

HORIZONTAL TYPE CHILLED WATER FAN COIL UNIT



TT Air Engineering



DAIKIN INDUSTRIES., LTD.

For years, DAIKIN has been providing the society with multiple types of high quality air handling systems and has made remarkable achievements in related fields. Integrating the advanced air conditioner manufacturing technology and process of DAIKIN, DAIKIN fan coil units showcase more compact structure, more convenient installation and maintenance, more efficient performance and lower noises, and have been widely used in public buildings, hospitals, office buildings, hotels, high-end residences, etc.

In this community, DAIKIN is renowned for its complete product series, covering the full range of air-conditioning, purifying and refrigeration equipment. More importantly, DAIKIN boasts the most complete fan coil series, and realizes product experience covering units, valves and controls. It is easier to use for customers.



Galaxy SOHO (Beijing)

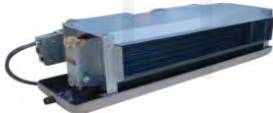
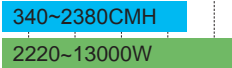
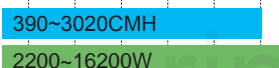

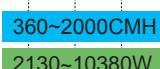


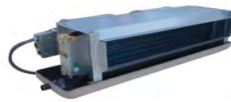
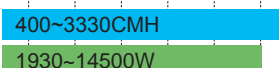

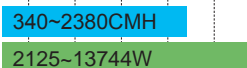


Palm Jumeirah (Dubai, UAE)



White Swan Hotel (Guangzhou)

Product lineup

Airflow range (CMH×100)			0	5	10	15	20	25	30	35	40	45	50	55
	Low ESP standard unit	FWW-VC												
	Mid ESP standard unit	FWW-C												
		FWW-F												
		FWW-H												
	High ESP standard unit	FUW-A												
	District cooling unit	FWW-DA												
	District cooling unit	FWW-AA												
Cooling capacity range (kW)			0	5	10	15	20	~ 40						

Page	Unit model	Coil	Rated ESP	ESP RANGE ⁽³⁾	Appication power supply
Page 4	FWW-VC	2 pipe, 3row	12/30/50Pa	0~70Pa	220-240V~/50Hz
Page 9	FWW-C	2 pipe, 3row	60/80Pa	40~100Pa	220-240V~/50Hz
Page 10	FWW-F	2 pipe, 4row	60/80Pa	40~100Pa	115V~/60Hz
Page 11	FWW-H	4 pipe, 3+1row	60/80Pa	40~100Pa	208-230V~/60Hz
Page 14	FWW-DA	2 pipe, 4row	60Pa	40~100Pa	220-240V~/50Hz
Page 18	FWW-AA	2 pipe, 4row	0Pa	0Pa	220-240V~/50Hz
Page 21	FUW-A	2 pipe, 4/6row	70/100/120/150Pa ⁽¹⁾	49~200Pa	220-240V~/50Hz 208-230V~/60Hz

Remark: ⁽¹⁾ means different model have different rated ESP, pls refer to detailed catalogue.
⁽²⁾ cooling capacity is based on return air condition.
⁽³⁾ the ESP range is for H speed of the whole series, different model and speed have differernt ESP range, pls refer to detailed selection software.

Product Structure

General

FWW-VC

FWW-C/F/H

FWW-DA

FWW-AA

FWW-A

Wiring

INSTALLATION

Centrifugal impeller

The centrifugal double-suction fan featuring high-efficiency wide-impeller and forward-curved multi-blade is adopted to implement low speed, large air flow and low noise.



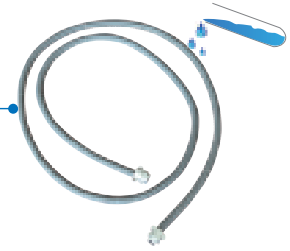
High-efficiency motor

High efficiency and energy saving, powerful, stable and quite operation; configuration of the international brand NSK bearing, ensuring efficient, safe and maintenance-free operation.



Plastic-coated metal hose

The cable protection pipe for the motor uses plastic-coated metal hose; the plastic-coated metal hose is light in weight and well flexible, with outstanding barrier property; The hose is resistant to corrosion, wear and high temperature; it has good insulation property and can better protect safety in use.



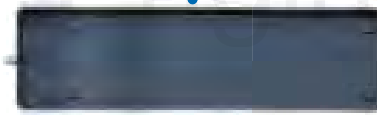
High-efficiency heat exchanger

Formed using high quality copper tubes and highly efficient hydrophilic aluminum fins through mechanical expansion joint to reduce heat resistance; Quasi counterflow fan coil design enables thorough heat exchange between air and water to guarantee high efficiency in heat exchange.



New self-slope drain pan

The self-slope structure design ensures quick drainage of condensate water; with spray on both sides for anti-corrosion, the tray surface is cleaner; the integrated design is adopted to avoid cold bridges.



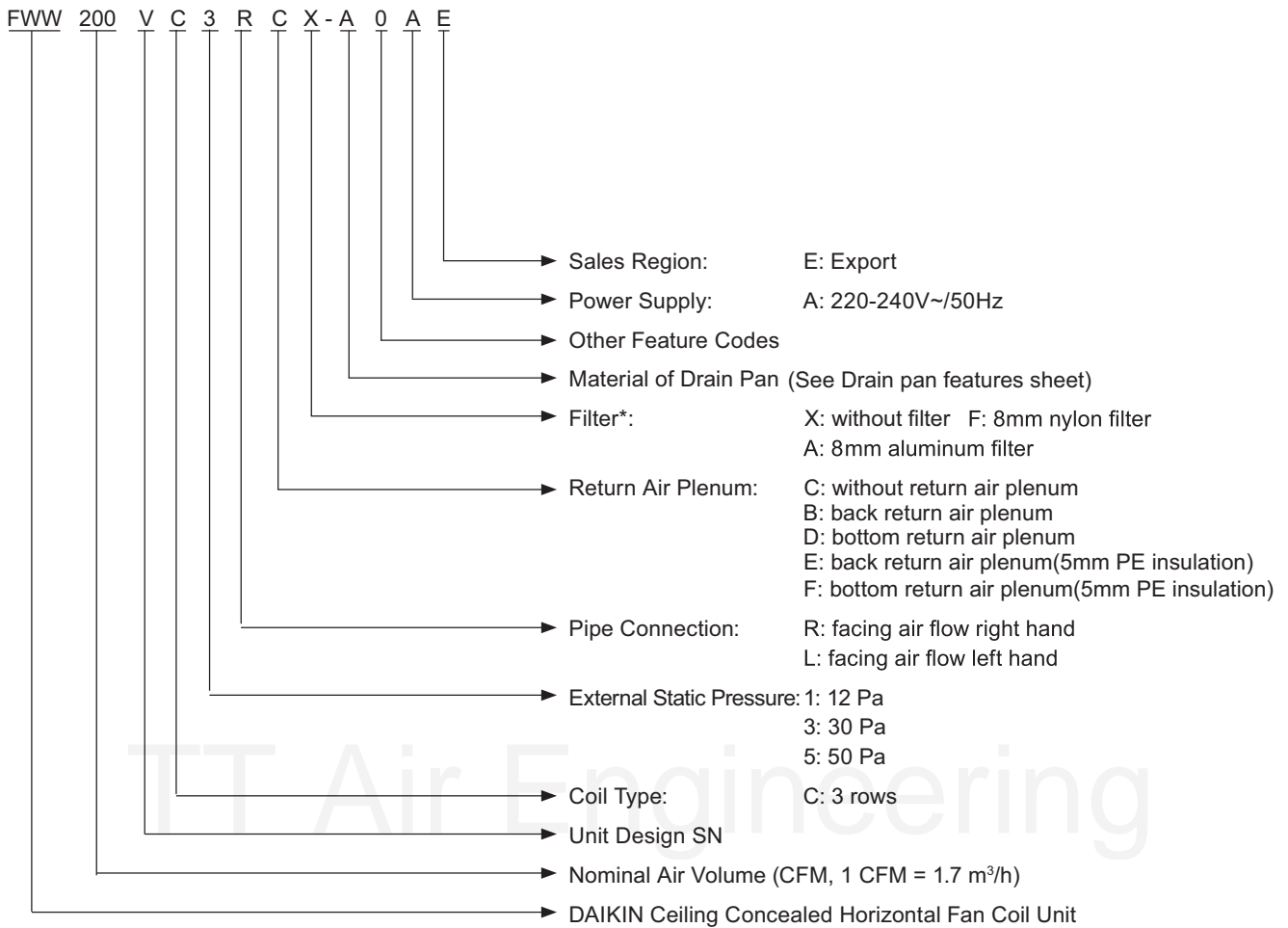
Manual air vent valve

The unit is configured with manual air vent valve for convenient operation, quicker discharge, and easier installation. The valve is placed at the highest point to guarantee thorough discharging of air in the system and ensure the heat exchange effect.



Nomenclature

Ceiling Concealed Unit FWW-VC



Drain Pan Features Sheet

Code	Material	Length	Insulation
A	standard	standard	7mm PE
B	standard	+100mm	7mm PE
E	SUS	standard	7mm PE
F	SUS	+100mm	7mm PE
K	standard	standard	6mm class"0" armflex
P	standard	+100mm	6mm class"0" armflex
L	SUS	standard	6mm class"0" armflex
Q	SUS	+100mm	6mm class"0" armflex

Remark: (*) means filter of back air return plenum unit is side withdraw.

Technical specifications

Ceiling Concealed Unit FWW-VC

Standard Unit/2 pipe/3 rows

		MODEL	FWW200VC	FWW300VC	FWW400VC	FWW500VC	FWW600VC	FWW700VC	FWW800VC	FWW1000VC	FWW1200VC	FWW1400VC
Performance												
Air flow	High	m3/h	340	510	680	850	1020	1170	1360	1700	2040	2380
		CFM	200	300	400	500	600	688	800	1000	1200	1400
	Medium	m3/h	279	418	530	640	790	900	1115	1350	1600	1952
		CFM	164	246	312	376	465	529	656	794	941	1148
	Low	m3/h	170	255	340	425	510	585	680	850	1020	1190
		CFM	100	150	200	250	300	344	400	500	600	700
External static pressure	Pa	12,30,50										
	in.wg	0.05,0.12,0.20										
Total cooling capacity	W	2220	3300	4260	5050	5820	6600	8200	9300	11190	13000	
	Btu/h	7575	11260	14536	17231	19859	22520	27980	31733	38182	44358	
Sensible cooling capacity	W	1380	2220	2770	3400	4000	4550	5500	6500	7700	9200	
	Btu/h	4709	7575	9452	11601	13649	15525	18767	22179	26273	31392	
Water flow rate	m3/h	0.38	0.57	0.73	0.87	1	1.13	1.41	1.59	1.92	2.23	
	USGPM	1.67	2.51	3.21	3.83	4.4	4.98	6.2	7	8.45	9.82	
Water pressure drop	kPa	25	21	30	30	32	35	32	40	35	50	
	in.wg.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
	12Pa	High	32	43	56	73	93	113	133	152	188	228
Medium		29	37	49	64	81	100	116	147	159	209	
Low		22	28	37	46	66	80	92	118	127	173	
30Pa	High	39	53	72	83	107	122	142	174	217	250	
	Medium	36	45	58	73	93	108	132	167	204	226	
	Low	27	34	46	55	75	88	105	141	164	193	
50Pa	High	46	62	80	95	112	131	168	200	237	295	
	Medium	39	52	75	86	107	111	146	191	216	280	
	Low	29	43	68	70	91	99	118	171	195	256	
Rated running current (A)	12Pa	High	0.15	0.2	0.26	0.34	0.43	0.52	0.61	0.7	0.86	1.12
		Medium	0.14	0.17	0.23	0.3	0.38	0.46	0.54	0.68	0.74	0.96
		Low	0.11	0.13	0.17	0.22	0.31	0.37	0.43	0.55	0.59	0.8
	30Pa	High	0.18	0.24	0.33	0.38	0.49	0.56	0.65	0.8	1	1.19
		Medium	0.17	0.21	0.27	0.34	0.43	0.5	0.61	0.77	0.94	1.04
		Low	0.13	0.16	0.22	0.26	0.35	0.41	0.49	0.65	0.76	0.89
	50Pa	High	0.21	0.28	0.37	0.44	0.51	0.6	0.77	0.92	1.09	1.45
		Medium	0.18	0.24	0.35	0.4	0.5	0.51	0.68	0.88	1	1.29
		Low	0.14	0.2	0.32	0.33	0.42	0.46	0.55	0.79	0.9	1.18
Sound pressure level (dB(A))	12Pa	High	35	36	40.5	41	45	45.5	44.5	48	49	51
		Medium	28.5	31	34.5	36.3	39	40.3	38.6	43.6	44.3	46.8
		Low	20.5	23	23	25.6	29.8	27.9	30	32.6	33.4	35.5
	30Pa	High	38	39.5	42	44.5	47	47.5	47	49.5	51	52
		Medium	30	35	35	39.5	41.1	41.8	41.3	44.9	45.7	47.6
		Low	19.5	25.5	26	27.3	27.3	29.4	32.5	36.4	34.7	38.7
	50Pa	High	42	43	44.5	47	49	48.5	49	51	52.5	53.5
		Medium	35	38.5	40	42.7	43.9	43.6	43.7	46.4	47.1	49
		Low	25.5	31.5	31.5	31.3	33.9	37.3	31.8	37.6	41.7	41
Coil												
Tube material		Copper										
Fin material		Hydrophilic aluminum 0.11mm										
Max. Working Pressure		1.6MPa										
Cooling Water Pipe Size		Rc 3/4 Female thread										
Condensation Water Pipe Size		R3/4 Male thread										
Fan												
Type		Galvanized steel double stage impeller centrifugal (blade: forward)										
Quantity		1	2	2	2	2	2	3	3	4	4	
Motor												
Type		3 Speed Permanent Split Capacitor Motor										
Quantity		1	1	1	1	1	1	2	2	2	2	
Insulation class		IP20/B										

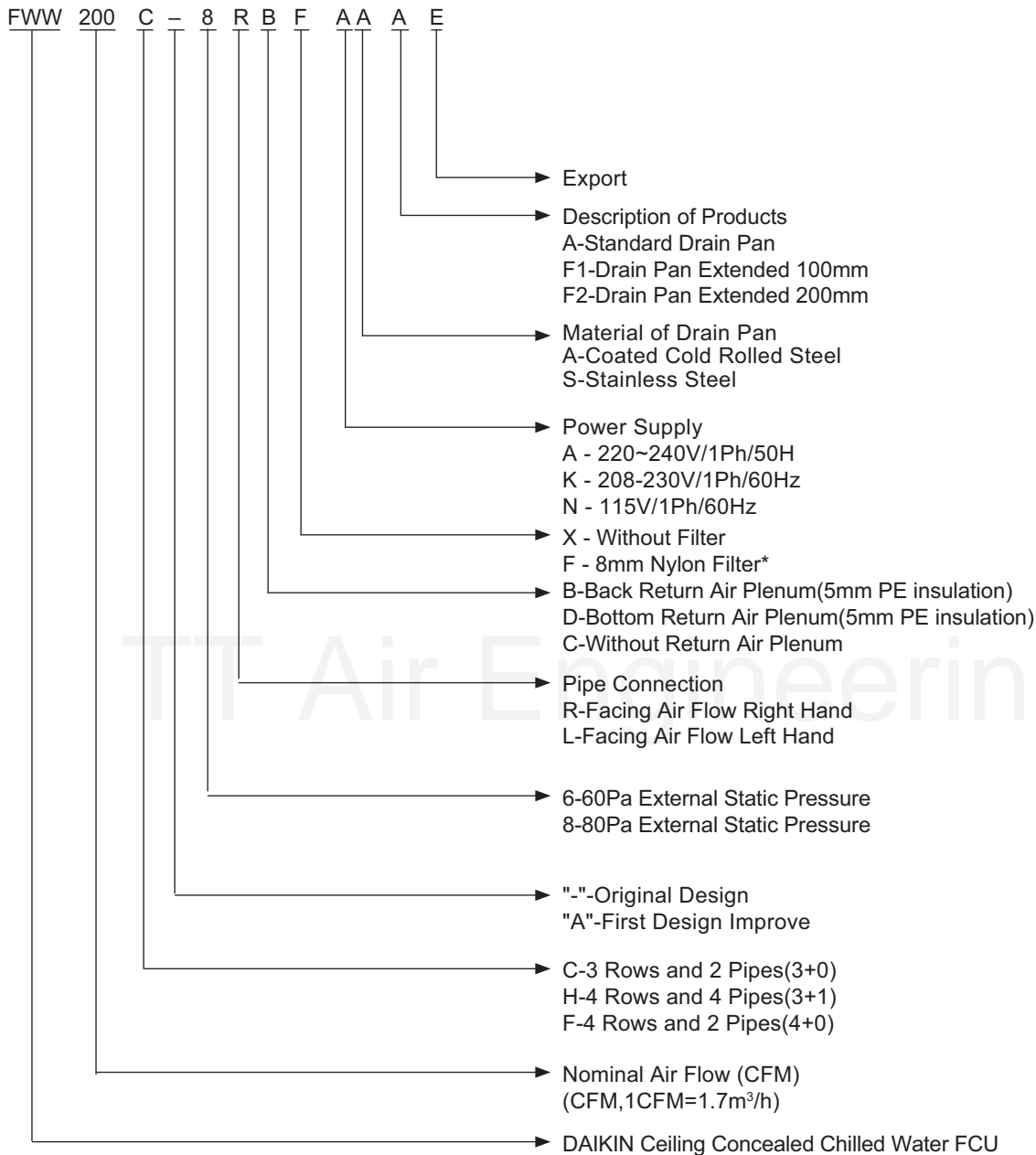
NOTES:

- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
- 2) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL, THE AIR FLOW OF M/L SPEED IS TESTED WITH THE SAME DUCT OF H SPEED.
- 3) THE COOLING CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
H SPEED, ENTERING AIR DB/WB: 27°C/19.5°C, WATER INLET 7°C, WATER OUTLET 12°C
- 4) SOUND PRESSURE MEASURED AT 1M INFRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT AND TESTED IN SENAI-ANECHOIC ROOM WITH BACKGROUND SOUND PRESSARE LEVEL: 11.5DB(A)
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~/50HZ AND WITHOUT PLENUM AND FILTER.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 15%.
- 7) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

Nomenclature

Ceiling Concealed Unit FWW-C/F/H

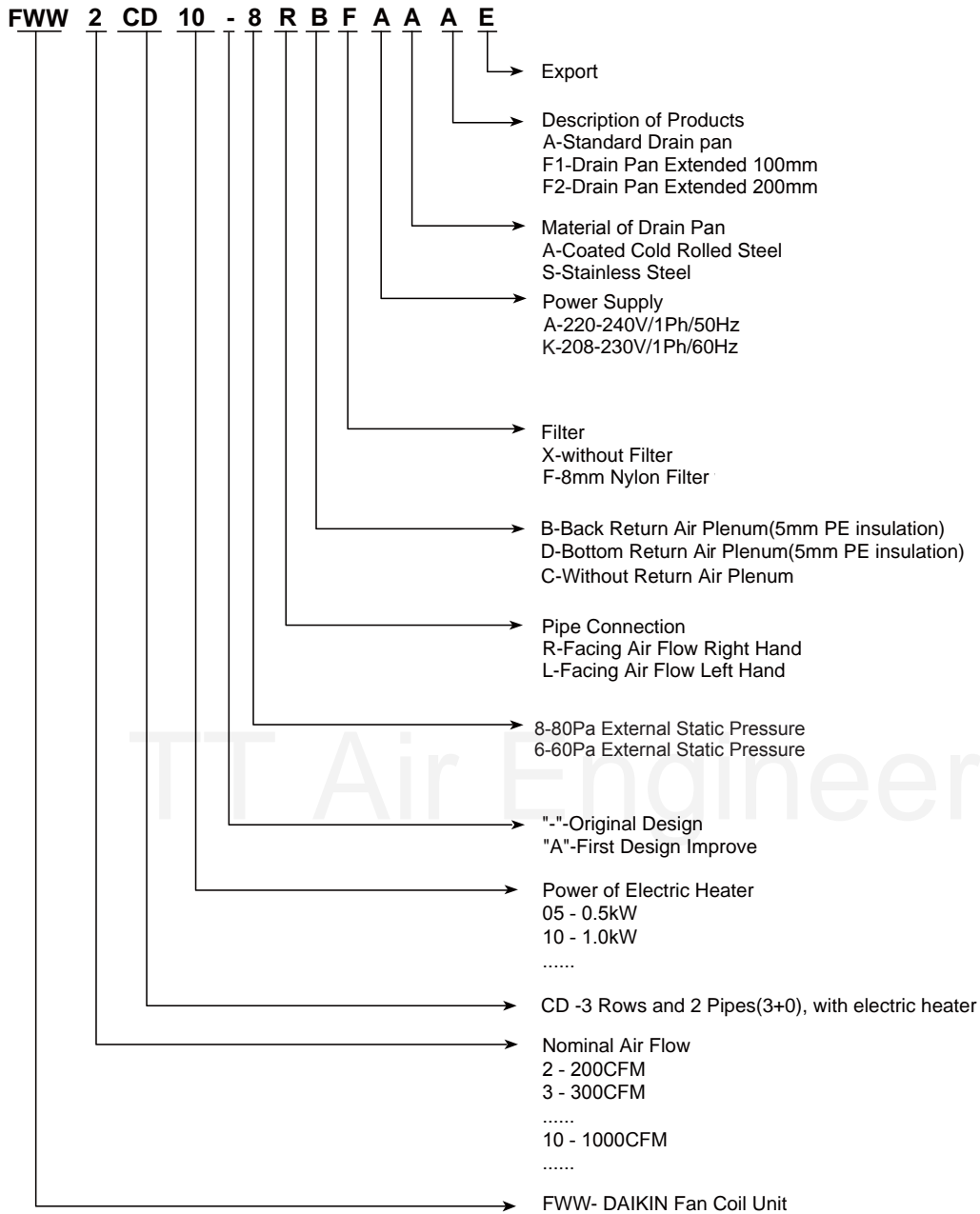
FWW-C/H/F Series without Electric Heater



Remark: (*) means filter of back air return plenum unit for FWW200~1200 is front withdraw and FWW1400~1800 is side withdraw or down withdraw.

Nomenclature

FWW-C Series with Electric Heater



Electric Heater Power

Option	1.0 kW	2.0kW	3.0kW	4.0kW	5.0kW	6.0kW
FWW2CD	•					
FWW3CD	•	•				
FWW4CD	•	•				
FWW6CD		•	•			
FWW8CD		•	•	•		
FWW10CD			•	•		
FWW12CD			•	•	•	•
FWW14CD				•	•	•
FWW16CD				•	•	•
FWW18CD				•	•	•

Note: The power supply of electric heater is 220-240V~/50(60)Hz.

Technical specifications

Ceiling Concealed Unit FWW-C

Standard unit/2 pipe/3 rows

		MODEL	FWW200C	FWW300C	FWW400C	FWW600C	FWW800C	FWW1000C	FWW1200C	FWW1400C	FWW1600C	FWW1800C		
Performance														
Air flow	High	m ³ /h	390	530	760	1040	1420	1620	2040	2350	2700	3020		
		CFM	229	312	447	612	835	953	1200	1382	1588	1776		
	Medium	m ³ /h	260	370	490	780	1090	1140	1500	2050	2430	2780		
		CFM	153	218	288	459	641	671	882	1206	1429	1635		
	Low	m ³ /h	190	240	340	500	740	830	1020	1550	1830	2180		
		CFM	112	141	200	294	435	488	600	912	1076	1282		
External static pressure		Pa	60/80											
		in.wg	0.24/0.32											
Total cooling capacity		W	2200	3200	4390	6160	7810	8830	10700	12500	14500	16200		
		Btu/h	7507	10919	14979	21019	26649	30129	36510	42651	49476	55277		
Sensible cooling capacity		W	1738	2359	3242	4401	6040	6409	7763	9100	10700	11850		
		Btu/h	5930	8049	11062	15017	20609	21868	26488	31050	36509	40433		
Water flow rate		m ³ /h	0.38	0.55	0.75	1.06	1.34	1.51	1.83	2.14	2.49	2.78		
		USGPM	1.67	2.42	3.3	4.67	5.9	6.65	8.06	9.42	10.96	12.24		
Head loss		kPa	15	12	22	38	18	21	33	35	37	34		
		in.wg.	58	48	86	153	74	84	131	140	148	136		
Sound pressure level (dB(A))	60Pa	High	42	44	45	47	49	50	51	51.5	53	53.5		
		Medium	38	39	41	43	46	47	48	50	51.5	52		
		Low	36	36	38	40	43	44	44	46.5	47.5	49.5		
	80Pa	High	43.9	45	47.4	49.4	49.7	51.6	52.6	52	53.5	54		
		Medium	42.3	42.2	43	47.4	48	49	50	50.5	52	52.5		
		Low	39	39.8	41	42	46	46	47	47	48	50		
Electrical Data														
220-240V~/50Hz	Rated Power Input-60Pa (W)	High	47	69	83	149	205	219	271	390	528	564		
		Medium	39	58	63	123	185	183	235	354	425	511		
		Low	35	47	53	105	163	159	209	249	299	387		
	Rated running current-60Pa (A)	High	0.21	0.31	0.38	0.68	0.93	1	1.23	1.78	2.41	2.57		
		Medium	0.19	0.29	0.3	0.57	0.84	0.86	1.07	1.61	1.93	2.33		
		Low	0.17	0.26	0.26	0.49	0.74	0.74	0.95	1.13	1.37	1.77		
	Rated Power Input-80Pa (W)	High	51	73	97	157	215	237	281	406	559	590		
		Medium	45	60	71	125	193	189	237	368	454	522		
		Low	37	51	57	113	175	173	221	257	320	402		
Rated running current-80Pa (A)	High	0.23	0.33	0.44	0.71	0.98	1.08	1.28	1.86	2.55	2.7			
	Medium	0.21	0.3	0.33	0.57	0.88	0.87	1.09	1.69	2.07	2.38			
	Low	0.18	0.27	0.28	0.52	0.8	0.8	1.01	1.17	1.47	1.84			
208-230V~/60Hz	Rated Power Input-80Pa (W)	High	75	97	125	175	248	270	335	334	748	835		
		Medium	70	89	108	156	218	242	304	288	588	729		
		Low	60	75	97	129	182	201	242	214	389	530		
	Rated running current-80Pa (A)	High	0.36	0.47	0.6	0.84	1.19	1.3	1.61	1.59	3.43	3.85		
		Medium	0.33	0.44	0.55	0.75	1.05	1.16	1.46	1.34	2.68	3.34		
		Low	0.29	0.39	0.49	0.63	0.88	0.98	1.2	0.97	1.77	2.41		
115V~/60Hz	Rated Power Input-80Pa (W)	High	72	107	125	187	253	283	353	-	-	-		
		Medium	53	69	93	135	209	211	265	-	-	-		
		Low	45	57	81	123	193	187	247	-	-	-		
	Rated running current-80Pa (A)	High	0.63	0.93	1.09	1.63	2.2	2.46	3.07	-	-	-		
		Medium	0.49	0.67	0.86	1.2	1.84	1.85	2.33	-	-	-		
		Low	0.43	0.57	0.76	1.1	1.69	1.7	2.2	-	-	-		
Coil														
Tube material		Copper												
Fin material		Hydrophilic aluminum 0.11mm												
Max. Working Pressure		1.6MPa												
Cooling Water Pipe Size		Rc 3/4 Female thread							Rc 1 Female thread					
Condensation Water Pipe Size		R3/4 Male thread												
Fan														
Type		Galvanized steel double stage impeller centrifugal (blade: forward)												
Quantity		1			2			3			4			2
Motor														
Type		3 Speed Permanent Split Capacitor Motor												
Quantity		1			1			2			2			1
Insulation class		IP20/B												

NOTES:

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- 3) THE COOLING CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
H SPEED, ENTERING AIR DB/WB: 27°C/19.5°C, WATER INLET 7°C, WATER OUTLET 12°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT, AND TESTED IN SEMI-ANECHOIC ROOM, WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~/50HZ AND WITHOUT PLENUM AND FILTER.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 15%.
- 7) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

Technical specifications

Ceiling Concealed Unit FWW-F

Standard unit/2 pipe/4 rows

		MODEL	FWW200F	FWW300F	FWW400F	FWW600F	FWW800F	FWW1000F	FWW1200F	FWW1400F	FWW1600F	FWW1800F
Performance												
Air flow	High	m ³ /h	360	510	750	1010	1380	1570	2000	2270	2650	2960
		CFM	212	300	441	594	812	924	1176	1335	1559	1741
	Medium	m ³ /h	250	350	470	770	1070	1100	1470	1980	2340	2700
		CFM	147	206	276	453	629	653	865	1165	1376	1588
	Low	m ³ /h	180	230	330	490	720	820	1010	1500	1800	2150
		CFM	106	135	194	288	424	482	594	882	1059	1265
External static pressure		Pa	60/80									
		in.wg	0.24/0.32									
Total cooling capacity		W	2622	3418	5277	7185	8691	10261	12791	13800	16200	18000
		Btu/h	8948	11661	18007	24517	29653	35013	43644	47086	55274	61416
Sensible cooling capacity		W	1783	2406	3536	5047	6365	7297	9382	9600	11460	12700
		Btu/h	6085	8210	12066	17222	21719	24899	32011	32756	39103	43334
Water flow rate		m ³ /h	0.45	0.59	0.9	1.23	1.49	1.76	2.19	2.37	2.78	3.08
		USGPM	1.98	2.6	3.96	5.42	6.56	7.75	9.64	10.44	12.24	13.56
Head loss		kPa	2	6	13	27	9	12	20	35	40	38
		in.wg.	8	24	52	108	36	48	80	140	160	152
Sound pressure level (dB(A))	60Pa	High	42	44	45	47	49	50	51	53	53.5	53.5
		Medium	38	39	41	43	46	47	48	51	51.5	52
		Low	36	36	38	40	43	44	44	48	49	49.5
	80Pa	High	43.9	45	47.4	49.4	49.7	51.6	52.6	53	54	54
		Medium	42.3	42.2	43	47.4	48	49	50	51.5	52.5	53
		Low	39	39.8	41	42	46	46	47	49	49.5	50
Electrical Data												
220-240V~/50Hz	Rated Power Input-60Pa (W)	High	47	69	83	149	205	219	271	384	525	553
		Medium	39	58	63	123	185	183	235	348	422	501
		Low	35	47	53	105	163	159	209	246	299	382
	Rated running current-60Pa (A)	High	0.21	0.31	0.38	0.68	0.93	1	1.23	1.74	2.39	2.52
		Medium	0.19	0.29	0.3	0.57	0.84	0.86	1.07	1.58	1.92	2.28
		Low	0.17	0.26	0.26	0.49	0.74	0.74	0.95	1.12	1.36	1.74
	Rated Power Input-80Pa (W)	High	51	73	97	157	215	237	281	398	555	574
		Medium	45	60	71	125	193	189	237	362	451	508
		Low	37	51	57	113	175	173	221	254	318	394
	Rated running current-80Pa (A)	High	0.23	0.33	0.44	0.71	0.98	1.08	1.28	1.83	2.53	2.62
		Medium	0.21	0.3	0.33	0.57	0.88	0.87	1.09	1.66	2.06	2.32
		Low	0.18	0.27	0.28	0.52	0.8	0.8	1.01	1.16	1.46	1.8
208-230V~/60Hz	Rated Power Input-80Pa (W)	High	75	97	125	175	248	270	335	321	743	812
		Medium	70	89	108	156	218	242	304	277	584	709
		Low	60	75	97	129	182	201	242	208	387	519
	Rated running current-80Pa (A)	High	0.36	0.47	0.6	0.84	1.19	1.3	1.61	1.54	3.4	3.74
		Medium	0.33	0.44	0.55	0.75	1.05	1.16	1.46	1.3	2.67	3.26
		Low	0.29	0.39	0.49	0.63	0.88	0.98	1.2	0.95	1.76	2.36
115V~/60Hz	Rated Power Input-80Pa (W)	High	72	107	125	187	253	283	353	-	-	-
		Medium	53	69	93	135	209	211	265	-	-	-
		Low	45	57	81	123	193	187	247	-	-	-
	Rated running current-80Pa (A)	High	0.63	0.93	1.09	1.63	2.2	2.46	3.07	-	-	-
		Medium	0.49	0.67	0.86	1.2	1.84	1.85	2.33	-	-	-
		Low	0.43	0.57	0.76	1.1	1.69	1.7	2.2	-	-	-
Coil												
Tube material		Copper										
Fin material		Hydrophilic aluminum 0.11mm										
Max. Working Pressure		1.6MPa										
Cooling Water Pipe Size		Rc 3/4 Female thread							Rc 1 Female thread			
Condensation Water Pipe Size		R3/4 Male thread										
Fan												
Type		Galvanized steel double stage impeller centrifugal (blade: forward)										
Quantity		1	2	3	4	2						
Motor												
Type		3 Speed Permanent Split Capacitor Motor										
Quantity		1	1	2	2	1						
Insulation class		IP20/B							IP20/F			

