DOUBLE SKIN MODULAR AIR HANDLING UNIT

Round Edge

EUROVENT CERTIFIED PERFORMANCE
AHU N° 09.11.441
Range DW AHU
www.eurovent-certification.com

AHRI CERTIFIED®
www.ahridirectory.org
Central Station Air-Handling Unit Casings
AHRI Standard 1350

ACSON® International
Air Conditioners

AIR HANDLING UNIT

Acson DM Air Handling Unit is designed based on modular panelling concept which making it suitable to be subdivided into multiple sections to be assembled on the site. Acson DM Air Handling Unit is designed in accordance to BS EN 1886, certification with Eurovent and AHRI1350. It comes with a wide variability of air flow range within 330 to 25,000 lps (1,100 to 90,000 CMH) and up to a total static pressure of 2000 pa (8”W.G). It can handle both chilled water and direct expansion system. Acson DM Air Handling Unit is made up of Double Skin Polyurethane foam (PUR) insulation Panel. The PU foam insulation thickness can be 25mm and 50mm with density of 40kg/m3. Special customed design for non standard AHU upon customer request is available.

Selection software is availabe for Acson DM AHU, to optimize the best arrangement either chillled water system or DX system. Standard components can be selected and be placed according to customer requirement. Once the unit is defined, optional item and accessories are identified. The program gives immediate feedback if there is no suitable choice for the units. The user friendly selection program provides fan curves data,coil performance data, dimension and shipmet weight.

ADM Cabinet Reaches
EUROVENT Certified Ratings

High Grade — Low Grade

	DM2TB	DM2	DM1
Casing Strength	D1(M)	D1(M)	D1(M)
Casing Air Leakage	L1	L1	L2
	L2	L2	>L3
Filter By-passed Leakage	F9	F9	F9
Thermal Transmittance	T2	T3	T4
Thermal Bridging Factor	TB2	TB3	TB3

Class Classification of EN1886 Standard

Strength Class	D1	D2	D3		
Maximum relative deformation of the cabinet under bearable pressure mm/m	4	10	≥ 10		
Air Leakage class	L1	L2	L3		
Maximum Air leakage rate of the cabinet under test pressure of -400 Pa (l/s/m$^{2)}$	0.15	0.44	1.32		
Maximum Air leakage rate of the cabinet under test pressure of +700 Pa (l/s/m$^{2)}$	0.22	0.63	1.90		
Filter by-passed class	F9	F8	F7	F^	G1-F5
Maximum by-pass leakage rate, k in % of the volume flow rate	0.5	1	2	4	6
Thermal Transmitance Class	T1	T2	T3	T4	T5
Heat transfer coefficient of the cabinet (U) W/(m^2.K)	U ≤ 0.5	0.6 ≤ U < 1.0	1.0 ≤ U ≤ 1.4	1.4 ≤ U ≤ 2.0	No requirement
Thermal Transmitance Class	TB1	TB2	TB3	TB4	TB5
Cold Bridge coefficient of the cabinet (Kb)	0.75 ≤ Kb ≤ 1.0	0.6 ≤ Kb ≤ 0.75	0.45 ≤ Kb ≤ 0.6	0.3 ≤ Kb ≤ 0.45	No requirement

ADM Cabinet Reaches
AHRI 1350 Certified Ratings

High Grade — Low Grade

	DM2TB	DM2	DM1
Casing Deflection Rating Class	CD2	CD2	CD3
Casing Air Leakage Class	CL2	CL2	CL3
Thermal Transmittance Class with Leakage	CT2	CT3	CT4
Thermal Transmittance Class without leakage	CT2	CT3	CT4
Thermal Bridging Class	CB2	CB3	CB3

Class Classification of AHRI Standard 1350 (I-P)

Strength Class	CD1	CD2	CD3	CD4	CD5
Rating Differential Static Pressure, in H^{2}o	10	8	6	4	1
Maximum Normalized Deflection, in/in of span	0.0033	0.0042	0.0042	0.0042	≥ 0.0042
Casing air leakage class	CL1	CL2	CL3	CL6	CL12
Maximum Casing Air Leakage Rate, cfm/100ft^2 (at P=1 in.H^{2}o)	1	2	3	6	12
Thermal Transmittance Class	CT1	CT2	CT3	CT4	CT5
Thermal Transmittance with Leakage (U), BTU / hr / ft^2 / °F	U ≤ 0.16	0.16 > U ≥ 0.26	0.26 > U ≥ 0.39	0.39 > U ≥ 0.61	U > 0.61
Thermal Transmitance Class	CT1	CT2	CT3	CT4	CT5
Thermal Transmittance without Leakage (U), BTU / hr / ft^2 / °F	U ≤ 0.14	0.14 > U ≥ 0.23	0.23 > U ≥ 0.36	0.36 > U ≥ 0.55	U > 0.55
Thermal Bridging class	CB1	CB2	CB3	CB4	CB5
Thermal Bridging Factor, Kb	Kb ≥ 0.8	0.8 > Kb ≥ 0.6	0.6 > Kb ≥ 0.4	0.4 > Kb ≥ 0.2	Kb < 0.2

Features

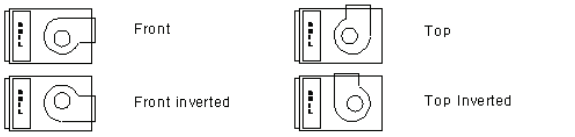
A Complete Line Of Accessories For Maximum Flexibility

With the modular paneling concept design, each unit can be congured to help you make the best possible use of your available space. Depending on its length, each shipping section can accommodate one, two, three or more components such as dampers, coils, Iters or other accessories, giving you the opportunity to select a very compact unit that makes the most out of limited space. Or, if space is not at a premium, you can create a large clearance between components for a better accessibility during maintenance. All Air Handling Units are designed from computer selection to help assure maximum performance from coils and fans.

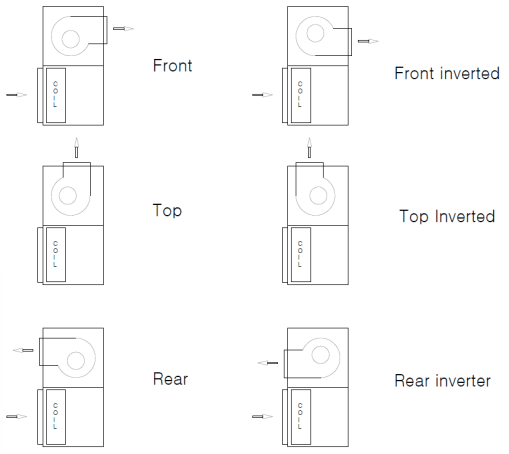
Two Discharge Direction

Fan discharge direction can be either horizontal or vertical (top and bottom)

