

TOPAIRE

AIR CONDITIONER



Central Station Air Handling Units

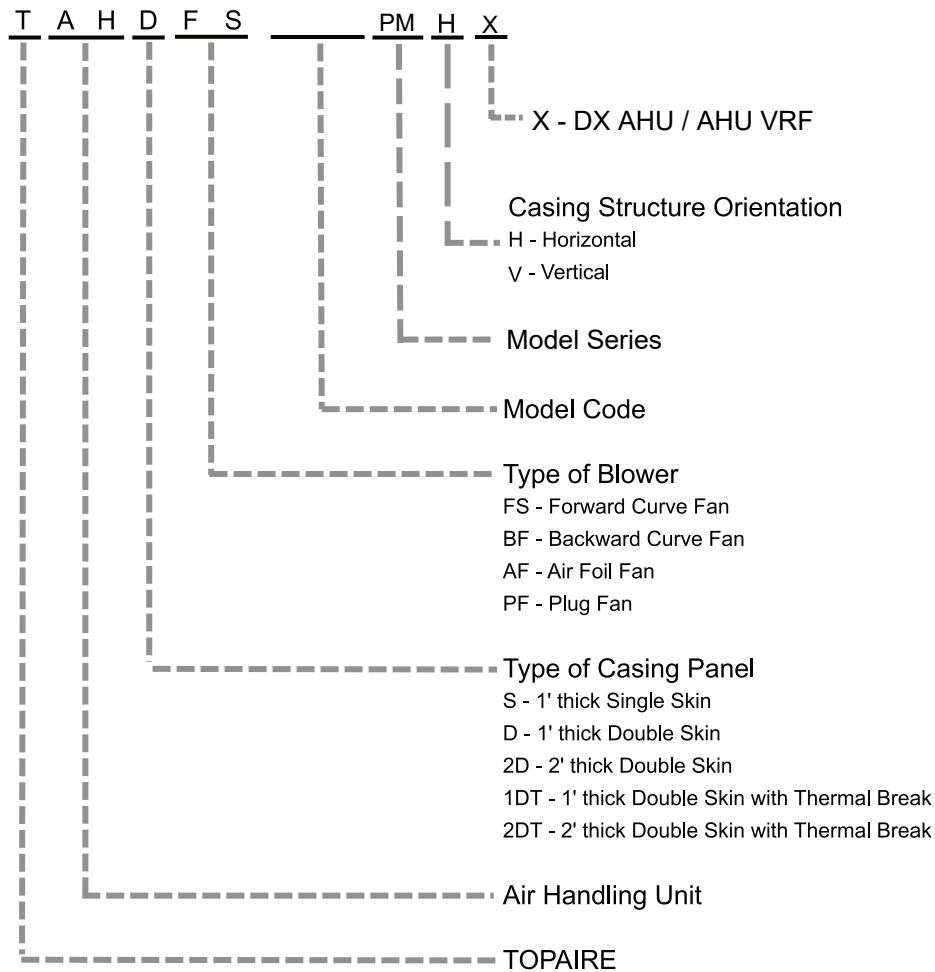
Air Volume: 1,000 to 36,000 CFM

 Innovation Beyond Comfort

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NOMENCLATURE



TOPAIRE AIR HANDLING UNIT

FEATURES

This range of Air Handling Units have an air volume range from 1000 to 36,000 cfm (1700 to 61,000 m³/hr) for fix construction Central Station Air Handling Units, and have an air volume range from 1000 to 56000 cfm (1700 to 95000 m³/hr) for modular Central Station Air Handling Units. The product features an extruded aluminium frame profile that provides a high level of unit design and application flexibility necessary to meet the rising demands for improved Indoor Air Quality. The unit is constructed using rigid nylon corners and double skin polyurethane foam insulated panels. Internal joints are insulated with rigid PVC strip and PE foam to provide air-tight casing and minimize cold bridging.

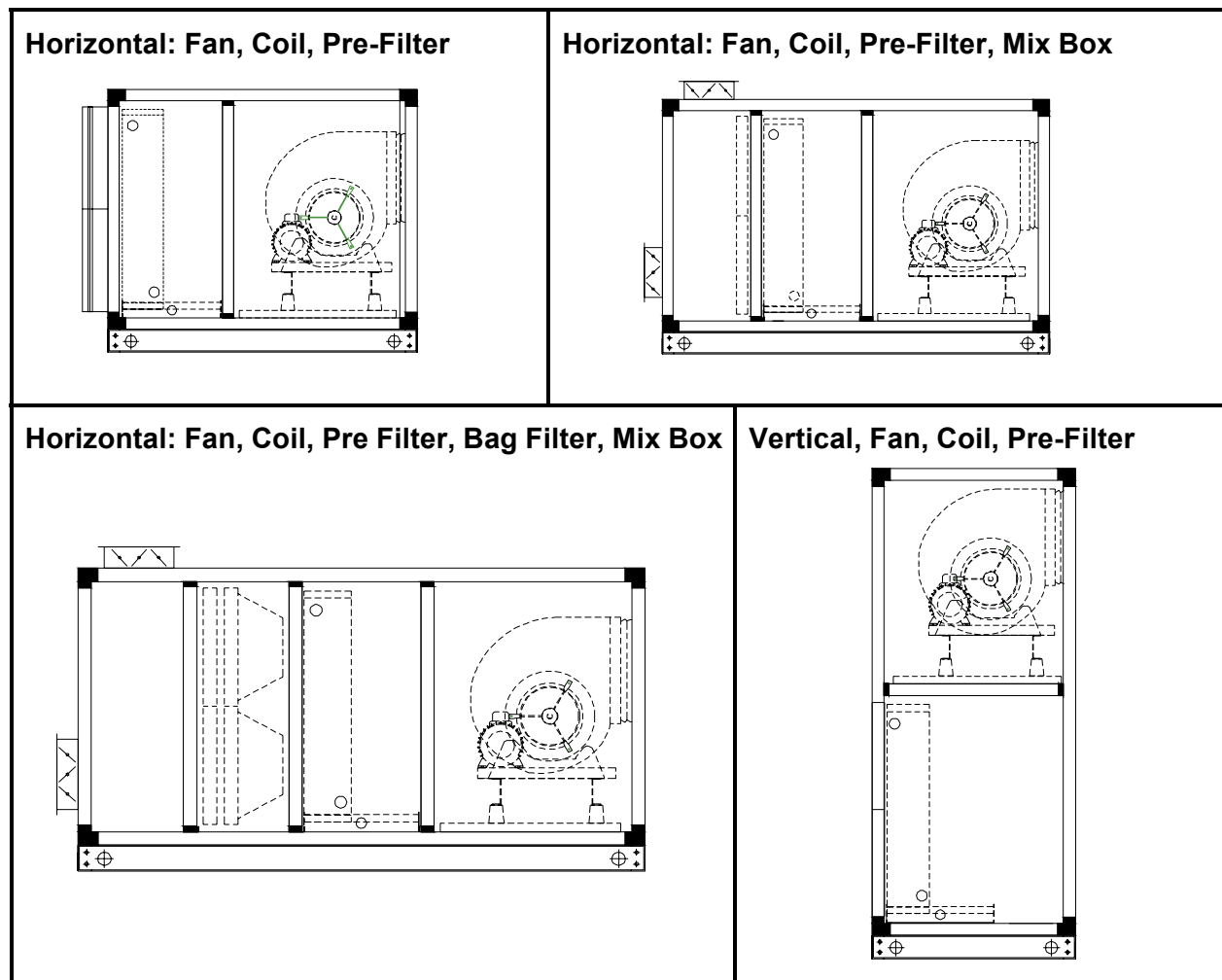
This range is available in horizontal and vertical construction.



