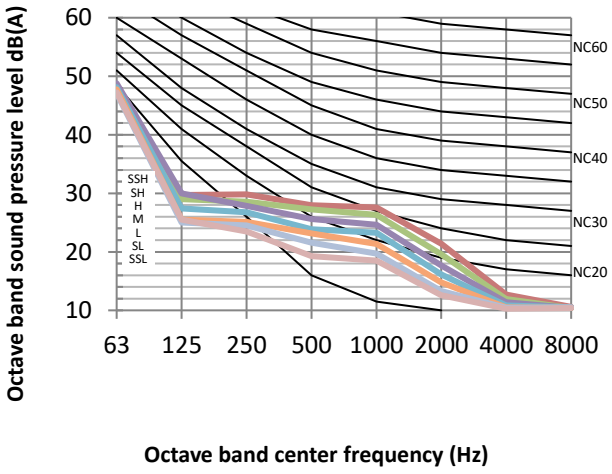


Figure 8.4: MIH28GHN18 octave band levels

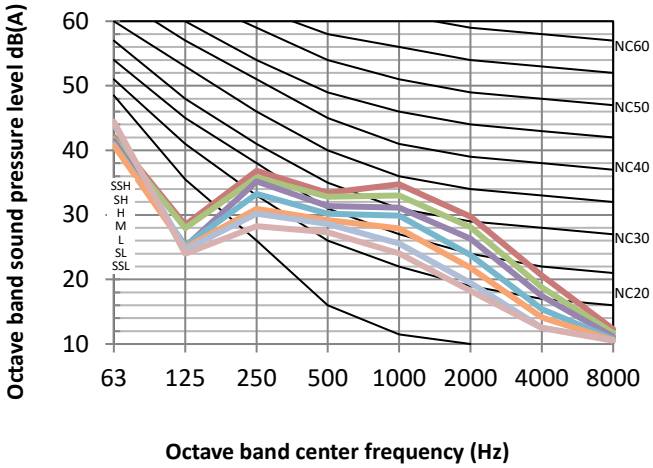


Figure 8.5: MIH36GHN18 octave band levels

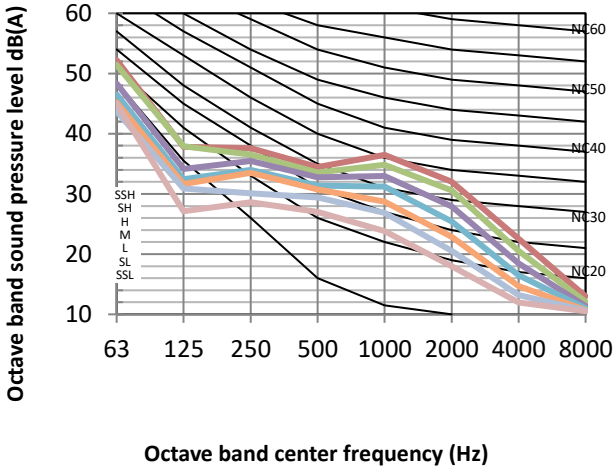


Figure 8.6: MIH45GHN18 octave band levels

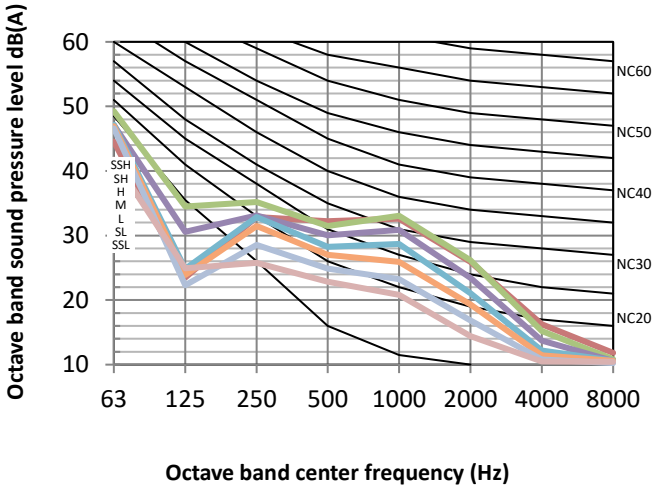


Figure 8.7: MIH56GHN18 octave band levels

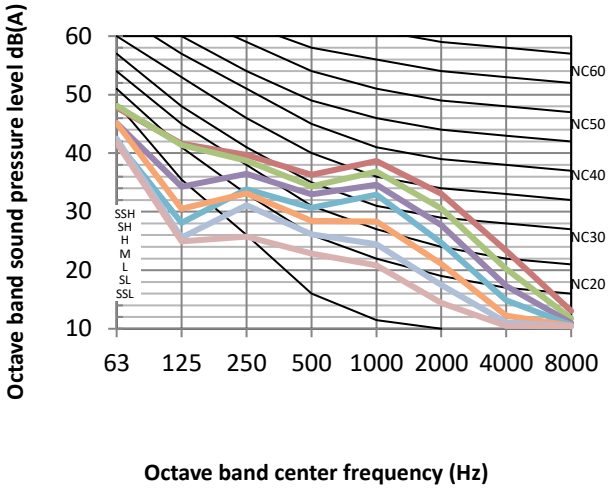


Figure 8.8: MIH71GHN18 octave band levels

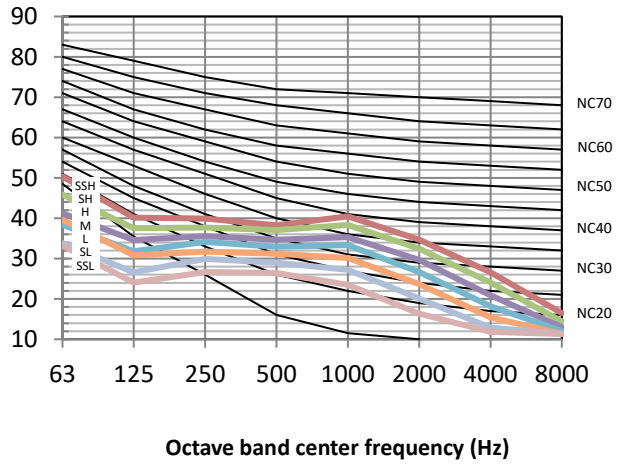
