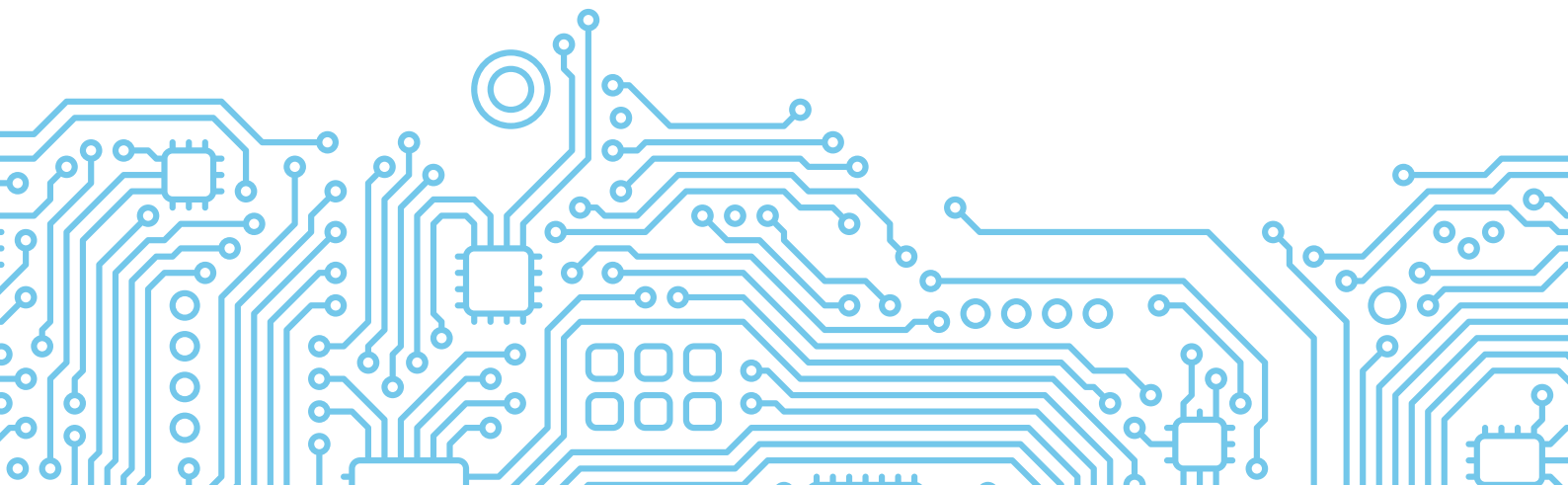
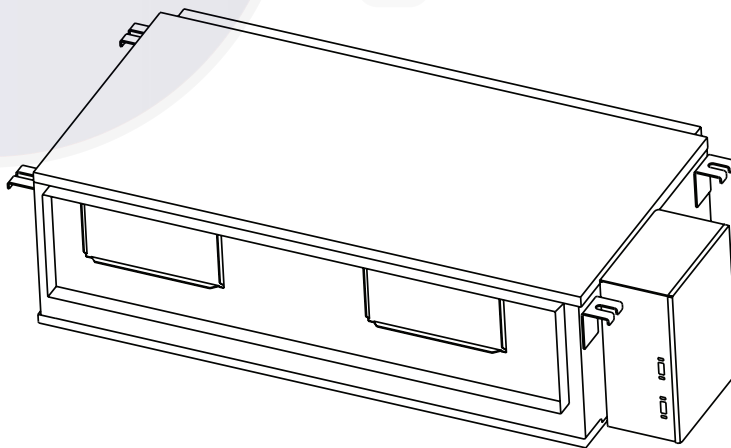
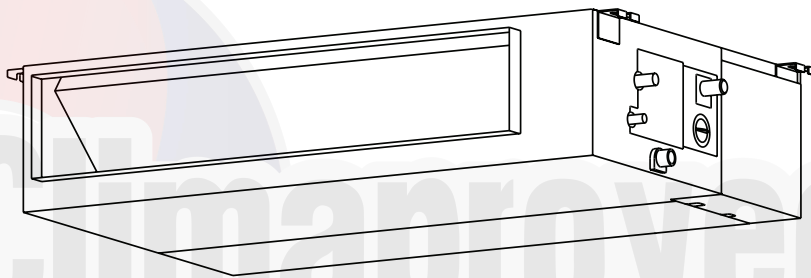




