



Fin  *Power*

EUROVENT CERTIFIED
AIR HANDLING UNIT



ABOUT US

Finpower, incorporated in 2012, is a proud and leading HVAC solution provider, designing and manufacturing high quality, energy-efficient air-conditioning equipment as well as kitchen ventilation systems. Our units are suitable for all kinds of industrial, commercial, residential as well as a multitude of other special application and bespoke projects.

Ever since our inception more than half a decade ago, Finpower has been enhancing the lives of their customers, helping them breathe cleaner and cooler air, at the same time providing a refreshing atmosphere through our reliable and best in quality of HVAC Products.

An ISO 9001:2015 (Quality Management System), ISO 45001:2018 (Occupational Health & Safety Management System) and ISO 14001:2015 (Environmental Management System) certified company, we are committed to quality and excellence, and are passionate about our customer focus with innovation. To fulfill this, we have the strong backing of our competent engineering team. Being a top-notch provider of HVAC solutions to diverse and complex design challenges, we are a preferred and trusted choice in the industry. This is vouched by the many prestigious projects that we have bagged and successfully completed. To also fulfill our commitment towards the environment, we make sure that the HVAC engineering solutions we provide assist in maximizing energy savings and reduce carbon footprints, and consequently result in operational savings for our customers.

Having offices in Dubai, Abu Dhabi, Doha, Mangalore, Bangalore, Mumbai, we are predominant in The Middle East & India and have a global presence to serve and support our customers across the world. Our state-of-the-art futuristic manufacturing facility, that houses some of the advanced machinery, has been designed keeping in mind the intricacies in the manufacturing process and the international standards.

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INTRODUCTION

The importance of the Air Handling unit in a HVAC system is readily understood, as it modifies and conditions the indoor air with high efficiency cooling, precise control over temperature and humidity and thus enhancing the whole air conditioned environment.

Air handling units are capable of balancing air pressure, removing and filtering dust, dirt and other pollutants, thereby eliminating any health problems due to bad air quality. AHU can also act as a humidifier in dry conditions.

Since the construction layout and the physical location of the installed Air Handling unit is extremely difficult to alter later, it's imperative that the equipment is carefully and precisely selected and installed.

The type of fans and motors are selected based on designed static pressure and efficiency requirement. The characteristics of the cooling and heating units can be defined on the basis of the estimated cooling and/ or heating load.

Energy saving devices such as Heat wheel, Heat pipe etc. can be selected as and where advantageous without wasting energy. Suppliers are undergone with stringent pre-qualification process ensuring the quality of components/raw materials, availability of spares etc. with a proven track record of supply in the region and industry specific.

Why choose Finpower Air Handling Units?

- Eurovent Certified
- Enhanced Indoor Air Quality
- Easy Installation & Commissioning
- Operational efficiency & Energy efficiency
- Highly Reliable and Best-in-class Performance
- Cost savings & Energy savings
- Suitable for application in Residential, Commercial & Industrial spectrum
- High Quality components
- Ease of maintenance
- Round the clock service support

PRODUCTS

FRESH AIR HANDLING UNITS

Fresh Air Handling Unit (FAHU) is an excellent solution for regulating and circulating fresh air. As a part of HVAC system, it ensures a constant flow of fresh clean air maintaining well-conditioned environment. Capable of withstanding external static pressure up to 1000pa, Finpower SK 50T Series FAHUs are efficient enough to endure air volume from 1700 CMH to 60000 CMH.



AIR HANDLING UNITS

Air Handling units (AHU) are primarily used to regulate, recondition and circulate air as part of an HVAC system, in order to improve the indoor air quality and ensure fresh, comfortable and conditioned environment. Finpower's leading and advanced technology to design and manufacture energy efficient and premium quality air handling units are guaranteed to minimize carbon footprints and maximize cost savings for our customers.

CEILING SUSPENDED UNITS

Finpower ceiling suspended air handling units are designed in compact sizes to cool, heat, filter and clean the air. These highly durable units are suitable for commercial as well as industrial applications.



HEAT RECOVERY UNITS

Finpower's heat recovery units are designed to improve the fresh air quality in buildings, by treating and conditioning the waste heat from extract air, thereby ensuring efficient use of energy.

HEAT RECOVERY AIR HANDLING UNITS

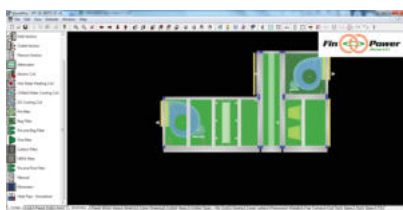
Air handling units with heat recovery is an ideal solution for cost reduction and energy savings. These AHUs have a high rate of heat recovery efficiency and will provide a fresh, healthy and comfortable environment.



DX TYPE AIR HANDLING UNITS

Finpower's high cooling capacity range of DX type AHUs are simple and intelligent HVAC solution with added energy savings.

OUR USP's



Finpower AHU Selector

Computerized software selection



Solid Edge

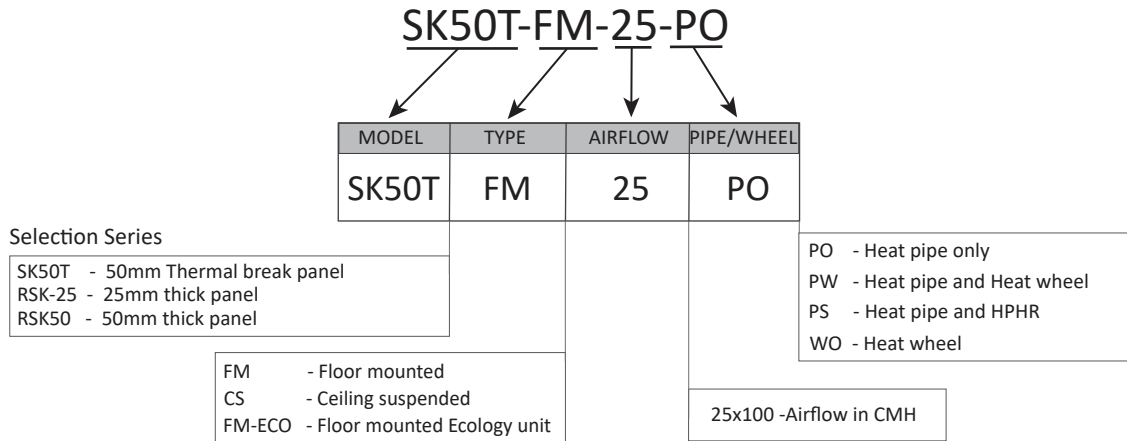
Design Softwares



Professional Coils 7.3

Design Softwares

NOMENCLATURE



SELECTION SERIES

SK50T SERIES



Series of horizontal floor mounted fresh air handling units are capable of handling the air volume from 1700 CMH to 60000 CMH and handling external static pressure of up to 1000pa. The casing consists of 50mm thick profile with thermal break which ensures that no condensation takes place on the surface of AHU. The panels are of 50mm thick insulated with CFC free PUF with uniform density of 40kg/m³. To fulfil our promise of quality and reliability, we ensure that all our units are certified as per international standards. The SK50T series is Eurovent certified and tested as per EN-1886 (Mechanical Performance) and EN-13053 (Unit Performance).

Particulars	Series					
	SK50T	SK50T-PO	SK50T-WO		SK50T-PW	
			Supply	Return	Supply	Return
Combination filter section with pre and bag filters.	✓	✓	✓		✓	
Cooling coil (CHW or DX type).	✓	✓			✓	
Intake section with G.I powder coated sand trap louvers*	✓	✓	✓		✓	
Forward or backward curved blower.	✓	✓	✓	✓	✓	✓
3 phase foot mounted induction motor.	✓	✓	✓	✓	✓	✓
Horse shoe heat pipe for energy recovery and cooling & dehumidification		✓			✓	
Rotary heat recovery wheel or PHE or HPHR for energy recovery			✓	✓	✓	✓
Intake section				✓		✓
Pre-filter				✓		✓

*Optional

SK-25 SERIES

Standard Air handlings are of two types: Floor mounted (FM) / Ceiling suspended (CS) that are also known as recirculation AHU. Horizontal Floor Mounted units, RSK-25-FM series, consist of the 25 mm thick profile without thermal break. They are suitable for indoor applications and has insulated double skin CFC free PUF with uniform density of 40 Kg/m³.