Horizontal Arrangement Unit

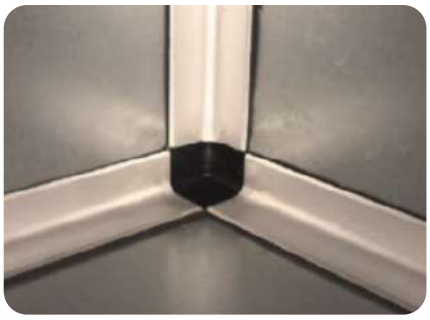


Vertical Arrangement Unit



Strong and Rigid - Casing/Cabinet

- Low energy consumption and no condensation due to high thermal insulation and airtight casings accordance to EN 1886 certified under EUROVENT or AHRI 1350 Certification.
- Constructed of high strength extruded round edge aluminum pentapost and flat surface internal intermediate post.
- The frame channel design allows three identical pieces to be bolted together to form a composite corner piece to form rigid frame of the AHU.
- The unit wall is made up by Double Skin Polyurethane foam (PUR) insulation panel with 0.5 mm high strength pre-painted steel as external skin and 0.5 mm galvanized steel (GI) as internal skin.
- The PU foam insulation thickness can be 25mm or 50mm with density 40 kg/m3.



Features

Friendly Access and Maintenance

- Easily access to all the components as the panels may be removed from all units sections without compromising the unit rigidity which is ensured by the aluminum frame.
- Access door or service panel can be supplied with a swing type or removable panel type
- The unit is mounted on galvanized steel base frame for easy handling and positioning.
- The lastest improvement on Internal prole from square to round resulting easier cleaning of internal compartment.

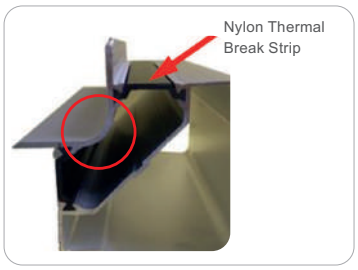
Maximun Flexibility

- Variable dimensioning features for flexible cabinet sizing (increment 100mm in height and width)
- Variable coil casing and drain pan material
- Variable fan selection include forward-curved, backward curved and airfoil, AC/EC plug fan
- Variable frequency drive / Frequency inverter (VFD) and thermistor
- Multiple section depth

High Quality Thermal Break Profile

- It is constructed of two parts of extruded aluminum joint together with thermal barrier nylon strip. The nylon is sandwiching the inner and outer layers of extruded aluminum.
- The thermal bridging factor of the assembled ADM Air Handling Unit is designed to meet BS EN 1886, Class TB2.
- The thermal break profile only available for cabinet with 50mm thickness.

Benefits
i) Increased Energy Efficiency.
ii) Unit condensation minimized.
iii) Probability of moisture migration into panel interior, which can degrade the insulation, is eliminated in this thermal break profile.
iv) Improve sound insulation.



Better Air Flow Quality

- High quality and reliable Primary, Secondary & HEPA filters available for air filtration.
- Activated carbon filters are available with designed to improve indoor air quality through the effective removal of indoor and outdoor gaseous contaminants typically found in the urban environment. This includes VOCs, SOx, NOx, and Ozone.

Mechanical Specifications

Coil

- Coil constructed with aluminum corrugated fins and seamless copper tubes.
- Copper fins and hydrophilic fins are anti-corrosive materials which are optional.
- Optional Ultraviolet Germicidal Irradiation (UVGI) Lamps are installed for for eradicating germs harboring in cooling coils and drain pans. UVGI Systems is constructed with an inner lamp made of soft glass and out shell made of Quartz glass (called Quartz Shield).
- Coils are designed based on the applications to meet the desired requirements.

Motor

- Motor is internally mounted integral to an isolated fan assembly. For the desired operation speed between fan and motor, different poles (2, 4, 6 and 8 poles) can be consider.

MOTOR OPTION

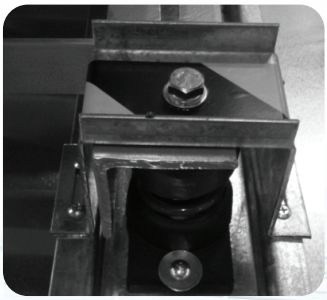
- 380-415 Volt / 3 phase/ 50 Hz (standard)
- 230/380/440 Volt/ 3 phase/ 60Hz
- Motor efficiency from IE1, IE2, IE3 up to IE4 (EC motor)
- Dual speed motor
- Motor with space heater & Thermistor
- Explosion / Flame proof

Fan

- The fan type selection includes forward, backward, airfoil wheel fan, twin fans with double width double inlet (DWDI) centrifugal.
- The blade of fan is constructed of galvanized steel.
- Perfomance of these fans have been tested and measured in accordance to AMCA 210.
- The sound level is measure and rated in accordance with AMCA Standard 300.
- Fan is dynamically and statically balanced to Standard ISO 1940.
- The fan bearing provided will have a minimum L50 life of 200,000 hours, and option available as high as 1,000,000 hours.

Spring or Rubber Isolator

- The spring or rubber isolator is mounted between the fan compartment and the rest of the AHU to prevent the transmission of noise and vibration into panels.



There are two types of isolators used:

- Rubber mounting (for blower <= model 355)
- 25mm deflection spring (for blower > model 355)

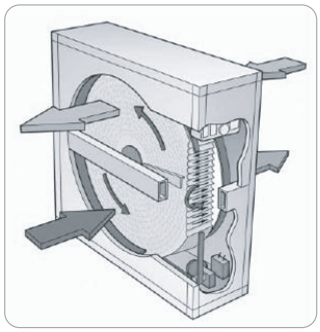
Optional Add Ons

VFD/ Frequency Inverter

- VFD is a type of adjustable-speed drive used in electro-mechanical drive systems to control motor speed and torque by varying motor input frequency and voltage.
- VFD providing protection for motor operation.
- VFD can very the frequency within 30Hz to 60Hz in order to control motor rotation in AHU.

Heat Recovery Wheel

- It is constructed of aluminum coated with heat transfer material (silica gel or others) which is rotated by an electric motor at constant or variable speed.
- Can reduce the capacity of ventilation equipment.
- Can work at lower temperature without frosting occurs.
- Recover both latent and sensible heat by allowing reduction in system capacity about 30 to 65%.
- Prevent sick building syndrome.



Humidifier

- It is an electric device which is used to increase the air relative humidity in atmosphere without steam source.
- It is a constant temperature humidifier.
- Its principle is the common electrode humidifier regulates the generated steam by the way of controlling water level and electrical current.