NOTES:

- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
- 2) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL.
- 3) THE COOLING CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
H SPEED, ENTERING AIR DB/WB: 27°C/19.5°C, WATER INLET 7°C, WATER OUTLET 12°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT, AND TESTED IN SEMI-ANECHOIC ROOM, WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~/50HZ AND WITHOUT PLENUM AND FILTER.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 15%.
- 7) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

Technical specifications

Ceiling Concealed Unit FWW-H

Standard unit/4 pipe/3+1 rows

		MODEL	FWW200H	FWW300H	FWW400H	FWW600H	FWW800H	FWW1000H	FWW1200H
Performance									
Air flow	High	m³/h	360	510	750	1010	1380	1570	2000
		CFM	212	300	441	594	812	924	1176
	Medium	m³/h	250	350	470	770	1070	1100	1470
		CFM	147	206	276	453	629	653	865
	Low	m³/h	180	230	330	490	720	820	1010
		CFM	106	135	194	288	424	482	594
External static pressure		Pa	60/80						
		in.wg	0.24/0.32						
Total cooling capacity		W	2130	3100	4260	5980	7580	8570	10380
		Btu/h	7268	10578	14536	20405	25864	29242	35418
Sensible cooling capacity		W	1638	2285	3146	4272	5862	6220	7531
		Btu/h	5589	7798	10735	14578	20002	21224	25696
Cooling water flow rate		m³/h	0.36	0.53	0.73	1.03	1.3	1.47	1.78
		USGPM	1.6	2.33	3.21	4.54	5.72	6.47	7.84
Cooling head loss		kPa	13	11	21	36	17	20	31
		in.wg.	52	44	84	144	68	80	124
Heating capacity		W	1350	2280	3210	4290	5120	6940	8490
		Btu/h	4606	7780	10953	14638	17470	23680	28969
Heating water flow rate		m³/h	0.2	0.2	0.2	0.2	0.2	0.5	0.5
		USGPM	1.1	1.1	1.1	1.1	1.1	2.2	2.2
Sound pressure level (dB(A))	60Pa	High	42	44	45	47	49	50	51
		Medium	38	39	41	43	46	47	48
		Low	36	36	38	40	43	44	41
	80Pa	High	43.9	45	47.4	49.4	49.7	51.6	52.6
		Medium	42.3	42.2	43	47.4	48	49	50
		Low	39	39.8	41	42	46	46	47
Electrical Data									
220-240V~/50Hz	Rated Power Input-60Pa (W)	High	47	69	83	149	205	219	271
		Medium	39	58	63	123	185	183	235
		Low	35	47	53	105	163	159	209
	Rated running current-60Pa (A)	High	0.21	0.31	0.38	0.68	0.93	1	1.23
		Medium	0.19	0.29	0.3	0.57	0.84	0.86	1.07
		Low	0.17	0.26	0.26	0.49	0.74	0.74	0.95
	Rated Power Input-80Pa (W)	High	51	73	97	157	215	237	281
		Medium	45	60	71	125	193	189	237
		Low	37	51	57	113	175	173	221
	Rated running current-80Pa (A)	High	0.23	0.33	0.44	0.71	0.98	1.08	1.28
		Medium	0.21	0.3	0.33	0.57	0.88	0.87	1.09
		Low	0.18	0.27	0.28	0.52	0.8	0.8	1.01
208-230V~/60Hz	Rated Power Input-80Pa (W)	High	75	97	125	175	248	270	335
		Medium	70	89	108	156	218	242	304
		Low	60	75	97	129	182	201	242
	Rated running current-80Pa (A)	High	0.36	0.47	0.6	0.84	1.19	1.3	1.61
		Medium	0.33	0.44	0.55	0.75	1.05	1.16	1.46
		Low	0.29	0.39	0.49	0.63	0.88	0.98	1.2
115V~/60Hz	Rated Power Input-80Pa (W)	High	72	107	125	187	253	283	353
		Medium	53	69	93	135	209	211	265
		Low	45	57	81	123	193	187	247
	Rated running current-80Pa (A)	High	0.63	0.93	1.09	1.63	2.2	2.46	3.07
		Medium	0.49	0.67	0.86	1.2	1.84	1.85	2.33
		Low	0.43	0.57	0.76	1.1	1.69	1.7	2.2
Coil									
Tube material		Copper							
Fin material		Hydrophilic aluminum 0.11mm							
Max. Working PressureS		1.6MPa							
Cooling Water Pipe Size		Rc 3/4 Female thread							
Condensation Water Pipe Size		R3/4 Male thread							
Fan									
Type		Galvanized steel double stage impeller forward centrifugal							
Quantity		1	2		3		4		
Motor									
Type		3 Speed Permanent Split Capacitor Motor							
Quantity		1	1	2	2				
Insulation class		IP20/B							

NOTES:

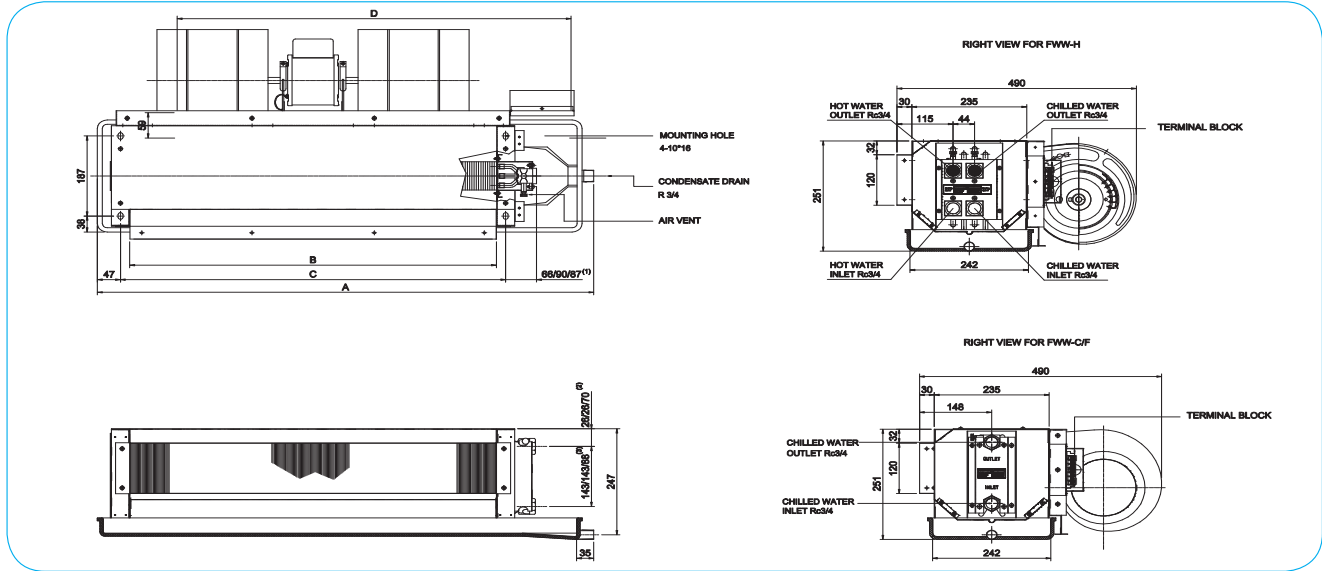
- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
- 2) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL.
- 3) THE CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
COOLING: H SPEED, ENTERING AIR DB/WB: 27°C/19.5°C, WATER INLET 7°C, WATER OUTLET 12°C
HEATING: H SPEED, ENTERING AIR DB: 21°C, WATER INLET 60°C, WATER OUTLET 50°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT, AND TESTED IN SEMI-ANECHOIC ROOM, WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~/50HZ AND WITHOUT PLENUM AND FILTER.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 15%.
- 7) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

Dimensions

Ceiling Concealed Unit FWW-C/F/H

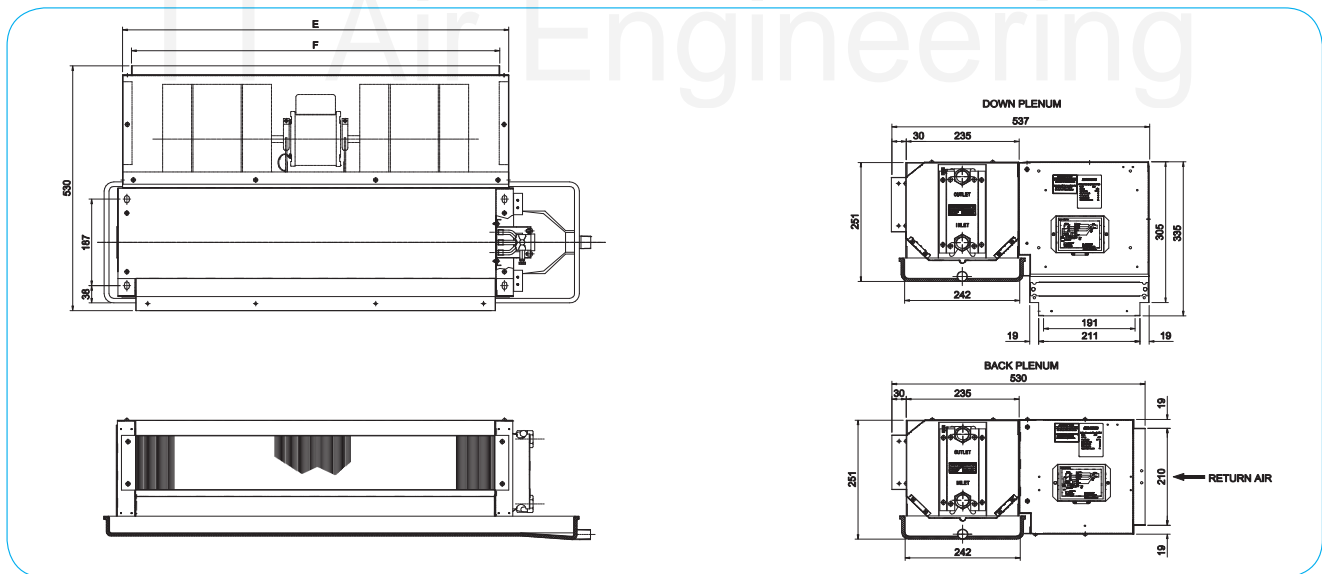
FWW200-1200C/F/H

WITHOUT PLENUM



Remark: the three sizes of the dimensions marked (1) (2) (3) are for C/F/H series respectively.

WITH PLENUM



Model	A						Package Dimension (L*W*H)					
	Standard drain pain		100mm extend drain pan		B	C	D	E	F	Without plenum	With back plenum	With bottom plenum
FWW200	714	814	448	487	505	507	467			734x261x550	734x261x564	734x355x570
FWW300	884	984	618	657	675	677	637			904x261x550	904x261x564	904x355x570
FWW400	1014	1114	748	787	805	807	767			1034x261x550	1034x261x564	1034x355x570
FWW600	1214	1314	948	987	1005	1007	967			1234x261x550	1234x261x564	1234x355x570
FWW800	1464	1564	1198	1237	1255	1257	1217			1484x261x550	1484x261x564	1484x355x570
FWW1000	1564	1664	1298	1337	1355	1357	1317			1584x261x550	1584x261x564	1584x355x570
FWW1200	1824	1924	1558	1597	1615	1617	1577			1844x261x550	1844x261x564	1844x355x570

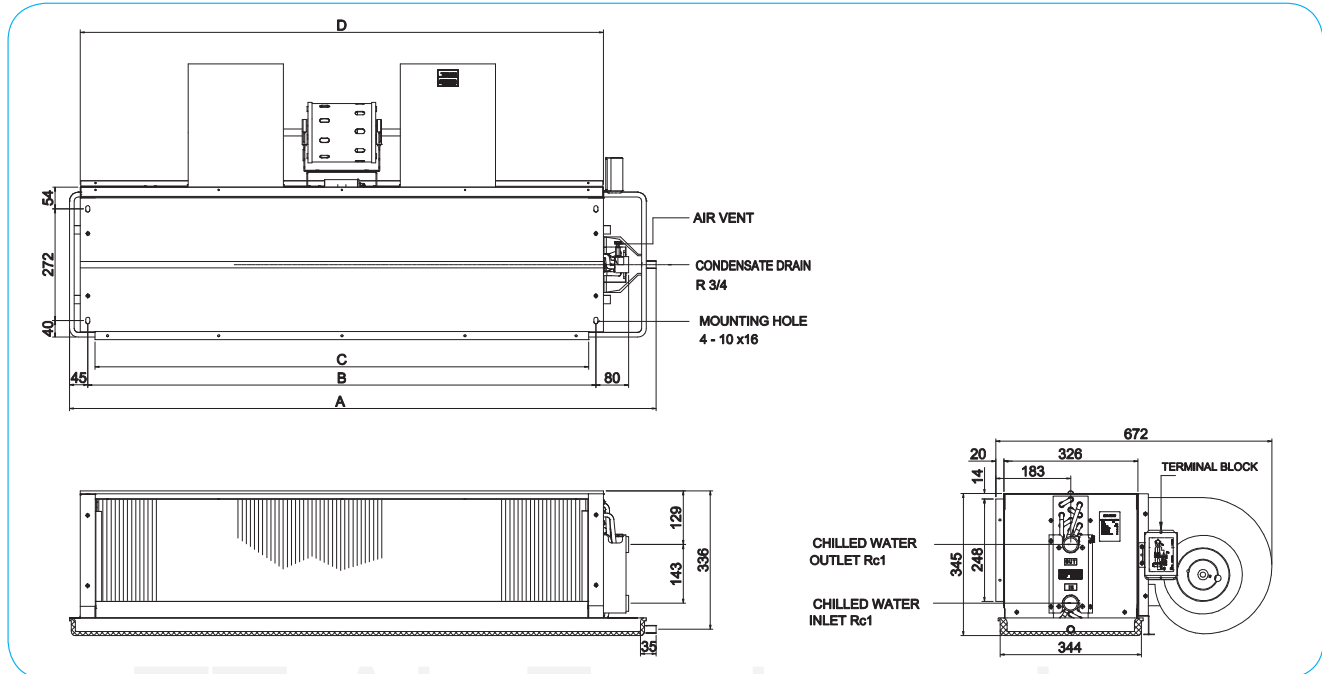
Model	Net Weight						Unit gross weight					
	3 rows		4 rows		3+1 rows		3 rows		4 rows		3+1 rows	
	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum
FWW200	19	20	20	22	20	22	21.7	22.7	22.7	24.7	22.7	24.7
FWW300	20	24	24	27	24	27	24.8	28.8	26.8	29.8	26.8	29.8
FWW400	26	28	28	31	28	31	29.5	31.5	31.5	34.5	31.5	34.5
FWW600	30	33	32	36	32	36	33.6	36.6	35.6	39.6	35.6	39.6
FWW800	41	44	44	48	44	48	44	47	47	51	47	51
FWW1000	44	47	47	52	47	52	47.8	50.8	50.8	55.8	50.8	55.8
FWW1200	46	50	49	56	49	56	51.2	55.2	54.2	61.2	54.2	61.2