Particulars	Series	
	RSK-25-FM	RSK-25-CS
Pre-filter section	✓	✓
Cooling coil section	✓	✓
Forward or backward curved blower	✓	✓
3 phase induction motor	✓	✓
Mixing box can be provided*	✓	✓

*Optional

COMPONENTS

CASING

The casing construction for SK50T Series is tested as per EN 1886 with model box SK-50T-MB2 with results product performance rating as below.

Eurovent is applicable only for SK50T Series 50mm thermal break profile with Puff Insulation of density 40 kg/m³ / Rockwool Insulation of density 90 kg/m³

Feature	Value
MB - Casing Strength	
CS Class (Casing Strength Class)	D1(M)
MB - Casting Air Leakage	
CAL Class @ -400 Pa (Casing Air Leakage class at -400 Pa)	L1(M)
CAL Class @ +700 Pa (Casing Air Leakage class at +700 Pa)	L3(M)
MB - Filter Bypass Leakage	
FBL Class(Filter Bypass Leakage Class)	F9(M)
MB -Thermal Transmittance	
TT Class (Thermal Transmittance Class)	T2
MB - Thermal Bridging Factor	
TBF Class (Thermal Bridging Factor Class)	TB2

ALUMINIUM FRAME

The unit structure is made from hollow extruded heavy aluminum profiles, anodized for extra anti-corrosion protection. The frame provides excellent rigidity and stability to the structure apart from good aesthetics. Specially designed for HVAC applications, these profiles are connected by means of special die cast glass filled with nylon corner piece to form the AHU sections. Frame sizes for panels varying thickness (like 25 mm & 50 mm) are available. 50 mm thermal break profile has an excellent thermal bridging and least thermal transmittance properties that are tested in accordance to EN1886:2007 and Eurovent certified.

Following are the features of this construction:

- Aluminum frame construction
- Good mechanical strength
- Perfect appearance and precise dimensions
- Quick and precise installation of the interior components
- Can be easily dismantled and assembled in minimum time and cost
- Flexibility of construction
- Internal coving profile to avoid moisture stagnation & avoid bacterial growth.



BASE FRAME

Sendzimir galvanized steel sheets applied with Epoxy paint and heavy duty lifting holes are in house made while fabricating Base Frames. Mild steel channel frames are also provided for larger capacity units. 100 mm high base is provided for lifting floor mounted units. Hanging supports are provided for the ceiling suspended units to hang the units. Base frame with powder coating can be provided as per ASTM-B117 for corrosive environment. 100, 150, 200mm for heavy duty MS C channel are with hot dip galvanized or powder coating.



COOLING & HEATING COILS

In-house manufactured chilled water / hot water / DX coils made in either 3/8", 1/2" & 5/8" diameter. Seamless copper tubes which are mechanically expanded with rippled aluminum fins. This ensures high heat transfer efficiency, low air resistance and longer coil life. The cooling coil are designed in accordance with AHRI-410 standard & ASHRAE 33. Hydrophilic Aluminum or Copper fins are also available. An additional option of anti-corrosive coatings such as Heresite™, Copon Blue or Blygold™ etc. are also available. All Coils are provided with Copper / Mild steel headers. Coils are provided with Brass threaded male adaptors / connectors. Refrigerant coils are provided with brass distributors. Air & Drain vents made of brass are standard for water coils the standard casing material for all coils is Galvanized Steel. Casing can also be manufactured with stainless steel or aluminum. AHRI-410 certified coils can be provided.

All coils are tested at pressure of 400 psig / 27 bar. Coils are also available separately for OEM's and refurbishment.



DRAIN PAN

Drain pan is in-house manufactured made from corrosion resistant Stainless Steel 304 grade (standard feature).

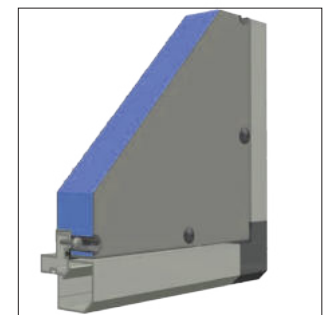
Multi-slope drain pans are designed as per ASHRAE 62 which ensures that all the condensate is drained and there is no microbial growth inside the unit, thereby maintain indoor air quality. The drain pan is insulated externally with 10, 19 or 25 mm closed cell elastomeric foam to avoid surface condensate from outside. Stainless steel 316 /Aluminum/GI/CR powder coated double skin drain pan provided as option.



PANEL

Finpower has an in-house double skin manufacturing facility. The panels are sandwich double skin type with outer sheet as pre-painted galvanized steel and inner as galvanized sheet. Polyurethane foam insulation is injected between the two sheets to make sandwich panels. A minimum density of 40kg/m³ is maintained; higher density up to 48kg/m³ can also be achieved with puff insulation.

Stainless steel 304 (or 316) or aluminum sheets can be provided for double skin panels as an option. The Polyurethane injected panels have an excellent heat insulation and noise reduction properties and these add to the mechanical strength and rigidity of the structure. Factory injected PUF is CFC & HFC free and self-extinguishing type. The maximum heat transfer coefficient for 25mm, 50T thermal break is U = 0.73 w/m²K and 0.35w/m²K respectively.



Panel sandwiched with Rockwood insulation for 25 mm, 30 mm and 50 mm provided as an option.

Rockwool insulation is provided with 90 KG / M³ density. Other densities upon request are also available.

It has sealing properties and good resistance to different compression stress as well as temperature.

Thermal insulation and fire resistance properties of class A1 following BS EN 13501-1, Class A when tested accordance with ASTM-84.

DROPLET ELIMINATORS

Droplet eliminators are provided where the coil face velocity exceeds 2.54 m/s as an option. The droplet eliminator can be provided in Aluminum or PVC or Stainless steel construction.



HANDLES & HINGES

Handles are made from glass fiber reinforced polyamide with zinc die cast chrome plated, can be used to open both sides. Hinges are made of glass fiber reinforced polyamide can be used for opening angle of 180°. Handles and Hinges are hygiene complaint VDI 6022.

Stainless steel handle and other locking arrangement can be provided as an option.



GASKET

We use specially designed gaskets and profiles to provide as excellent thermal break. These gaskets lined between the panels are fire retardant with perfect thermal acoustic insulation, to ensure leak proof.

HARDWARE

All hardware accessories used in the air handling units, like screws, nuts, and bolts are of a high standard quality and durability, and are also tested for corrosion.

FILTERS

PRE-FILTER

Filter sections are suitable for insertion of various types of filters, equipped with easily removable panels to permit and fasten the filters after the inspection and replacement.

A complete line of filters is available to meet all kinds of filtration efficiency and requirements. Single or multi-stage filtration to suit different application conforming to the latest ASHRAE & EUROVENT ISO standards 6980 are provided. The filters are arranged in the grid in heavy-duty specially designed galvanized sheet steel frame to avoid air bypass and are removable and washable type.



METALLIC FILTER

- Grease or Metallic filters are suitable for kitchen extract Metal Series for heavy duty & coarse filtration Washable filter
- G2 Grade
- High Dust holding capacity filters
- High temperature resistance filter
- Stainless steel frame can be provided



SOFT BAG FILTER

- Bag, pocket type
- Non-woven synthetic or Glass fiber media Flange type construction
- UL classified media
- Low pressure drop and longer life
- Available in depth option of 300mm, 500mm & 600mm Used for filtration of particles from 5 microns up to 1 micron



RIGID V CELL FILTER

- Mini pleat rigid bag filter
- Microfine glass fiber media
- Flange type construction
- Low initial pressure drop UL certified media
- Large surface area
- Available in wide range of efficiencies from F6 to F9 grade
- Used for filtration of particles from 5 microns up to 1 micron



HEPA FILTER

- High efficiency particulate air filters are made of glass fibers
- Used for filtration of particles of size up to 0.3 microns efficiency of filters is 99.97%
- HEPA Filter are 150/300 mm in depth
- Frame is assembled with filter paper whose surface area is compact, which prevents leakage of unfiltered air.
- Mini Pleat HEPA Filters are provided as optional
- Used in Operation theaters, clean room applications



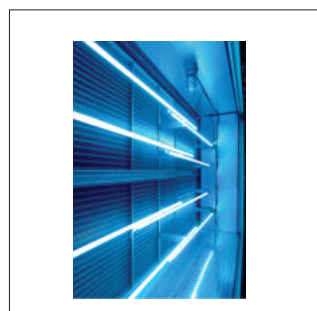
CARBON FILTER

- Odor filtration is done by using activated carbon to remove volatile organic compounds in the air
- Filters are made of activated carbon impregnated granules filled in deep bed panels arranged in a V shape and encased in metallic box
- Used for odor control
- Also use to treat some of the harmful gases in the air
- NFX Grade carbon filter



ULTRA VIOLET LAMPS

Ultra violet lamps are factory fitted as an option in the Air handling units to prevent the microbial growth and other air borne contaminations. The UV lamps can be placed upstream or downstream of the cooling coil. The UV lamps are also used in the ecology unit to minimize emission of the harmful gases in the air.