Electrical Heater

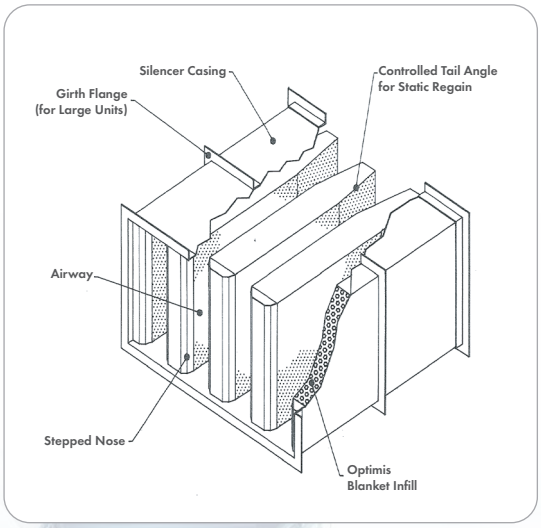
- Electric heaters are optional with either single step or multi step of heating process.
- Heaters are available in 220-230V and the wiring can be in single phase / 3 phase for contactor or thyristor control.

Mixing Box

- It is an air inlet section to mix fresh and return air according to the system designer's requirement.
- It consists of damper in parallel blades with opposed rotating blade with driving shaft.
- The damper blades are fabricated of aluminum and continuous Thermoplastic Elastomer (TPE) seals are inserted onto every damper blade.
- The rotated rod of handle is made of brass and handle is fabricated of aluminum casting.

Sound Attenuator

- It has a perimeter galvanized steel frame.
- Different attenuator length can be selected to meet the most stringent sound attenuation requirements.



EC FAN ELECTRONICALLY COMMUTATED FAN

Acson Air Handling Unit is able to be fitted with (EC Plug Fan). It boast better efficient, lower noise emission, compact yet robust. Now it is up for selection for model with total static pressure of 1800Pa and below.

Technology Features

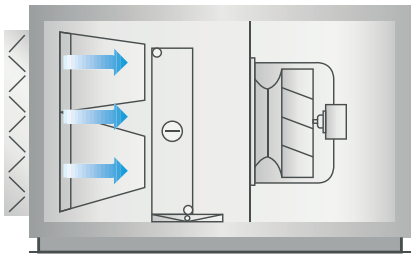
- Unrivalled Compactness
- High Efficiency
- Robust Design
- Economical Operation
- Low Noise Emissions
- Low Vibration Level
- Long Service Life
- Reliable Operation

Savings

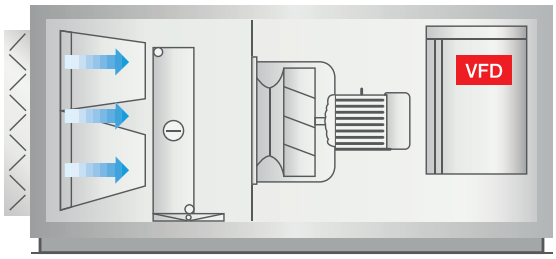
- Save on Space - Smaller AHU size
- Save on Components - Inverter, Sine Filter, Premium Motor, Shielded Cable, Motor Protection
- Save on Cost - Installation & Maintenance Cost

Solutions To Your Fan Woes

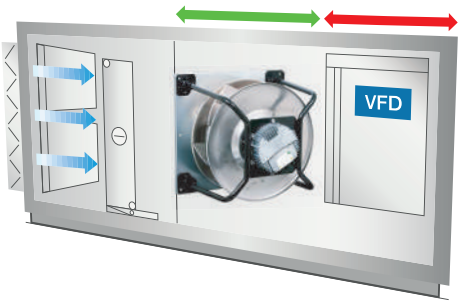
EC Fan (Our Solution)



Fan+Motor+VFD
(Conventional Fan Solution)



Why EC FAN



- **Save on Installation Cost**
- **Save on Space**
- **Save on Components**
  - No Inverter
  - No Sine Filter
  - No Premium Motor
  - No Shielded Cable
  - No Motor Protection

Fan Array

2-Fan Array Arrangement

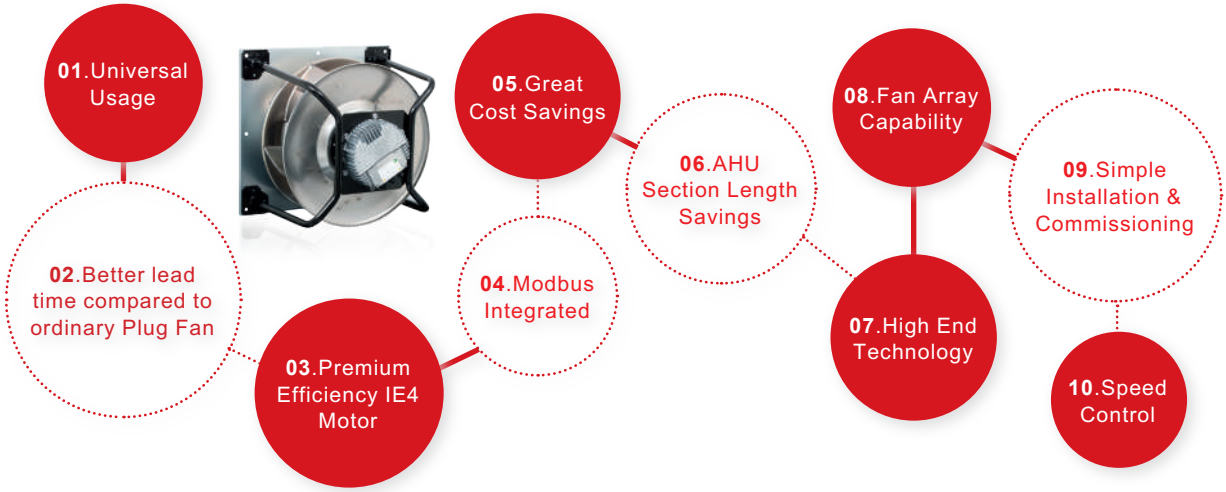
8-Fan Array Arrangement

4-Fan Array Arrangement

More Fan Array Arrangements

6-Fan Array Arrangement

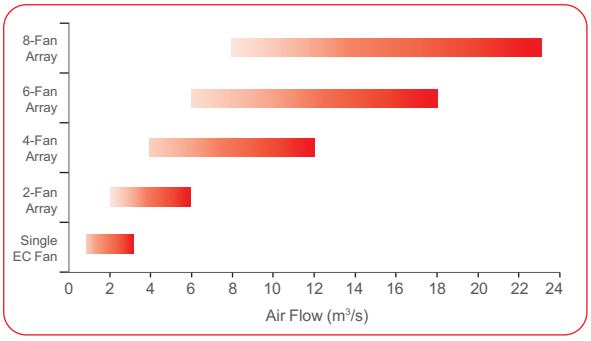
Benefits of Using Acson EC Solution



Fan Array Air Flow Range

	Air Flow Range (m^3/s)
Single EC Fan	0.93 - 2.85
2-Fan Array	1.86 - 5.70
4-Fan Array	3.72 - 11.40
6-Fan Array	5.58 - 17.10
8-Fan Array	7.44 - 22.80

