

K-AHU

KINAIR Handling Units

Ranging from 500 CFM to 50,000 CFM



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SUSTAINABILITY IN HVAC TECHNOLOGY

Air Handling Units



Introduction

Each air handling unit system is customized based on your specific air volume, cooling, heat recovery, and resistance requirements. Our units are designed tailor-made in so many ways, be it in terms of dimensions, components, arrangement, etc. Specialized and highly customizable indoor and outdoor air handler units meet the demands of any application through unmatched design scalability, flexibility, and versatility.

We provide

- Performance-leading flexibility – Design and construction features that adapt to any situation, requirement and environment.
- Quality - The factory where we manufacture air handling unit, has undergone rigorous quality management system program having an external accreditation from International Organization for Standardization which has substantial impact on the quality of our product.
- Services - Round the clock support, be in terms of assembly at site, technical assistance on selecting the right AHU, supervision on commissioning, annual maintenance support etc.

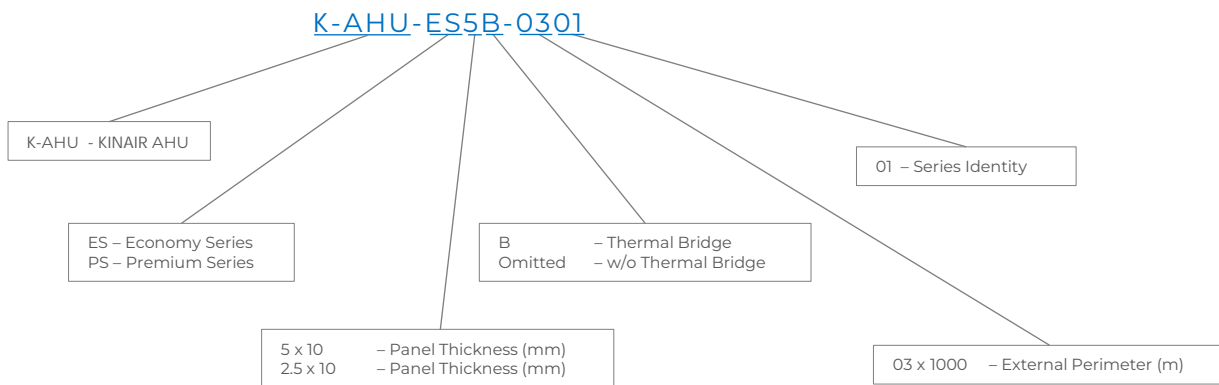
Product Configurations

Various type of product configuration are available:

- Air handling unit - In-line type, either chilled water or Dx units
- Air handling unit with energy recovery components such as Heat recovery wheel, Plate heat exchanger, or Heat pipe heat recovery
- Air handling unit with horseshoe heat pipe dehumidification system
- Air handling unit as per the requirements stated in DIN 1946-4 standard
- Air handling unit with integrated control systems - Plug and play solution
- Air handling unit incorporated with indirect evaporative cooling along with intelligent control functions

Our Work is tailored to your unique requirements.

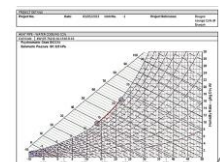
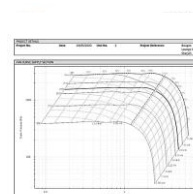
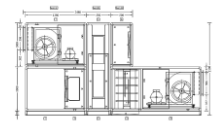
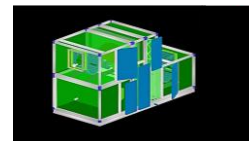
Nomenclature



Selection Software

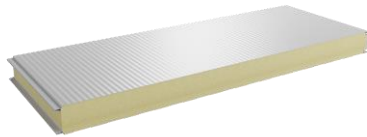
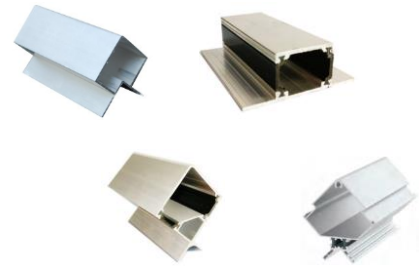
KINAIR AHU selection software tool helps you to select the right product which best suits your requirement, thus providing a very competitive solution available within. Some of the features listed are:

- One can select different configuration based on his requirements, which has a unique 3D visualization
- One can select various construction manufacturing options like , sheet thickness, insulation, etc.
- Once the selection is finished, a detailed technical report, fan curves, psychrometric curve, etc. can be generated and reviewed
- Dimensional drawings can be generated in both pdf, dwg format.



Components

Aluminum Profile : The unit frame is constructed of extruded aluminum profiles with the option of an anodized or mill finish. For the frame to be effective, it must serve a variety of functions other than design support and structural integrity and be constructed of extruded Aluminum alloy 6063, T6 temper, which provides good resistance to stress, corrosion, and cracking.



Sandwiched Panels : The air handling unit's enclosure is made up of sandwiched panels with insulation material, either polyurethane foam insulation or rockwool insulation, to ensure excellent thermal and sound insulation. Double-wall construction reduces vibration and allows high static pressure operation. Regardless of the type of structure, all panels on the access side can be easily removed, thereby facilitating access to the internal parts of the air handling unit.

Heat Transfer Coils : Kinetics provides coils that include variable fin spacing, copper tube thickness, and a variety of casing and fin materials, including galvanized and stainless-steel casings. Protective coatings and treatments are available to extend the service life of coils installed in corrosive atmospheres. The coil components (fins, tubes, headers, and casing) are completely coated with several coating options.

We can offer the following coil configurations

- Chilled water
- Hot water
- Direct expansion (DX)
- Condenser
- AHRI 410 Certified Coils



Drain Pan : The coil section is provided with an insulated drain pan made of stainless steel for collecting the condensation. The pan is multi-sloped towards the drain connection on either the lefthand or righthand side of the unit for easier drainage to prevent the growth of harmful bacteria and to maintain indoor air quality.

Air Filtration

Different types of filters are available with wide variety of filtering materials, covering an extensive range of possibilities in filtering efficiency depending upon the application. All the filters are in accordance with latest **ISO 16890** standards.

Prefilters : Pleated & Panel filters: Available in 2 & 4" deep made up of metallic or cotton/synthetic media with metallic or cardboard frame. Efficiency rating ranging from G2 - G4 (EN779 or equivalent).



Medium & Fine Filters : Pocket & Rigid Box Filters: Pocket Filters made of non-woven synthetic media, encased in metallic frame. Alternate to pocket filters, rigid filters made of micro-fine glass fiber media arranged in mini-pleated or deep pleated construction. Filter grades ranges from M5 - F9 (EN 779 or equivalent)



EPA & HEPA Filters : Available in 11 1/2", or 6" deep, made up of micro glass fiber paper media available in various efficiency grades from H10 to H14 (EN 1882) encased in metallic or MDF frame.

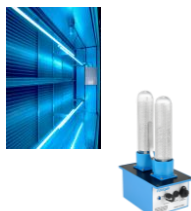


Gas Phase Filters : These filters primary handles the gas phase filtration, which utilizes a broad spectrum of chemical media to ensure removal of very wide range of airborne chemicals by adsorption process. Available in V-Bank or Granular media packing.



Other Methodologies : We offer the following technologies, for filtration purposes:

- UV-C Filtration
- Bi-Polar Ionizers



Fan & Motor

DIDW Blower : Double-inlet, double-width centrifugal belt-driven blowers are supplied as a standard feature in all the units. Mainly, there are two types of blowers that cover all needs: the forward-curve blower for low pressures and the backward-curve blower for medium and high pressures. All the belt-driven blowers are in accordance with AMCA standard 99-0098-76 R20. All the wheels are statically and dynamically balanced to ISO 1940 and AMCA 204-G2.5 standards. A balancing grade of G1.0 is available upon request for clean room applications. The performance of the blower has been tested and measured in accordance with AMCA Standard 210, and the noise level has been measured in accordance with AMCA Standard 300.