MEETING IAQ DESIGN REQUIREMENT

Double Skin "Sandwich" panel construction has smooth inner surfaces for easy and effective cleaning to reduce risk of dirt and bacteria accumulation. The sandwich panels are injected with Polyurethane Foam of 40kg/m³ density. Panel of nominal 25mm thickness and 50mm thickness are available. The external surface of all panels with 0.5mm high strength pre-painted and 0.5mm galvanized steel (GI) as internal skin.

STANDARD UNIT CONFIGURATION



CASING PERFORMANCE

Excellent Air Tightness

The casing is constructed using rigid nylon corners, double skin polyurethane foam insulated panels, aluminum frame and sealing strips. New casing structure of the unit avoids any of the interior support member is exposed and ensures smooth internal surface, easy for maintenance and effective cleaning to reduce risk of dirt and bacteria accumulation.

New type of sealing strips between the frame and the panels, and careful sealing design to all panels ensures excellent air tightness of the casing structure and minimize air leakage.

Thermal Bridge Free

AHU unique frame design enables interpost covered by rigid PVC insulator to prevent exposing in treated air, so the thermal bridge at post is avoided. Each junction is subjected to special heat insulation treatment to prevent the thermal bridge effect.

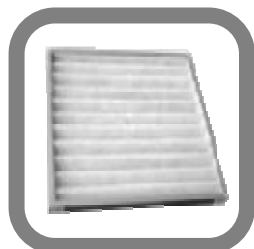
Optimal Thermal Insulation

The unit wall is made up by minimum 50mm double skin polyurethane foam (PU) insulation panel with 0.5mm high strength powder coated steel as external skin and 0.5mm galvanized steel (GI) as internal skin. The sandwich panels are injected with PU foam of 40kg/m³ density with light weight, good rigidity and thermal conductivity.

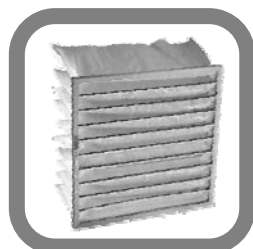
SPECIFICATION

YOUR CHOICE OF FILTRATION

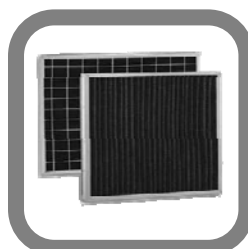
Air filtration is an important component to achieve an acceptable indoor air quality. The structure of filters are stable and firm, high strength and intensity, easy changing and the filters efficiency is up to 95%. Various options of filter type, filter media and filter efficiency are available to meet the different air quality requirement.



High Efficiency Filter



Bag Filter



Carbon Filter



HEPA Filter

YOUR CHOICE OF COILS

There are three typical types of coils: chilled water coils, hot water coils and steam heater coils. Coils are consisted of copper-tubes and aluminum fins. The fins are design with slits for better heat transfer efficiency and moisture carry-over limit performance.

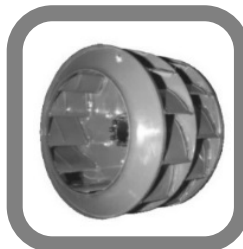
Three-way pitch drain pan design discharges condensate quickly and prevents microbial growth. Condensate pans of 304 stainless steel material are also available as an option.

YOUR CHOICE OF BLOWER

The fan impeller and pulley are statically and dynamically balanced, and the whole fan is calibrated through the operational vibration testing, making the fan to operate stably and smoothly. With the fan and motor assembly mounted on a common base with shock absorber and the fan outlet isolated from the casing by a flexible connection and completely separated from moving parts, the vibration is effectively isolated. Moreover, the forward or backward impeller may be selected according to the air pressure and volume. Blower shall be coupled with pulley and motors.



Forward Fan (FS)



Airfoil Fan (AF)



Direct Driven DIDW Fan



Direct Driven Plenum Fan



EC Fan

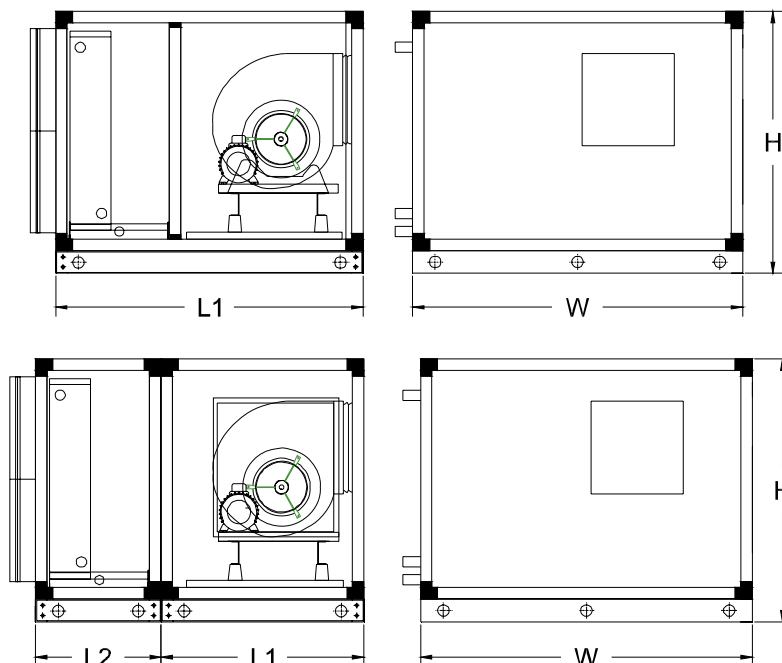
OPTIONAL

A wide choice of accessory sections – diffuser sections, mixing box sections, face and bypass damper sections, humidifier sections, reheating sections and heat recovery sections are available to meet the required air conditions application needs. For outdoor installation, applications in corrosive or hazardous atmosphere, other material options are available. Special motor voltages and dual speed motors can be supplied. Frequency inverter drive for Variable Air Volume applications is also offered as an option.

PHYSICAL DIMENSION

HORIZONTAL TYPE (H1)