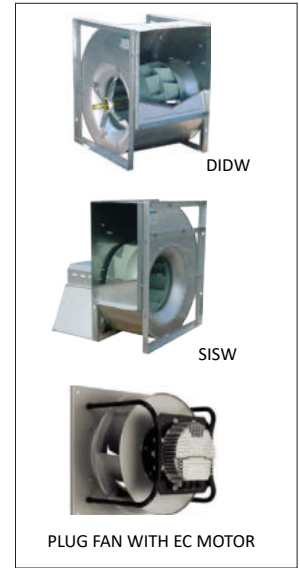


FANS

The unit consist of double inlet, double width AMCA FEG certified fans, Which can be either forward or backward curved or Aerofoil bladed. The type of impeller is selected on the basis of static pressure and efficiency requirement.

Single inlet, single width fans i.e. plenum fans are with backward, curved or Aerofoil bladed especially for the clean rooms & hospital projects. Plenum / plug type backward curved fans with motors directly coupled to the fan is also available as an option. The fans are AMCA certified for sound & air performance and fan grade efficiency. Generally, all fans and wheels are statically and dynamically balanced to ISO 1940 & AMCA 204 – G2.5 standards. Plenum fans with high energy efficiency EC motors are also available with low noise, low power consumption and longer durability. Fan bearing have life L50 of 200,000 hours as standard, based on fan selection.

Clients looking for high energy efficient units can opt for AHUs with EC fans, which has up to 50% power savings as compared to conventional fans. Spark proof fans and high temperature can be provided.



MOTORS

Standard foot mounted, TEFC, 3 phase induction motors are provided with standard efficiency EFF-2, high energy efficiency EFF-1 & premium efficiency motor can also be supplied. All the motors are standard foot mounted TEFC, IP 55, Class F Insulation with temperature rise to class B. Motors for special application can be provided like flame proof or explosion proof. Permanent magnet motors can also be provided to meet IE-4 requirements. All motors are as per IEC & NEMA-MG-1 standards. Class H insulation can also be provided.



FAN & MOTOR ASSEMBLY

Fan and motor are mounted on extruded aluminum frame which is manufactured in-house with high efficiency vibration isolators (spring isolators or rubber mounts) ensures no vibration is transmitted to the unit casing.

The isolators are designed for 92 % efficiency. The isolators are selected on the basis of weight of the fan, motor assembly and the higher value of RPM of the fan or motor.



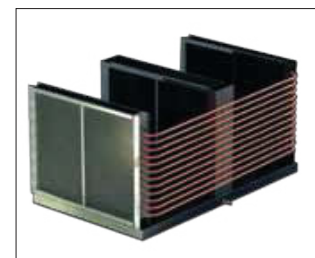
PULLEY & V BELTS

Cast iron pulley with balancing equals to G2.5 is used with minimum of 2 grooves, SPA and SPB type of pulleys are used based on the motor capacity. V belts used are of high grade, anti-static and oil resistance type. Variable pitch pulleys can be provided as an option.



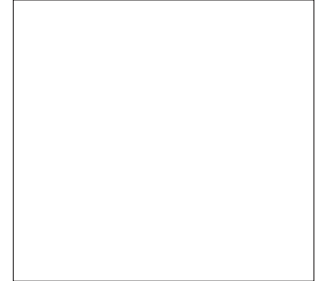
HEAT PIPE

The horse shoe coil is a self-sustaining coil, which operates on the ambient temperature without any external source of energy. The horse shoe coil is used as a dehumidifier which helps to maintain the humidity and maintains the indoor air conditioning. R134a, water is used as cooling medium.



HEAT RECOVERY WHEEL

Heat wheel is a rotating regenerative air-to-air recovery unit specially designed to transfer sensitive (temperature) and latent (humidity) heat from the exhaust air to the supply air. These energy components can recover 50% or more of the energy normally exhausted from a building. They are working based on this concept capture heat from exhaust air as it passes through the air handling unit and transfer it to the supply air stream. The heat wheel rotates at a speeds, capturing and transferring both sensible (heat) energy and latent (moisture) energy. The ability to transfer both sensible and latent energy gives the heat wheel several advantages. First, it can reduce the capacity of ventilation equipment. Furthermore, heat wheels can work at lower temperature without frosting occurs. The benefit includes recover both latent and sensible heat by allowing reduction in system capacity about 40 to 65%.



SOUND ATTENUATORS (SAT)

Sound Attenuators can be provided as integral part of AHU, and can be placed both in supply and return air stream for noise reduction generated by fans.

Square and rectangular bullnose construction SATs are designed to handle maximum air capacities and sound vibrations at minimum pressure drop. Noise radiated is minimized by the double skin construction and bullnose design of splitter at the air inlet providing good aerodynamics.

Attenuators provided are manufactured from high quality galvanized sheet of thickness conforming to JIS 3302 or BS 2989 (Stainless steel & Aluminum- optional). Acoustic material is of inorganic non hygroscopic mineral fiber incombustible with class 1 Fire Rating conforming to BS 476. Sound attenuators are conforming to international standard.



ELECTRIC HEATER (EH)

Electric heaters are used for sensible or reheating purpose to control the temperature and humidity respectively.

Stainless steel finned tubular heating elements which are safe and durable are used. Stainless steel fins are brazed to stainless steel tubular sheath which includes 80/20 nickel chrome resistance wire connected to terminal pins. The electric heaters with different capacities can be provided with different watt density as per the requirement. The heater can be provided in 3 phase or single phase as per the specifications. Heater can be provided with magnetic contactors, Thyristor controller and disconnect switch (optional feature).



CANOPY

Weather proof canopy are provided as an option for units which are exposed to air. Canopy can be multi patch with slope on one side/both sides which guides to drain the rain water.