Dimensions

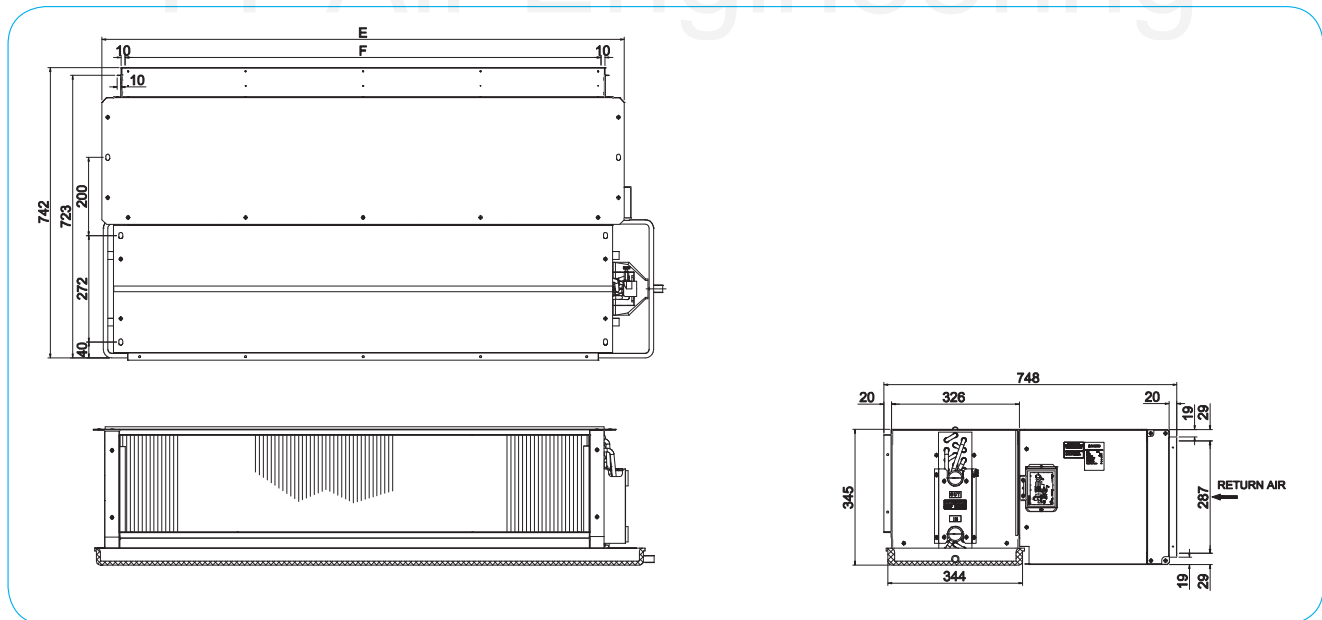
Ceiling Concealed Unit FWW-C/F/H

FWW1400-1800C/F

WITHOUT PLENUM



WITH PLENUM

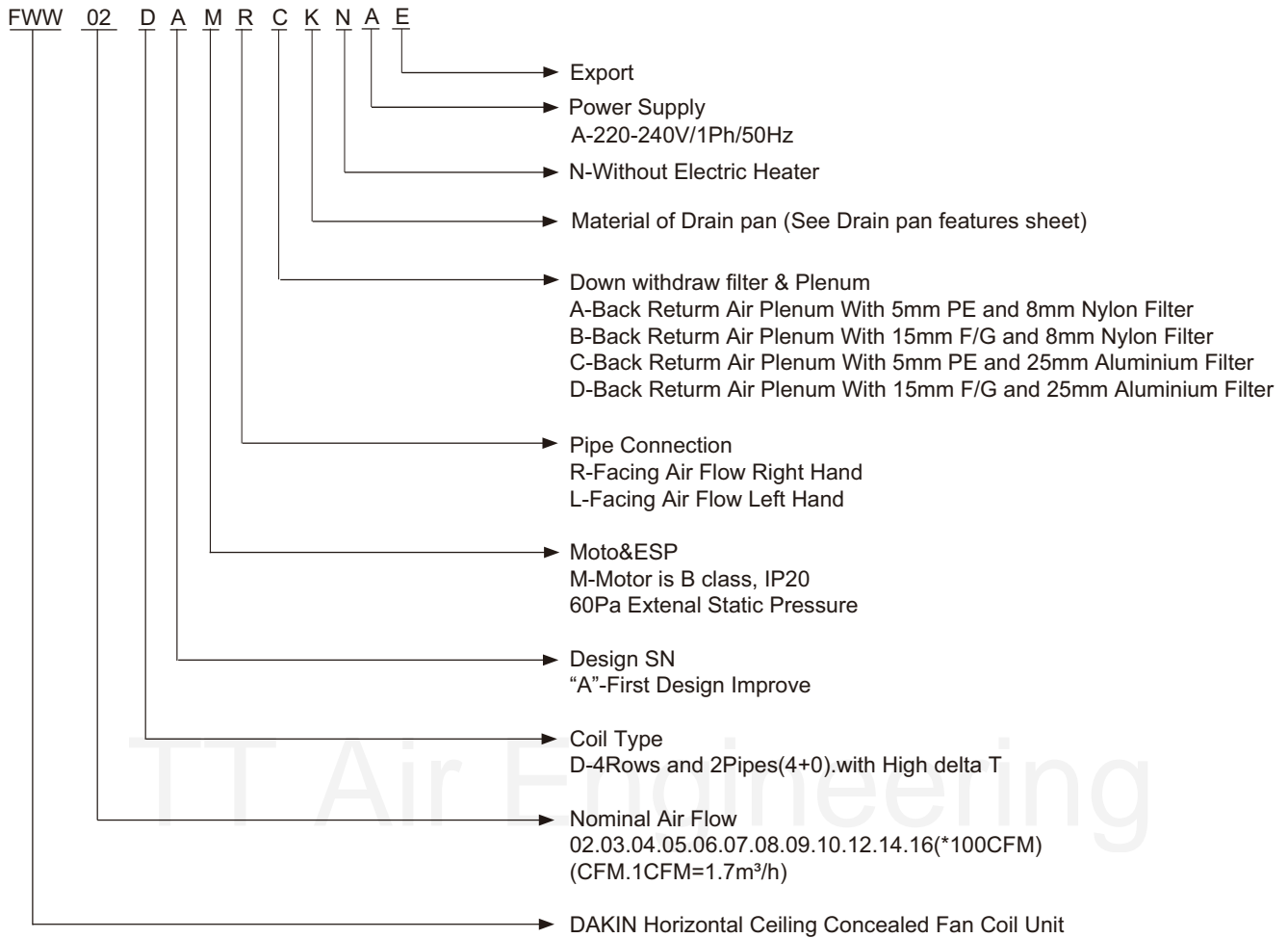


Model	A		B	C	D	E	F	Package Dimension (L*W*H)	
	Standard drain pan	100mm extend drain pan						Without plenum	With backplenum
FWW1400	1195	1295	985	950	1125	1084	965	1221x366x727	1221x366x792
FWW1600	1295	1395	1085	1050	1225	1184	1065	1321x366x727	1321x366x792
FWW1800	1445	1545	1235	1200	1375	1334	1215	1471x366x727	1471x366x792

Model	Net Weight				Unit gross weight			
	3 rows		4 rows		3 rows		4 rows	
	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum	Without plenum	With plenum
FWW1400	41.5	51	43.5	53.5	46	54.5	48	57
FWW1600	45	55.5	47.5	58	49.5	58.5	52	61
FWW1800	49	59	51.5	61	54	62.5	56	64.5

Nomenclature

Ceiling Concealed Unit For District Cooling FWW-DA



Drain pan features sheet

Code	Material	Length	Insulation
A	standard	standard	7mm PE
B	standard	+100mm	7mm PE
E	SUS	standard	7mm PE
F	SUS	+100mm	7mm PE
K	standard	standard	6mm class"0" armflex
P	standard	+100mm	6mm class"0" armflex
L	SUS	standard	6mm class"0" armflex
Q	SUS	+100mm	6mm class"0" armflex

Technical specifications

Ceiling Concealed Unit FWW-DA

District cooling unit/2 pipe/4 rows

		MODEL	FWW02DA	FWW03DA	FWW04DA	FWW05DA	FWW06DA	FWW07DA	FWW08DA	FWW10DA	FWW12DA	FWW14DA	FWW16DA	FWW18DA	FWW20DA
Air flow	High	m³/h	400	500	700	850	1050	1210	1340	1670	1850	2020	2350	2580	3330
		CFM	235	294	412	500	618	712	788	982	1088	1188	1382	1518	1959
	Medium	m³/h	360	450	640	790	950	1140	1290	1610	1750	1950	2100	2480	3070
		CFM	212	265	376	465	559	671	759	947	1029	1147	1235	1459	1806
Low	m³/h	240	340	460	600	750	880	920	1280	1420	1550	1650	1930	2250	
	CFM	141	200	271	353	441	518	541	753	835	912	971	1135	1324	
External static pressure		Pa	60Pa												
		in.wg	0.24												
Total cooling capacity		W	1930	2300	3400	4100	4700	5500	5700	7400	8500	9250	10300	11600	14500
		Btu/h	6585	7848	11601	13989	16036	18766	19448	25249	29002	31561	35144	39579	49474
Sensible cooling capacity		W	1360	1550	2330	2880	3300	3750	4190	5490	6080	6430	7500	8400	10700
		Btu/h	4640	5289	7950	9827	11260	12795	14296	18732	20745	21939	25590	28661	36508
Water flow rate		m³/h	0.18	0.22	0.32	0.39	0.45	0.52	0.54	0.7	0.81	0.88	0.98	1.1	1.38
		Am.gpm	0.79	0.97	1.41	1.72	1.98	2.29	2.38	3.08	3.56	3.87	4.31	4.84	6.07
Water pressure drop		kPa	5	6	14	20	9	14	14	13	17	20	17	23	25
		PSI	20	24	56	80	36	56	56	52	68	80	68	92	100
Rated power input (W)		High	60	86	110	122	149	166	181	301	262	315	486	640	710
		Medium	57	80	100	116	134	163	174	283	250	302	437	550	660
		Low	49	63	80	99	112	150	148	245	224	270	367	440	550
Rated running current (A)		High	0.27	0.4	0.51	0.56	0.68	0.77	0.85	1.43	1.2	1.54	2.22	2.91	3.34
		Medium	0.26	0.37	0.46	0.53	0.63	0.74	0.79	1.29	1.14	1.38	1.99	2.57	3.01
		Low	0.23	0.3	0.37	0.46	0.54	0.69	0.67	1.12	1.03	1.27	1.67	2.09	2.52
Sound pressure level (dB(A))		High	42.5	43.5	44	45	47.5	47.5	48	48.5	50.5	51.5	52	53.5	57
		Medium	41.5	43	43	44	46.5	46.5	47.5	48	49.5	51	51	53	56
		Low	37	40	41	42	43.5	44.5	44.5	46.5	47	48	47	49.5	52
Coil															
Tube material		Copper													
Fin material		Hydrophilic aluminum 0.11mm													
Max. Working Pressure		1.6MPa													
Cooling Water Pipe Size		Rc 3/4 Female thread													
Condensation Water Pipe Size		R3/4 Male thread													
Fan															
Type		Galvanized steel double stage impeller forward centrifugal													
Quantity		1	1	2	2	2	2	2	2	3	4	4	3	3	4
Motor															
Type		3 Speed Permanent Split Capacitor Motor													
Quantity		1	1	1	1	1	1	1	1	2	2	2	2	2	2
Insulation class		IP20/B													

NOTES:

- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
- 2) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL.
- 3) THE COOLING CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
H SPEED, ENTERING AIR DB/WB: 24°C/18°C, WATER INLET 5.5°C, WATER OUTLET 14.5°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT, AND TESTED IN SEMI-ANECHOIC ROOM, WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~50HZ AND UNIT COMPLE WITH BACK PLENUM BUT NO FILTER.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 6%.
- 7) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

Technical specifications

Ceiling Concealed Unit FWW-DA

District cooling unit/2 pipe/4 rows

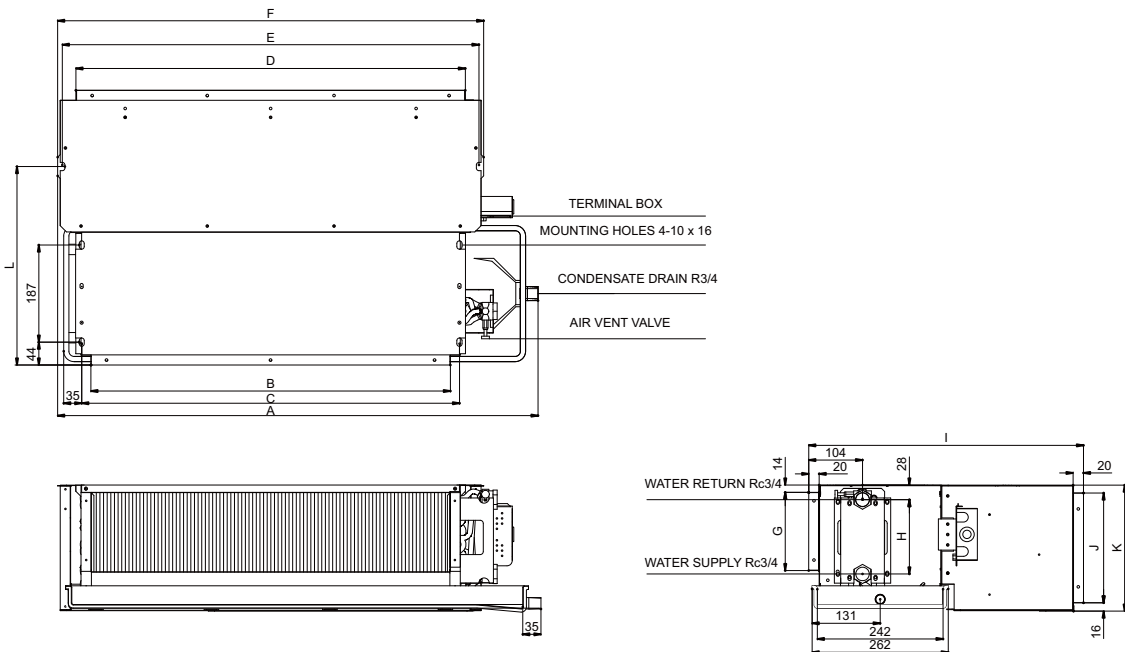
	MODEL	FWW02DA	FWW03DA	FWW04DA	FWW05DA	FWW06DA	FWW07DA	FWW08DA	FWW10DA	FWW12DA	FWW14DA	FWW16DA	FWW18DA	FWW20DA
Air flow (m3/h)	HIGH	397	482	680	822	990	1159	1268	1611	1765	1908	2269	2476	3237
	MEDIUM	376	459	653	793	941	1122	1246	1575	1715	1875	2087	2416	3022
	LOW	306	404	558	679	811	944	994	1367	1525	1649	1692	1984	2347
ESP (Pa)	HIGH	55	56	54	54	56	53	52	52	53	52	59	53	55
	MEDIUM	50	50	50	50	50	50	50	50	50	50	50	50	50
	LOW	33	38	37	36	37	35	32	38	39	39	33	33	33
Total cooling capacity (W)	HIGH	1980	2230	3360	3970	4510	5310	5490	7140	8220	8900	9940	11270	14000
	MEDIUM	1790	2120	3160	3820	4560	5190	5460	6770	7940	8700	9930	11160	13670
	LOW	1530	1670	2890	3570	3830	4360	4790	6280	7360	8020	8610	10100	11760
Sensible cooling capacity (W)	HIGH	1370	1500	2280	2790	3150	3620	4020	5310	5860	6160	7260	8190	10440
	MEDIUM	1200	1490	2180	2720	3150	3580	3830	5280	5540	6090	6960	8090	10100
	LOW	960	1390	1890	2410	2710	3030	3350	4920	5130	5760	5830	7170	8420
WATER PRESSURE DROP (Pa)	HIGH	5.3	5.6	13.7	18.9	8.4	13.2	13.1	12.2	16.1	18.7	16.0	21.8	23.6
	MEDIUM	4.2	5.1	12.3	17.7	8.5	12.6	12.9	11.1	15.1	18.0	16.0	21.2	22.3
	LOW	2.9	3.0	10.4	15.7	6.2	9.2	10.2	9.8	13.3	15.6	12.4	17.7	16.9
RATED POWER INPUT (W)	HIGH	63	88	113	120	154	165	170	281	239	289	450	608	666
	MEDIUM	60	82	103	114	140	161	161	262	227	273	408	525	622
	LOW	54	65	83	101	117	152	145	241	218	265	374	455	578
Lw outlet duct (dB(A))	HIGH	62	63	64	64	67	67	68	68	70	71	72	73	73
	MEDIUM	61	63	63	64	66	66	67	68	70	71	70	71	71
	LOW	57	60	60	62	64	64	64	66	67	68	67	69	69
Lw inlet + rad (dB(A))	HIGH	70	71	72	72	75	75	76	76	78	79	80	81	81
	MEDIUM	69	71	71	72	74	74	75	76	78	79	78	79	79
	LOW	65	68	68	70	72	72	72	74	74	76	75	77	77

NOTES:

- 1) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL.
- 2) THE COOLING CAPACITY ARE TESTED UNDER FOLLOWING CONDITION:
ENTERING AIR DB/WB: 24°C DB/18°C, WATER INLET 5.5°C, WATER OUTLET 14.5°C
- 3) ALL PERFORMANCE ARE TESTED UNDER 220V~/50HZ WITH BACK PLENUM AND 25MM ALUMINUM FILTER.
- 4) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD, THE CAPACITY SHOULD BE REDUCED BY 6%.
- 5) PERFORMANCE OF SPECIFIED CONDITION CAN BE CALCULATED BY OUR SOFTWARE.