1.) Fan, Coil, Pre-Filter



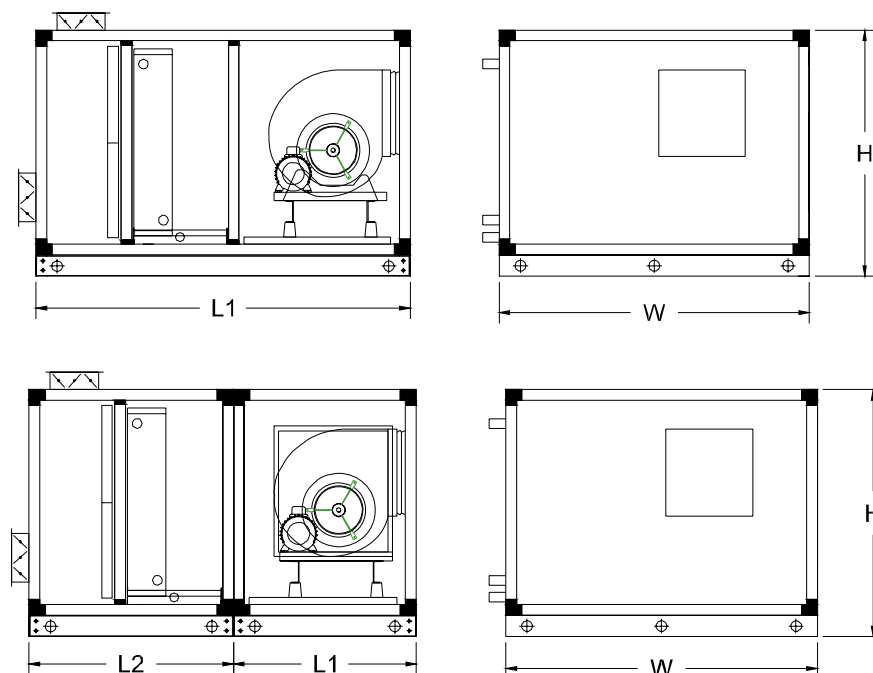
Model Code	Air Flow CFM	Coil Size		Horizontal Unit (Fan (BF/AF/FC) + Coil + Pre-Filter), H1								Horizontal Unit (Fan (EC) + Coil + Pre-Filter), H1								Horizontal Unit (Fan (PF) + Coil + Pre-Filter), H1							
				25mm Casing				50mm Casing				25mm Casing				50mm Casing				25mm Casing				50mm Casing			
		TH	FL	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)
AH012	1200	12	24	1040	-	940	740	1050	-	950	750	1640	-	940	740	1650	-	950	750	1340	-	940	740	1350	-	950	750
AH018	1800	14	30	1040	-	1040	840	1050	-	1050	850	1640	-	1040	840	1650	-	1050	850	1340	-	1040	840	1350	-	1050	850
AH022	2200	18	32	1140	-	1140	940	1150	-	1150	950	1640	-	1140	940	1650	-	1150	950	1440	-	1140	940	1450	-	1150	950
AH030	3000	18	38	1140	-	1240	940	1150	-	1250	950	1640	-	1240	940	1650	-	1250	950	1440	-	1240	940	1450	-	1250	950
AH036	3600	24	36	1140	-	1240	1140	1150	-	1250	1150	1640	-	1240	1140	1650	-	1250	1150	1440	-	1240	1140	1450	-	1250	1150
AH042	4200	24	41	1240	-	1340	1140	1250	-	1350	1150	1640	-	1340	1140	1650	-	1350	1150	1640	-	1340	1140	1650	-	1350	1150
AH048	4800	24	45	1340	-	1440	1140	1350	-	1450	1150	1640	-	1440	1140	1650	-	1450	1150	1640	-	1440	1140	1650	-	1450	1150
AH058	5800	30	45	1340	-	1440	1340	1350	-	1450	1350	1640	-	1440	1340	1650	-	1450	1350	1740	-	1440	1340	1750	-	1450	1350
AH064	6400	30	49	1340	-	1540	1340	1350	-	1550	1350	1640	-	1540	1340	1650	-	1550	1350	1740	-	1540	1340	1750	-	1550	1350
AH075	7500	34	52	1340	-	1640	1440	1350	-	1650	1450	1640	-	1640	1440	1650	-	1650	1450	1840	-	1640	1440	1850	-	1650	1450
AH090	9000	36	57	1440	-	1740	1540	1450	-	1750	1550	1640	-	1740	1540	1650	-	1750	1550	1840	-	1740	1540	1850	-	1750	1550
AH100	10000	40	60	1440	-	1840	1640	1450	-	1850	1650	1640	-	1840	1640	1650	-	1850	1650	1940	-	1840	1640	1950	-	1850	1650
AH120	12000	40	68	1540	-	2040	1640	1550	-	2050	1650	1640	-	2040	1640	1650	-	2050	1650	2040	-	2040	1640	2050	-	2050	1650
AH135	13500	46	68	1540	-	2040	1840	1550	-	2050	1850	1640	-	2040	1840	1650	-	2050	1850	2040	-	2040	1840	2050	-	2050	1850
AH150	15000	52	68	1640	-	2040	2040	1650	-	2050	2050	1640	-	2040	2040	1650	-	2050	2050	2040	-	2040	2040	2050	-	2050	2050
AH165	16500	56	68	1640	-	2040	2140	1650	-	2050	2150	1640	-	2040	2140	1650	-	2050	2150	2240	-	2040	2140	2250	-	2050	2150
AH180	18000	62	68	1840	-	2040	2340	1850	-	2050	2350	1640	-	2040	2340	1650	-	2050	2350	2240	-	2040	2340	2250	-	2050	2350
AH195	19500	62	72	1840	-	2140	2340	1850	-	2150	2350	1640	-	2140	2340	1650	-	2150	2350	2040	440	2140	2340	2050	450	2150	2350
AH210	21000	62	80	1840	-	2340	2340	1850	-	2350	2350	1640	-	2340	2340	1650	-	2350	2350	2040	440	2340	2340	2050	450	2350	2350
AH240	24000	62	88	1940	-	2540	2340	1950	-	2550	2350	1640	-	2540	2340	1650	-	2550	2350	2240	440	2540	2340	2250	450	2550	2350
AH270	27000	62	100	1940	-	2840	2340	1950	-	2850	2350	1640	-	2840	2340	1650	-	2850	2350	2240	440	2840	2340	2250	450	2850	2350
AH300	30000	60	110	2140	-	3140	2340	2150	-	3150	2350	1640	-	3140	2340	1650	-	3150	2350	2240	440	3140	2340	2250	450	3150	2350
AH360	36000	60	134	1940	440	3740	2340	1950	450	3750	2350	1640	-	3740	2340	1650	-	3750	2350	2240	440	3740	2340	2250	450	3750	2350

Notes: 1) Height (H) includes the unit base.
2) R/H motor and R/H piping shown.
3) Unit AH360 available in two sections.

PHYSICAL DIMENSION

HORIZONTAL TYPE (H2)