TM_DUCT_60R410A_3D INVERTER_US_S_NA_171113

CEILING CONCEALED DUCT R410A 60HZ 3D INVERTER CONTROL

2017 TECHNICAL SPECH



1. Model Reference

Refer to the following table to determine the specific indoor and outdoor unit model number of your purchased equipment.

Indoor Unit Model	Outdoor Unit Model	Capacity (Btu/h)	Power Supply
MTIU-09HWFN1-M	MOBA30-09HFN1-MT0W	9K	1Φ, 208/230V~, 60Hz
MTIU-12HWFN1-M	MOB30-12HFN1-MT0W	12K	
MTIU-18HWFN1-M	MOCA31-18HFN1-MT0W	18K	
MTIU-24HWFN1-M	MOD31-24HFN1-MT0W	24K	
MTI-36HWFN1-M	MOD30U-36HFN1-M	36K	
MTI-48HWFN1-M	MOE30U-48HFN1-M	48K	
MHG-60HWFN1-MW	MOE30U-60HFN1-M	60K	

2. General Specifications

Indoor Model		MTIU-09HWFN1-M	MTIU-12HWFN1-M	MTIU-18HWFN1-M	
Outdoor Model		MOBA30-09HFN1-MTOW	MOB30-12HFN1-MTOW	MOCA31-18HFN1-MTOW	
Power supply	V-ph-Hz	208~230-1-60	208~230-1-60	208~230-1-60	
Minimum circuit ampacity	A	10	12	15	
Max.fuse	A	15	15	20	
Indoor fan motor	Model	ZKFN-55-8-22	ZKFN-55-8-22	ZKFN-160-8-1-2	
	Qty	1	1	1	
	Input	W	130	130	90.0
	RLA	A	0.9	1	1.2
	LRA	A	/	/	/
	Winding Resistance	Ω	/	/	/
	Capacitor	μ F	/	/	/
Speed	r/min	1170/1030/850	1170/1030/850	850/700/450	
Indoor air flow (Hi/Med/Lo) (No duct)	m ³ /h	600/480/300	600/480/300	900/765/630	
Indoor air flow (Hi/Med/Lo) (No duct)	CFM	353/283/177	353/283/177	530/450/371	
ESP	Range	Pa	0-40	0-40	0-100
	Range	In. WG.	0-0.16	0-0.16	0-0.40
Indoor noise level (Hi/Med/Lo)	dB(A)	35.5/30.5/27.5	37.5/33/27.5	41.5/38.5/36	
Throttle type		/	/	/	
Indoor unit	Dimension (WxDxH)	mm	700x450x200	700x450x200	880x674x210
		inch	27.55x17.71x7.87	27.55x17.71x7.87	34.65x28.53x8.27
	Packing(WxDxH)	mm	860x540x275	860x540x275	1070x725x270
		inch	33.86x21.26x10.83	33.86x21.26x10.83	42.13x28.53x10.63
	Net/Gross weight	kg	17.7/21.9	17.8/22	23.8/29.5
		lbs.	39/48.3	39/48.5	52.5/65.0
Design pressure	PSIG	550/340 PSIG	550/340 PSIG	550/340 PSIG	
Drainage water pipe diameter	mm	OD Φ 25	OD Φ 25	OD Φ 25	
Refrigerant piping	Liquid side/ Gas side	mm	Φ 6.35/ Φ 9.52(1/4"/3/8")	Φ 6.35/ Φ 12.7(1/4"/1/2")	Φ 6.35/ Φ 12.7(1/4"/1/2")
Controller		Wired control	Wired control	Wired control	
Room temperature	Cooling	C	17~32	17~32	17~32
		F	62~90	62~90	62~90
	Heating	C	0~30	0~30	0~30
		F	32~86	32~86	32~86
Operation temperature	C	17~30	17~30	17~30	
	F	62~86	62~86	62~86	
Compressor	Model	ASN98D22UFZ	ASM98D32UFZ	ASM135D23UFZ	
	Type	ROTARY	ROTARY	ROTARY	
	Brand	GMCC	GMCC	GMCC	
	Capacity	Btu/h	10014	10093	13836
	Input	W	748	730	1035
	Rated current (RLA)	A	5.35	5.08	7.32
	Locked rotor Amp(LRA)	A	----	----	----
	Thermal protector position		INTERNAL	----	INTERNAL
	Capacitor	μ F	----	----	----
Refrigerant oil	ml	ESTER OIL VG74/370	ESTER OIL VG74/370	ESTER OIL VG74/450	