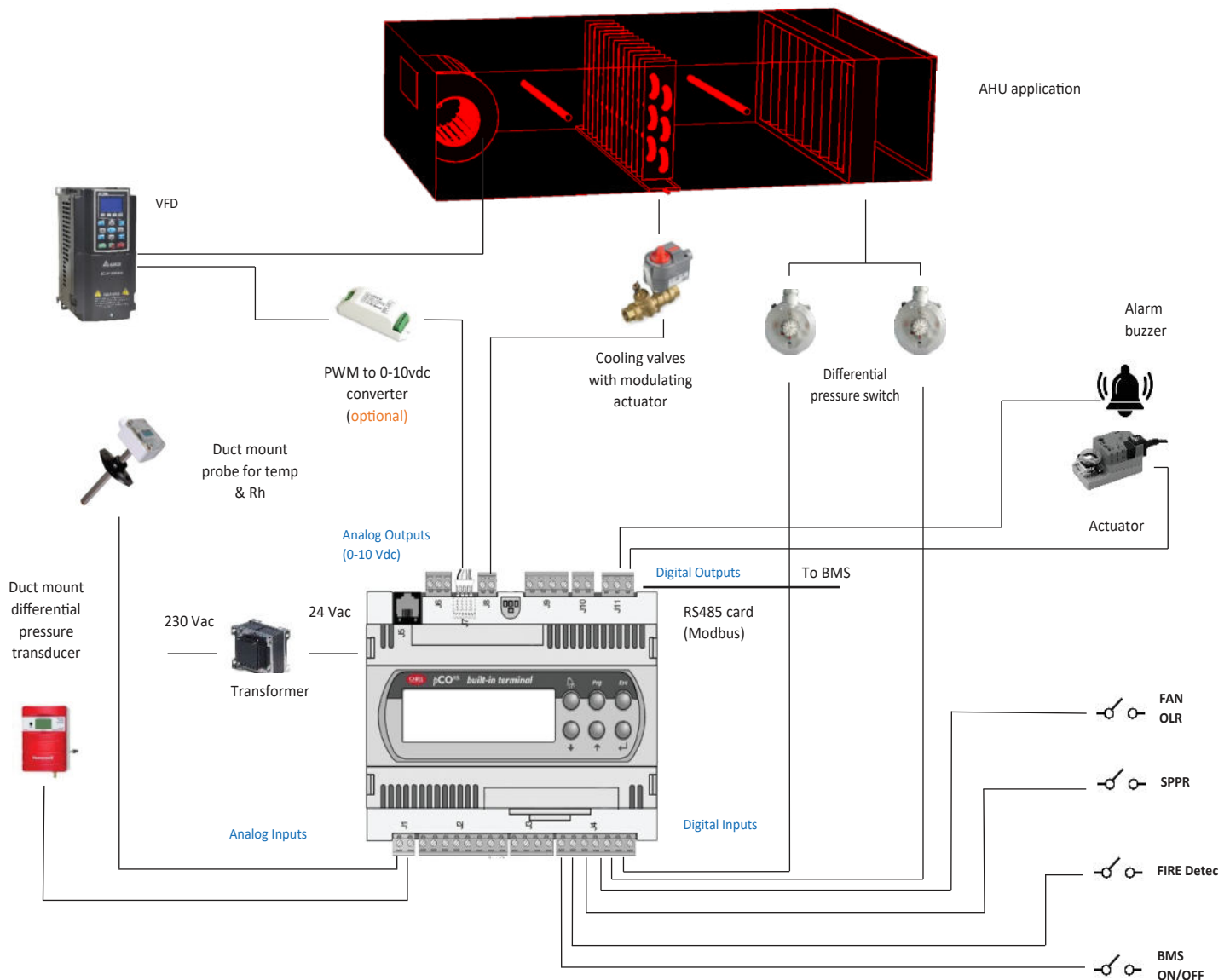
CONTROL PANEL FOR AHU

Standard control panel includes switches, LEDs, switchgears for blower, heaters etc.

Customized control panel includes following:

- Contactors, Overload relay, MCB, Control relays, Toggle switch, ON/OFF switch, LEDs etc.
- Switchgears
- PLC controller
- Transformers for control circuit supply
- Power & Control terminals
- Variable Frequency Drive
- Differential pressure transducer
- Differential pressure switches
- Modulating valves
- Modulating damper actuator
- Duct mountable temperature & humidity sensor

Logic diagram



ACCESSORIES

Marine Light: Marine Light with 100W bulb can be provided in Fan section and other sections upon request / requirement.

Marine Switch: Water proof switch for Marine light can be provided

View Port: View Glass made of high class Polycarbonate is supplied in Fan section & other sections as per request /requirement

Limit Switch: Limit Switch NO/NC type can be provided in Fan section for additional safety to disconnect the electrical supply to motor in case the unit door is opened while operational.

Door Guard: A standard feature for safety provided in fan section to ensure that nobody can enter the unit if the door is opened in case the unit is operational.

Weather Proof Canopy: Canopy for outdoor unit can be provided.

Belt Guard: Belt guard can be provided on the request for the drives.

Flexible Canvas: Flexible canvas made of woven fiberglass with neoprene coating is provided as standard feature in between the fan and casing (Fire retardant grade)

Volume Control Damper: Volume control damper with Galvanized steel opposed or parallel type blades can be provided with the minimum pressure drop.

Sand Trap Louver: Can be provided with galvanized steel, powder coated & in Stainless steel.

Magnehelic Gauge: To measure the pressure drop across various components.

Differential pressure switch: To indicate the pressure drop across various filters.

Differential pressure sensor: Can be provided to measure pressure difference and provide signal to PLC

Temperature Sensor: Can be provided to measure temperature across the coil.

Actuator: Can be provided to control the VCD.



Marine Light



View Port



Limit Switch



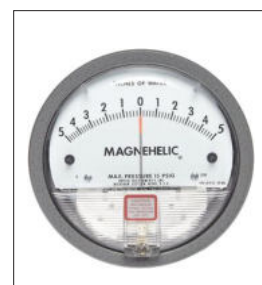
Differential Switch



VCD



Sand Trap Louver



Magnehelic Gauge



Spring Isolator

DIMENSION DETAILS

FLOOR MOUNTED

The floor mounted units constructed in 50 mm thermal break panels are generally Eurovent Certified. These units are also available in 25 mm profile construction. The double skin panels can be constructed in various combinations from PPGI /GI / Stainless steel / Aluminum sheets of thickness ranging from 0.6 mm to 1.5 mm with standard puff insulations. Optional construction with powder coated finish, rock wool insulation, SS drain pan etc. shall also be provided as per the project requirement. The cooling coil / heating coil is the combination of the copper tube and aluminum fins with G.I casing and optional SS casing. The units are equipped with AMCA certified fans and with high efficiency motors.

Model	Air flow	W	H	Mixing Box	Inlet Section	Pre Filter	Bag Filter	Rigid Vcell Filter	CF	2R Coil	4R/6R Coil	HSC	Elim.	EH	UVC	Fan Sec.	HEPA Filter	HRW Sec.	Sound Attenuator
	CMH	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
SK-FM-30	2950	960	770	500	500	80	700	400	750	275	550	750	100	300	600	877	1100	550	1000
SK-FM-43	4300	1150	770	500	500	80	700	400	750	275	550	750	100	300	600	961	1100	550	1000
SK-FM-57	5680	1410	885	500	500	80	700	400	750	275	550	750	100	300	600	1033	1100	550	1000
SK-FM-66	6560	1410	935	500	500	80	700	400	750	275	550	750	100	300	600	1093	1100	550	1000
SK-FM-74	7380	1410	1110	500	500	80	700	400	750	275	550	750	100	300	600	1093	1100	550	1000
SK-FM-82	8200	1410	1110	500	500	80	700	400	750	275	550	750	100	300	600	1185	1100	550	1000
SK-FM-94	9430	1450	1110	500	500	80	700	400	750	275	550	750	100	300	600	1185	1100	550	1000
SK-FM-108	10800	1734	1054	500	500	80	700	400	750	275	550	750	100	300	600	1261	1100	550	1000
SK-FM-118	11750	1734	1094	500	500	80	700	400	750	275	550	750	100	300	600	1261	1100	550	1000
SK-FM-124	12400	1734	1154	500	500	80	700	400	750	275	550	750	100	300	600	1225	1100	550	1000
SK-FM-135	13500	1950	1200	500	500	80	700	400	750	275	550	750	100	300	600	1335	1100	550	1000
SK-FM-147	14650	1950	1200	500	500	80	700	400	750	275	550	750	100	300	600	1375	1100	550	1000
SK-FM-160	15950	1950	1360	500	500	80	700	400	750	275	550	750	100	300	600	1375	1100	550	1000
SK-FM-181	18100	2010	1410	500	500	80	700	400	750	275	550	750	100	300	600	1467	1100	625	1000
SK-FM-205	20500	2310	1485	650	650	80	700	400	750	275	550	750	100	300	600	1573	1400	625	1000
SK-FM-224	22350	2310	1485	650	650	80	700	400	750	275	550	750	100	300	600	1510	1400	625	1000
SK-FM-244	24400	2310	1585	650	650	80	700	400	750	275	550	750	100	300	600	1573	1400	625	1000
SK-FM-272	27200	2310	1710	650	650	80	700	400	750	275	550	750	100	300	600	1695	1400	625	1000
SK-FM-285	28500	2520	1725	650	650	80	700	400	750	275	550	750	100	300	600	1695	1400	625	1000
SK-FM-311	31100	2635	2010	650	650	80	700	400	750	275	550	750	100	300	600	1738	1400	625	1000
SK-FM-338	33800	2635	2010	650	650	80	700	400	750	275	550	750	100	300	600	1872	1400	625	1000
SK-FM-368	36800	2635	2010	650	650	80	700	400	750	275	550	750	100	300	600	1872	1400	625	1000
SK-FM-408	40800	2660	2310	750	750	80	700	400	750	275	550	750	100	300	600	2026	1400	700	1000
SK-FM-473	47300	2920	2248	750	750	80	700	400	750	275	550	750	100	300	600	2026	1400	700	1000
SK-FM-525	52450	3235	2310	750	750	80	700	400	750	275	550	750	100	300	600	2158	1400	700	1000
SK-FM-578	57750	3235	2438	750	750	80	700	400	750	275	550	750	100	300	600	2158	1800	700	1000
SK-FM-631	63050	3235	2635	950	950	80	700	400	750	275	550	750	100	300	600	2192	1800	700	1000
SK-FM-683	68250	3310	3235	950	950	80	700	400	750	275	550	750	100	300	600	2377	1800	700	1000
SK-FM-735	73500	3310	3235	950	950	80	700	400	750	275	550	750	100	300	600	2377	1800	700	1000
SK-FM-788	78800	3310	3235	950	950	80	700	400	750	275	550	750	100	300	600	2377	1800	700	1000