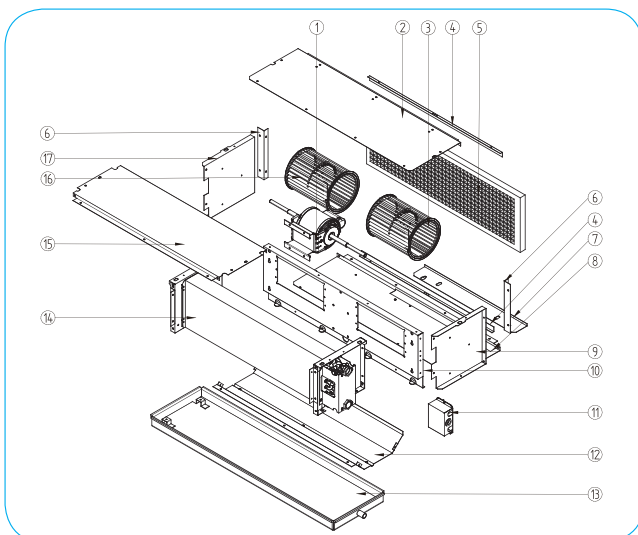
Dimensions

Ceiling concealed unit FWW-DA



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	Package Dimension (LxWxH) mm	Unit net Weight (kg)	Gross weight (kg)
FWW02DA	675	452	487	469	522	540	151	143	529	211	243	382	72	689x255x542	16	19
FWW03DA	675	452	487	469	522	540	151	143	529	211	243	382	72	689x255x542	16	19
FWW04DA	825	592	627	649	702	720	151	143	529	211	243	382	72	839x255x542	21	24
FWW05DA	925	692	727	749	802	820	151	143	529	211	243	382	72	939x255x542	22	25
FWW06DA	995	772	807	789	842	860	151	143	529	211	243	382	72	1009x255x542	24	28
FWW07DA	1095	872	907	889	942	960	151	143	529	211	243	382	72	1109x255x542	28	31
FWW08DA	1095	872	907	889	942	960	151	143	529	211	243	382	72	1109x255x542	28	31
FWW10DA	1425	1202	1237	1219	1272	1290	151	143	529	211	243	382	72	1439x255x542	39	43
FWW12DA	1525	1302	1337	1359	1412	1420	151	143	529	211	243	382	72	1549x255x542	44	48
FWW14DA	1525	1302	1337	1359	1412	1420	151	143	529	211	243	382	72	1549x255x542	44	48
FWW16DA	1425	1202	1237	1239	1289	1307	201	194	599	266	297	413	82	1439x309x612	51	55
FWW18DA	1525	1302	1337	1322	1372	1390	201	194	599	266	297	413	82	1539x309x612	52	58
FWW20DA	1825	1602	1637	1622	1672	1690	201	194	599	266	297	413	82	1839x309x612	62	68

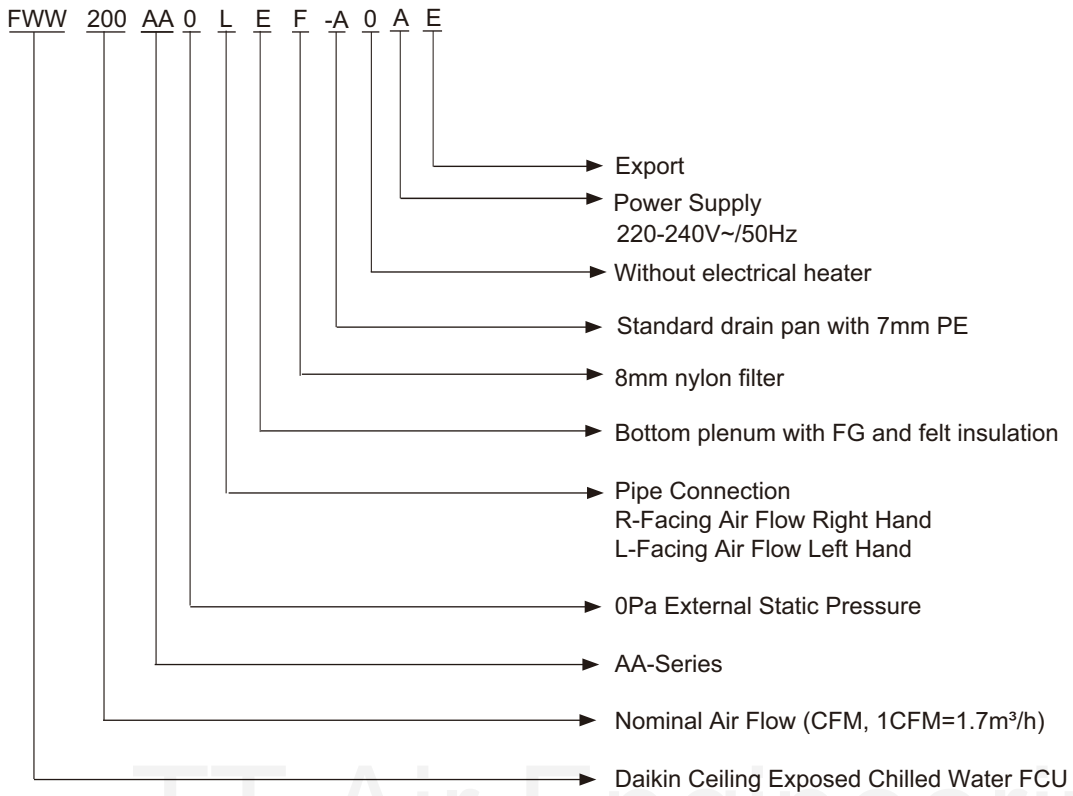
Exploded-view & Part List



Item	Description
1	Motor
2	Top Panel For Air Return Plenum
3	Blower Left
4	Flange top/bottom For Air Return Plenum
5	Filter
6	Flange left/right For Air Return Plenum
7	Filter Cover
8	Bottom Panel For Air Return Plenum
9	Side Panel Right For Air Return Plenum
10	Fan Deck
11	Terminal Box
12	Deflector
13	Drain Pan
14	Coil Assy
15	Top Panel
16	Blower Right
17	Side Panel Left For Air Return Plenum

Nomenclature

Ceiling Exposed Unit For District Cooling FWW-AA



TT Air Engineering

- General
- FWW-VC
- FWW-C/F/H
- FWW-DA
- FWW-AA
- FUW-A
- Wiring
- INSTALLATION

Technical specifications

Ceiling Exposed Unit FWW-AA

District cooling unit/2 pipe/4 rows

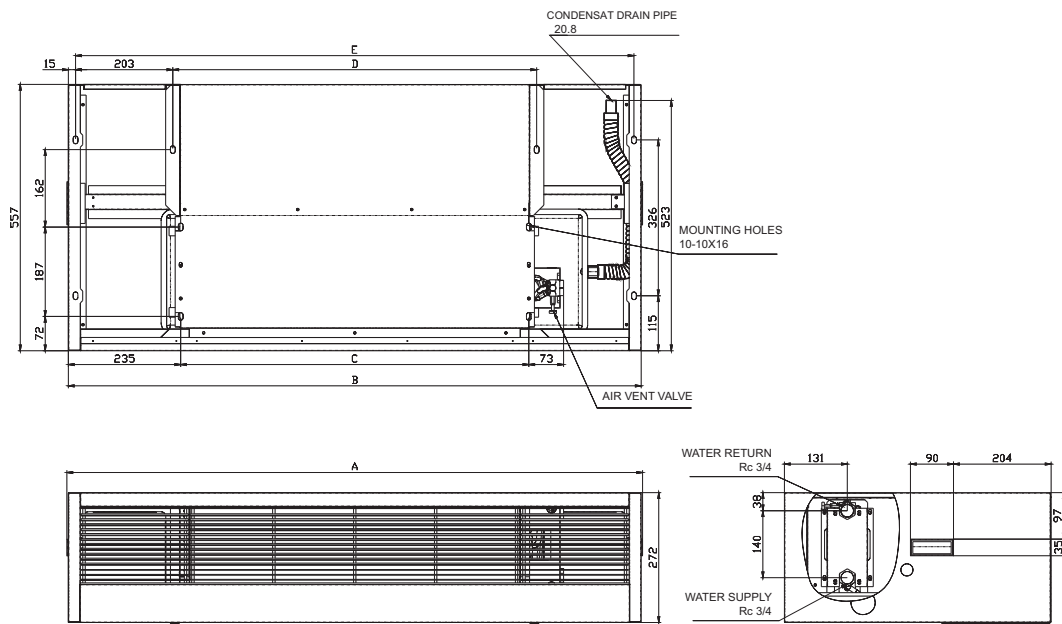
MODEL			200AA	300AA	400AA	600AA	800AA	1000AA	1200AA	1400AA
Air flow	High	m ³ /h	340	510	680	1020	1360	1700	2040	2380
	Medium	m ³ /h	279	418	558	836	1115	1394	1673	1952
	Low	m ³ /h	170	255	340	510	680	850	1020	1190
Total cooling capacity		W	2125	3385	4390	6207	8096	10165	11066	13744
Sensible capacity		W	1233	2059	2848	4179	5572	7125	7961	9770
Water flow		m ³ /h	0.21	0.33	0.43	0.6	0.79	0.99	1.07	1.32
Water pressure drop		kPa	5	13	22	16	16	25	20	29
Rated power input		W	39	53	72	107	142	183	217	239
Rated running current		A	0.18	0.24	0.33	0.48	0.65	0.83	0.99	1.09
Sound pressure level	High	dB(A)	36	40	43	46	46	50	50	51
	Medium	dB(A)	32	36	36	42	42	47	47	46
	Low	dB(A)	23	25	29	30	32	38	36	37
Coil										
Tube material			Copper							
Fin material			Hydrophilic aluminum 0.11mm							
Max. Working Pressure			1.6MPa							
Cooling Water Pipe Size			Rc 3/4 Female thread							
Condensation Water Pipe Size			R3/4 Male thread							
Fan										
Type			Galvanized steel double stage impeller forward centrifugal							
Quantity			1	2	2	2	3	4	4	4
Motor										
Type			3 Speed Permanent Split Capacitor Motor							
Quantity			1	1	1	1	2	2	2	2
Insulation class			IP20/B							

NOTES:

- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
ALL STANDARD UNITS ARE WITH BACK AIR PLENUM AND BOTTOM REMOVAL FILTERS;
- 2) THE AIR FLOW IS TESTED AT 20°C DB WITHOUT WATER IN COIL.
- 3) THE COOLING CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
H SPEED, ENTERING AIR DB/WB: 27°C/19.5°C, WATER INLET 5.5°C, WATER OUTLET 14.5°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT,
AND TESTED IN SEMI-ANECHOIC ROOM, WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~50HZ.
- 6) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 6%.
- 7) FOR MEDIUM SPEED, THE CAPACITY IS ABOUT 87% OF HIGH SPEED.
FOR LOW SPEED, THE CAPACITY IS ABOUT 60% OF HIGH SPEED.

Technical specifications

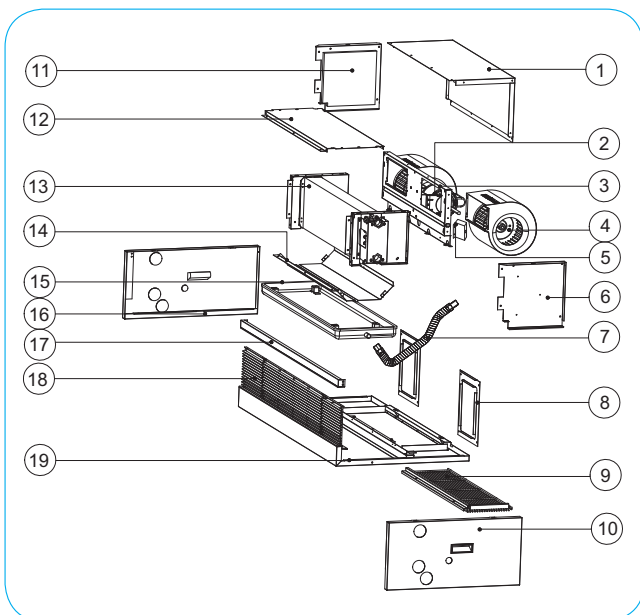
Ceiling Exposed Unit FWW-AA



Unit: mm

UNIT Model	A	B	C	D	E	Package Dimension (LxWxH) mm	Net Weight (kg)	Gross weight (kg)
FWW200AA	963	957	488	520	927	970x565x300	30	32
FWW300AA	1103	1097	628	660	1067	1110x565x300	35	38
FWW400AA	1203	1197	728	760	1167	1210x565x300	39	42
FWW600AA	1383	1377	908	940	1347	1390x565x300	44	48
FWW800AA	1713	1707	1238	1270	1677	1720x565x300	61	66
FWW1000AA	1813	1807	1338	1370	1777	1820x565x300	66	71
FWW1200AA	2013	2007	1538	1570	1977	2020x565x300	73	78
FWW1400AA	2273	2267	1798	1830	2237	2280x565x300	83	89

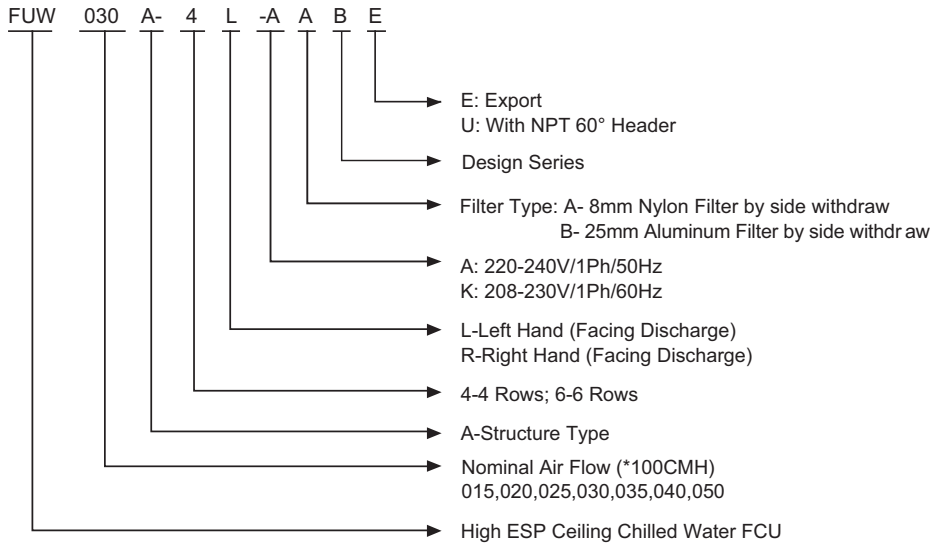
Exploded-View & Part List



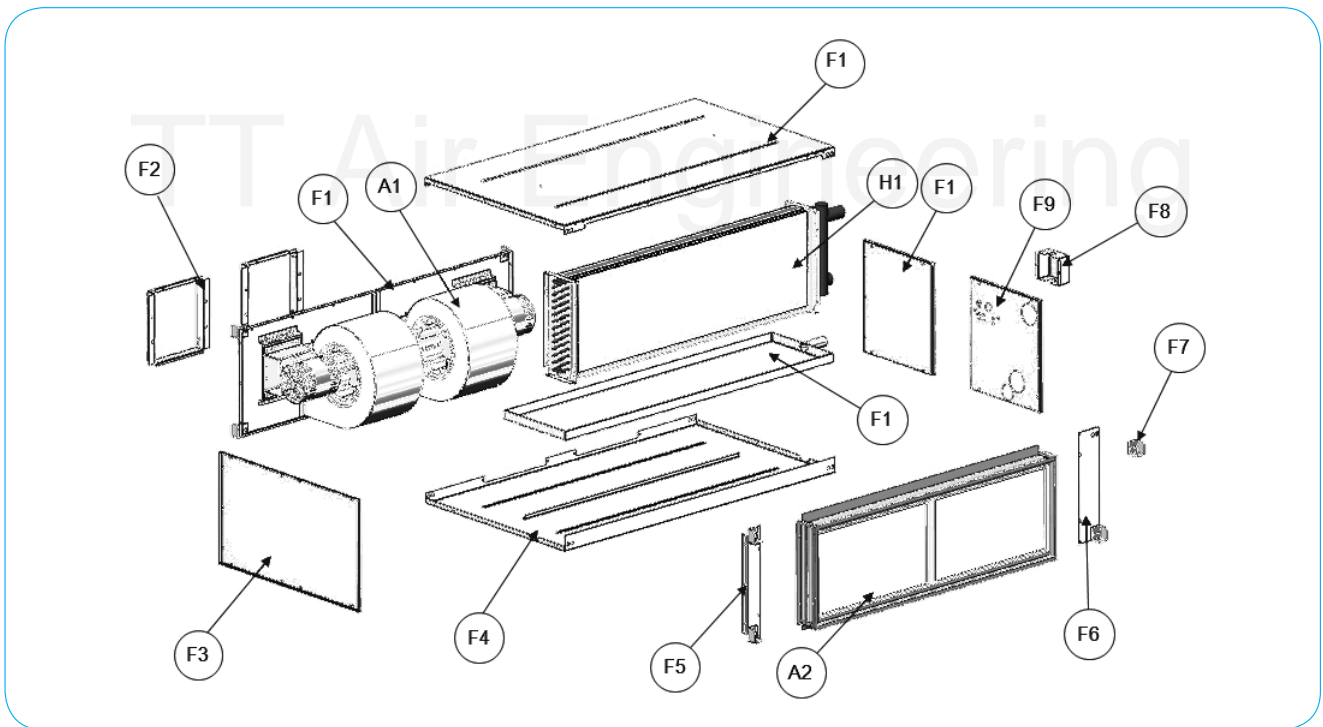
Item	Description
1	Top Panel For Air Return Plenum
2	Motor
3	Fan Deck
4	Fan
5	Terminal Box
6	Right side plate of air return box
7	Condensate drain pipe
8	Back support plate
9	Filter and Grille
10	Right side plate
11	Left side plate of return air box
12	Top plate
13	Coil assy
14	Deflector
15	Drain pan
16	Left side plate
17	Front cross beam
18	Air supply grille
19	Bottom panel