Plenum Fans : These are where the fan wheel operates without housing, inside a plenum. This results in the saving of space normally occupied by the fan housing, transition, and diffusers. It is available in two types: direct-driven and belt-driven. The operating limit is set according to the requirements of class I, II, and III limits as defined in AMCA Standard 99. All wheels are statically and dynamically balanced to ISO 1940 and AMCA 204-G2.5 standards.

EC Fan : Equipped with a single-inlet centrifugal impeller with high-efficiency backward-curved blades and an external rotor EC (Electronically Commutated) motor. It provides a compact and high-efficiency solution for air handling units. The high-performance impeller, motor, and electronics system are all optimally adjusted to one another, leading to an overall efficiency well above 60%. An important feature of these motors is the integrated variable speed drive (VSD) that allows for simple speed control, PI control with sensor input, or MODBUS high-level interface (HLI) connection over RS485.



Motor : Motors are totally enclosed fan-cooled (TEFC), foot-mounted, continuous duty type, IP55 protected, and have class F insulation. Rating and operating characteristics are in accordance with IEC60034 standards. As standard, IE2 efficiency motors are supplied along with the unit; upon request, IE3 motors and Class H motors shall be provided. All the motors are equipped with an adjustable motor base plate for adjusting the belt tension.

Unit Dimensions (without heat recovery)		Component Diagrams														
		Mixing Box	Prefilter- 2" Deep	Prefilter- 4" Deep	Bagfilter- 12" Deep	Bagfilter - 24" Deep	Cooling coil Upto 6R	Cooling coil from 8R	Electric Heater	Humidifier	Hepa Filter 11.5" Deep	Carbon filter 11.5" Deep	Eliminator 2 Pass	Fan section		
Model	Air volume CFM	Width mm	Height mm	Mixing Box mm	Prefilter- 2" Deep mm	Prefilter- 4" Deep mm	Bagfilter- 12" Deep mm	Bagfilter - 24" Deep mm	Cooling coil Upto 6R mm	Cooling coil from 8R mm	Electric Heater mm	Humidifier mm	Hepa Filter 11.5" Deep mm	Carbon filter 11.5" Deep mm	Eliminator 2 Pass mm	Fan section mm
0301	1000	850	710	450	120	170	370	630	696	796	400	850	500	500	300	980
0402	2000	1100	810	450	120	170	370	630	696	796	400	850	500	500	300	1230
0403	3000	1230	850	450	120	170	370	630	696	796	400	850	500	500	300	1230
0504	4000	1450	935	450	120	170	370	630	696	796	400	850	500	500	300	1230
0505	5000	1450	1100	450	120	170	370	630	696	796	400	850	500	500	300	1230
0506	6000	1525	1165	500	120	170	370	630	696	796	400	850	500	500	300	1330
0607	7000	1750	1165	500	120	170	370	630	696	796	400	850	500	500	300	1330
0608	8000	1825	1240	500	120	170	370	630	696	796	400	850	500	500	300	1350
0609	9000	1900	1300	500	120	170	370	630	696	796	400	850	500	500	300	1550
0710	10000	1900	1450	500	120	170	370	630	696	796	400	850	500	500	300	1550
0711	11000	2050	1450	600	120	170	370	630	696	796	400	850	500	500	300	1550
0712	12000	2150	1520	600	120	170	370	630	696	796	400	850	500	500	300	1550
0713	13000	2200	1550	600	120	170	370	630	696	796	400	850	500	500	300	1550
0814	14000	2300	1650	600	120	170	370	630	696	796	400	850	500	500	300	1580
0815	15000	2390	1650	600	120	170	370	630	696	796	400	850	500	500	300	1580
0816	16000	2390	1740	650	120	170	370	630	696	796	400	850	500	500	300	1580
0917	17000	2550	1740	650	120	170	370	630	696	796	400	850	500	500	300	1830
0918	18000	2550	1875	650	120	170	370	630	696	796	400	850	500	500	300	1830
0919	19000	2650	2100	650	120	170	370	630	696	796	400	850	500	500	300	1830
1020	20000	2750	2100	650	120	170	370	630	696	796	400	850	500	500	300	1830