** The Above dimension details are subject to change without notice due to continuous design improvement initiative

Note:

1. For 25 mm thick panels (Read as RSK-FM)
2. For 50 mm thick panels (Read as SKSOT-FM)
3. Kindly add 100 for 50 mm thick Profiles
4. The Height mentioned is excluding the base frame add 100 mm height for the base frame
5. For the Heat Recovery Unit kindly multiple the height x 2 to get the Heat recovery wheel unit height.
6. CF - Carbon filter | HSC - Horse shoe coil | Elim. - Eliminator | Fan sec. - Fan Section | EH - Electric Heater | HRW sec. - Heat recovery wheel section

CEILING SUSPENDED

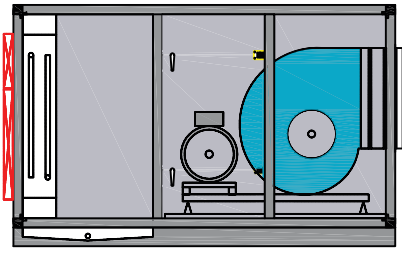
The Ceiling suspended units are constructed in 25mm thick double skin panel which is free from HFC and CFC with density of 40 Kg/m³. The base frames of these units are galvanized / powder coated mild steel with thickness of minimum 16 gauge with lifting holes for handling. The units are equipped with AMCA certified fans and with high efficiency motors.



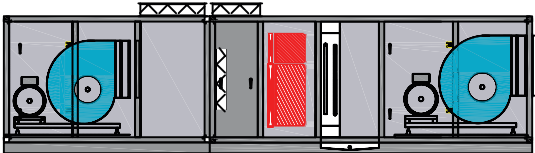
Model	CMH	Width	Height	Length	Filter Area	Coil Area
		mm	mm	mm	SqFt	SqFt
RSK-25-CS-20	2000	1027	520	1245	2.8	2.39
RSK-25-CS-30	3000	1360	575	1300	3.7	4.13
RSK-25-CS-40	4000	1740	520	1245	4.6	4.77
RSK-25-CS-50	5000	1840	575	1275	6.5	6.01
RSK-25-CS-60	6000	2150	575	1275	8.6	7.23
RSK-25-CS-70	7000	1992	675	1355	9.7	8.42
RSK-25-CS-80	8000	2220	675	1425	9.7	9.56
RSK-25-CS-90	9000	2500	675	1425	12.9	10.96
RSK-25-CS-100	10000	2300	775	1425	13.2	12.1
RSK-25-CS-110	11000	2475	775	1500	13.2	13.17
RSK-25-CS-120	12000	2655	775	1500	15.1	14.26
RSK-25-CS-130	13000	2625	825	1500	15.1	15.31
RSK-25-CS-140	14000	2900	825	1500	16.9	17.13

**The above details are subject to change without notice due to continuous design improvement initiative.*

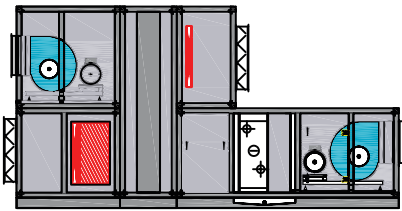
CONFIGURATION



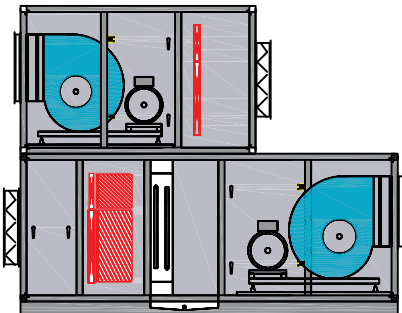
STANDARD AHU



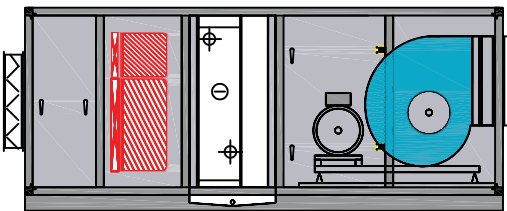
AHU WITH ECONOMIZER SECTION



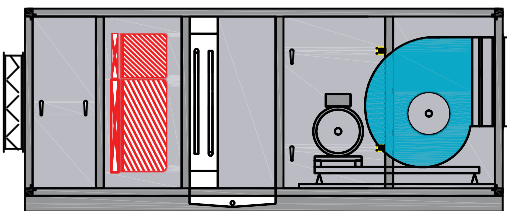
HEAT RECOVERY UNIT
WITH HORSE SHOE TYPE HEAT PIPE



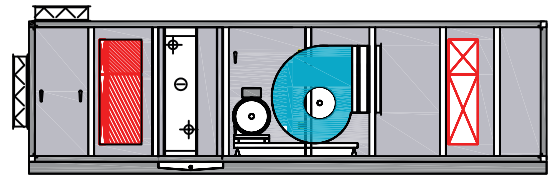
DOUBLE DECKER UNIT
WITH SUPPLY AND EXHAUST



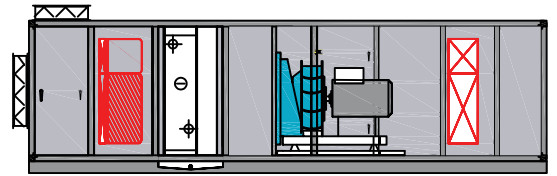
AHU WITH HORSE SHOE HEATPIPE TYPE



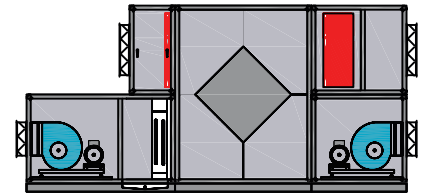
AHU WITH MIXING BOX



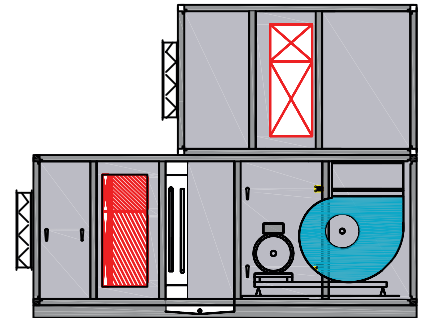
CLEAN ROOM AHU



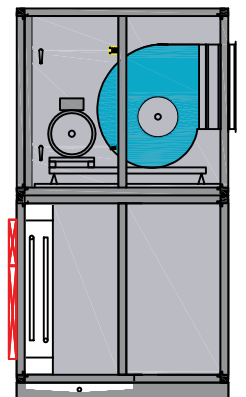
AHU WITH PLUG/PLENUM FAN



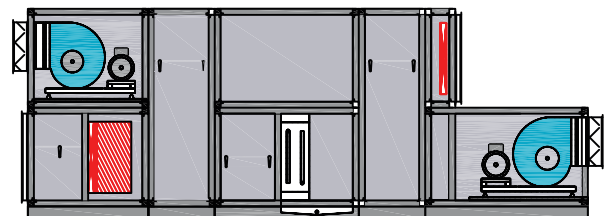
AHU WITH CROSS PLATE TYPE
HEAT EXCHANGER



2 TIER AHU WITH POSITIVE SECTION



VERTICAL AHU



DOUBLE HEAT RECOVERY UNIT

AIR COOLED CONDENSING UNIT



FPC series Air Cooled Condensing units are available in 12 models, with nominal capacity ranging from 5 TR – 75 TR for 50Hz application. All CDU models are rated in accordance with AHRI 365. Finpower's new FPC series Condensing units features a footprint up to 20% smaller than previous models and offers better design flexibility.

The broad size ranges allows you to intermix (and customize) the models of condensing units to accommodate the actual job requirements, thus eliminating the need to use oversized or undersized equipment. Appropriate sized equipment (for actual building load) can provide superior operating economy, better humidity control, and longer equipment life.

All the units are ESMA compliant and meets EER requirement as required by local government bodies. The units can be operated up to ambient of 52°C.

FEATURES

COMPRESSOR

- Hermetically sealed Copeland scroll compressors
- Crankcase heater as standard on all models
- No additional cooling required for compressor motors
- Low oil circulation rate
- Superior liquid handling capability
- Part loads are available on models 20TR to 75TR
- All compressors are equipped with advanced scroll temperature protection (ASTP)



CONDENSER COIL

- Coils are constructed with seamless copper tubes, that are mechanically bonded to aluminum fins, that ensures maximum heat transfer capacity.
- All coil assemblies are leak tested up to 392 psig internal pressure
- Heresite anticorrosive coating for the coils
- Copper fins & Electro tinned copper fins can be provided when high corrosion protection is required.