Specifications



Rated at static Pressure 1200 Pa

Air Flow Range

AHU Model	Fan QTY	Air Flow Range (m^3/s)	Rate Air Flow (m^3/s)	Input Power (W)		Watts / CMH	
				@500Pa	@1200Pa	@500Pa	@1200Pa
0707	1	1.00 - 1.67	1.34	1064	2642	0.22	0.55
0710	1	1.37 - 2.29	1.83	1477	3326	0.22	0.50
0713	1	1.74 - 2.85	2.30	1933	4118	0.23	0.50
0715	2	1.99 - 3.32	2.66	2120	5264	0.22	0.55
1010	1	1.90 - 2.85	2.38	2036	4294	0.24	0.50
1013	1	2.42 - 2.85	2.64	2381	4811	0.25	0.51
1015	2	2.76 - 4.60	3.68	2970	6680	0.22	0.50
1019	2	3.44 - 5.70	4.57	3840	8192	0.23	0.50
1021	2	3.79 - 5.70	4.75	4068	8580	0.24	0.50
1315	2	3.37 - 5.62	4.50	3744	8034	0.23	0.50
1319	2	4.21 - 5.70	4.96	4342	9024	0.24	0.51
1321	2	4.63 - 5.70	5.17	4622	9422	0.25	0.51
1519	4	4.59 - 7.65	6.12	4940	11636	0.22	0.53
1521	4	5.05 - 8.42	6.74	5448	12464	0.22	0.51
1819	4	5.74 - 9.57	7.66	6192	13804	0.22	0.50
1821	4	6.31 - 10.52	8.42	6812	14980	0.22	0.49
1823	4	6.88 - 11.40	9.14	7680	16384	0.23	0.50
1827	6	8.03 - 13.38	10.71	8640	19554	0.22	0.51
2027	6	8.56 - 14.27	11.42	9228	20604	0.22	0.50
2233	8	11.69 - 19.48	15.59	12624	28016	0.23	0.50
2239	8	13.75 - 22.8	18.275	15352	32752	0.233	0.498

Nominal Data

Phase		3~
Nominal Voltage	VAC	400
Nominal Voltage Range	VAC	380 ~ 480
Frequency	Hz	50/60
Method of Obtaining Data		ml
Speed	min^{-1}	2600
Power Consumption	W	5250
Current Draw	A	8
Min. Ambient Temperature	ºC	-25
Max. Ambient Temperature	ºC	40

Control Basic

- EC Fan - Build in controller with Modbus integrated
- Able to couple with differential pressure controller only to achieve constant air volume control. The system is self-adjusting to adapt to interference factors like filter pollution

Quick Air Filter Selection Guide

Classification as per ISO 16890

Filter Model	EN 779	ISO 16890
Washable AmerTex-R15	G2	ePM Coarse
Washable AmerTex-R29	G3	ePM Coarse
Washable AmerTex-R50	G4	ePM Coarse
Washable Aluminium Mesh	G3	ePM Coarse
AmAir 300E	G4	ePM Coarse 70%
AmAir 500E	M5	ePM Coarse 70%

Table 1: Filtration Class for Coarse filters

Filter Model	EN 779	ISO 16890
DriPak 2000 60-65%	M6	ePM_{10} 65%
DriPak 2000 80-85%	F7	ePM_{10} 80%
DriPak 2000 90-95%	F8	ePM_{10} 80%
DriPak 2000 >95% (21")	F9	ePM_{10} 85%
VariCel II 80-85% (4")	F7	ePM_{1} 50%
VariCel II 90-95% (4")	F8	ePM_{1} 70%
Varicel VXL >95%(12")	F9	ePM_{1} 80%

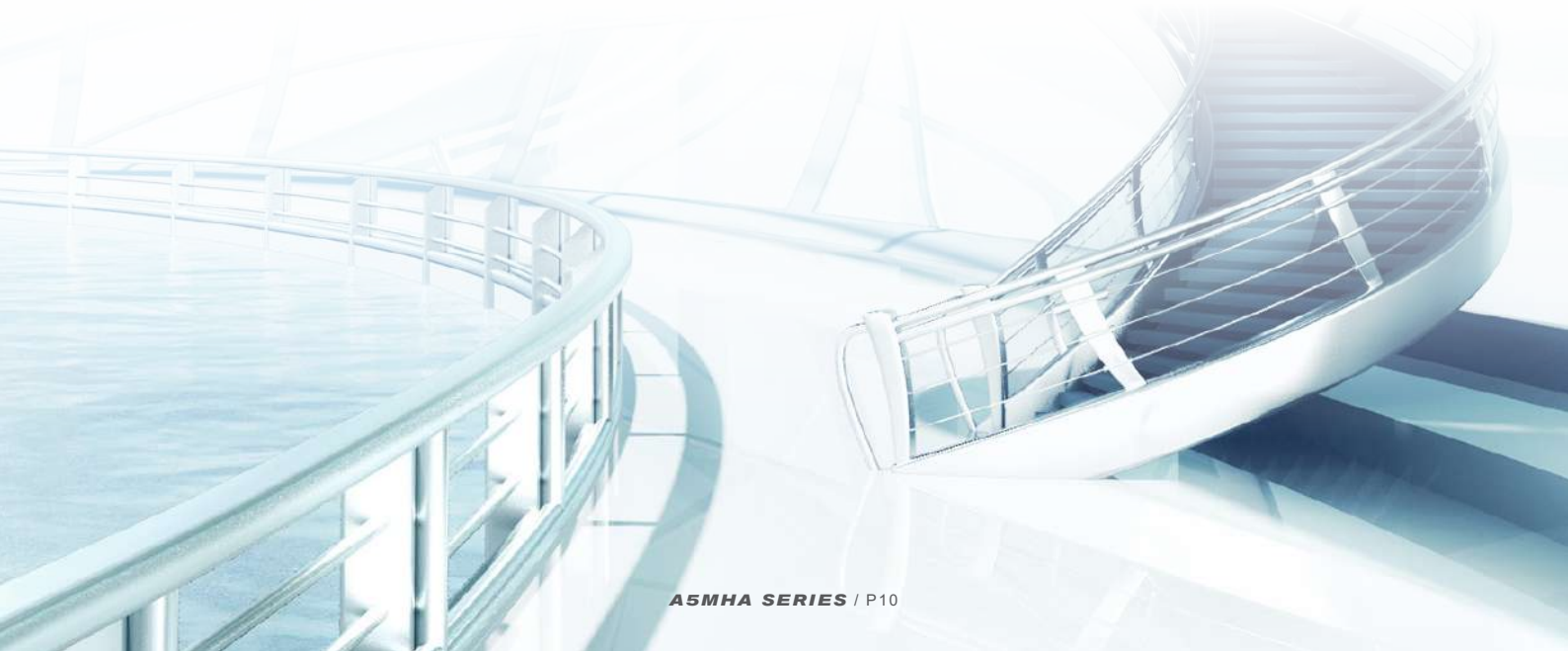
Table 2: Filtration Class for fine filters

Classification as per EN 1822

EN 1822 Class	E 10	E 11	H 13	H 14
Efficiency (% at 0.3 µm)	> 95	> 98	> 99.997	> 99.999
Efficiency (% at MPPS)	> 85	> 95	> 99.95	> 99.995
Recommended Filter	BioCel® I	-	AstroCel®	AstroCel®

Table 3: Filter Efficiency for EPA & HEPA Filters Class E10-H14

In addition, filter section can be enhanced by an optional item – filter pressure gauge to ensure regular filter servicing and prevent clogging. Normally, the filter life span can be indicated by pressure gauge value.