* Above dimensions are without duct connecting flange. Kindly add 50mm on each side of the component for duct connecting flange



Unit Dimensions (with heat recovery)																		
Model	Air volume CFM	Width mm	Height mm	Mixing Box mm	Prefilter- 2" Deep mm	Prefilter- 4" Deep mm	Bagfilter-12" Deep mm	Bagfilter - 2 1/4" Deep mm	Cooling coil Upto 6R mm	Cooling coil from 8R mm	Electric Heater mm	Humidifier mm	Hepa Filter 11.5" Deep mm	Carbon filter 11.5" Deep mm	Eliminator 2 Pass mm	Fan section mm	Heat pipe mm	Heat recovery wheel mm
0401	1000	1050	710	450	120	170	370	630	696	796	400	850	500	500	300	980	750	550
0402	2000	1250	810	450	120	170	370	630	696	796	400	850	500	500	300	1230	750	550
0503	3000	1430	850	450	120	170	370	630	696	796	400	850	500	500	300	1230	750	550
0504	4000	1650	935	450	120	170	370	630	696	796	400	850	500	500	300	1230	750	550
0605	5000	1800	1100	450	120	170	370	630	696	796	400	850	500	500	300	1230	750	550
0606	6000	1920	1165	500	120	170	370	630	696	796	400	850	500	500	300	1330	750	550
0607	7000	2000	1165	500	120	170	370	630	696	796	400	850	500	500	300	1330	750	550
0708	8000	2125	1240	500	120	170	370	630	696	796	400	850	500	500	300	1350	750	550
0709	9000	2300	1300	500	120	170	370	630	696	796	400	850	500	500	300	1550	750	550
0710	10000	2300	1450	500	120	170	370	630	696	796	400	850	500	500	300	1550	750	550
0811	11000	2450	1450	600	120	170	370	630	696	796	400	850	500	500	300	1550	750	650
0812	12000	2600	1520	600	120	170	370	630	696	796	400	850	500	500	300	1550	750	650
0813	13000	2700	1550	600	120	170	370	630	696	796	400	850	500	500	300	1550	750	650
0914	14000	2850	1650	600	120	170	370	630	696	796	400	850	500	500	300	1580	750	650
0915	15000	3000	1650	600	120	170	370	630	696	796	400	850	500	500	300	1580	750	650
0916	16000	3000	1740	650	120	170	370	630	696	796	400	850	500	500	300	1580	750	650
1017	17000	3200	1740	650	120	170	370	630	696	796	400	850	500	500	300	1830	750	650
1018	18000	3200	1875	650	120	170	370	630	696	796	400	850	500	500	300	1830	750	650
1019	19000	3300	2100	650	120	170	370	630	696	796	400	850	500	500	300	1830	750	650
1020	20000	3450	2100	650	120	170	370	630	696	796	400	850	500	500	300	1830	750	650