2.) Fan, Coil, Pre-Filter, Mix Box



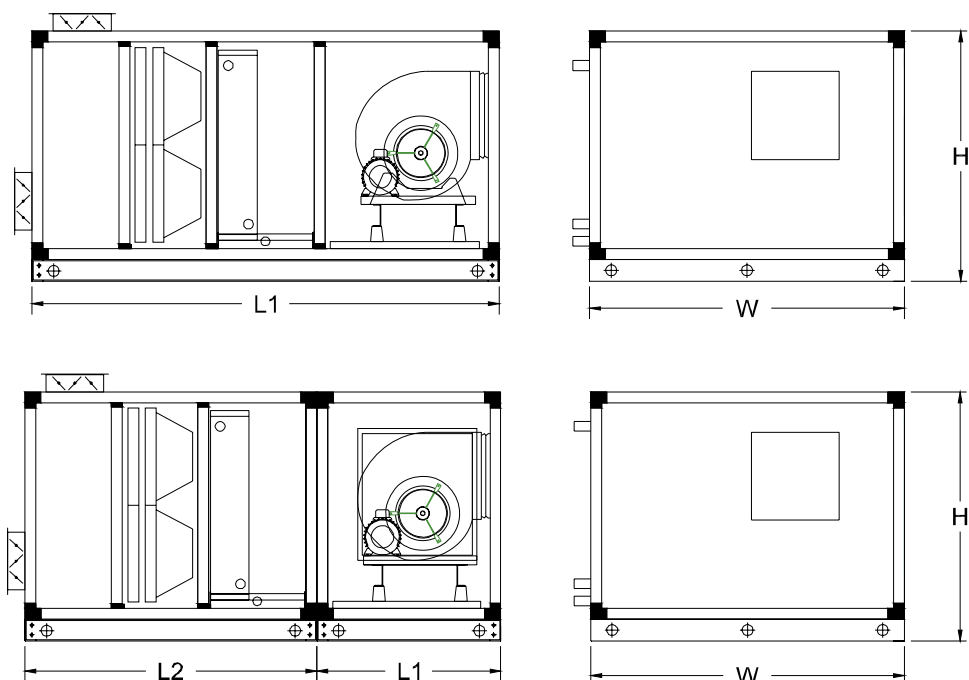
Model Code	Air Flow CFM	Coil Size		Horizontal Unit (Fan (BF/AF/FC) + Coil + Pre-Filter), H2								Horizontal Unit (Fan (EC) + Coil + Pre-Filter), H2								Horizontal Unit (Fan (PF) + Coil + Pre-Filter), H2							
				25mm Casing				50mm Casing				25mm Casing				50mm Casing				25mm Casing				50mm Casing			
		TH	FL	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)
AH012	1200	12	24	1340	-	940	740	1350	-	950	750	1940	-	940	740	1950	-	950	750	1640	-	940	740	1650	-	950	750
AH018	1800	14	30	1340	-	1040	840	1350	-	1050	850	1940	-	1040	840	1950	-	1050	850	1640	-	1040	840	1650	-	1050	850
AH022	2200	18	32	1440	-	1140	940	1450	-	1150	950	1940	-	1140	940	1950	-	1150	950	1740	-	1140	940	1750	-	1150	950
AH030	3000	18	38	1440	-	1240	940	1450	-	1250	950	1940	-	1240	940	1950	-	1250	950	1740	-	1240	940	1750	-	1250	950
AH036	3600	24	36	1540	-	1240	1140	1550	-	1250	1150	1940	-	1240	1140	1950	-	1250	1150	1840	-	1240	1140	1850	-	1250	1150
AH042	4200	24	41	1640	-	1340	1140	1650	-	1350	1150	1940	-	1340	1140	1950	-	1350	1150	2040	-	1340	1140	2050	-	1350	1150
AH048	4800	24	45	1740	-	1440	1140	1750	-	1450	1150	1940	-	1440	1140	1950	-	1450	1150	2040	-	1440	1140	2050	-	1450	1150
AH058	5800	30	45	1840	-	1440	1340	1850	-	1450	1350	1940	-	1440	1340	1950	-	1450	1350	2240	-	1440	1340	2250	-	1450	1350
AH064	6400	30	49	1840	-	1540	1340	1850	-	1550	1350	1940	-	1540	1340	1950	-	1550	1350	2240	-	1540	1340	2250	-	1550	1350
AH075	7500	34	52	1840	-	1640	1440	1850	-	1650	1450	1940	-	1640	1440	1950	-	1650	1450	2340	-	1640	1440	2350	-	1650	1450
AH090	9000	36	57	1940	-	1740	1540	1950	-	1750	1550	1940	-	1740	1540	1950	-	1750	1550	2340	-	1740	1540	2350	-	1750	1550
AH100	10000	40	60	1940	-	1840	1640	1950	-	1850	1650	1940	-	1840	1640	1950	-	1850	1650	2440	-	1840	1640	2450	-	1850	1650
AH120	12000	40	68	2040	-	2040	1640	2050	-	2050	1650	1940	-	2040	1640	1950	-	2050	1650	2540	-	2040	1640	2550	-	2050	1650
AH135	13500	46	68	2140	-	2040	1840	2150	-	2050	1850	1940	-	2040	1840	1950	-	2050	1850	2640	-	2040	1840	2650	-	2050	1850
AH150	15000	52	68	2340	-	2040	2040	2350	-	2050	2050	1940	-	2040	2040	1950	-	2050	2050	2740	-	2040	2040	2750	-	2050	2050
AH165	16500	56	68	2340	-	2040	2140	2350	-	2050	2150	1940	-	2040	2140	1950	-	2050	2150	2940	-	2040	2140	2950	-	2050	2150
AH180	18000	62	68	2590	-	2040	2340	2600	-	2050	2350	1940	-	2040	2340	1950	-	2050	2350	2990	-	2040	2340	3000	-	2050	2350
AH195	19500	62	72	1340	1140	2140	2340	1350	1150	2150	2350	1940	-	2140	2340	1950	-	2150	2350	2040	1140	2140	2340	2050	1150	2150	2350
AH210	21000	62	80	1340	1140	2340	2340	1350	1150	2350	2350	1940	-	2340	2340	1950	-	2350	2350	2040	1140	2340	2340	2050	1150	2350	2350
AH240	24000	62	88	1440	1140	2540	2340	1450	1150	2550	2350	1940	-	2540	2340	1950	-	2550	2350	2240	1140	2540	2340	2250	1150	2550	2350
AH270	27000	62	100	1440	1140	2840	2340	1450	1150	2850	2350	1940	-	2840	2340	1950	-	2850	2350	2240	1140	2840	2340	2250	1150	2850	2350
AH300	30000	60	110	1640	1140	3140	2340	1650	1150	3150	2350	1940	-	3140	2340	1950	-	3150	2350	2240	1140	3140	2340	2250	1150	3150	2350
AH360	36000	60	134	1840	1140	3740	2340	1850	1150	3750	2350	1940	-	3740	2340	1950	-	3750	2350	2240	1140	3740	2340	2250	1150	3750	2350

Notes: 1) Height (H) includes the unit base.
2) R/H motor and R/H piping shown.
3) Unit AH195 to AH360 available in two sections.

PHYSICAL DIMENSION

HORIZONTAL TYPE (H3)