Standard Units Quick Selection Table

a. Return Air

Unit Size	Air Flow	ESP	4-ROWS COOLING COIL					Circuit	1-ROW HEATING COIL				Motor kW
			S.C	T.C.C	Off Coil (°C)	Water flow	WPD		T.C	Off Coil (°C)	Water flow	WPD	
	LPS	Pa	kW	kW	Dry/Wet	lps	kPa		kW	Dry/Wet	lps	kPa	
0404	646	500	7.94	8.66	16.40/15.65	0.43	0.81	S	4.75	27.70/18.33	0.13	0.10	1.5
0407	1027	500	13.69	16.64	15.51/14.78	0.83	3.19	S	8.92	28.92/18.73	0.24	0.38	2.2
0410	1408	500	19.70	25.30	14.94/14.23	1.27	7.86	S	13.17	29.53/18.93	0.36	0.90	3
0413	1789	500	25.74	33.99	14.59/13.89	1.7	15.06	S	17.32	29.84/19.03	0.47	1.71	4
0707	1670	500	22.26	27.06	15.51/14.78	1.36	5.94	S	14.5	28.92/18.73	0.39	0.60	3
0710	2289	500	32.03	41.13	14.94/14.22	2.06	14.2	S	21.4	29.53/18.93	0.58	1.39	5.5
0713	2908	500	41.85	55.25	14.60/13.89	2.77	26.5	S	28.16	29.84/19.03	0.76	2.55	5.5
0715	3321	500	48.37	64.57	14.45/13.75	3.24	36.98	S	33.27	30.14/19.13	0.90	3.68	7.5
1010	3169	500	44.35	56.95	14.94/14.22	2.86	23.55	S	29.63	29.53/18.93	0.80	2.14	7.5
1013	4026	500	57.93	76.50	14.60/13.89	3.84	43.38	S	38.99	29.84/19.03	1.06	3.84	7.5
1015	4598	500	66.96	89.40	14.45/13.75	4.48	14.47	S	46.06	30.14/19.13	1.25	5.47	11
1019	5741	500	85.58	116.69	14.15/13.46	5.85	27.17	S	59.43	30.45/19.22	1.61	9.50	11
1021	6312	500	94.89	130.16	14.04/13.36	6.53	35.34	S	65.34	30.45/19.22	1.77	11.72	11
1315	5619	500	81.83	109.25	14.45/13.75	5.48	29.83	S	56.29	30.14/19.13	1.53	3.12	11
1319	7016	500	104.58	142.61	14.15/13.46	7.15	53.34	S	72.63	30.45/19.22	1.97	5.58	15
1321	7715	500	115.98	159.09	14.04/13.36	7.98	33.59	S	79.87	30.45/19.22	2.17	6.99	15
1519	7654	500	114.10	155.58	14.15/13.46	7.8	25.92	S	79.23	30.45/19.22	2.15	6.02	15
1521	8416	500	126.52	173.54	14.04/13.36	8.7	33.78	S	87.12	30.45/19.22	2.37	7.52	15
1819	9568	500	142.63	194.48	14.15/13.46	9.75	26.48	S	99.05	30.45/19.22	2.69	7.59	18.5
1821	10520	500	158.15	216.93	14.04/13.36	10.88	34.48	S	108.9	30.45/19.22	2.96	9.41	18.5
1823	11473	500	172.45	236.58	14.04/13.36	11.86	42.94	S	120.68	30.60/19.27	3.28	11.82	22
1827	13378	500	192.48	254.19	14.60/13.89	12.75	12.69	D	142.96	30.75/19.32	3.88	17.33	22
2027	14270	500	205.31	271.14	14.60/13.89	13.59	13.42	D	152.49	30.75/19.32	4.14	18.58	30
2033	17300	500	252.91	338.9	14.40/13.70	16.99	22.39	D	187.75	30.90/19.37	5.10	29.79	30
2035	18333	500	269.10	361.84	14.35/13.66	18.14	26.04	D	202.03	31.05/19.42	5.49	35.04	30
2039	20284	500	302.50	412.3	14.14/13.46	20.67	35.06	D	223.53	31.05/19.42	6.07	44.41	37
2233	19482	500	284.78	381.65	14.40/13.70	19.14	24.95	D	211.44	30.90/19.37	5.74	34.00	37
2239	22900	500	307.25	418.92	14.15/13.46	20.01	45.03	D	264.40	30.12/19.05	6.31	50.61	37
2539	24800	500	341.39	465.47	14.15/13.46	23.34	39.03	D	286.34	30.12/19.05	6.84	37.11	37

Rated Condition:
For Cooling Coil: EDB = 27deg. C, EWB = 19.5 deg. C, EWT = 7 deg. C, LWT = 12deg. C
For Heating Coil: EDB =21 deg. C, EWT = 60 deg. C, LWT = 50 deg. C