Outdoor fan motor	Model		ZKFN-40-8-1L	ZKFN-40-8-1L	ZKFN-50-8-2
	Qty		1	1	1
	Input	W	63	63	115
	RLA	A	0.4	0.4	0.6
	LRA	A	----	----	----
	Winding Resistance	Ω	----	----	----
	Capacitor	uF	----	----	----
	Speed	r/min	800	800	850
Outdoor air flow (Max.)		m ³ /h	1800	1900	2500
Outdoor air flow (Max.)		CFM	1060	1120	1470
Outdoor noise level		dB(A)	54.5	58	59
Throttle type			Capillary +EXV	Capillary +EXV	Capillary +EXV
Outdoor unit	Dimension (WxDxH)	mm	770x300x555	800x333x554	845x363x702
		inch	30.31x11.81x21.85	31.5x13.11x21.81	33.27x14.29x27.64
	Packing (WxDxH)	mm	900x345x585	920x390x615	965x395x755
		inch	35.43x13.58x23.03	36.22x15.35x24.21	37.99x15.55x29.72
	Net/ Gross weight	kg	30.5/32.5	36.5/39.1	47.7/51
		lbs.	67.24/71.65	80.47/86.2	105.16/112.43
Refrigerant type/ Quantity	Type/Charged volume	Oz	R410A/38.8	R410A/40.6	R410A/68.8
Refrigerant precharge		ft	25	25	25
Additional charge for each ft		oz	0.16	0.16	0.16
Design pressure		PSIG	550/340	550/340	550/340
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ9.52(1/4"/3/8")	Φ6.35/Φ12.7(1/4"/1/2")	Φ6.35/Φ12.7(1/4"/1/2")
	Max. pipe length	m	25	25	30
		ft	82	82	98
	Max. difference in level	m	10	10	20
ft		33	33	66	
Ambient temperature	Cooling	C	-25~50	-25~50	-25~50
		F	-13~122	-13~122	-13~122
	Heating	C	-25~30	-25~30	-25~30
		F	-13~86	-13~86	-13~86
Qty'per 20' /40' /40'HQ		Indoor	214/461/519	214/461/519	120/264/297
Qty'per 20' /40' /40'HQ		Outdoor	166/344/344	108/219/292	102/216/216

Notes:

1) Capacities are based on the following conditions:

Cooling(T1): - Indoor Temperature 26.7°C(80°F) DB /19.4 °C(64°F) WB Heating: - Indoor Temperature 21.1°C(70°F) DB / ≤15.6°C(≤60°F) WB
 -Outdoor Temperature 35 °C(95°F) DB /23.9 °C(75°F) WB -Outdoor Temperature 8.3°C(47°F) DB / 6.1°C(43°F) WB
 -Interconnecting Piping Length 7.5 m(24.6ft) - Interconnecting Piping Length 7.5 m(24.6ft)
 - Level Difference of Zero. - Level Difference of Zero.

2) Capacities are Net Capacities.

3) Due to our policy of innovation some specifications may be changed without notification.