3.) Fan, Coil, Pre Filter, Bag Filter, Mix Box



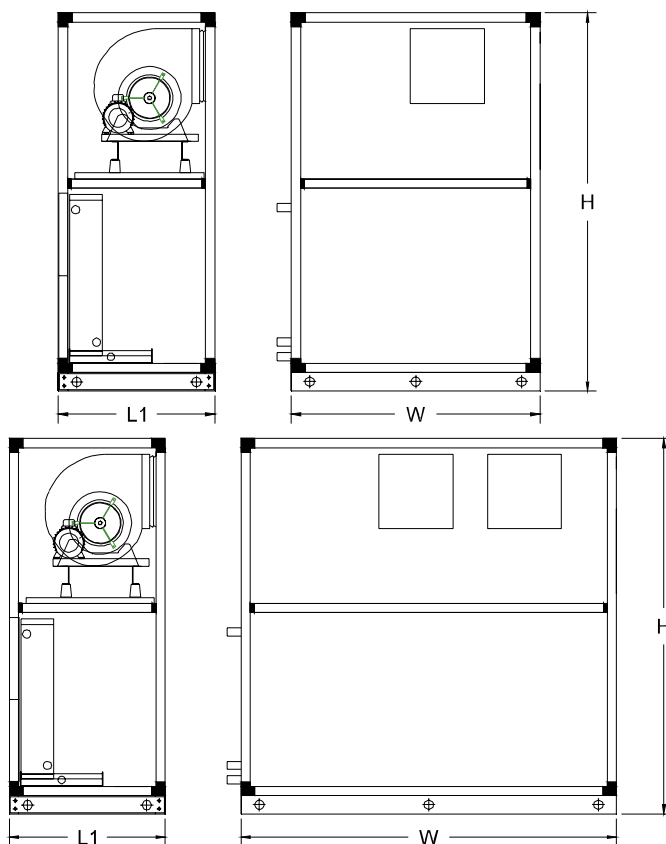
Model Code	Air Flow CFM	Coil Size		Horizontal Unit (Fan (BF/AF/FC) + Coil + Pre-Filter), H3								Horizontal Unit (Fan (EC) + Coil + Pre-Filter), H3								Horizontal Unit (Fan (PF) + Coil + Pre-Filter), H3							
				25mm Casing				50mm Casing				25mm Casing				50mm Casing				25mm Casing				50mm Casing			
		TH	FL	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)	L1 (mm)	L2 (mm)	W (mm)	H (mm)
AH012	1200	12	24	1740	-	940	740	1750	-	950	750	2240	-	940	740	2250	-	950	750	2040	-	940	740	2050	-	950	750
AH018	1800	14	30	1740	-	1040	840	1750	-	1050	850	2240	-	1040	840	2250	-	1050	850	2040	-	1040	840	2050	-	1050	850
AH022	2200	18	32	1840	-	1140	940	1850	-	1150	950	2240	-	1140	940	2250	-	1150	950	2140	-	1140	940	2150	-	1150	950
AH030	3000	18	38	1840	-	1240	940	1850	-	1250	950	2240	-	1240	940	2250	-	1250	950	2140	-	1240	940	2150	-	1250	950
AH036	3600	24	36	1940	-	1240	1140	1950	-	1250	1150	2240	-	1240	1140	2250	-	1250	1150	2240	-	1240	1140	2250	-	1250	1150
AH042	4200	24	41	2040	-	1340	1140	2050	-	1350	1150	2240	-	1340	1140	2250	-	1350	1150	2440	-	1340	1140	2450	-	1350	1150
AH048	4800	24	45	2140	-	1440	1140	2150	-	1450	1150	2240	-	1440	1140	2250	-	1450	1150	2440	-	1440	1140	2450	-	1450	1150
AH058	5800	30	45	2240	-	1440	1340	2250	-	1450	1350	2240	-	1440	1340	2250	-	1450	1350	2640	-	1440	1340	2650	-	1450	1350
AH064	6400	30	49	2240	-	1540	1340	2250	-	1550	1350	2240	-	1540	1340	2250	-	1550	1350	2640	-	1540	1340	2650	-	1550	1350
AH075	7500	34	52	2240	-	1640	1440	2250	-	1650	1450	2240	-	1640	1440	2250	-	1650	1450	2740	-	1640	1440	2750	-	1650	1450
AH090	9000	36	57	2340	-	1740	1540	2350	-	1750	1550	2240	-	1740	1540	2250	-	1750	1550	2740	-	1740	1540	2750	-	1750	1550
AH100	10000	40	60	2340	-	1840	1640	2350	-	1850	1650	2240	-	1840	1640	2250	-	1850	1650	2840	-	1840	1640	2850	-	1850	1650
AH120	12000	40	68	2440	-	2040	1640	2450	-	2050	1650	2240	-	2040	1640	2250	-	2050	1650	2940	-	2040	1640	2950	-	2050	1650
AH135	13500	46	68	2540	-	2040	1840	2550	-	2050	1850	2240	-	2040	1840	2250	-	2050	1850	3040	-	2040	1840	3050	-	2050	1850
AH150	15000	52	68	2740	-	2040	2040	2750	-	2050	2050	2240	-	2040	2040	2250	-	2050	2050	3140	-	2040	2040	3150	-	2050	2050
AH165	16500	56	68	2740	-	2040	2140	2750	-	2050	2150	2240	-	2040	2140	2250	-	2050	2150	3340	-	2040	2140	3350	-	2050	2150
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AH195	19500	62	72	1340	1540	2140	2340	1350	1550	2150	2350	2240	-	2140	2340	2250	-	2150	2350	2040	1540	2140	2340	2050	1550	2150	2350
AH210	21000	62	80	1340	1540	2340	2340	1350	1550	2350	2350	2240	-	2340	2340	2250	-	2350	2350	2040	1540	2340	2340	2050	1550	2350	2350
AH240	24000	62	88	1440	1540	2540	2340	1450	1550	2550	2350	2240	-	2540	2340	2250	-	2550	2350	2240	1540	2540	2340	2250	1550	2550	2350
AH270	27000	62	100	1440	1540	2840	2340	1450	1550	2850	2350	2240	-	2840	2340	2250	-	2850	2350	2240	1540	2840	2340	2250	1550	2850	2350
AH300	30000	60	110	1640	1540	3140	2340	1650	1550	3150	2350	2240	-	3140	2340	2250	-	3150	2350	2240	1540	3140	2340	2250	1550	3150	2350
AH360	36000	60	134	1840	1540	3740	2340	1850	1550	3750	2350	2240	-	3740	2340	2250	-	3750	2350	2240	1540	3740	2340	2250	1550	3750	2350

Notes: 1) Height (H) includes the unit base.
2) R/H motor and R/H piping shown.
3) Unit AH195 to AH360 available in two sections.

PHYSICAL DIMENSION

VERTICAL TYPE (V1)