Standard Units Quick Selection Table

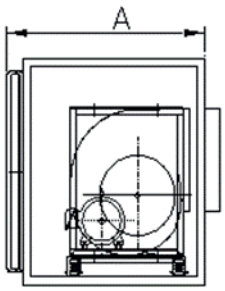
b. Fresh Air

Unit Size	Air Flow	ESP	4-ROWS COOLING COIL					Circuit	1-ROW HEATING COIL				Motor kW
			S.C	T.C.C	Off Coil (°C)	Water flow	WPD		T.C	Off Coil (°C)	Water flow	WPD	
	LPS	Pa	kW	kW	Dry/Wet	lps	kPa		kW	Dry/Wet	lps	kPa	
0404	646	500	10.77	23.64	20.01/19.71	1.19	5.31	S	8.96	12.66/2.55	0.24	0.31	1.5
0407	1027	500	18.9	43.12	18.45/18.21	2.16	18.83	S	16.09	14.30/3.45	0.44	1.11	2.2
0410	1408	500	27.06	62.5	17.72/17.52	3.13	42.07	S	23.15	15.00/3.83	0.63	2.52	3
0413	1789	500	32.23	72.97	18.80/18.56	3.66	36.5	D	30.33	15.47/4.08	0.82	4.68	4
0707	1670	500	30.73	70.12	18.45/18.21	3.52	37.28	S	26.17	14.30/3.45	0.71	1.84	3
0710	2289	500	39.04	86.5	19.66/19.38	4.34	47.19	D	37.63	15.00/3.83	1.02	4.02	5.5
0713	2908	500	52.38	118.62	18.80/18.56	5.95	89.22	D	49.3	15.47/4.08	1.34	7.27	5.5
0715	3321	500	61.12	139.45	18.45/18.21	6.99	123.75	D	57.16	15.70/4.20	1.55	10.09	7.5
1010	3169	500	54.05	119.76	19.66/19.38	6	88.54	D	52.1	15.00/3.83	1.41	6.32	7.5
1013	4026	500	72.52	164.22	18.80/18.56	8.23	166.97	D	68.26	15.47/4.08	1.85	11.22	7.5
1015	4598	500	84.62	193.07	18.45/18.21	9.68	18.82	D	79.13	15.70/4.20	2.15	15.39	11
1019	5741	500	109.12	251.4	17.91/17.70	12.6	33.39	D	100.28	15.94/4.33	2.72	25.69	11
1021	6312	500	121.3	280.19	17.72/17.52	14.05	42.36	D	111.88	16.17/4.45	3.04	32.54	11
1315	5619	500	103.42	235.94	18.45/18.21	11.83	90.42	D	96.71	15.70/4.20	2.63	8.44	11
1319	7016	500	133.35	307.23	17.91/17.70	15.4	154.78	D	122.55	15.94/4.33	3.33	14.54	15
1321	7715	500	148.26	342.46	17.72/17.52	17.17	26.13	D	136.74	16.17/4.45	3.71	18.66	15
1519	7654	500	145.48	335.17	17.91/17.70	16.81	21.79	D	133.7	15.94/4.33	3.63	15.8	15
1521	8416	500	161.73	373.58	17.72/17.52	18.73	27.97	D	149.17	16.17/4.45	4.05	20.23	15
1819	9568	500	181.36	418.98	17.91/17.70	21.01	27.01	D	167.13	15.94/4.33	4.54	20.25	18.5
1821	10520	500	202.16	466.98	17.72/17.52	23.41	34.44	D	186.46	16.17/4.45	5.06	25.77	18.5
1823	11473	500	222.83	516.16	17.54/17.34	25.88	43.13	D	203.35	16.17/4.45	5.52	31.35	22
1827	13378	500	265.39	617.92	17.16/16.99	30.98	64.7	D	240.55	16.41/4.58	6.53	45.67	22
2027	14270	500	283.08	659.12	17.16/16.99	33.05	69.04	D	256.59	16.41/4.58	6.97	49.2	30
2033	17300	500	350.44	819.82	16.79/16.62	41.11	113.28	D	311.07	16.41/4.58	8.45	76.28	30
2035	18333	500	375.3	879.77	16.59/16.44	44.11	132.71	D	334.36	16.64/4.70	9.08	89.42	30
2039	20284	500	417.51	979.48	16.49/16.35	49.11	170.57	D	369.94	16.64/4.70	10.05	113.03	37
2233	19482	500	394.6	923.23	16.79/16.62	46.29	128.25	D	350.31	16.41/4.58	9.51	87.82	37
2239	22900	500	471.19	1105.81	16.50/16.35	55.44	192.86	D	417.65	16.64/4.70	11.34	129.97	37
2539	24800	500	341.39	465.47	14.15/13.46	23.34	39.03	D	252.35	31.05/19.42	6.85	50.61	37

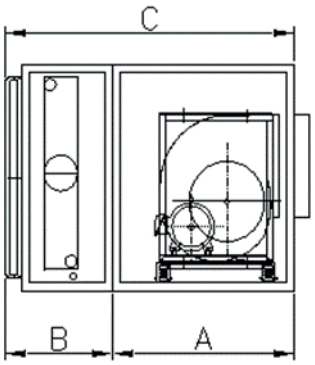
Rated Condition:
For Cooling Coil: EDB = 35 deg. C, EWB = 28 deg. C, EWT = 7 deg. C, LWT = 12deg. C
For Heating Coil: EDB = 0 deg. C, EWT = 60 deg. C, LWT = 50 deg. C

Outline And Dimension

a. Horizontal Typical Configuration



Type 1



Type 2

Model	0404	0407	0410	0413	0707	0710	0713	0715	1010	1013	1015	1019	1021	1315	1319
CMH	2326	3697	5069	6440	6012	8240	10469	11956	11408	14494	16553	20668	22723	20228	25258
LPS	646	1027	1408	1789	1670	2289	2908	3321	3169	4026	4598	5741	6312	5619	7016
Height	800	800	800	800	1100	1100	1100	1100	1400	1400	1400	1400	1400	1700	1700
Width	800	1100	1400	1700	1100	1400	1700	1900	1400	1700	1900	2300	2500	1900	2300

Length

1	A	1000	1000	1100	1100	1100	1100	1300	1300	1300	1300	1500	1500	1500	1500	1500
2	A	900	900	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1400
	B	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	C	1600	1600	1700	1700	1700	1700	1900	1900	1900	1900	2100	2100	2100	2100	2100

Model	1321	1519	1521	1819	1821	1823	1827	2027	2033	2035	2039	2233	2239	2539
CMH	27774	27554	30298	34445	37872	41303	48161	51372	62280	65999	73022	70135	82440	89280
LPS	7715	7654	8416	9568	10520	11473	13378	14270	17300	18333	20284	19482	22900	24800
Height	1700	1900	1900	2200	2200	2200	2200	2400	2400	2400	2400	2600	2600	2900
Width	2500	2300	2500	2300	2500	2700	3100	3100	3700	3900	4300	3700	4300	4300

Length

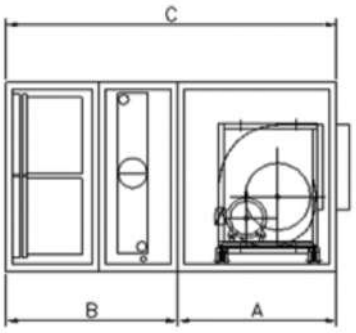
1	A	1700	1700	1700	1700	1900	1900	2100	2100	2300	2300	2300	N/A	N/A	N/A
2	A	1600	1600	1600	1600	1800	1800	2000	2000	2200	2200	2200	2200	2200[5])	2200[5])
	B	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	C	2300	2300	2300	2300	2500	2500	2700	2700	2900	2900	2900	2900	2900	2900

Table 1: Horizontal Typical Configuration Type 1 & 2

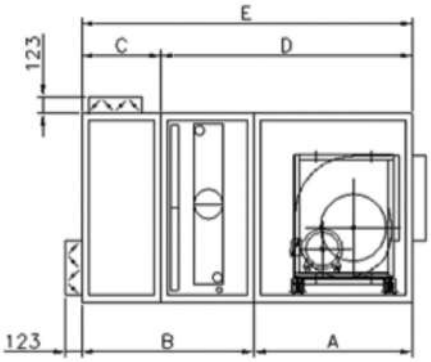
Note:
1. Please add 100mm for model using coil (8 Row & above)
2. The dimensions are subject to change without any notice for future improvement.
3. Dimensions in mm.
4. Please add 50mm lenght on the individual section width, depth and height if using the 50mm insulation panel.
5. For blower model 1250, section size will be 2600.*