Indoor Model			MTIU-24HWFN1-M	MTI-36HWFN1-M
Outdoor Model			MOD31-24HFN1-MT0W	MOD30U-36HFN1-M
Power supply		V-ph-Hz	208~230-1-60	208~230-1-60
Minimum circuit ampacity		A	15	35
Max.fuse		A	25	50
Indoor fan motor	Model		ZKFN-160-8-1-2	ZKFN-300-8-1
	Qty		1	1
	Input	W	90.0	250
	RLA	A	1.5	1.6
	LRA	A	/	/
	Winding Resistance	Ω	/	/
	Capacitor	μ F	/	/
	Speed	r/min	880/820/690	1130/1050/990
Indoor air flow (Hi/Med/Lo) (No duct)		m ³ /h	1318.3/1178.2/739.3	1839/1551/1195
Indoor air flow (Hi/Med/Lo) (No duct)		CFM	776/693/435	1082/913/703
ESP	Range	Pa	0-160	0-160
	Range	In. WG.	0-0.64	0-0.64
Indoor noise level (Hi/Med/Lo)		dB(A)	44/41/34	45.5/42/38.5
Throttle type			/	/
Indoor unit	Dimension (WxDxH)	mm	1100x774x249	1360x774x249
		inch	43x30x10	54x30x10
	Packing(WxDxH)	mm	1305x805x305	1570x805x305
		inch	51x32x12	62x32x12
	Net/Gross weight	kg	39.4/46.7	48.3/55.5
		lbs.	87/103	106/122
Design pressure		PSIG	550/340 PSIG	550/340 PSIG
Drainage water pipe diameter		mm	OD Φ 25	OD Φ 25
Refrigerant piping	Liquid side/ Gas side	mm	Φ 9.52/ Φ 15.9(3/8"/5/8")	Φ 9.52/ Φ 15.9(3/8"/5/8")
Controller			Wired control	Wired control
Room temperature	Cooling	C	17~32	17~32
		F	62~90	62~90
	Heating	C	0~30	0~30
		F	32~86	32~86
Operation temperature		C	17~30	17~30
		F	62~86	62~86
Compressor	Model		ATF235D22UMT	ATF310D43UMT
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	Btu/h	24345	32380
	Input	W	1970	2600
	Rated current (RLA)	A	6.95	5.10
	Locked rotor Amp(LRA)	A	----	----
	Thermal protector position		EXTERNAL	EXTERNAL
	Capacitor	μ F	----	----
	Refrigerant oil	ml	POE(VG74)/670	ESTER OIL VG74/1000
Outdoor fan motor	Model		ZKFN-120-8-2	ZKFN-120-8-2
	Qty		1	1
	Input	W	150	150
	RLA	A	0.6	1.0
	LRA	A	----	----
	Winding Resistance	Ω	----	----
	Capacitor	μ F	----	----
	Speed	r/min	810	950

Outdoor air flow (Max.)		m ³ /h	4000	4300
Outdoor air flow (Max.)		CFM	2354	2530
Outdoor noise level		dB(A)	59	63.5
Throttle type			Capillary +EXV	Capillary +EXV
Outdoor unit	Dimension (WxDxH)	mm	946x410x810	946x410x810
		inch	37.24x16.14x31.89	37.24x16.14x31.89
	Packing (WxDxH)	mm	1090x500x875	1090x500x875
		inch	42.91x19.69x34.45	42.91x19.69x34.45
	Net/ Gross weight	kg	64/69	67.4/73
		lbs.	141.09/152.12	148.59/160.94
Refrigerant type/Quantity	Type/Charged volume	Oz	R410A/82.9	R410A/108
Refrigerant precharge		ft	25	25
Additional charge for each ft		oz	0.32	0.32
Design pressure		PSIG	550/340	550/340
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Ø9.52/Ø15.9(3/8"/5/8")	Ø9.52/Ø15.9(3/8"/5/8")
	Max. pipe length	m	50	65
		ft	164	213
	Max. difference in level	m	25	30
		ft	82	98
	Ambient temperature	Cooling	C	-25~50
F			-13~122	5~122
Heating		C	-25~30	-15~30
		F	-13~86	5~86
Qty/per 20' /40' /40'HQ		Indoor	77/161/184	49/105/120
Qty/per 20' /40' /40'HQ		Outdoor	44/96/144	44/96/144

Notes:

1) Capacities are based on the following conditions:

Cooling(T1): - Indoor Temperature 26.7°C(80°F) DB /19.4 °C(64°F) WB

-Outdoor Temperature 35 °C(95°F) DB /23.9 °C(75°F) WB

-Interconnecting Piping Length 7.5 m(24.6ft)

- Level Difference of Zero.