Fan, Coil, Pre-Filter

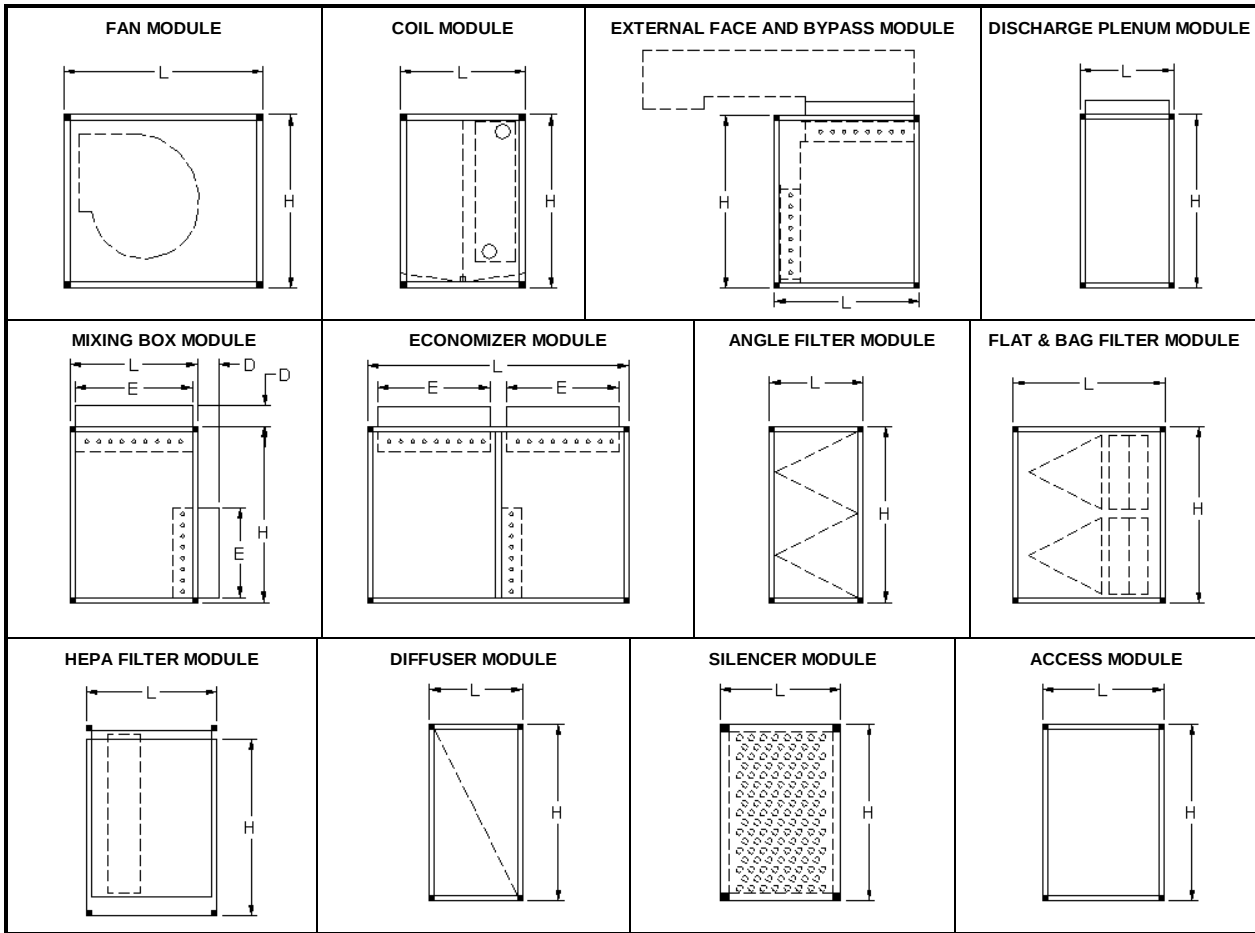


Model Code	Air Flow CFM	Coil Size TH FL		Vertical Unit (Fan + Coil + Pre-Filter), V1					
				25mm Casing			50mm Casing		
				L1 (mm)	W (mm)	H (mm)	L1 (mm)	W (mm)	H (mm)
AH012	1200	12	24	640	940	1340	650	950	1350
AH018	1800	14	30	640	1040	1540	650	1050	1550
AH022	2200	18	32	740	1140	1740	750	1150	1750
AH030	3000	18	38	740	1240	1740	750	1250	1750
AH036	3600	24	36	740	1240	1840	750	1250	1850
AH042	4200	24	41	840	1340	2040	850	1350	2050
AH048	4800	24	45	840	1440	2040	850	1450	2050
AH058	5800	30	45	940	1440	2340	950	1450	2350
AH064	6400	30	49	940	1540	2340	950	1550	2350
AH075	7500	34	52	940	1640	2440	950	1650	2450
AH090	9000	30	70	940	2040	2440	950	2050	2450
AH100	10000	30	76	940	2240	2440	950	2250	2450
AH120	12000	32	86	940	2440	2440	950	2450	2450
AH135	13500	34	94	940	2740	2440	950	2750	2450
AH150	15000	34	104	940	2940	2440	950	2950	2450
AH165	16500	34	114	940	3240	2440	950	3250	2450
AH180	18000	36	118	940	3540	2440	950	3550	2450
AH195	19500	34	128	1040	4040	2440	1050	4050	2450
AH210	21000	34	140	1040	4240	2440	1050	4250	2450
AH240	24000	34	166	1040	4540	2440	1050	4550	2450

Notes: 1) Height (H) includes the unit base.
2) R/H motor and R/H piping shown.
3) Unit AH090 to AH240 available in twin fans installation.

PHYSICAL DIMENSION (MODULAR)

DIMENSIONS FOR ACCESSORY SECTIONS



Model	Unit Height	Unit Width	Fan Section	Plenum Fan Section	EC Fan Section	Coil Section	External Face & Bypass Section	Mixing Box Section	Economiser Section	Flat & Bag Filter Section	HEPA Filter Section	Diffuser Section	Silencer Section	Access Section	Discharge Plenum Section
AH012	3	4.5	2.5	4	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH018	3.5	5	2.5	4	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH022	4	5.5	3	4.5	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH030	4	6	3	4.5	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH036	5	6	3	4.5	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH058	6	7	4	6	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH064	6	7.5	4	6	5.5	2.5	1.5	1.5	3	2.5	4	1.5	5	2.5	2
AH075	6.5	8	4	6.5	5.5	2.5	2	2	4	2.5	4	2	5	2.5	2.5
AH090	7	8.5	4.5	6.5	5.5	2.5	2	2	4	2.5	4	2	5	2.5	2.5
AH100	7.5	9	4.5	7	5.5	2.5	2	2	4	2.5	4	2	5	2.5	2.5
AH120	7.5	10	5	7.5	5.5	2.5	2	2	4	2.5	4	2	5	2.5	2.5
AH135	8.5	10	5	7.5	5.5	2.5	2.5	2.5	5	2.5	4	2	5	2.5	3
AH150	9.5	10	5.5	7.5	5.5	2.5	2.5	2.5	5	2.5	4	2	5	2.5	3
AH165	10	10	5.5	8.5	5.5	2.5	2.5	2.5	5	2.5	4	2	5	2.5	3
AH180	11	10	6.5	8.5	5.5	2.5	2.5	2.5	5	2.5	4	2	5	2.5	3
AH195	11	10.5	6.5	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH210	11	11.5	6.5	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH240	11	12.5	7	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH270	11	14	7	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH300	11	15.5	8	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH360	11	18.5	8	8.5	5.5	2.5	2.5	2.5	5	2.5	4	3	5	2.5	3
AH420	11	20	10	10	6	3	7	7	14	3	5	5	5	3	7
AH520	11	21	10	11	6	8	8	8	16	3	5	5	5	3	8

Notes: 1) To calculate actual unit height, **1 Module = 7 7/8" [200mm]**

Unit base = 4" [100mm]

eg. 2" Casing For Model 12, Unit Height (H) = (4 x 7 7/8"[200mm]) + 2"[50mm] + 4"[100mm] = 37 1/2"[950mm] (includes unit base)

For Model 210, Unit Height (H) = (10 x 7 7/8"[200mm]) + 2"[50mm] + 4 1/2"[115mm] = 85 1/8"[2165mm] (includes unit base)

2) To calculate actual unit width and length, **1 Module = 7 7/8" [200mm]**

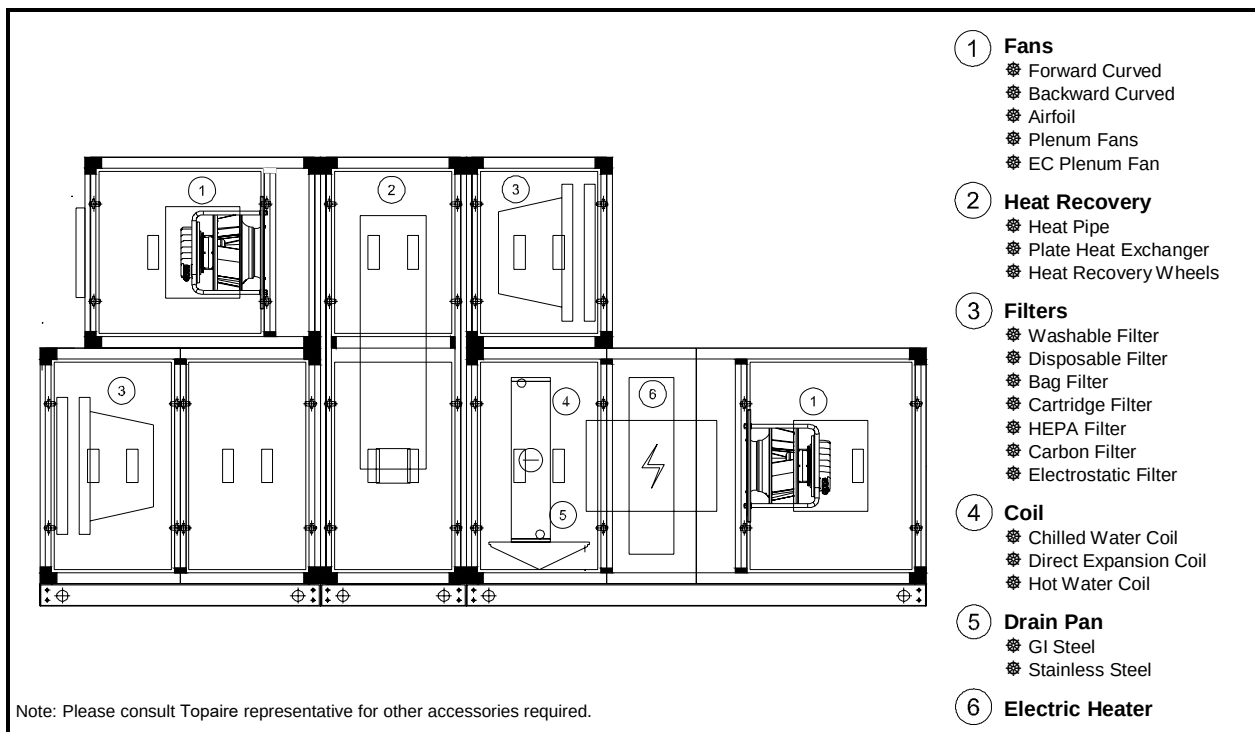
2" Casing, For all Models, Unit Width (W) = (4 x 7 7/8"[200mm]) + 2"[50mm] = 33 1/2"[850mm]

3) Maximum shipping length, if:-

i) Unit Width <= 10M, Lmax = 15M

ii) Unit Width > 10M, Lmax = 10M

STANDARD MODULAR UNIT CONFIGURATION



GUIDE SPECIFICATION

This specification describes requirements for a non-modular central air handling unit. The system shall be designed to achieve required air conditions for various application such as commercial and industrial premises, healthcare premises, hotel, etc.