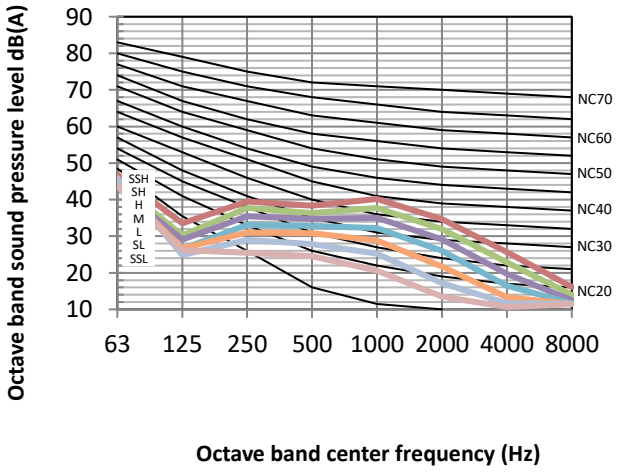


Figure 8.9: MIH80GHN18 octave band levels



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
MIH15GHN18	4×4	2.7	58°/88°	Wall mounted
MIH22GHN18	4.5×4.5	2.7	58°/88°	Wall mounted
MIH28GHN18	5×5	2.7	58°/88°	Wall mounted
MIH36GHN18	5.5×5.5	2.7	58°/88°	Wall mounted
MIH45GHN18	6×6	2.7	58°/88°	Wall mounted
MIH56GHN18	8×8	2.7	58°/88°	Wall mounted
MIH71GHN18	8×8	2.7	58°/88°	Wall mounted
MIH80GHN18	8×8	2.7	58°/88°	Wall mounted