Heating: - Indoor Temperature 21.1°C(70°F) DB / ≤15.6°C(≤60°F) WB

-Outdoor Temperature 8.3°C(47°F) DB / 6.1°C(43°F) WB

- Interconnecting Piping Length 7.5 m(24.6ft)

- Level Difference of Zero.

2) Capacities are Net Capacities.

3) Due to our policy of innovation some specifications may be changed without notification.

Indoor Model			MTI-48HWFN1-M	MHG-60HWFN1-MW
Outdoor Model			MOE30U-48HFN1-M	MOE30U-60HFN1-M
Power supply		V-ph-Hz	208~230-1-60	208~230-1-60
Minimum circuit ampacity		A	35	36
Max.fuse		A	50	50
Indoor fan motor	Model		ZKFN-560-8-1-1	ZKFN-700-8-1
	Qty		1	1
	Input	W	560	420
	RLA	A	2	3.65
	LRA	A	/	/
	Winding Resistance	Ω	/	/
	Capacitor	μ F	/	/
	Speed	r/min	1020/800/600	1060/910/790
Indoor air flow (Hi/Med/Lo) (No duct)		m ³ /h	2088.3/1752.7/1214.9	3665/2906/2145
Indoor air flow (Hi/Med/Lo) (No duct)		CFM	1229/1032/715	2157/1710/1263
ESP	Range	Pa	0-160	0-200
	Range	In. WG.	0-0.64	0-0.8
Indoor noise level (Hi/Med/Lo)		dB(A)	50.5/48.5/46	57/54/51
Throttle type			/	/
Indoor unit	Dimension (WxDxH)	mm	1200x874x300	1400x858x440
		inch	47.24x34.41x11.81	55/34/17
	Packing(WxDxH)	mm	1405x915x355	1605x910x505
		inch	55.31x36.02x13.98	63/36/20
	Net/Gross weight	kg	54.3/64.3	74/86
		lbs.	54.3/64.3	163/190
Design pressure		PSIG	550/340 PSIG	550/340 PSIG
Drainage water pipe diameter		mm	OD Φ 25	OD Φ 25
Refrigerant piping	Liquid side/ Gas side	mm	Φ 9.52/ Φ 15.9(3/8"/5/8")	Φ 9.52/ Φ 19(3/8"/3/4")
Controller			Wired control	Wired control
Room temperature	Cooling	C	17~32	17~32
		F	62~90	62~90
	Heating	C	0~30	0~30
		F	32~86	32~86
Operation temperature		C	17~30	17~30
		F	62~86	62~86
Compressor	Model		ATQ420D1UMU	ATQ420D1UMU
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	Btu/h	44697	44697
	Input	W	3420	3420
	Rated current (RLA)	A	6.85	6.85
	Locked rotor Amp(LRA)	A	----	/
	Thermal protector position		INTERNAL	INTERNAL
	Capacitor	μ F	----	----
	Refrigerant oil	ml	Ester Oil VG74/1400	Ester Oil VG74/1400
Outdoor fan motor	Model		ZKFN-85-8-22	ZKFN-85-8-22
	Qty		2	2
	Input	W	126	126
	RLA	A	1.2	1.2
	LRA	A	----	----
	Winding Resistance	Ω	----	----
	Capacitor	μ F	----	----
	Speed	r/min	900	900