Nomenclature

High ESP Ceiling Unit FUW-A



Exploded-View & Part List



A1	FAN MOTOR ASSY.	F4	BASE PANEL ASSY.	F9	SIDE PANEL DRAIN
A2	FILTER ASSY.	F5	R COIL BAFFLE	F10	SIDE PANEL ACCESS
F1	FRONT PANEL	F6	L COIL BAFFLE	F11	TOP PANEL
F2	COLLAR ASSY.	F7	TOP FIX	F12	DRAIN PAN ASSY.
F3	SIDE PANEL WIDE	F8	TERMINAL BOX	H1	COIL ASSY.

General

FWW-VC

FWW-C/F/H

FWW-DA

FWW-AA

FUW-A

Wiring

INSTALLATION

Technical specifications

High ESP Ceiling unit FUW-A

Standard unit/2 pipe/4 or 6 rows

Model			FUW015A	FUW020A	FUW025A	FUW030A	FUW035A	FUW040A	FUW050A
Nominal air flow		m ³ /h	1500	2000	2500	3000	3500	4000	5000
External static pressure (ESP)		Pa	70	100	100	120	120	150	150
Power supply		V/Ph/Hz	220-240/1/50 208-230/1/60						
Nominal capacity	Cooling	4 Rows(return air)	7	10	13	17	20	23	30
		4 Rows(fresh air)	18	26	33	41	47	53	64
		6 Rows(fresh air)	10	14	18	22	26	30	38
	Heating	4 Rows(return air)	24	33	42	50	57	65	78
		4 Rows(fresh air)	13	18	22	27	32	36	46
		6 Rows(fresh air)	22	29	37	44	52	59	75
Water flow	Cooling	4 Rows(return air)	16	22	27	33	38	44	55
		4 Rows(fresh air)	26	35	43	52	61	70	88
		6 Rows(fresh air)	0.34	0.48	0.64	0.79	0.93	1.08	1.42
	Heating	4 Rows(return air)	0.88	1.24	1.59	1.93	2.25	2.51	3.05
		4 Rows(fresh air)	0.48	0.67	0.86	1.05	1.23	1.43	1.83
		6 Rows(fresh air)	1.15	1.59	2.01	2.38	2.72	3.08	3.72
Water pressure drop	Cooling	4 Rows(return air)	0.31	0.42	0.53	0.64	0.75	0.87	1.1
		4 Rows(fresh air)	0.51	0.69	0.87	1.05	1.23	1.41	1.78
		6 Rows(fresh air)	0.38	1.51	0.65	0.78	0.91	1.04	1.31
	Heating	4 Rows(return air)	0.61	0.83	1.03	1.24	1.45	1.67	2.08
		4 Rows(fresh air)	1	3	5	9	13	19	37
		6 Rows(fresh air)	7	16	29	46	60	66	77
220-240V~50Hz	Rated power input	4 Rows	4	8	14	22	33	47	87
		6 Rows	18	37	65	79	87	95	112
		6 Rows(fresh air)	1	2	3	5	8	11	20
	Rated running current	4 Rows	2	5	8	13	19	27	49
		6 Rows	2	4	7	11	16	23	41
		6 Rows(fresh air)	5	10	17	26	38	53	93
208-230V~60Hz	Rated power input	4 Rows	373	614	787	797	905	1248	1533
		6 Rows	397	653	823	845	1016	1362	1699
		6 Rows(fresh air)	1.72	2.96	3.61	3.62	4.22	5.68	6.98
	Rated running current	4 Rows	1.81	3.01	3.78	3.96	5.1	6.29	7.86
		6 Rows	279	387	945	619	733	1584	2063
		6 Rows(fresh air)	273	445	1137	681	1222	1607	2134
Sound pressure level	4 Rows	1.28	1.79	4.35	2.83	3.41	7.59	9.55	
	6 Rows	1.25	2.03	5.29	3.19	5.97	7.73	9.89	
	6 Rows(fresh air)	44.1	50.6	55.7	52.5	53.5	53.6	57	
Structure	High	40.7	48	52.2	50.5	52.1	51.5	56	
	Medium	37.7	45.1	48.4	48.5	50.2	49.5	54.9	
	Low	Gaalvanized steel coated with electrostatic spraying. Internal guded with Insulator PE							
Filter	Type/material	8mm nylon filter							
Coil	Type	Corrugated aluminum fin mechanically bonded with copper tube							
	Max. Working Pressure(MPa)	1.6							
	Inlet/outlet pipe	R1½"							
Fan	Condensing water pipe	R¾"							
	Type/material	Centrifugal forward curved blower and galvanized steel							
Motor	Fan no.	1				2			
	Type	Single phase capacitor running							
	Quantity	1				2			
Insulation class	Insulation class	IP20 B							

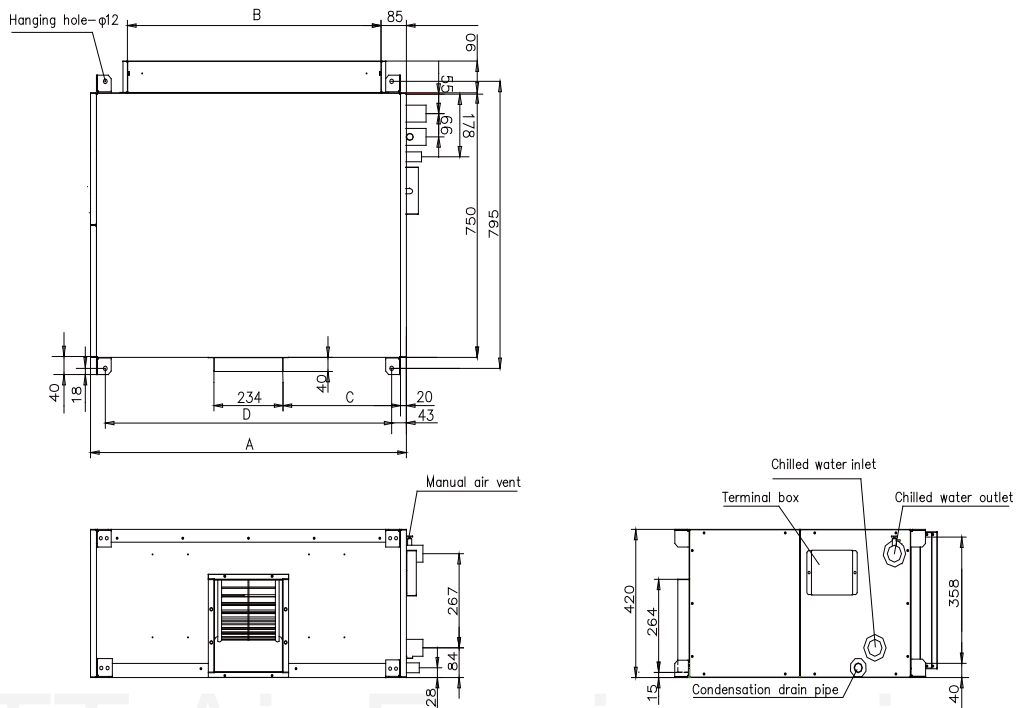
NOTES:

- 1) ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
- 2) THE AIR FLOW IS TESTED AT 20°C DB WITHOUT WATER IN COIL.
- 3) THE CAPACITY ARE BEING TESTED UNDER FOLLOWING CONDITION:
 COOLING: RETURN AIR COOLING CONDITIONS: 27°C/19.5°C WB; FRESH AIR COOLING CONDITIONS: 34°C DB/28°C WB
 COOLING WATER ENTERING/LEAVING CONDITIONS: 7°C/12°C
 HEATING: RETURN AIR HEATING CONDITION: 21°C DB; FRESH AIR HEATING CONDITION: 0°C DB;
 HEATING WATER ENTERING/LEAVING CONDITIONS: 60°C/50°C
- 4) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT, AND TESTED IN SEMI-ANECHOIC ROOM WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB(A)
- 5) ALL PERFORMANCE ARE TESTED UNDER 220V~50HZ AND UNIT COUPLE WITH 8MM NYLEN FILTER.
- 6) THE PARAMETERS ABOVE ARE MEASURED AT THE ALTITUDE OF 0M ABOVE SEA LEVEL, AND MAY VARY WITH THE ALTITUDE.

Dimensions

High ESP Ceiling Unit FUW-A

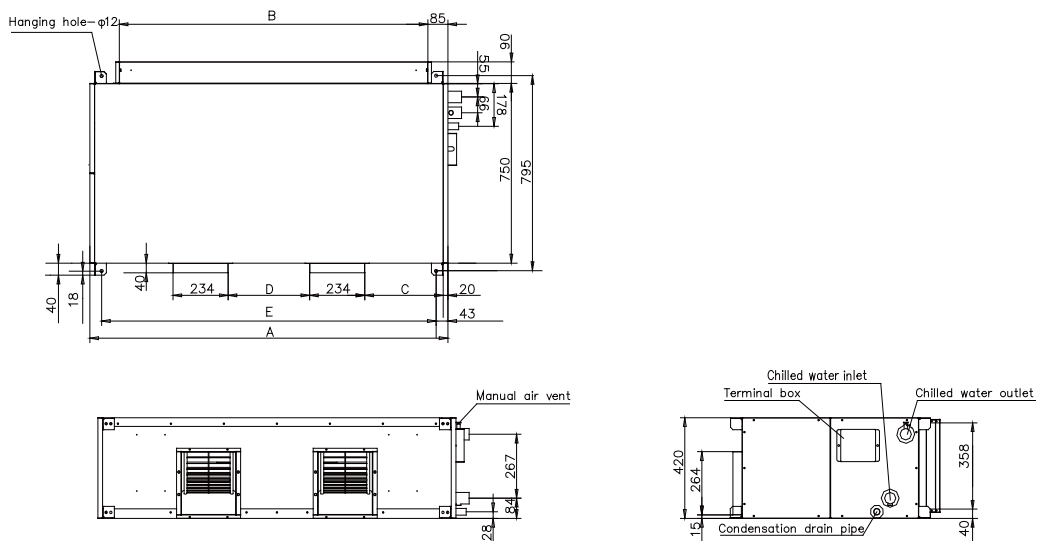
FUW015A, FUW020A, FUW025A



Unit: mm

Model	Dimension				Package Dimension (L×W×H) mm	Net Weight (kg)	
	A	B	C	D		4rows	6rows
FUW015A	750	540	238	664	930×930×590	76	79
FUW020A	910	700	318	824	1090×930×590	80	84
FUW025A	1070	860	398	984	1250×930×590	86	90

FUW030A, FUW035A, FUW040A, FUW050A



Unit: mm

Model	Dimension					Package Dimension (L×W×H) mm	Net Weight (kg)	
	A	B	C	D	E		4rows	6rows
FUW030A	1220	1010	271	170	1134	1400×930×590	92	96
FUW035A	1370	1160	326	210	1284	1540×930×590	96	101
FUW040A	1520	1310	336	340	1434	1700×930×590	102	107
FUW050A	1850	1640	401	540	1764	2030×930×590	108	113

Electric heating box for FUW-A unit

Electric heating box power

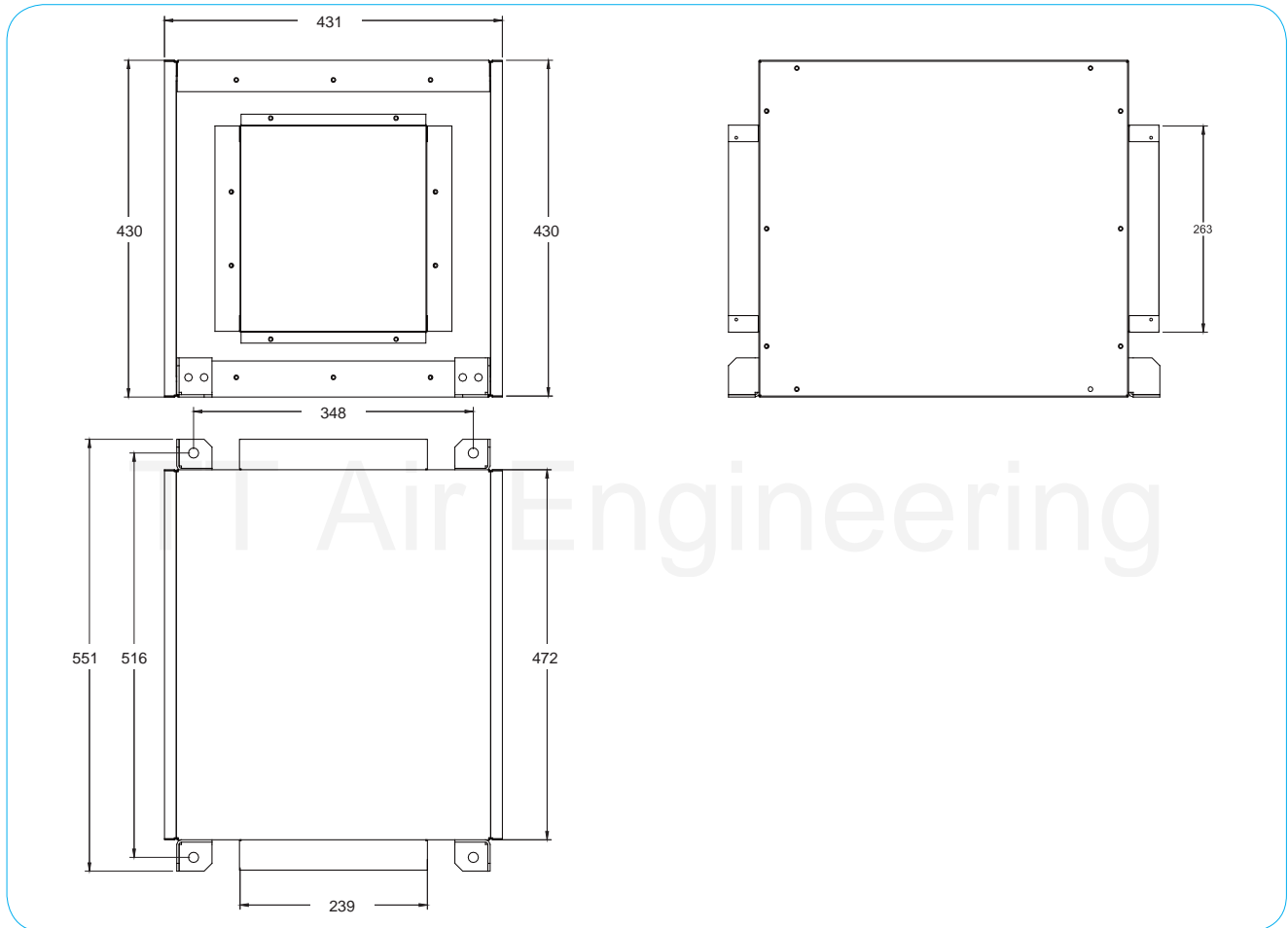
Electric Box Model	Power Supply	Capacity(kW)	Electric Box Model	Power Supply	Capacity(kW)
FUW-EH-020BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	2	FUW-EH-050BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	5
FUW-EH-030BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	3	FUW-EH-060BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	6
FUW-EH-040BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	4	FUW-EH-075BOX	220-240V/1Ph/50Hz; 208-230V/1Ph/60Hz	7.5