Note:

1. 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: MIH15GHN18 *cooling at 300S*

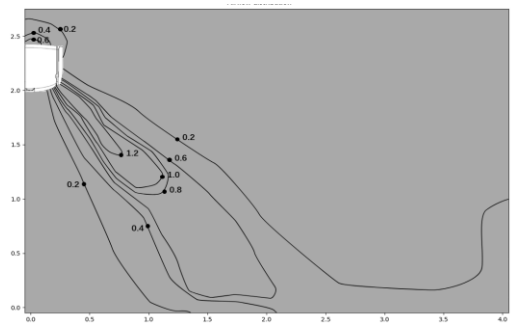


Figure 9.2: MIH15GHN18 *heating at 300S*

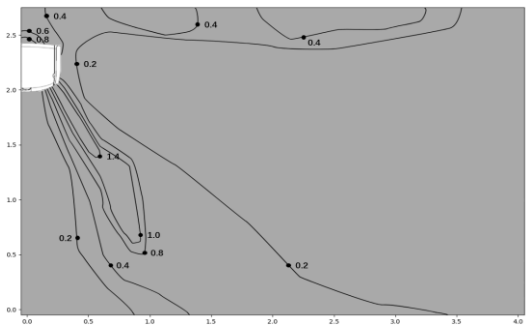


Figure 9.3: MIH22GHN18 *cooling at 300S*

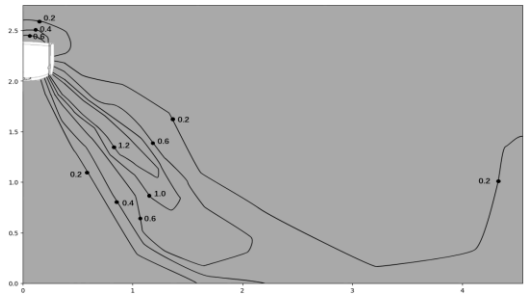


Figure 9.4: MIH22GHN18 *heating at 300S*

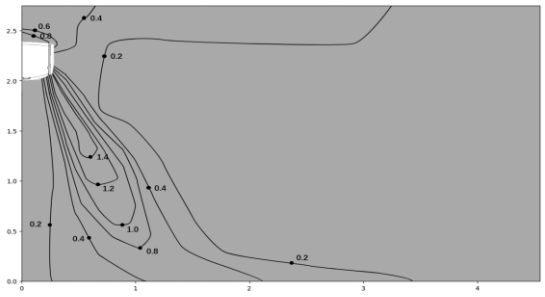


Figure 9.5: MIH28GHN18 cooling at 300S

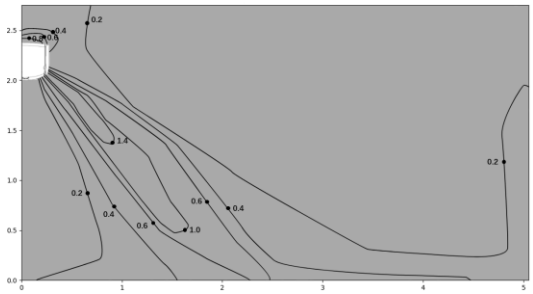


Figure 9.6: MIH28GHN18 *heating at 300S*

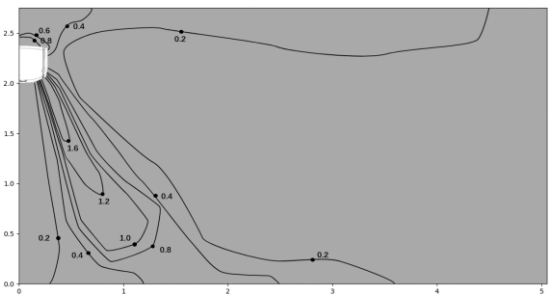


Figure 9.7: MIH36GHN18 *cooling at 300S*

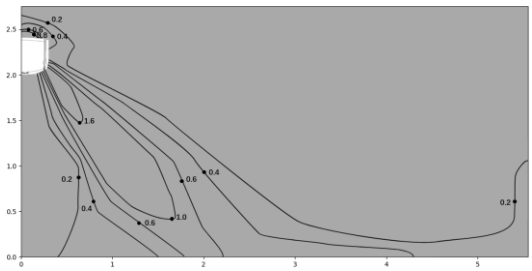


Figure 9.8: MIH36GHN18 *heating at 300S*