CONDENSER FAN & MOTOR

- Direct drive propeller type, aluminum alloy blades, with permanently lubricated motors having internal thermal overload as a standard feature.
- Motors are Totally Enclosed Air Over (TEAO) six pole with class 'F' insulation and IP44 protection for single phase motor and IP54 protection for three phase motors.
- The condenser fans are individually statically and dynamically balanced at the factory.



CONDENSING UNIT CASING

- Entire casing is structured using powder coated galvanized steel sheet with glossy finish.
- The powder coat finish is durable, capable of withstanding a 1000-hour salt spray test per ASTM B117.
- The base frame of the assembly is equipped with lifting holes for rigging and easy installation
- Powder coated grilles are provided for cooling coils, fan & motor as protection and safety feature.

ELECTRICAL CONTROL PANEL

The Control panel enclosure, mounted on the condensing unit, is fabricated out of cleaned, G90 galvanized heavy gauge plate conforming to ASTM A 653, followed by baked on electrostatic polyester dry powder coat finish.

- The panel is factory wired, all terminals are numbered by ferrules, tagged and has a 230V control circuit.
- All compressors are with DOL starter and are equipped with overload relay.
- Voltage protection against under voltage, over voltage, phase loss, phase reversal and phase unbalance of the incoming voltage.
- Power and control terminal blocks
- High pressure / low pressure protection.



SERVICE ACCESS

- Compressor and other refrigerant controls are accessible through access panels.
- Electrical access cover may be opened or removed without affecting normal operation of the unit.
- Condenser fan motors are equipped with plug connector for easy replacement.
- Structure is independent to one another which allows all access panels to be opened or removed without affecting the structural strength of the unit.



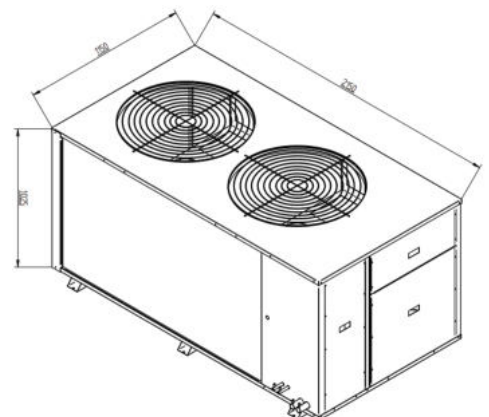
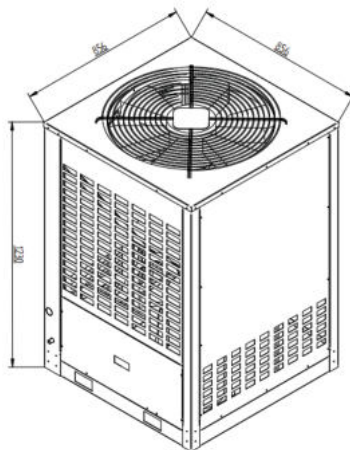
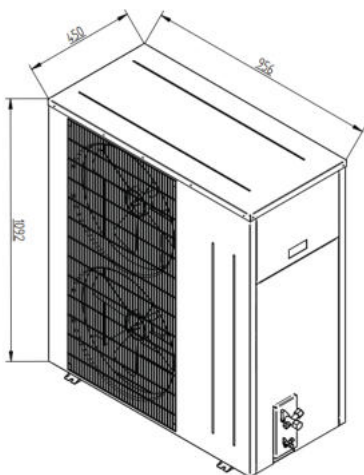
TESTING AND CHARGING

- All units are tested against leakage and undergoes a dry run at the factory prior to shipment.
- Condensing units above 5TR are shipped with nitrogen holding charge only.



UNIT MODEL		FPC 04ZE	FPC 05ZE	FPC 08ZE	FPV 10ZE	FPC 12ZE	FPC 15ZE	FPC 20ZE	FPC 25ZE	FPC 30ZE	FPC 40ZE	FPC 50ZE	FPC 60ZE	
Nominal Cooling Capacity	Mbh	48.4	55.56	96.5	110.5	126.9	161.7	221.04	253.8	323.4	409.8	489.3	507.7	
At 95of Ambt/46.4 of SST	KW	14.19	16.28	28.28	32.39	37.19	47.39	64.78	74.38	94.78	120.11	143.41	148.8	
Power Source	V/Ph/Hz	380-420/3/50												
Connections														
Suction-ODF	Inch	7/8			1-3/8		1-5/8		1-3/8 x 2		1-5/8 x 2		1-5/8 x 2	
Liquid-ODF	Inch	1/2			5/8		7/8		5/8 x 2		7/8 x 2		7/8 x 2	
Unit Dimension (Mm.)														
A	Length	960	1050	860	1300	1,850	2,150	2,500	2,040	2,040				
B	Width	450	450	860	950	1,000	1,150	1,150	2,600	3,187				
C	Height	1092	1092	1350	892	1025	1025	1025	1,525	1,520				
Unit Operating Weight	Kgs	90	98	215	230	233	350	470	500	590	870	910	950	
Compressors														
Type		Scroll												
Power Source	V/Ph/Hz	380-420/3/50												
Quantity		1	1	1	1	1	1	2	2	2	2	2	2	
Motor Power input	kW	3.8	4.0	6.6	7.7	8.7	11.8	7.7	8.7	11.8	20.0	25.0	30.0	
Max. Operating Current Each	Amp.	8.2	14.0	16.8	19.6	22.3	34.0	19.6	22.3	34.0	33.6	41.4	54.3	
Locked Rotor Current Each	Amp.	50	59.0	111.0	118.0	118.0	174.0	118.0	118.0	174.0	225.0	272.0	310.0	
Condenser Coil														
Type		Plate Fin (Slit Type) Bonded With Plain Or Inner Groove Copper Tubes												
Number Of Circuit		1	1	1	1	1	1	2	2	2	2	2	2	
Face Area	FT ²	8	11	11	15.52	15.52*	28.2*	31.9	31.9	35.6	50	66	66	
No. Of Rows		2	2	3	3	3	2	3	3	4	4	3	4	
No. Of Fin Per Inch		14	14	13	13	13	13	13	13	13	12	12	14	
Condenser Fan														
Type		Propeller												
Quantity		2	2	1	1	1	2	2	2	3	4	6	6	
Diameter	Inch	18	18	26	28	28	26	30	30	26	28	26	26	
Condenser Fan Motor														
Type		Asynchronous motor -												
Quantity		2	2	1	1	1	2	2	2	3	4	6	6	
Power Output	Hp.	1/4	1/2	1/2	3/4	3/4	3/4	1 1/4	1 1/4	3/4	3/4	3/4	3/4	
Rpm		920	920	920	920	920	920	920	920	920	940	940	940	
Full Load Amps Each	Amp.	1.6	4	4.0	4.0	4.0	4	2.5	2.5	4.0	4.0	4.0	4.0	
Type Of Refrigerant		R-407c												
Standard Components														
Accessories		Filter Drier, sight glass, thermal expansion valve												
Safety Devices		Internal Compressor, Low & high pressure protection, Fan Motor Protection, phase protector												