Outdoor air flow (Max.)		m ³ /h	7600	7500
Outdoor air flow (Max.)		CFM	4470	4414
Outdoor noise level		dB(A)	63	64
Throttle type			Capillary +EXV	Capillary +EXV
Outdoor unit	Dimension (WxDxH)	mm	952x415x1333	952x415x1333
		inch	37.48x16.34x52.48	37/16/52
	Packing (WxDxH)	mm	1095x495x1480	1095x495x1480
		inch	43.11x19.49x58.27	43/19/58
	Net/ Gross weight	kg	101/115	102.1/115.4
		lbs.	222.66/253.53	224.9/254.4
Refrigerant type/Quantity	Type/Charged volume	Oz	R410A/148	R410A/163
Refrigerant precharge		ft	25	25
Additional charge for each ft		oz	0.32	0.32
Design pressure		PSIG	550/340	550/340
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Ø9.52/Ø15.9(3/8"/5/8")	Ø9.52/Ø19(3/8"/3/4")
	Max. pipe length	m	65	65
		ft	213	213
	Max. difference in level	m	30	30
		ft	98	98
	Ambient temperature	Cooling	C	-15~50
F			5~122	5~122
Heating		C	-15~30	-15~30
		F	5~86	5~86
Qty'per 20' /40' /40'HQ		Indoor	62/130/149	35/72/86
Qty'per 20' /40' /40'HQ		Outdoor	22/46/46	22/48/48

Notes:

1) Capacities are based on the following conditions:

Cooling(T1): - Indoor Temperature 26.7°C(80°F) DB /19.4 °C(64°F) WB

-Outdoor Temperature 35 °C(95°F) DB /23.9 °C(75°F) WB

-Interconnecting Piping Length 7.5 m(24.6ft)

- Level Difference of Zero.

Heating: - Indoor Temperature 21.1°C(70°F) DB / ≤15.6°C(≤60°F) WB

-Outdoor Temperature 8.3°C(47°F) DB / 6.1°C(43°F) WB

- Interconnecting Piping Length 7.5 m(24.6ft)

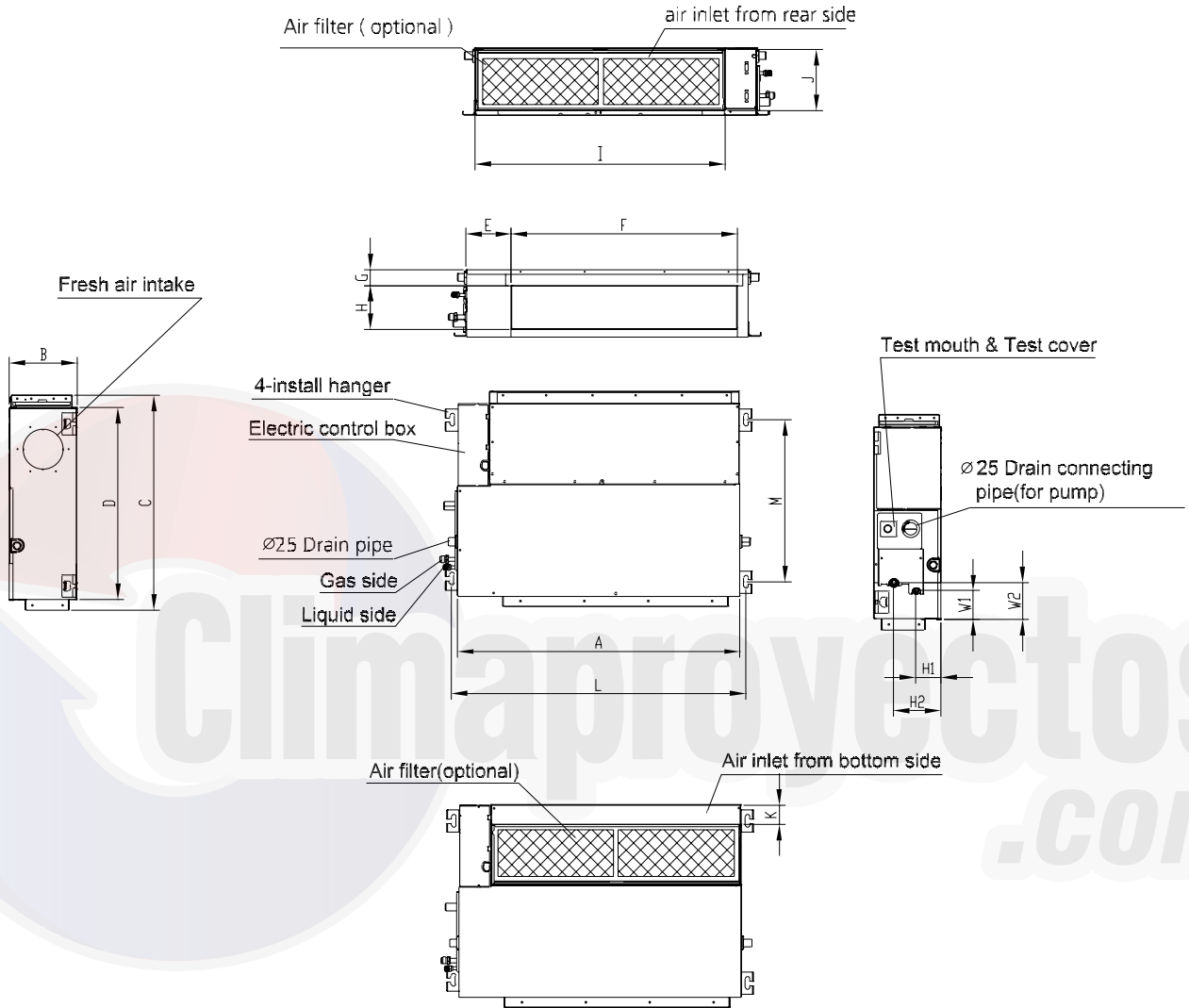
- Level Difference of Zero.