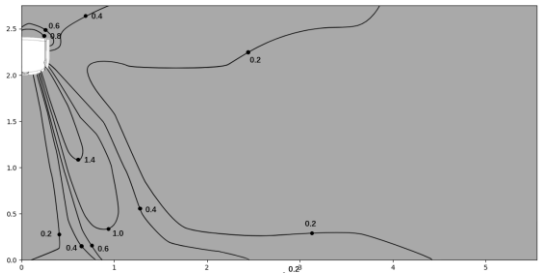


Figure 9.9: MIH45GHN18 *cooling at 300S*

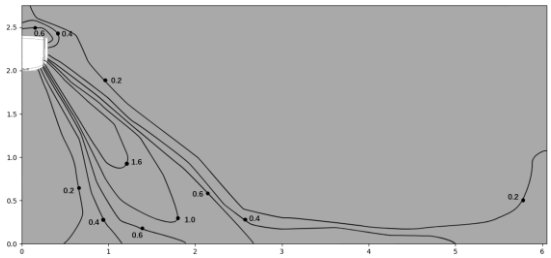


Figure 9.10: MIH45GHN18 *heating at 300S*

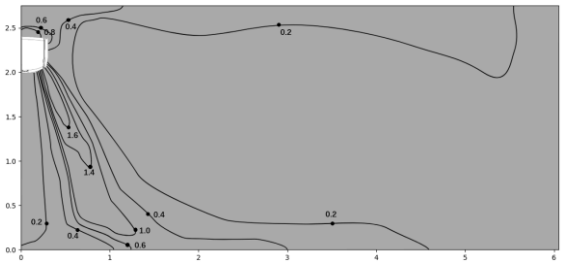


Figure 9.11: MIH56GHN18 *cooling at 300S*

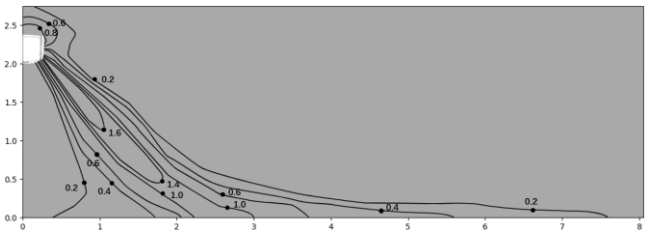


Figure 9.12: MIH56GHN18 *heating at 300S*

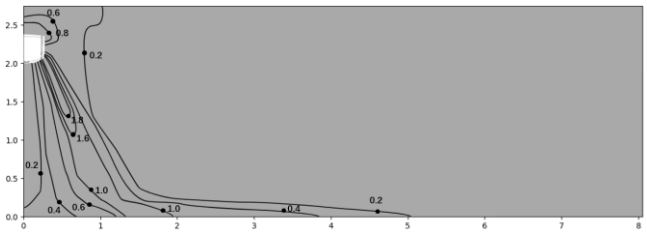


Figure 9.13: MIH71GHN18 *cooling at 300S*

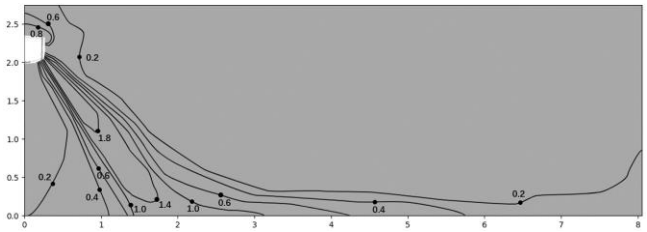


Figure 9.14: MIH71GHN18 *heating at 300S*

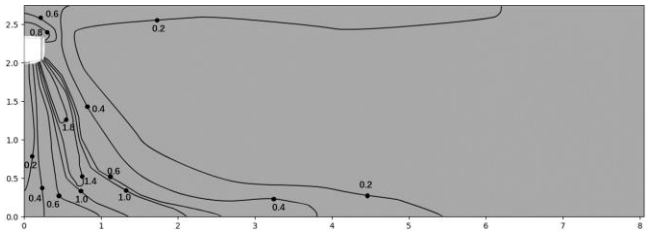


Figure 9.15: MIH80GHN18 *cooling at 300S*

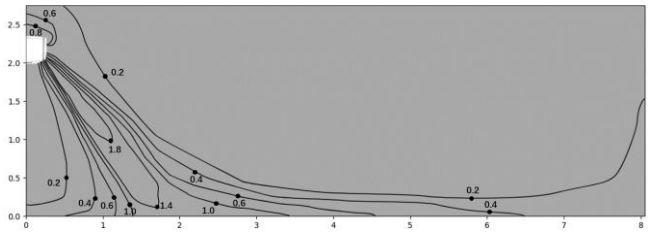
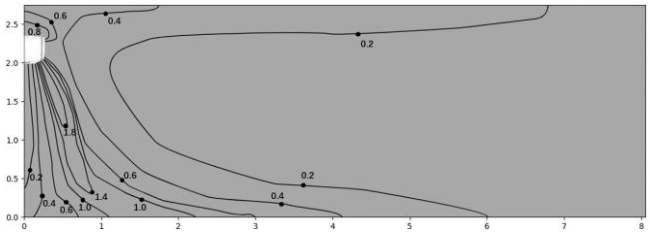