DESIGN REQUIREMENTS

(A) Complete Unit Requirement

- The unit is designed with 25mm / 50mmTB type and Horizontal/Vertical orientation
- The unit is designed for indoor application and to be installed at ____meter altitude (or 0 meter as default).
- The unit shall be supplied with ____/____/____ (Volt/Phase/Hz) electrical power supply.
- The system is designed to supply ____CFM air volume and ____ in.wg supply fan ESP.
- Best model to be selected based on calculated coil velocity and filter face velocity.

(B) Filter Assembly Requirement

- The unit shall be supplied with 2" disposable / 2" washable primary filter and optional 12" rigid / 15" bag secondary filter.

(C) Chilled Water (CW) Coil System

- The system shall have a total cooling capacity of ____ MBH / ____ kW and a sensible cooling capacity of ____ MBH / ____ kW based on an entering air temperature of ____°F/____°C DB and ____°F/____°C WB.
- The system shall be supplied with chilled water with an entering water temperature of ____°F/____°C and leaving water temperature ____°F/____°C.
- The coil shall be supplied with 1/2" / 5/8" tube, aluminium/copper/hydrophilic fin material, standard steel/copper header and MBSP/MNPT/Flanged header connection.

(D) Direct Expansion (DX) Coil System

- Only available for double skin 50mm series.
- The system is designed for the use of R407C / R410A.
- The system shall have a total cooling capacity of ____ MBH / ____ kW and a sensible cooling capacity of ____ MBH / ____ kW based on an entering air temperature of ____°F/____°C DB and ____°F/____°C WB.
- The system shall be designed based on ____°F / ____°C DB ambient temperature. For low ambient application, the system shall also be designed to operate at ____°F/____°C DB ambient temperature.
- The coil shall be supplied with 1/2" / 5/8" tube, aluminium/copper/hydrophilic fin material and copper header connection.

GUIDE SPECIFICATION

(E) Fan Assembly Requirement

- The unit shall be supplied with belt driven and forward curve/ backward curve / airfoil type.
- The unit is designed with horizontal front / top fan discharge base on requirement.
- The unit shall be supplied with IE1/EFF2 / IE2/EFF1 motor efficiency and motor location RH side / LH side.

1.0 STANDARD FEATURES

1.1 Casing

The casing comprises an extruded aluminium frame, joint with nylon corner to form rigid structure and double skin panel construction with PU insulation. All panels and access doors fabricated from standard 0.5mm hot dipped galvanised steel (GI) with polyester powder coated oven baked beige colour paint externally to provide a durable finish and 0.5mm hot dipped galvanised steel (GI) unpainted liner. There is optional thickness: 1.0mm & 1.5mm and material: SS304 and Aluminium steel sheet. Panel available in 25mm thick & 50mm.

1.2 Fan Assembly

Fan installed is belt driven or direct driven double inlet double width (DIDW) or direct driven plenum fan. DIDW fan offered forward curve (FC), backward curve (BC) and airfoil (AF) blade type with Class 1/2/3 are available. Fan shall be statically and dynamically balanced and all comply with AMCA Standard. Motor shall be installed with minimum 120% of the fan power absorbed (brake horsepower). Heavy duty V-belt fan drive with cast iron pulleys keyed and secured to the blower shaft shall be provided. Pulley type is taper lock complete with bush and available model are SPZ, SPA, SPB and SPC, balanced up to G6-3. Complete fan assembly shall be installed on the common base with rubber / spring mounted to isolate the vibration.

1.3 Motor Assembly

Motor installed is foot mounted, totally enclosed fan cooled (TEFC) with IP55 enclosure rating. There is various voltage available i.e. 380-415V/3Ph/50Hz, 208V/3Ph/60Hz, 230V/3Ph/60Hz, 460V/3Ph/60Hz, 480V/3Ph/60Hz, 575V/3Ph/60Hz and 380V/3Ph/60Hz. Motor efficiency are IE1, IE2 and IE3 (optional) for IEC motor and Premium Efficiency for NEMA motor. Standard motor is class F, and there are optional class H. Motor shall be mounted to an adjustable motor frame and fixed to the fan common base.

1.4 Coil Assembly

The coil assembly available for use of water (CW), direct expansion (DX). The coil shall be assembled with corrugated fin and staggered tube configuration and suitable for 17.6 kg/cm² (250 Psi) working pressure. The coil assembly tested under water with 24.6 kg/cm² (350 Psi) air pressure. Fin material available are

aluminium, copper and hydrophilic type. Tube material is copper and available in size 1/2" (CW & DX) and 5/8" diameter (CW, DX & steam). Header is made of heavy duty black steel pipe (CW) with inlet & outlet at the same end and copper pipe is optional. Connection for steel header are British Standard Male Threaded connection (MBSP), National

Pipe Male Thread (MNPT) or flanged connection, which required. Available fin density is 10, 12, 14 FPI (1/2 tube coil) and 8, 10, 12, 14 FPI (5/8 tube coil). Available coil row is 1, 2, 3, 4, 5, 6, 8, rows (1/2 tube coil) and 1, 2, 3, 4, 5, 6, 8 rows (5/8 tube coil). All standard coil casing is made of 1.5mm hot dipped galvanised steel (GI) and SS304 is optional. There are option of heresite coil coating available. The drain pan is fabricated from 1.5mm painted hot dipped galvanised steel (GI) and SS304 & SS316 are optional.

1.5 Filters

The filter assembly available are primary and secondary filter. There are various option of filter offered. Standard primary filter is 50mm thickness with media materials are synthetic washable, disposable or metal (aluminium). Available washable filter arrestance are 75%, 86% and 92% (Eurovent grade EU2, EU3 or EU4 respectively). Metal (aluminium) filter arrestance is 70% (EU2). Disposable filter efficiency is 25%-30% (ASHRAE dust spot efficiency), equivalent to: 90 % arrestance. Standard secondary filter is 4" & 12" depth rigid box type and 15" depth pocket bag type made of synthetic media material. Efficiencies of 60-65%, 80-85%, or 90-95% (ASHRAE dust spot efficiency) available for all types of secondary filter. Carbon filter option are available with 2" and 4" depth if required. Both primary and secondary filter are side loaded. Optional filter gauge with 5% accuracy (minihelic) or 2% accuracy (magnehelic) available if required.

1.6 Mixing Box

The mixing box available to mix the return air with fresh air. Standard design comprises flat blade airfoil blade aluminium damper for the air inlet. There is also actuator option available if required.