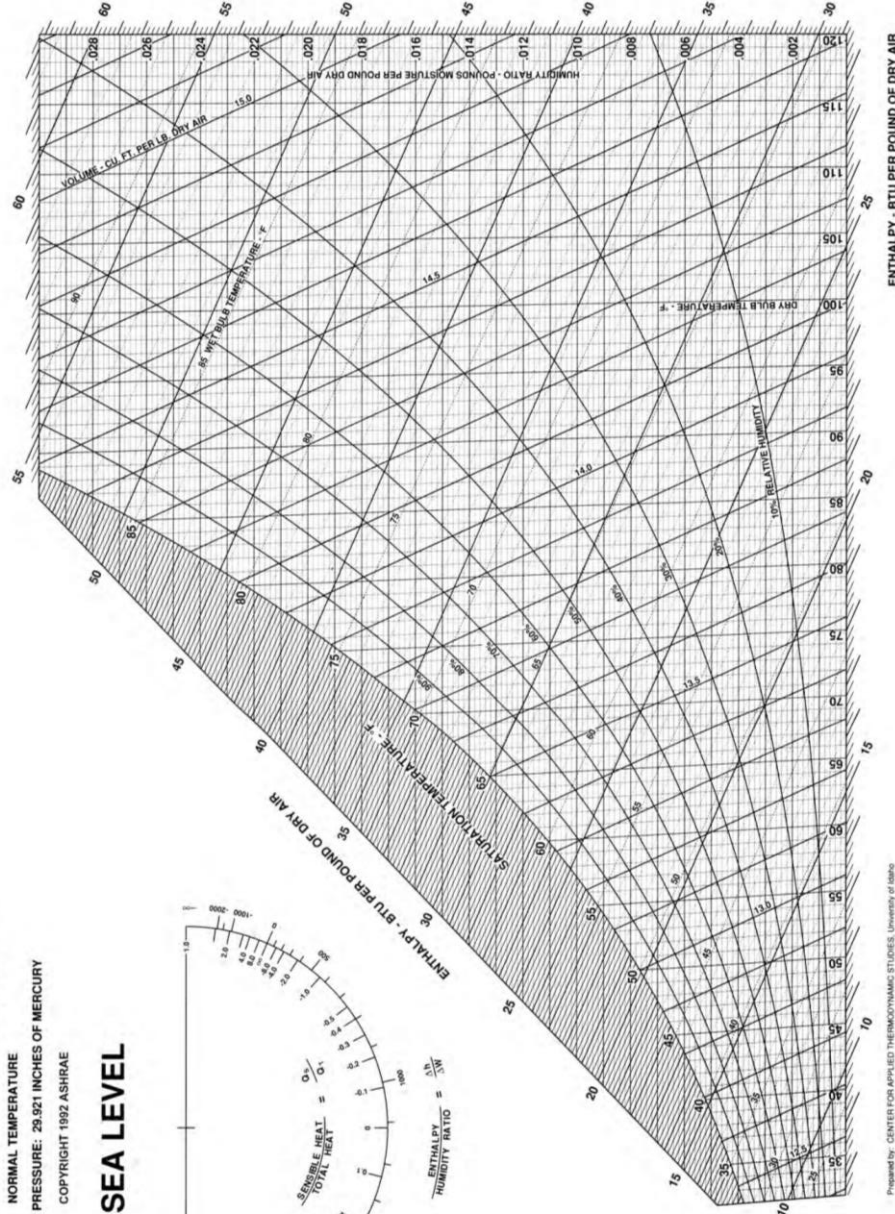
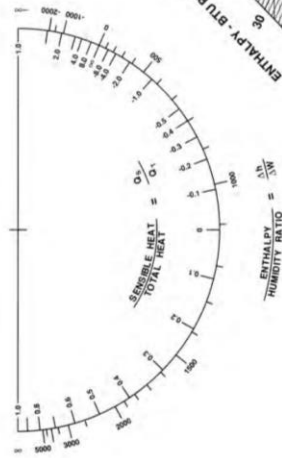
* Above dimensions are without duct connecting flange. Kindly add 50mm on each side of the component for duct connecting flange

* Above height is excluding the base frame.



ASHRAE PSYCHROMETRIC CHART NO. 1
 NORMAL TEMPERATURE
 BAROMETRIC PRESSURE: 29.921 INCHES OF MERCURY
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SEA LEVEL



Prepared by: CENTER FOR APPLIED THERMODYNAMIC STUDIES, University of Idaho

ENTHALPY - BTU PER POUND OF DRY AIR





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