Figure 9.16: MIH80GHN18 *heating at 300S*



9.3 Temperature distributions

Figure 9.17: MIH15GHN18 *cooling at 300S*

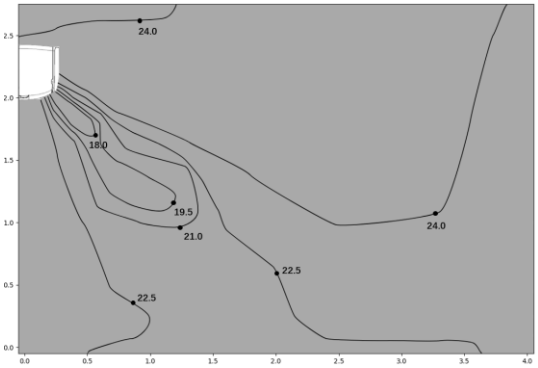


Figure 9.18: MIH15GHN18 *heating at 300S*

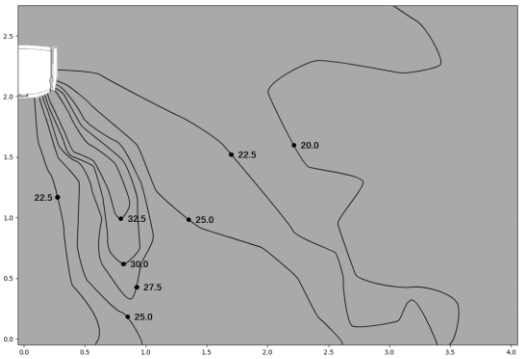


Figure 9.19: MIH22GHN18 *cooling at 300S*

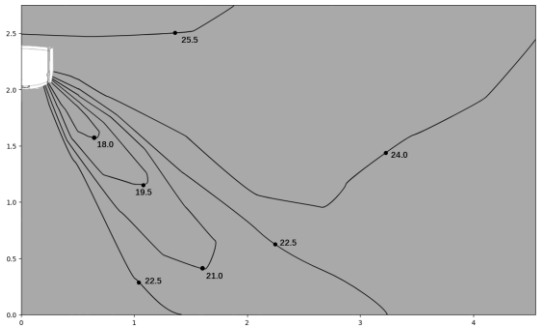


Figure 9.20: MIH22GHN18 *heating at 300S*

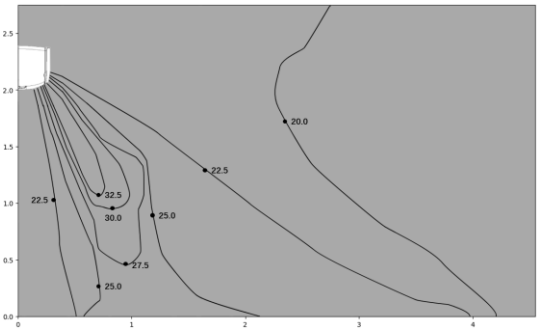


Figure 9.21: MIH28GHN18 cooling at 300S

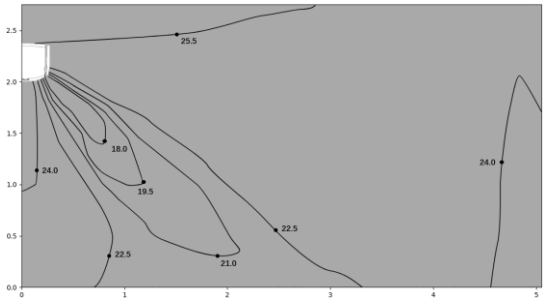