Outline And Dimension

b. Horizontal Typical Configuration



Type 3



Type 4

Model	0404	0407	0410	0413	0707	0710	0713	0715	1010	1013	1015	1019	1021	1315	1319
CMH	2326	3697	5069	6440	6012	8240	10469	11956	11408	14494	16553	20668	22723	20228	25258
LPS	646	1027	1408	1789	1670	2289	2908	3321	3169	4026	4598	5741	6312	5619	7016
Height	800	800	800	800	1100	1100	1100	1100	1400	1400	1400	1400	1400	1700	1700
Width	800	1100	1400	1700	1100	1400	1700	1900	1400	1700	1900	2300	2500	1900	2300

Length

3	A	900	900	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1400
	B	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	C	2200	2200	2300	2300	2300	2300	2500	2500	2500	2500	2700	2700	2700	2700	2700
4	A	900	900	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1400
	B	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	C	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	D	1700	1700	1800	1800	1800	1800	2000	2000	2000	2000	2200	2200	2200	2200	2200
	E	2200	2200	2300	2300	2300	2300	2500	2500	2500	2500	2700	2700	2700	2700	2700

Model	1321	1519	1521	1819	1821	1823	1827	2027	2033	2035	2039	2233	2239	2539
CMH	27774	27554	30298	34445	37872	41303	48161	51372	62343	65999	73022	70135	82485	89406
LPS	7715	7654	8416	9568	10520	11473	13378	14270	17318	18333	20284	19482	22913	24835
Height	1700	1900	1900	2200	2200	2200	2200	2400	2400	2400	2400	2600	2600	2900
Width	2500	2300	2500	2300	2500	2700	3100	3100	3700	3900	4300	3700	4300	4300

Length

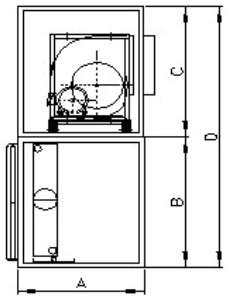
3	A	1600	1600	1600	1600	1800	1800	2000	2000	2200	2200	2200	2200	2200[5)]	2200[5)]
	B	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	C	2900	2900	2900	2900	3100	3100	3300	3300	3500	3500	3500	3500	3500	3500
4	A	1600	1600	1600	1600	1800	1800	2000	2000	2200	2200	2200	2200	2200[5)]	2200[5)]
	B	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	C	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	D	2400	2400	2400	2400	2600	2600	2800	2800	3000	3000	3000	3000	3000	3000
	E	2900	2900	2900	2900	3100	3100	3300	3300	3500	3500	3500	3500	3500	3500

Table 2: Horizontal Typical Configuration Type 3 & 4

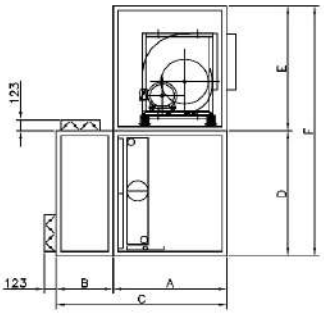
Note:
1. Please add 100mm for model using coil (8 Row & above)
2. The dimensions are subject to change without any notice for future improvement.
3. Dimensions in mm.
4. Please add 50mm length on the individual section width, depth and height if using the 50mm insulation panel.
5. For blower model 1250, section size will be 2600

Outline And Dimension

c. Vertical Type Configuration



Type 1



Type 2

Model	0404	0407	0410	0413	0707	0710	0713	0715
CMH	2326	3697	5069	6440	6012	8240	10469	11956
LPS	646	1027	1408	1789	1670	2288	2908	3321
Width	800	1100	1400	1700	1100	1400	1700	1900

Length

1	A	900	900	1000	1000	1000	1000	1200	1200
	B	800	800	800	800	1100	1100	1100	1100
	C	800	800	800	800	1100	1100	1100	1100
	D	1600	1600	1600	1600	2200	2200	2200	2200
2	A	900	900	1000	1000	1000	1000	1200	1200
	B	500	500	500	500	500	500	500	500
	C	1400	1400	1500	1500	1500	1500	1700	1700
	D	800	800	800	800	1100	1100	1100	1100
	E	800	800	800	800	1100	1100	1100	1100
	F	1600	1600	1600	1600	2200	2200	2200	2200

Model	1010	1013	1015	1019	1021	1315	1319	1321
CMH	11408	14494	16553	20668	22723	20228	25258	27774
LPS	3169	4026	4598	5741	6312	5619	7016	7715
Width	1400	1700	1900	2300	2500	1900	2300	2500

Length

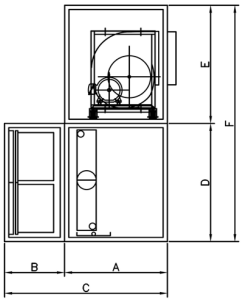
1	A	1200	1200	1400	1400	1400	1400	1400	1600
	B	1400	1400	1400	1400	1400	1700	1700	1700
	C	1100	1200	1200	1400	1400	1400	1600	1600
	D	2500	2600	2600	2800	2800	3100	3300	3300
2	A	1200	1200	1400	1400	1400	1400	1400	1600
	B	500	500	500	500	500	500	500	500
	C	1700	1700	1900	1900	1900	1900	1900	2100
	D	1400	1400	1400	1400	1400	1700	1700	1700
	E	1100	1200	1200	1400	1400	1400	1600	1600
	F	2500	2600	2600	2800	2800	3100	3300	3300

Table 3 : Vertical Typical Configuration Type 1 & 2

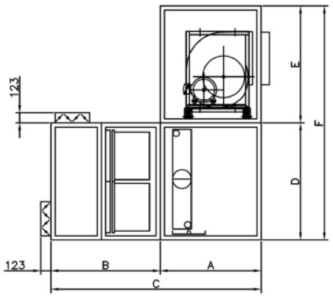
Note:
1. Please add 100mm for model using coil (8 Row & above)
2. The dimensions are subject to change without any notice for future improvement.
3. Dimensions in mm.
4. Please add 50mm lenght on the individual section width, depth and height if using the 50mm insulation panel.
5. For blower model 1250, section size will be 2600.*

Outline And Dimension

d. Vertical Type Configuration



Type 3



Type 4

Model	0404	0407	0410	0413	0707	0710	0713	0715
CMH	2326	3697	5069	6440	6012	8240	10469	11956
LPS	646	1027	1408	1789	1670	2289	2908	3321
Width	800	1100	1400	1700	1100	1400	1700	1900

Length

3	A	900	900	1000	1000	1000	1000	1200	1200
	B	700	700	700	700	700	700	700	700
	C	1600	1600	1700	1700	1700	1700	1900	1900
	D	800	800	800	800	1100	1100	1100	1100
	E	800	800	800	800	1100	1100	1100	1100
	F	1600	1600	1600	1600	2200	2200	2200	2200
4	A	900	900	1000	1000	1000	1000	1200	1200
	B	1200	1200	1200	1200	1200	1200	1200	1200
	C	2100	2100	2200	2200	2200	2200	2400	2400
	D	800	800	800	800	1100	1100	1100	1100
	E	800	800	800	800	1100	1100	1100	1100
	F	1600	1600	1600	1600	2200	2200	2200	2200