NOTES:

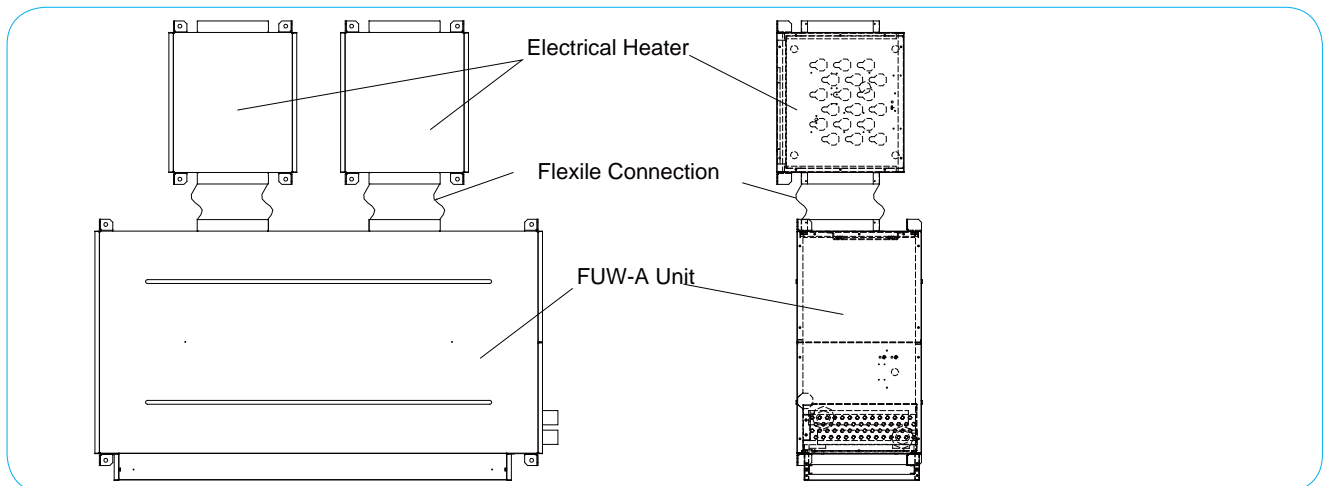
EACH HEATER BOX CAN ONLY BE USED FOR ONE AIR DISCHARGE DUCT.

- 1) FUW015/20/025 - ONLY ONE HEATING BOX IS REQUIRED.
- 2) FUW030/035/040/050 - NEED TO SELECT TWO BOX, AND THE HEATING CAPACITY OF EACH BOX SHOULD BE REQUIRED TOTAL CAPACITY TO DIVIDE BY TWO.

Dimensions of electric heating box



Scheme of electric heating box Installation

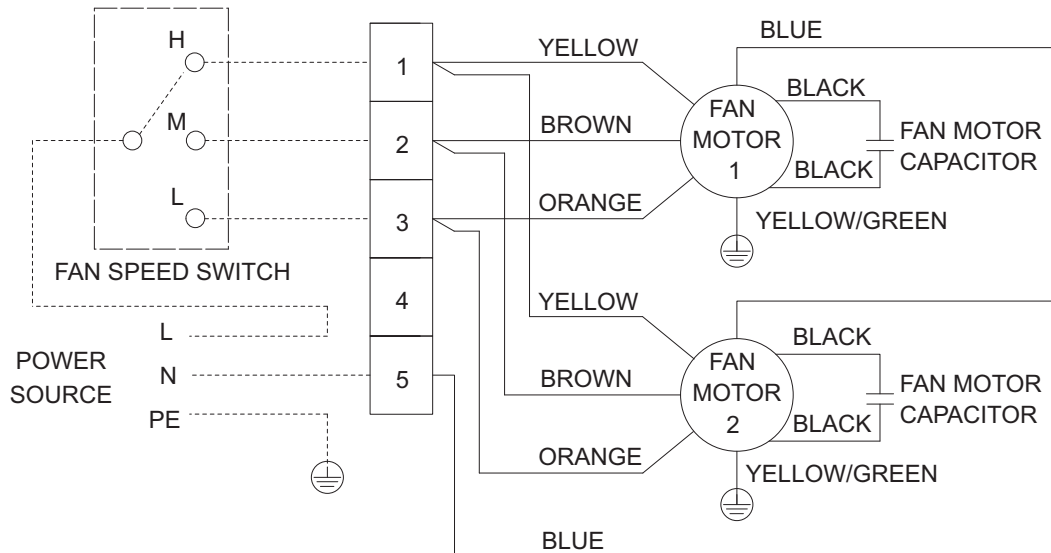


Wiring

Electrical wiring connection must be done according to the wiring diagram on the unit.
The unit must be GROUNDED to the earth system of the building.

All field wiring must be installed in accordance with the national wiring regulation and Fire Department regulation

MODEL: FWW200~1400VC
FWW200~1400AA

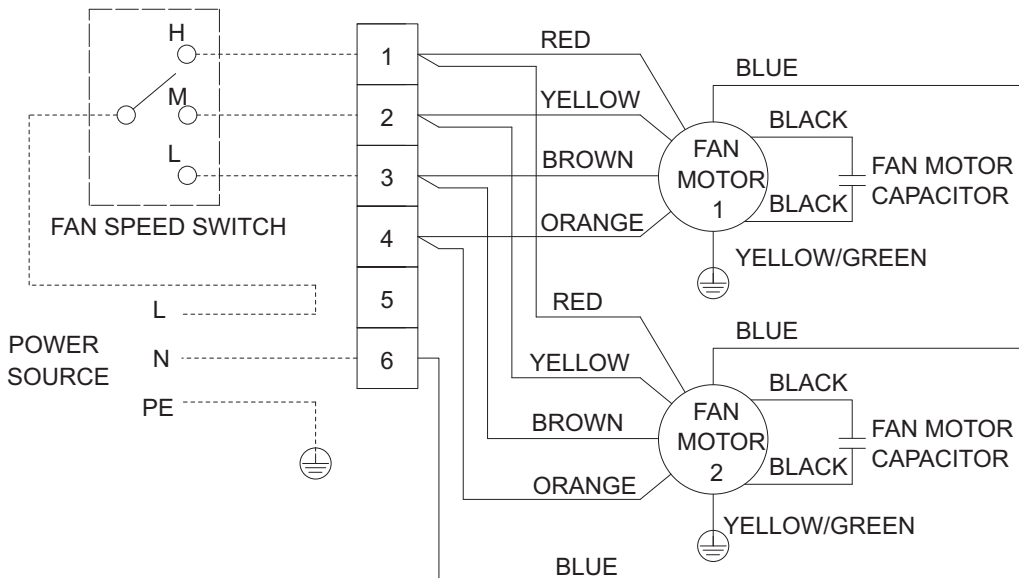


NOTE:

----- FIELD WIRING

FAN MOTOR2 APPLY TO 800~1400 UNITS.

MODEL: FWW200~1200C/F/H
FWW02~16DA

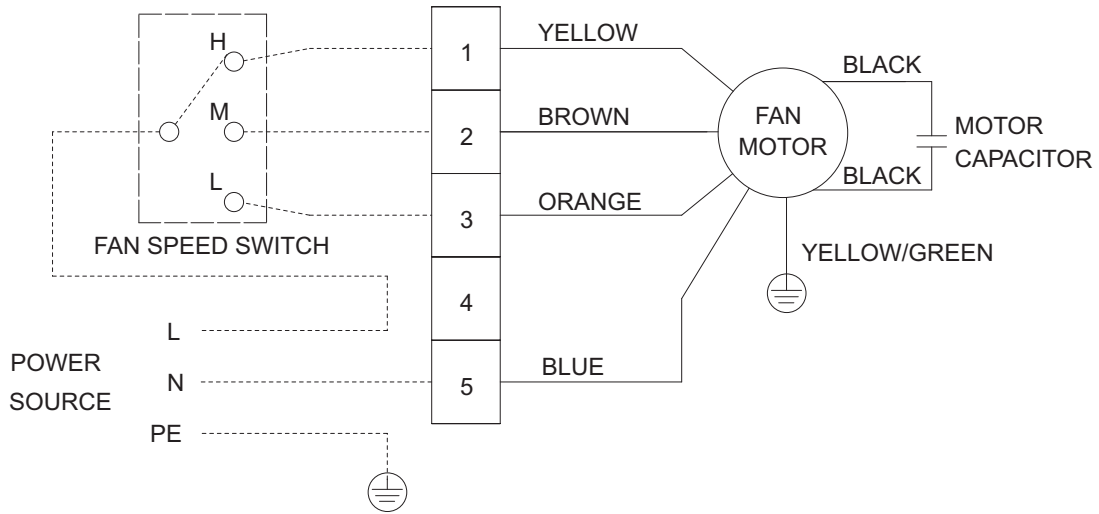


NOTE:

----- FIELD WIRING

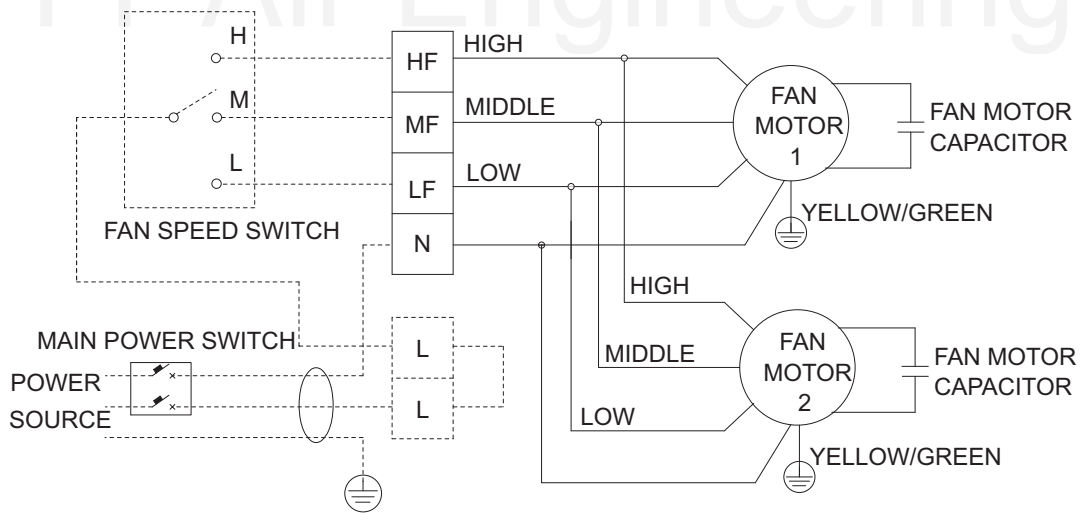
1. FAN MOTOR2 APPLY TO FWW 800~1200C/F/H UNITS
60Pa UNITS: (HIGH,MED,LOW) CONNECT TO (2,3,4)
80Pa UNITS: (HIGH,MED,LOW) CONNECT TO (1,2,3)
2. FAN MOTOR2 APPLY TO FWW 10~16DA UNITS
(HIGH,MED,LOW) CONNECT TO (1,2,3)

MODEL: FWW1400~1800C/F



NOTE:
 ----- FIELD WIRING

MODEL: FUW-A



NOTE:
 ----- FIELD WIRING FAN MOTOR2 APPLY TO FUW030A/035A/040A/050A UNITS.
 LF: FAN SPEED LOW
 MF: FAN SPEED MIDDLE
 HF: FAN SPEED HIGH

INSTALLATION

RECEIVING

All units leaving the factory have been inspected to ensure the shipment of high quality products and reasonable means are utilized to properly pack the fan coil units to protect them in transit.

Carefully inspect all shipments immediately upon delivery. When damage is visible, note this fact on the carrier's freight bill and request that the carrier send a representative to inspect the damage. This may be done by telephone or in person, but should always be confirmed in writing.

The shipment should be unpacked in the presence of the agent so that the damage or loss can be determined. The carrier's agent will make an inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

LOCATION

Before installation, please check the following:

There must be enough space for unit installation and maintenance. Please refer to the outline and dimensions and fig.1 for the minimum distance between the unit and obstacle.

In case of installation in free blow, the unit must be installed at a minimum height of 2.5m to avoid contact with the appliance.

Please ensure enough space for piping connection and electrical wiring.

Please make sure that the hanging rods can support weight of the unit.

INSTALLATION

The unit is designed for concealed ceiling installation.

There are holes on the top of the unit for hanging. Please refer to Fig.1. Fig.2 and Fig.3.

Make sure that the top of the unit is level.

Fig.1

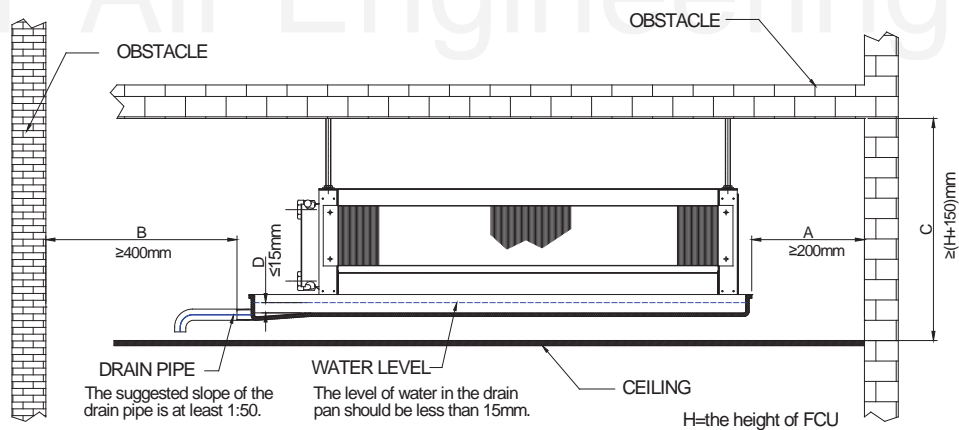


Fig.2

NOTE:

Dimension M and N was determined by air duct design, air duct should be fire-proof, refer to concerned country national and local regulations. Circulatory air pressure drop should be approximately equal to the External Static Pressure.