Figure 9.22: MIH28GHN18 *heating at 300S*

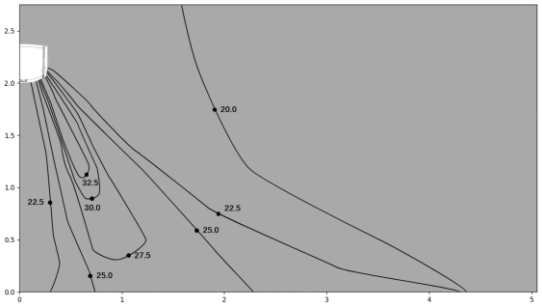


Figure 9.23: MIH36GHN18 *cooling at 300S*

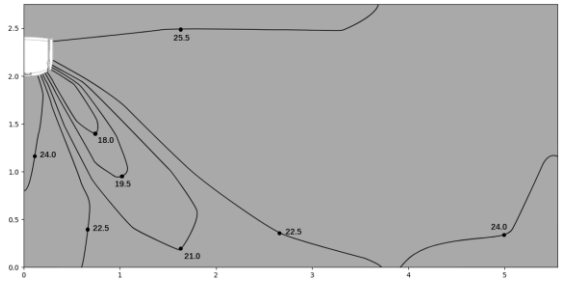


Figure 9.24: MIH36GHN18 *heating at 300S*

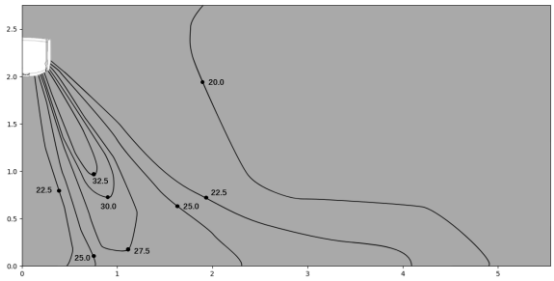


Figure 9.25: MIH45GHN18 *cooling at 300S*

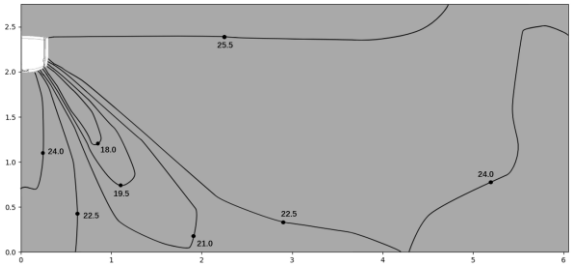


Figure 9.26: MIH45GHN18 *heating at 300S*

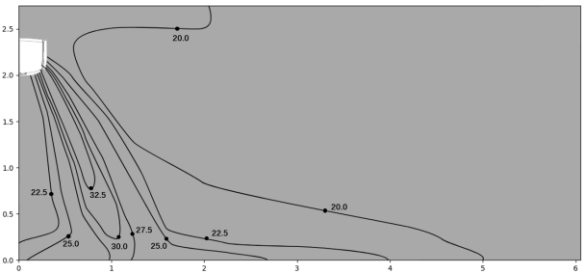


Figure 9.27: MIH56GHN18 cooling at 300S

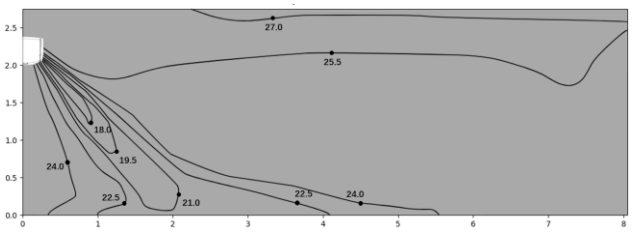