Model	1010	1013	1015	1019	1021	1315	1319	1321
CMH	11408	14494	16553	20668	22723	20228	25258	27774
LPS	3169	4026	4598	5741	6312	5619	7016	7715
Width	1400	1700	1900	2300	2500	1900	2300	2500

Length

3	A	1200	1200	1400	1400	1400	1400	1400	1600
	B	700	700	700	700	700	700	700	700
	C	1900	1900	2100	2100	2100	2100	2100	2300
	D	1400	1400	1400	1400	1400	1700	1700	1700
	E	1100	1200	1200	1400	1400	1400	1600	1600
	F	2500	2600	2600	2800	2800	3100	3300	3300
4	A	1200	1200	1400	1400	1400	1400	1400	1600
	B	1200	1200	1200	1200	1200	1200	1200	1200
	C	2400	2400	2600	2600	2600	2600	2600	2800
	D	1400	1400	1400	1400	1400	1700	1700	1700
	E	1100	1200	1200	1400	1400	1400	1600	1600
	F	2500	2600	2600	2800	2800	3100	3300	3300

Table 4 : Vertical Typical Configuration Type 3 & 4

Note:
1. Please add 100mm for model using coil (8 Row & above)
2. The dimensions are subject to change without any notice for future improvement.
3. Dimensions in mm.
4. Please add 50mm lenght on the individual section width, depth and height if using the 50mm insulation panel.
5. For blower model 1250, section size will be 2600.*

Filter Specification

a. Standard AHU Filter (Primary & Secondary Filter)

Model	Filter Media Size and Quantity								
	Sliding / Universal Filter frame								
	24" x 24"		20" x 24"		16" x 24"		12" x 24"		Total Area (m^2)
	Qty	Area (m^2)	Qty	Area (m^2)	Qty	Area (m^2)	Qty	Area (m^2)	
0404	1	0.35	0	0.00	0	0.00	0	0.00	0.35
0407	1	0.35	0	0.00	0	0.00	1	0.17	0.52
0410	2	0.71	0	0.00	0	0.00	0	0.00	0.71
0413	2	0.71	0	0.00	0	0.00	1	0.17	0.88
0707	1	0.35	0	0.00	0	0.00	2	0.34	0.70
0710	2	0.71	0	0.00	0	0.00	2	0.34	1.05
0713	2	0.71	0	0.00	0	0.00	3	0.51	1.22
0715	2	0.71	1	0.29	0	0.00	2	0.34	1.34
1010	4	1.41	0	0.00	0	0.00	0	0.00	1.41
1013	4	1.41	0	0.00	0	0.00	2	0.34	1.75
1015	4	1.41	2	0.58	0	0.00	0	0.00	2.00
1019	6	2.12	0	0.00	0	0.00	2	0.34	2.46
1021	6	2.12	2	0.58	0	0.00	0	0.00	2.70
1315	4	1.41	2	0.58	0	0.00	2	0.34	2.34
1319	6	2.12	0	0.00	0	0.00	5	0.86	2.98
1321	6	2.12	2	0.58	0	0.00	3	0.51	3.22
1519	6	2.12	3	0.88	0	0.00	2	0.34	3.34
1521	6	2.12	5	1.46	0	0.00	0	0.00	3.58
1819	9	3.18	0	0.00	0	0.00	3	0.51	3.69
1821	9	3.18	3	0.88	0	0.00	0	0.00	4.05
1823	12	4.23	0	0.00	0	0.00	0	0.00	4.23
1827	12	4.23	0	0.00	3	0.69	0	0.00	4.93
2027	12	4.23	0	0.00	7	1.62	0	0.00	5.86
2033	15	5.29	0	0.00	8	1.85	0	0.00	7.15
2035	18	6.35	0	0.00	6	1.39	0	0.00	7.74
2039	18	6.35	0	0.00	9	2.08	0	0.00	8.44
2233	20	7.06	0	0.00	4	0.93	0	0.00	7.98
2239	24	8.47	0	0.00	4	0.93	0	0.00	9.39
2539	24	8.47	0	0.00	4	0.93	6	1.03	10.42

Filter Specification

a. HEPA Filter Specification

Model	HEPA Filter Size c/w Frame and Quantity / unit								
	24" x 24"		20" x 24"		16" x 24"		12" x 24"		Total Area (m^2)
	Qty	Area (m^2)	Qty	Area (m^2)	Qty	Area (m^2)	Qty	Area (m^2)	
0404	1	0.37	0	0.00	0	0.00	0	0.00	0.37
0407	1	0.37	0	0.00	0	0.00	1	0.19	0.56
0410	2	0.74	0	0.00	0	0.00	0	0.00	0.74
0413	2	0.74	0	0.00	0	0.00	0	0.00	0.74
0707	1	0.37	0	0.00	0	0.00	2	0.37	0.74
0710	2	0.74	0	0.00	0	0.00	2	0.37	1.12
0713	2	0.74	0	0.00	0	0.00	2	0.37	1.12
0715	2	0.74	0	0.00	1	0.25	2	0.37	1.36
1010	4	1.49	0	0.00	0	0.00	0	0.00	1.49
1013	4	1.49	0	0.00	0	0.00	0	0.00	1.49
1015	4	1.49	0	0.00	2	0.50	0	0.00	1.98
1019	6	2.23	0	0.00	0	0.00	0	0.00	2.23
1021	6	2.23	0	0.00	2	0.50	0	0.00	2.73
1315	4	1.49	0	0.00	2	0.50	0	0.00	1.98
1319	6	2.23	0	0.00	0	0.00	0	0.00	2.23
1321	6	2.23	0	0.00	2	0.50	0	0.00	2.73
1519	6	2.23	0	0.00	3	0.74	0	0.00	2.98
1521	6	2.23	0	0.00	5	1.24	0	0.00	3.47
1819	9	3.35	0	0.00	0	0.00	0	0.00	3.35
1821	9	3.35	0	0.00	3	0.74	0	0.00	4.09
1823	12	4.47	0	0.00	0	0.00	0	0.00	4.47
1827	12	4.47	0	0.00	0	0.00	3	0.56	5.02
2027	12	4.47	0	0.00	0	0.00	7	1.30	5.77
2033	15	5.58	0	0.00	0	0.00	8	1.49	7.07
2035	15	5.58	3	0.93	0	0.00	5	0.93	7.44
2039	18	6.70	0	0.00	0	0.00	6	1.12	7.81
2233	15	5.58	5	1.55	0	0.00	3	0.56	7.69
2239	18	6.70	6	1.86	0	0.00	0	0.00	8.56
2539	24	8.93	0	0.00	0	0.00	0	0.00	8.93

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