2) Capacities are Net Capacities.

3) Due to our policy of innovation some specifications may be changed without notification.

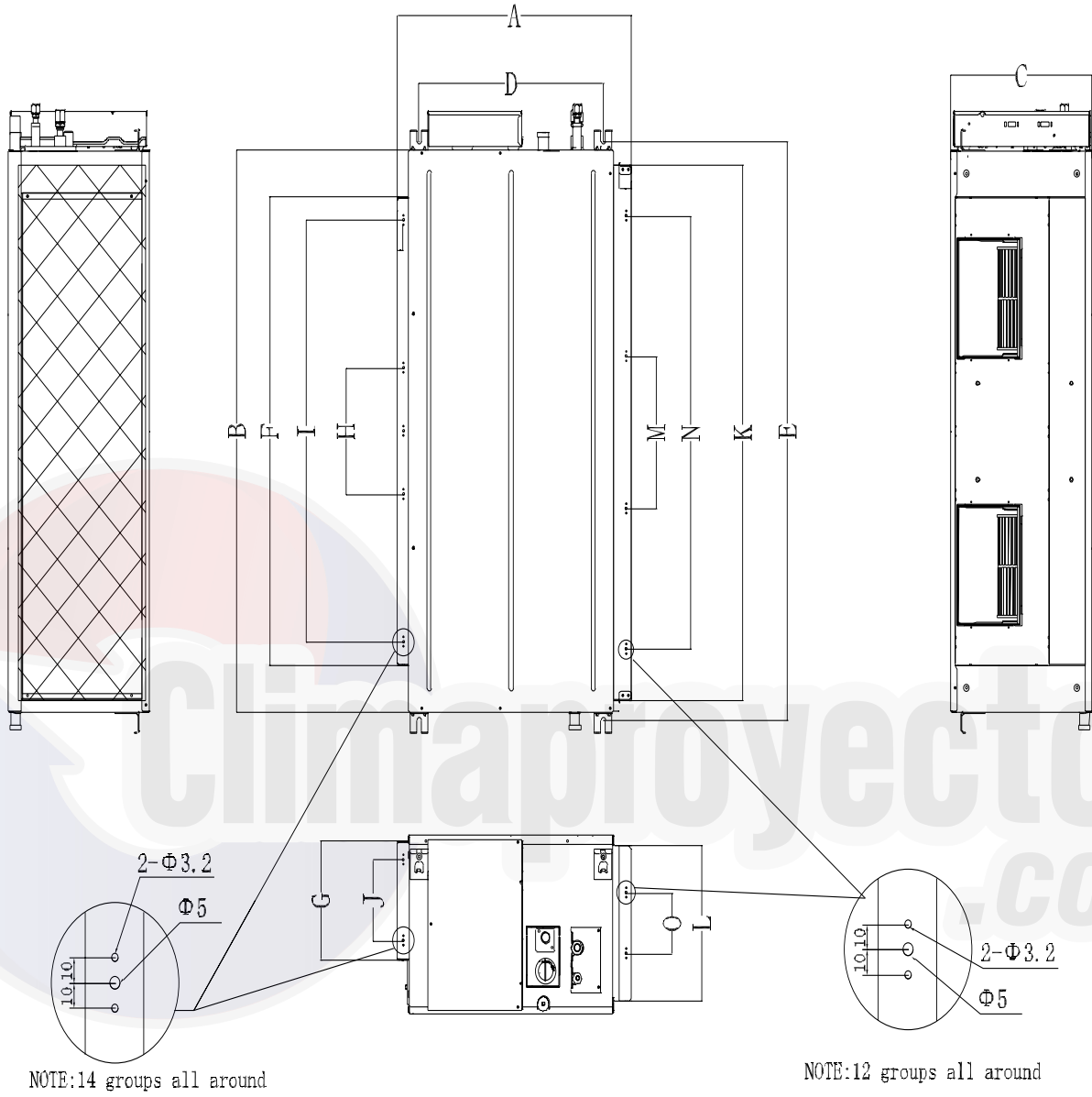
3. Dimensional Drawings

3.1 Indoor Unit



Model	unit	A	B	C	D	E	F	G	H	I	J	K	L	M	H1	H2	W1	W2
(KBtu/h)																		
9/12	mm	700	200	506	450	137	537	30	152	599	186	50	741	360	84	140	84	84
	inch	27.56	7.87	19.92	17.72	5.39	21.14	1.18	5.98	23.58	7.32	1.97	29.17	14.17	3.31	5.51	3.31	3.31
18	mm	880	210	674	600	140	706	50	136	782	190	40	920	508	78	148	88	112
	inch	34.65	8.27	26.54	23.62	5.51	27.8	1.97	5.35	30.79	7.48	1.57	36.22	20	3.07	5.83	3.46	4.41
24	mm	1100	249	774	700	140	926	50	175	1001	228	5	1140	598	80	150	130	155
	inch	43.31	9.80	30.47	27.56	5.51	36.46	1.97	6.89	39.41	8.98	0.2	44.88	23.54	3.15	5.91	5.12	6.10
36	mm	1360	249	774	700	140	1186	50	175	1261	228	5	1400	598	80	150	130	155
	inch	53.54	9.80	30.47	27.56	5.51	46.69	1.97	6.89	49.65	8.98	0.2	55.12	23.54	3.15	5.91	5.12	6.10
48	mm	1200	300	874	800	123	1044	50	227	1101	280	5	1240	697	80	150	185	210
	inch	47.24	11.81	34.41	31.5	4.84	41.1	1.97	8.94	43.35	11.02	0.2	48.82	27.44	3.15	5.91	7.28	8.27

High Static Pressure Duct



model (KBtu/h)	unit	Outline dimension			Size of mounted lug		Air outlet opening size(symmetry of air outlet opening)					Air inlet opening size(symmetry of air inlet opening)				
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
60	mm	858	1400	440	700	1436	1188	385	500	1000	280	1188	325	500	1000	280
	inch	33.8	55.1	17.3	27.5	56.5	46.7	15	20	39.3	11	46.7	12.8	20	39.3	11