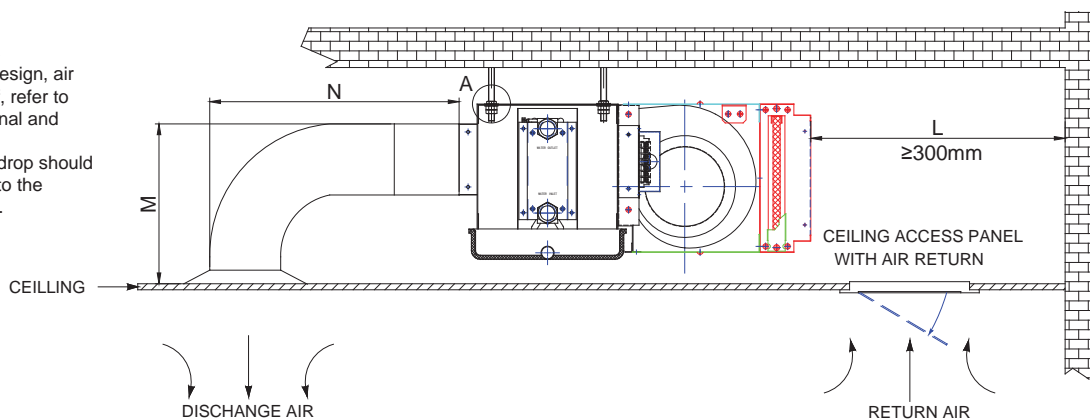
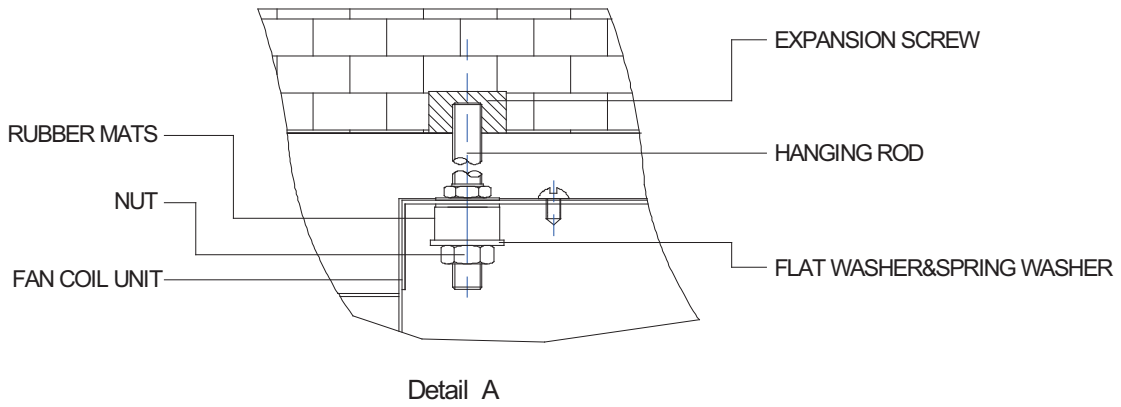


Fig.3 DETAIL A:



INSULATION

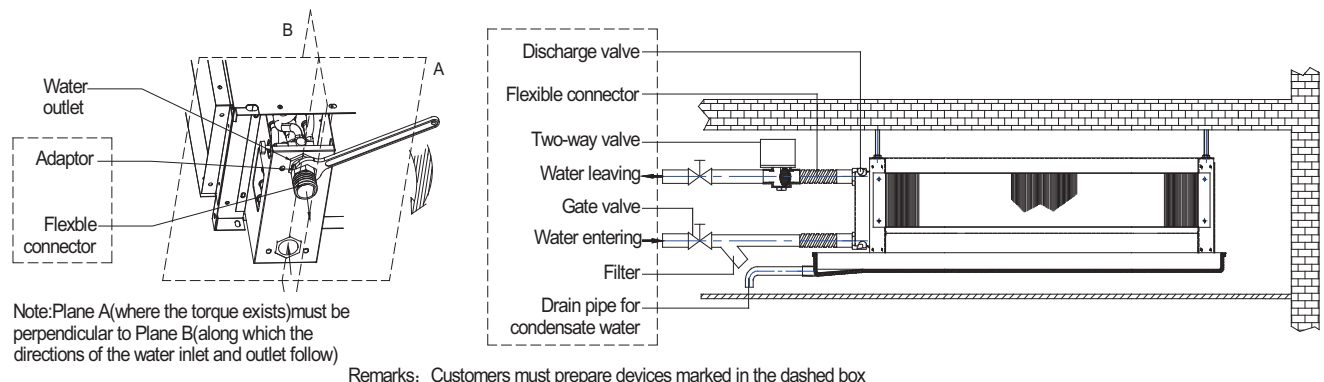
The insulation design and materials should be complying with local and national codes and regulations. Chilled water pipes and all parts on the pipes should be insulated. It is also necessary to insulate the air duct.

AIR DUCT CONNECTION

Circulatory air pressure drop should be within External Static Pressure.
Galvanized steel air ducts are suitable.
Make sure there is no leak of air.
Air duct should be fire-proof, refer to concerned country national and local regulations.

PIPE CONNECTION

Using suitable fittings as water pipe connections with reference to the outline and dimensions.
The water inlet is on the bottom while outlet on top.
The connection must be concealed with rubberized fabric to avoid leakage.
Drain pipe can be PVC or steel.
Water filter should be installed in the chiller water pump inlet and evaporator inlet pipes to prevent from block.
Use flexible connector tubes to connect the water entering and leaving pipes of the unit. Seal the joint with tape after connection. Keep the wrench near the water entering and leaving pipe during pipeline connection. Fasten the joints slowly at a constant speed. The torque is 110 N•m (11.2 kgf•m) at most. When tools with long arm of force are used, properly set the torque. An excessive torque can deform or even damage the copper pipe and cause leakage. The pipeline connection is shown in the following figure.



The suggested slope of the drain pipe is at least 1:50.

Preliminary softening treatment must be taken for water system, aimed to protecting plate exchanger from scaling. In addition, the unsoften water may be scaled on the pipeline, leading to increasing the water resistance, and the water flow and water pump will be impacted.

	Item	Base Value	Tendency	
			Corrosion	Scale Formation
Standard item	pH value (25°C)	6.5 ~ 8.0	○	○
	Conductivity (25°C)	μS/cm	< 800	○
	Cl ⁻	mg(Cl ⁻)/L	< 200	○
	SO ²⁻	mg(SO ²⁻)/L	< 200	○
	Acid consumption (pH=4.8)	mg(CaCO ₃)/L	< 100	○
	Full hardness	mg(CaCO ₃)/L	< 200	○
Reference item	Fe	mg(Fe)/L	< 1.0	○
	S ²⁻	mg(S ²⁻)/L	0	○
	NH ⁺	mg(NH ⁺)/L	< 1.0	○
	SO ₂	mg(SiO ₂)/L	< 50	○

Note: ○ indicates relevant factors that are inclined to corrosion or scale formation.

WIRING

Wiring connection must be done according to the wiring diagram on the unit.

The unit must be **GROUND**ED well.

An appropriate strain relief device must be used to attach the power wires to the terminal box.

A 5/8" hole is designed on the terminal box for field installation of the strain relief device.

Field wiring must be complied with the national security regulations.

A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with the relevant local and national legislation.

Unit cannot be parallel connected for electric wiring, or it may cause motor burning.

When unit fan motor stops running and continuous chilled water supply for long may cause unit condensation.

Please install electric valve and thermostat to ensure properly working.

OPERATING LIMITS

Items	OPERATING LIMITS
Water Circuit Maximum water-side pressure Minimum entering water temperature Maximum entering water temperature Recommend operation range	1.6 MPa 5°C (cooling) 70°C (heating) 16~36°C(cooling) 10~30°C(heating) humidity(<90%)
Power supply Operating voltage limits Operating frequency limits	± 10% Volt ± 1 Hz

VALVE KIT

The valve kit is applied for 2-pipe system.

For unit coupled with valve kit, the drain pan should extend 200mm based on standard one.

Pay attention to the connecting direction (L/R) of valve kit when place order.

Parts

The kit consists of (refer structure figure 0 ~ figure 2):

- **2/3 way valve body** is made of brass, maximum working pressure 1.6MPa.
- **Electric actuator** has the following specifications:
 - Power supply: 220V±10%/50Hz (±2Hz)
 - Activation: ON/OFF
- **Hydraulic kit** for the installation of the valve on the heat exchanger, complete with 2 ball valves for adjusting the water flow and for closing the water circuit when perform maintenance to the unit.
- **Y-strainer** protects unit from impurity, increases the service life and insulating valves.

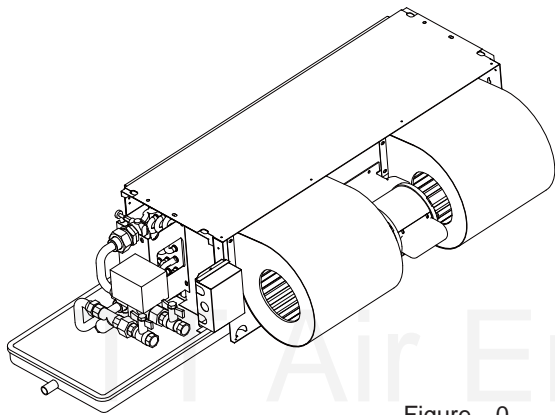


Figure 0

All parts of 2-way valve kit are indicated in the figure 1. (For right pipe connection unit.)

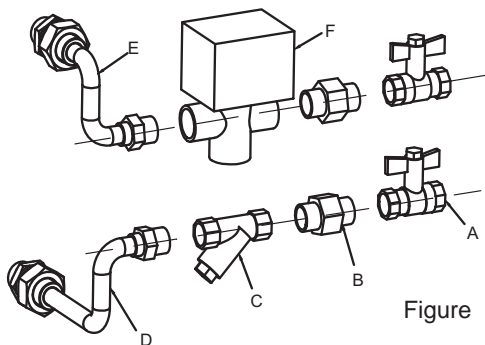


Figure 1

- A Ball valve
- B Brass connector
- C Y-strainer
- D Water inlet pipe
- E Water outlet pipe
- F 2-way valve

All parts of 3-way valve kit are indicated in the figure 2. (For right pipe connection unit.)

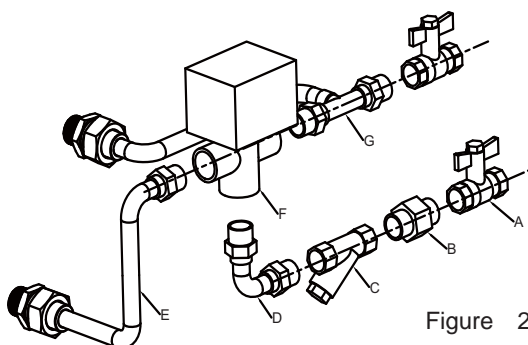


Figure 2

- A Ball valve
- B Brass connector
- C Y-strainer
- D Connector pipe
- E Water inlet pipe
- F 3-way valve
- G Water outlet pipe

Installation

1. Install the 2-way valve kit as indicated in the pictures of figure 3. (For right pipe connection unit.) As shown as detail A, firstly take apart connector, then install ① to unit with necessary sealing material. Fix ② between ① and ③. At last tighten ③, make sure all of connectors are sealed.
2. Install the 3-way valve kit as indicated in the pictures of figure 4. (For right pipe connection unit.) Detail is as same as 2-way valve unit.
3. The insulation and pipe connection should refer to the details of unit installation.

⚠ The valve kit has been pre-assembled for easy installation.

- Where needed the connections are pre-coated with sealing material.
- The connections are not tightened for easy adjustment.
- After determining the final position of the valve kit, tighten all connections to obtain water tightness.

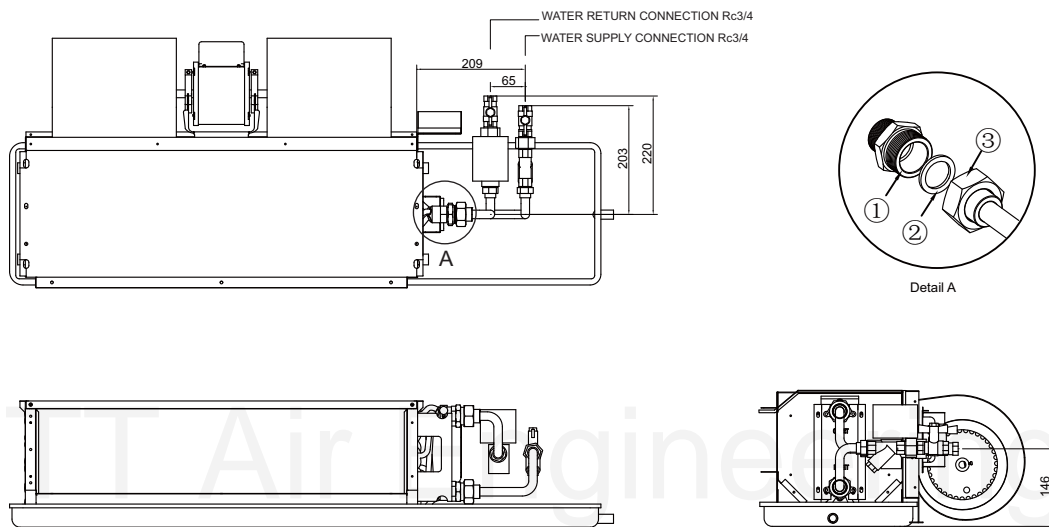


Figure 3 2-Way Valve

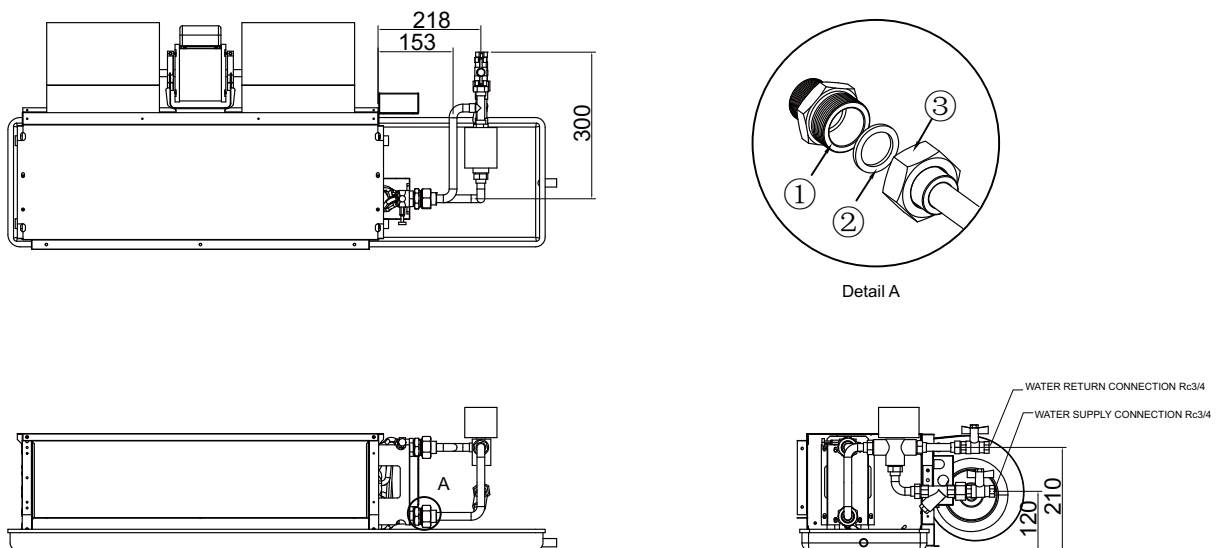


Figure 4 3-Way Valve

4. The flow resistance of the connecting valve/hydraulic kit assembly is obtained from the following formula:

$$\Delta P_w = (Q_w/100K_v)^2$$

P_w is the flow resistance (Pa)

Q_w is the water flow rate (m³/h)

K_v is the flow rate identified in the table

Valve Model	DN	Connction Type	Valve Type	K_v	Shut-off Pressure Difference (MPa)
MC-FCV3335G	20	Rc3/4"	3-way Valve	3.4	0.18
MC-FCV2334G	20	Rc3/4"	2-way Valve	3.0	0.18

5. Refer to the wiring diagram of the appropriate controller. For connection with the DAIKIN controller, position the water temperature sensor into the appropriate position. Refer to the dedicated controller installation and operation manual.

TT Air Engineering

Guide Specifications For FWW unit

Unit Description

Factory-assembled, horizontal, galvanized casing, ceiling ducted fan coil unit is complete with water coil, fans, motors, drain pan, filters and all required wiring, with full access to internal components.

Quality Assurance

Each coil is factory tested for leakage at 2.0MPa air pressure with coil submerged in water. Each unit and its moving components (fans and motors) are factory computer-tested and recorded after unit is complete and before it is packed.

Component Specifications

1.Casing:

Construction is galvanized steel, lined on the inside with PE thermal and acoustical insulation. Return air plenum is lined with PE foam and has a collar for return duct connection. Supply duct connection also has a collar. Removable bottom panel is provided for access to the fan/motor assembly.

2. Coil:

Standard unit is equipped with a 3-rows, 4-rows or 3+1 rows coil for installation in a 2-pipe or 4-pipe system. Coil has seamless copper tubes, slit type fins hydrophilic aluminum bonded to the tubes by mechanical expansion. Each coil has a manual air vent and two water pipe connections with a maximum working pressure of 1.6MPa.

3. Fan:

Direct-driven centrifugal fan wheel has forward-curved blades which are statically and dynamically balanced. The fan housing and blades are constructed of high quality hot-galvanized steel.

4.Motor:

Fan motor is 3-speed, permanent split-capacitor with ball type bearing and build-in automatic reset thermal overload protection.

5. Drain pan

The drain pan plate body is constructed of cold-rolled steel by way of integral cupping. Both its sides are sprayed with plastic coating. And its outer wall is lined with PE foam and high quality adhesive by way of integral adhering and pressing. It extends under the full length and width of the coils and is pitched for positive drainage with features of high anti-corrosion, anti-condensation and high fire reluctance.

6. Filter

Filter is with washable type nylon media in 8mm thickness aluminum frame.