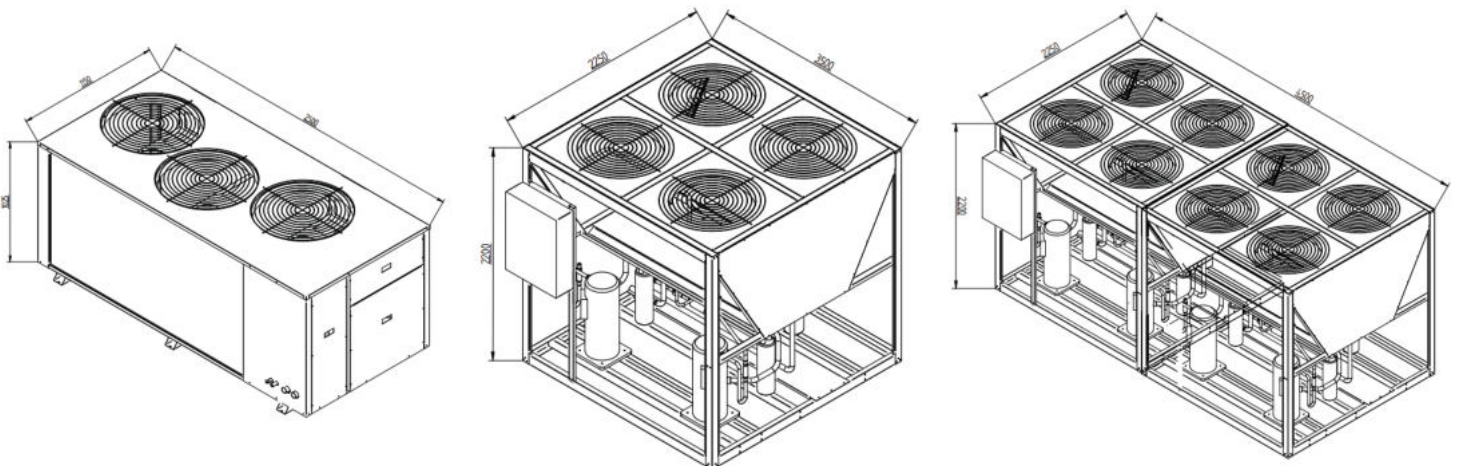
Note: - * inner groove copper tubes



PERFORMANCE DATA - R407C

UNIT MODEL	Saturated Suction Temp °F	Air Temperature Entering Condenser °F							
		85		95		105		115	
		MBH	KW	MBH	KW	MBH	KW	MBH	KW
FPC 04ZE	35	43.00	3.86	39.61	4.37	37.90	4.94	35.10	5.50
	40	47.10	3.98	43.64	4.49	41.60	5.06	38.90	5.62
	45	51.50	4.11	47.58	4.66	45.70	5.21	42.60	5.77
	50	56.30	4.28	52.00	4.85	49.80	5.43	46.70	5.96
FPC 05ZE	35	53.60	4.13	45.12	4.57	46.70	5.22	38.65	5.51
	40	59.00	4.24	49.34	4.65	51.50	5.33	42.60	5.61
	45	64.80	4.36	54.29	4.77	56.60	5.46	46.92	5.71
FPC 08ZE	50	71.00	4.46	59.50	4.90	61.80	5.61	51.50	5.85
	35	83.42	5.27	76.88	6.85	57.70	6.66	66.77	8.44
	40	92.15	5.40	84.93	6.98	63.50	6.82	73.59	8.61
FPC 12ZE	45	101.69	5.55	93.72	7.16	70.30	6.99	81.42	8.78
	50	112.30	5.67	103.50	7.35	77.10	7.14	90.00	8.97
	35	91.40	7.15	85.42	7.90	74.00	9.12	77.16	9.83
FPV 10ZE	40	100.97	7.32	94.37	8.06	81.20	9.33	85.04	10.03
	45	111.42	7.46	104.13	8.26	89.40	9.54	94.08	10.23
	50	123.05	7.63	115.00	8.48	98.30	9.70	104.00	10.45
FPC 15ZE	35	105.80	9.09	98.90	8.85	92.10	11.61	85.30	11.17
	40	116.30	9.36	109.20	9.02	101.70	11.87	93.80	11.41
	45	127.90	9.57	120.10	9.25	111.90	12.20	103.40	11.64
FPC 20ZE	50	140.60	9.87	131.70	9.50	122.80	12.52	114.00	11.85
	35	139.20	12.10	129.00	12.30	118.00	15.09	107.10	15.18
	40	152.80	12.39	141.60	12.54	129.60	15.52	117.70	15.50
FPC 25ZE	45	167.90	12.77	155.20	12.86	142.30	15.87	129.60	15.82
	50	183.20	13.23	169.20	13.20	155.60	16.29	141.90	16.10
	35	182.81	14.30	170.85	16.54	148.00	18.24	154.32	20.51
FPC 30ZE	40	201.94	14.64	188.73	16.86	162.40	18.66	170.08	20.93
	45	222.84	14.92	208.27	17.29	178.80	19.08	188.16	21.37
	50	246.10	15.26	230.00	17.75	196.60	19.40	208.00	21.75
FPC 40ZE	35	211.60	18.18	197.80	18.50	184.20	23.22	170.60	23.20
	40	232.60	18.72	218.40	18.86	203.40	23.74	187.60	23.68
	45	255.80	19.14	240.20	19.33	223.80	24.40	206.80	24.17
FPC 50ZE	50	281.20	19.74	263.40	19.85	245.60	25.04	228.00	24.60
	35	278.40	24.20	258.00	24.18	236.00	30.18	214.20	29.80
	40	305.60	24.78	283.20	24.65	259.20	31.04	235.40	30.41
FPC 60ZE	45	335.80	25.54	310.40	25.27	284.60	31.74	259.20	31.05
	50	366.40	26.46	338.40	25.95	311.20	32.58	283.80	31.60
	35	359.30	28.87	337.10	32.23	314.20	36.02	290.70	40.16
FPC 80ZE	40	395.80	29.94	371.90	33.15	346.30	37.12	320.70	41.23
	45	436.40	30.96	409.80	34.24	381.80	38.33	353.80	42.42
	50	479.40	31.87	450.40	35.33	420.00	39.40	389.60	43.54
FPC 100ZE	35	429.50	34.85	402.90	39.09	374.60	44.41	346.30	49.79
	40	473.20	35.89	443.90	40.15	412.80	45.57	381.80	50.92
	45	521.70	36.79	489.30	41.25	455.50	46.64	421.40	52.10
FPC 125ZE	50	572.80	37.99	537.00	42.64	500.50	47.88	464.00	53.06
	35	442.90	33.52	418.60	37.85	393.00	42.38	365.10	47.43
	40	487.20	34.63	460.90	38.96	432.30	43.63	401.90	48.69
FPC 150ZE	45	536.30	35.85	507.70	40.19	475.60	45.03	442.50	50.08
	50	588.50	37.18	557.50	41.49	522.00	46.49	486.20	51.52

* Due to continuous products improvement manufacturer reserves the right to make changes in design & construction at any time without notice and without incurring obligations.
 * Specifications are subject to change without prior notice