Leakage	Class 2 Performance according to EN 1751:2014 Ventilation for buildings: Air Terminal devices. Aerodynamic testing of damper and valves
Pressure	Up to 2000 Pa (refer to Pressure Limitations for Damper Blade Width)
Velocity	Up to 25 m/s (5000 fpm) (refer to Velocity Limitations for Damper Blade Width)
Temperature Limits	Damper Assembly: -15°C to 80°C
Temperature Limits	Blade Seals (Thermoplastic Elastomer TPE): -15°C to 80°C

Damper leakage rate

GUIDE SPECIFICATION

2.0 STANDARD OPTIONS

2.1 Moisture Eliminator

The moisture eliminator is made of aluminium frame and polypropylene blade. The standard model available is PSG33 (33mm pitch).

2.2 Marine Light

The bulkhead fitting for the marine light is weather proof type complete with non-corrosive aluminium alloy pressure die cast body with epoxy finish. Standard part is non UL (standard) and optional UL listed (for US and Latin market).

2.3 Viewport

Two models available are OBP25 (for 25mm panel) and OBP40 (for 50mm panel). Made of Polycarbonate res. UV and gasket material is TPE (thermoplastic rubber).

2.4 Chilled Water Control

The water circuit control available with 2-way valve or 3-way valve for 1", 1 1/4", 1 1/2" and 2" pipe size. Also flanged type for 2 1/2" and 3" pipe size. Actuator for modulating control available with spring return and non-spring return type.

2.5 Damper Actuator

The damper actuator available in standard non-spring return, modulating or on/off control. Spring return actuator available as option.

2.6 Motor Starter Package

The motor starter package comprises Circuit Breaker, fuse, contactor, on/off switch, terminal block, overload protector and optional disconnect switch and transformer.

2.7 VFD Assembly

VFD assembly available as an option to unit drive control for the fan motor. Applicable for 50/60Hz and complied with CE or UL standard, optional bypass and contactor are available if required.

2.8 Filter Gauge

Filter gauge offered is diaphragm actuated, round dial type. There are two types available, minihelic (50mm diameter) with 5% accuracy and magnehelic (100mm diameter) with 2% accuracy.

2.9 Pressure Differential Switch

Pressure Differential switch provided to interlock with the control circuit. It shall be used to sense airflow & feedback to the controller.

2.10 EC fan

Junction box or control box will be automatically including and mounted outside the fan section if EC

Fan option is chosen. This box will consist of terminal blocks to accommodate the power and control cable from the multiple fans.

2.11 Evaporator Coil Fins Materials

In lieu of standard aluminium fin, alternative fin material and/or protective coating include,

- Hydrophilic coated aluminium fin
- Copper fin

2.12 Stainless Steel Drain Pan

A stainless-steel condensate drain pan shall be provided for the evaporator section in lieu of standard galvanized and painted drain pan.

2.13 Motor Termination Box

If no motor starter and VFD are selected, motor termination junction box will be automatically provided. The motor will be wired to this junction box mounted outside the unit which consists of terminal blocks. The outgoing cables from the field supplied motor starter have to be terminated at this junction box.

2.14 Disconnect

Isolator or MCCB with handle will be provided to isolate the main incoming power supply at supply fan or return/exhaust fan section. At least a motor starter, VFD or EC Fan is required to be selected to include this option.

2.15 VFD (STD)

VFD is available as an option to drive the fan motor. Applicable for 50/60Hz, available with UL compliance or NON-UL version and optional bypass contactor are available if required. The VFD will be installed inside a control box mounted outside the fan section.

2.16 UV Light with Door Switch

UV Light is commonly specified to reduce infectious agents in the airflow. UV light is designed base on the unit size if required. Door safety switch available: power to the ballast in control box which is turned the UV light ON when door is closed and turned OFF when door is open.

3.0 APPLICABLE OPTIONS FOR MODULAR SERIES

3.1 Electric Heater

Finned tubular heating element type consists of a 80/20 nickel-chromium coiled resistor wire, centered in a stainless steel finned tube. The tube is filled with magnesium oxide and compressed to ensure rapid heat transfer. The elements will be sized and staged according to the air heating power required, and mounted in a galvanized steel enclosure. Starter is not included unless otherwise specified.

GUIDE SPECIFICATION

3.2 Electric Heater Starter

Electric Heater have to be pre-selected in order to have this option. Contactor and circuit breaker shall be provided for each stage of electric heaters. The components will be installed inside a control box mounted on the unit.

3.3 Electric Heater Termination Box

Electric Heater have to be pre-selected in order to have this option. If no electric heater starter is selected, heater\ termination junction box will be automatically provided. The electric heaters and high temperature limit switch (HTL) located inside the unit is wired to this junction box mounted outside the unit which consists of terminal blocks. The outgoing cables from the field supplied heater starter have to be terminated at this junction box.

3.4 Heat Recovery System (Heat Recovery Wheel & Plate Heat Exchanger)

The heat recovery system available for the optimization of energy usage by transferring the heat and moisture from exhaust air to the supply air. Two type available, rotating air recovery unit i.e. heat recovery wheel (HW) which is designed to transfer heat and moisture and static recovery unit i.e. plate heat exchanger (PHE) specially designed to transfer the heat. There are standard or premium HW option available in selection software. If no motor starter is selected, termination junction box will be automatically provided. The motor will be wired to this junction box mounted outside the unit which consists of terminal blocks. The outgoing cables from the field supplied motor starter have to be terminated at this junction box.

3.5 Dehumidification System (Heat Pipe)

Heat pipe installed to enhance the air conditioner usage by promote dehumidification to the airflow. Available rows are 1, 2, 3, 4 rows and fin density are 10, 12, 14 FPI. Standard heat pipe is horseshoe type with working fluid R134A. The application of the heat pipe gives significant effect in energy saving.

3.6 Sand Trap Louver

Sand trap louver are designed for removal of dust and sand particles. Made of 1.2mm galvanized steel construction with minimum 25% free area. The louver consists of two layers of vertical blades. The depth of the louver is 100mm. Sand particles trapped in the louver blades shall be discharged at the bottom of the louver face automatically. The louver is powder coated and furnished.

3.7 Silencer / Sound Attenuator

The acoustic splitter is consisting of a pre-galvanised steel framework into which is packed acoustic media. The acoustic media in-fill is covered in a glass fibre facing to prevent the erosion of particle into the air stream. As standard, the in-fill is then covered with pre-galvanised perforated sheet steel. The in-fill is mineral fibre which has Class 1 rating for surface spread of flame, as measured to BS476 and a non-combustible rating when exposed to BS476 Part 4

3.8 Outdoor Application

There is additional feature offered with the unit for outdoor application. Standard unit equipped with roof panel, air hood for air intake, stainless steel external fastener and RT access door for weatherproofing. The roof panel are pitched to the casing side with 1 ½" overhang to avoid rainwater flowing from roof panel drip onto the panel or door tops. Air hood is furnished for air intake, covered with standard bird screen made of wire mesh or aluminium flat filter available as option. RT access door is designed with double gasket. One layer of gasket is applied to the frame and there is another layer applied directly to the door.

3.9 Single point incoming power

By default, supply section and return / exhaust section will have its own incoming power supply termination point (dual point incoming). By adding single point incoming power option, the unit will be ready to accept one single incoming three phase power cables. Interconnecting power and control cables between sections will be bundled inside the unit with one end connected and another end for field termination.

3.10 Director Controller

The unit will be equipped with a Director Controller with the following features,

- The control algorithm and parameters shall be stored in flash memory and EPROM of the controller and shall retain even in the event of power failures, without requiring external backup battery
- User Interface with Display
- Temperature controlled
- Configurable by user
- Alarm status/display
- Analog input/output display
- Digital input/output status
- Remote start/stop input
- General alarm output
- Self-diagnostics
- Security password access with multiple access level for advanced settings
- Unit status display
- Built-in BMS Communication (Bacnet IP, Modbus IP or Modbus RTU comes as a standard in built feature)



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