Figure 9.28: MIH56GHN18 *heating at 300S*

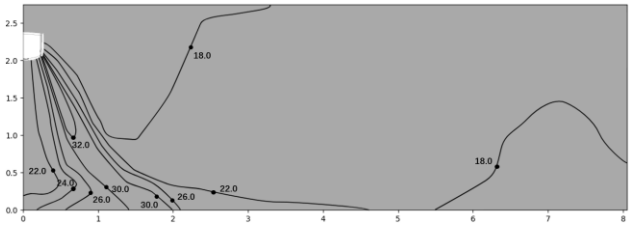


Figure 9.29: MIH71GHN18 cooling at 300S

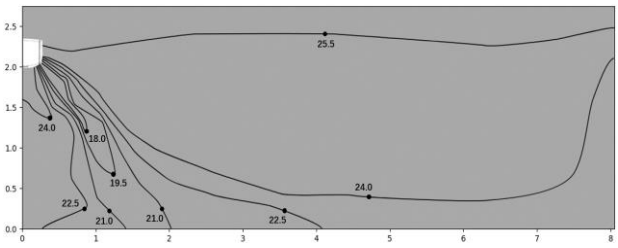


Figure 9.30: MIH71GHN18 *heating at 300S*

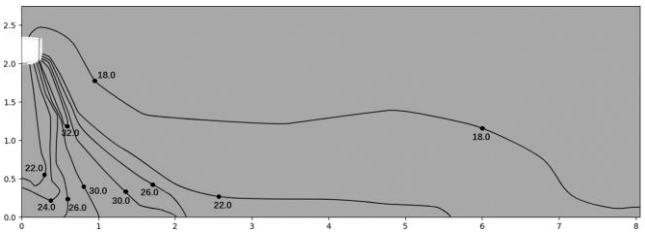


Figure 9.31: MIH80GHN18 cooling at 300S

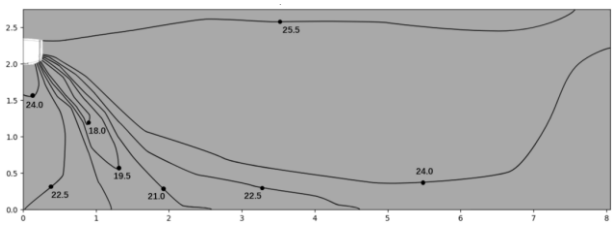
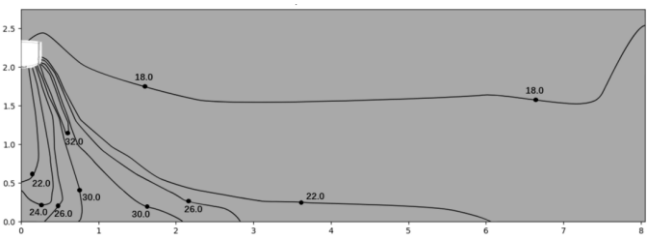


Figure 9.32: MIH80GHN18 *heating at 300S*



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