QUICK FORMULAE

SI METRIC - IMPERIAL UNITS CONVERSION TABLE

Conversion Factors

(Approximate)	Imperial Unit	Metric Unit	Imperial to Metric Units	Metric to Imperial Units
LENGTH	inch (in)	millimetre (mm) or	1 in = 25.4 mm	1 mm = 0.0394 in
	inch (in)	centimetre (cm)	1 in = 2.54 cm	1 cm = 0.394 in
	foot (ft)	metre (m)	1 ft = 0.305 m	1 m = 3.28 ft
	mile	kilometre (km)	1 mile = 1.61 km	1 km = 0.621 mile
MASS	ounce (oz)	gram (g)	1 oz = 28.3 g	1 g = 0.0353 oz
	pound (lb)	kilogram (kg)	1 lb = 0.454 kg	1 kg = 2.20 lb
	ton	kilogram (kg)	1 ton = 1000 kg	1 kg = 0.001 ton
AREA	square inch (in ²)	square centimetre (cm ²)	1 in ² = 6.45 cm ²	1 cm ² = 0.155 in ²
	square foot (ft ²)	square metre (m ²)	1 ft ² = 0.0929 m ²	1 m ² = 10.8 ft ²
VOLUME	cubic inch (in ³)	cubic centimetre (cm ³)	1 in ³ = 16.4 cm ³	1 cm ³ = 0.0610 in ³
	cubic foot (ft ³)	cubic metre (m ³)	1 ft ³ = 0.0283 m ³	1 m ³ = 35.3 ft ³
VOLUME (fluids)	pint (pt)	litre (l)	1 pint = 0.568 litre	1 litre = 1.76 pint
	gallon (gal)	litre (l) or cubic metre (m ³)	1 gal = 4.55 litre	1 m ³ = 220 gallons
VOLUME FLOW	cubic feet per minute (CFM)	litre per second (l/s)	1 CFM = 0.4721 l/s	1 l/s = 2.118 CFM
	gallon per minute (GPM)	litre per second (l/s)	1 GPM = 0.0758 l/s	1 l/s = 13.187 GPM
	cubic meter per hour (CMH)	litre per second (l/s)	1 CMH = 0.2778 l/s	1 l/s = 3.6 CMH
FORCE	pound - force (lbf)	newton (N)	1 lbf = 4.45 N	1 N = 0.225 lbf
PRESSURE	pound per square inch (psi)	kilopascal (kPa)	1 psi = 6.89 kPa	1 kPa = 0.145 psi
	pound per square inch (psi)	kilogram per centimetre sq. (kg/ cm ²)	1 psi = 0.0703 kg/ cm ²	1 kg/ cm ² = 14.223 psi
	atmosphere (atm)	kilopascal (kPa)	1 atm = 101.3 kPa	1 kPa = 0.009875 atm
	millimetre of mercury (mm)	kilopascal (kPa)	1 mm Mercury = 7.50 kPa	1 kPa = 0.1333 mm Mercury
VELOCITY	mile per hour (mph)	kilometre per hour (km/ hr)	1 mph = 1.61 km/ hr	1 km/ hr = 0.621 mph
	feet per minute (FPM)	metre per second (m/s)	1 FPM = 0.005083 m/s	1 m/s = 196.72 FPM
TEMPERATURE	Fahrenheit temp (°F)	Celsius temp (°C)	°C = (°F-32) / 1.8	°F = 1.8 x °C + 32
DENSITY	pound per cubic inch (lb/ in ³)	gram per cubic centimetre (g/ cm ³)	1 lb/ in ³ = 27.7 t/ m ³	1 t/m ³ = 0.0361 lb/ in ³
	pound per cubic inch (lb/ ft ³)	kilogram per cubic metre (kg/m ³)	1 lb/ ft ³ = 16.04 kg/ m ³	1 kg/ m ³ = 0.06233 lb/ft ³
ENERGY	British thermal unit (Btu)	kilojoule (kJ)	1 Btu = 1.06 kJ	1 kJ = 0.948 Btu
	therm	megajoule (MJ)	1 therm = 106 MJ	1 MJ = 9.48 x 10 ⁻³ therm
POWER	horsepower (hp)	kilowatt (kW)	1 hp = 0.746 kW	1 kW = 1.34 hp
	feet pound per second (ft-lb/s)	kilowatt (kW)	1 ft-lb/s = 0.001355 kW	1 kW = 738 ft-lb/s
HEAT	British thermal per hour (Btu/hr)	Watt (W)	1 Btu/hr = 0.293 W	1 W = 3.413 Btu/hr
	Kilo calorie per hour (kcal/hr)	kilowatt (kW)	1 kcal/hr = 0.001163 kW	1 kW = 860 kcal/hr
	refrigeration ton (TR)	kilowatt (kW)	1 TR = 3.517 kW	1 kW = 0.2843 TR

A. Cooling Load Equations

$$\begin{aligned} \text{Sensible Heat (W)} &= 1.21 \times \text{Airflow (l/s)} \times \text{Temperature Difference (}^\circ\text{C)} \\ \text{Latent Heat (W)} &= 2.98 \times \text{Airflow (l/s)} \times \text{Moisture Difference (g/kg)} \\ \text{Total Heat (W)} &= 1.19 \times \text{Airflow (l/s)} \times \text{Enthalpy Difference (kJ/kg)} \end{aligned}$$

B. Air Mixing Equation

$$\text{Supply Temp } T_{sa} = \frac{(\text{l/s})_{oa} \times T_{oa} + (\text{l/s})_{ra} \times T_{ra}}{(\text{l/s})_{sa}}$$

C. Sensible Heat Factor Equation

$$\text{RSHF} = \text{RSF} / \text{RTH}$$

D. Bypass Factor Equation

$$\text{BF} = \frac{(T_{Ldb} - T_{adp})}{(T_{Edb} - T_{adp})}$$

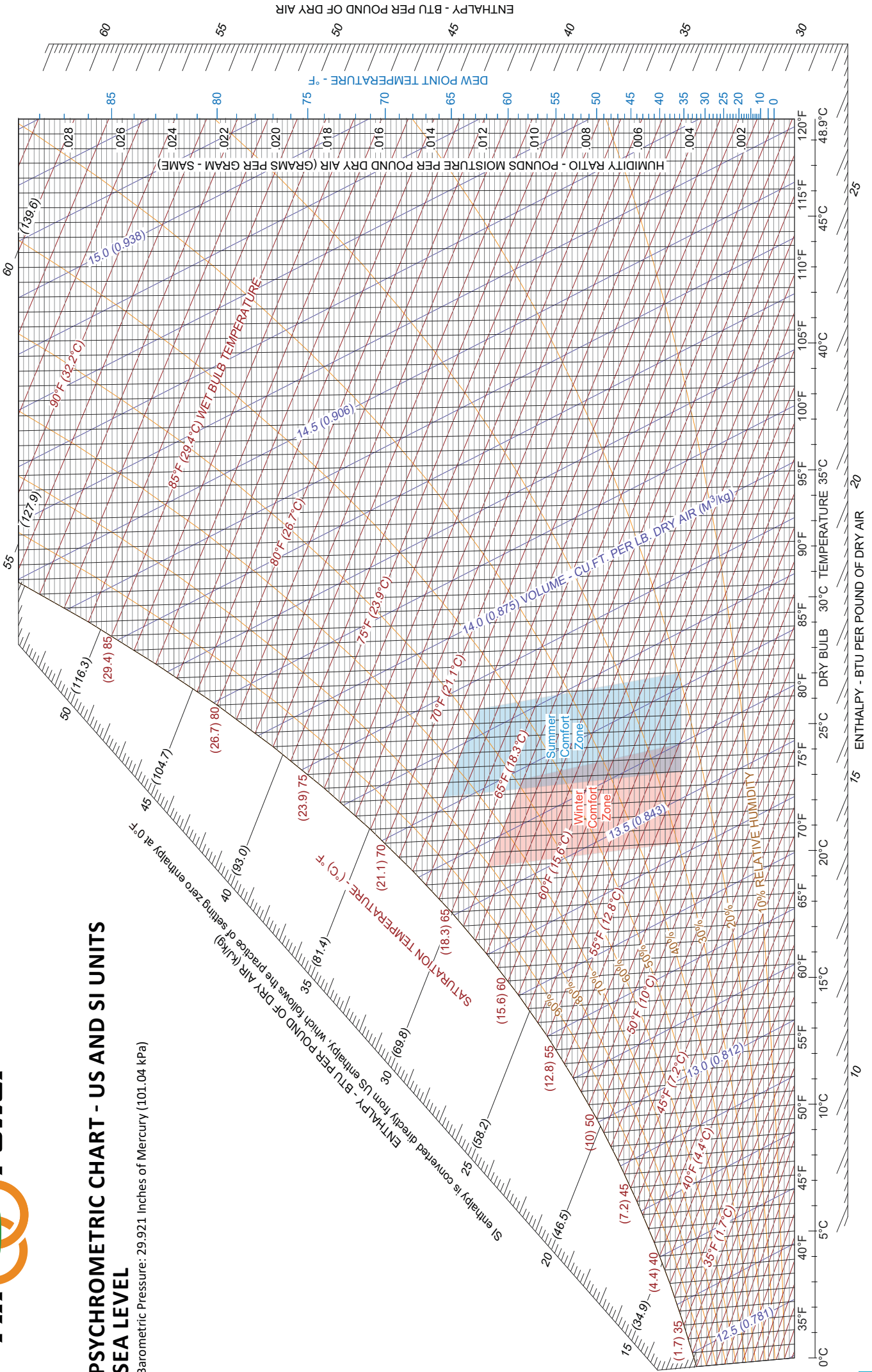
E. Fan Laws

Variable	Constant	Fan Law	Formula
Speed	Air density Fan size Duct system	Capacity varies as the speed Pressure varies as the square of the speed Horsepower varies as the cube of the speed	$Q1/Q2 = N1/N2$ $P1/P2 = (N1/N2)^2$ $HP1/HP2 = (N1/N2)^3$
Fan Size	Fan size Air density Tip speed	Capacity and horsepower vary as the square of the fan size Speed varies inversely as the fan size Pressure remains constant	$Q1/Q2 = HP1/HP2 = (D1/D2)^2$ $N1/N2 = D2/D1$ $P1 = P2$
	Air density Speed	Capacity varies as the cube of the size Pressure varies as the square of the size Horsepower varies as the fifth power of the size	$Q1/Q2 = (D1/D2)^3$ $P1/P2 = (D1/D2)^2$ $HP1/HP2 = (D1/D2)^5$



PSYCHROMETRIC CHART - US AND SI UNITS SEA LEVEL

Barometric Pressure: 29.921 Inches of Mercury (101.04 kPa)





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*Manufacturer reserves the right to discontinue or change the specifications or design of the product without prior notice at any time.

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