



CÔNG TY CỔ PHẦN AIRTEK VIỆT NAM

163/4 đường TA15, Phường Thới An, Quận 12, HCM
Văn phòng: 572 Lê Quang Định, Phường 1, Quận Gò Vấp, HCM
Email: hoang.ho@airtek.vn | Website: www.airtek.vn



Air handling units
Technical Catalogue

1 INTRODUCTION

AIRTEK concentrate on the products customization of the highest standards of quality, safety and sustainability express the consequent premium strategy puts into practice. As a technical-operative company, we thrive on our employees' ambitions to keep on developing better solutions and improved products. A versatile, highly efficient production with sophisticated work processes and our staff's reputable knowledge and major dedication are the keys to meet your requirements and fulfill your requests. Our employees' expertise enable the production of air handling units (AHUs) that suit the most diverse requirements at a consistent high level of quality. The successful composition of all processes creates efficiency – during production, installation and operation of our AHUs.

Adapting to individual customer requirements is our core business. Aluminum thermal break of our arbitrary cross-section casing for air flow within range of 1.000 to 320.000 m³/h with different static pressure base on the custom requirements.



2. IDENTIFICATION & DIMENSION

AT 15 -19 S/D/TB BCFM...

AT: AIRTEK

INTERNAL UNIT HIGH

07: 700 mm
09: 900 mm
11: 1100 mm
13: 1300 mm
15: 1500 mm
17: 1700 mm
19: 1900 mm
21: 2100 mm

INTERNAL UNIT WIDTH

07: 700 mm
11: 1100 mm
13: 1300 mm
15: 1500 mm
19: 1900 mm
25: 2100 mm
27: 2700 mm
29: 2900 mm
33: 3300 mm
35: 3500 mm
39: 3900 mm
41: 4100 mm

PANEL THICKNESS

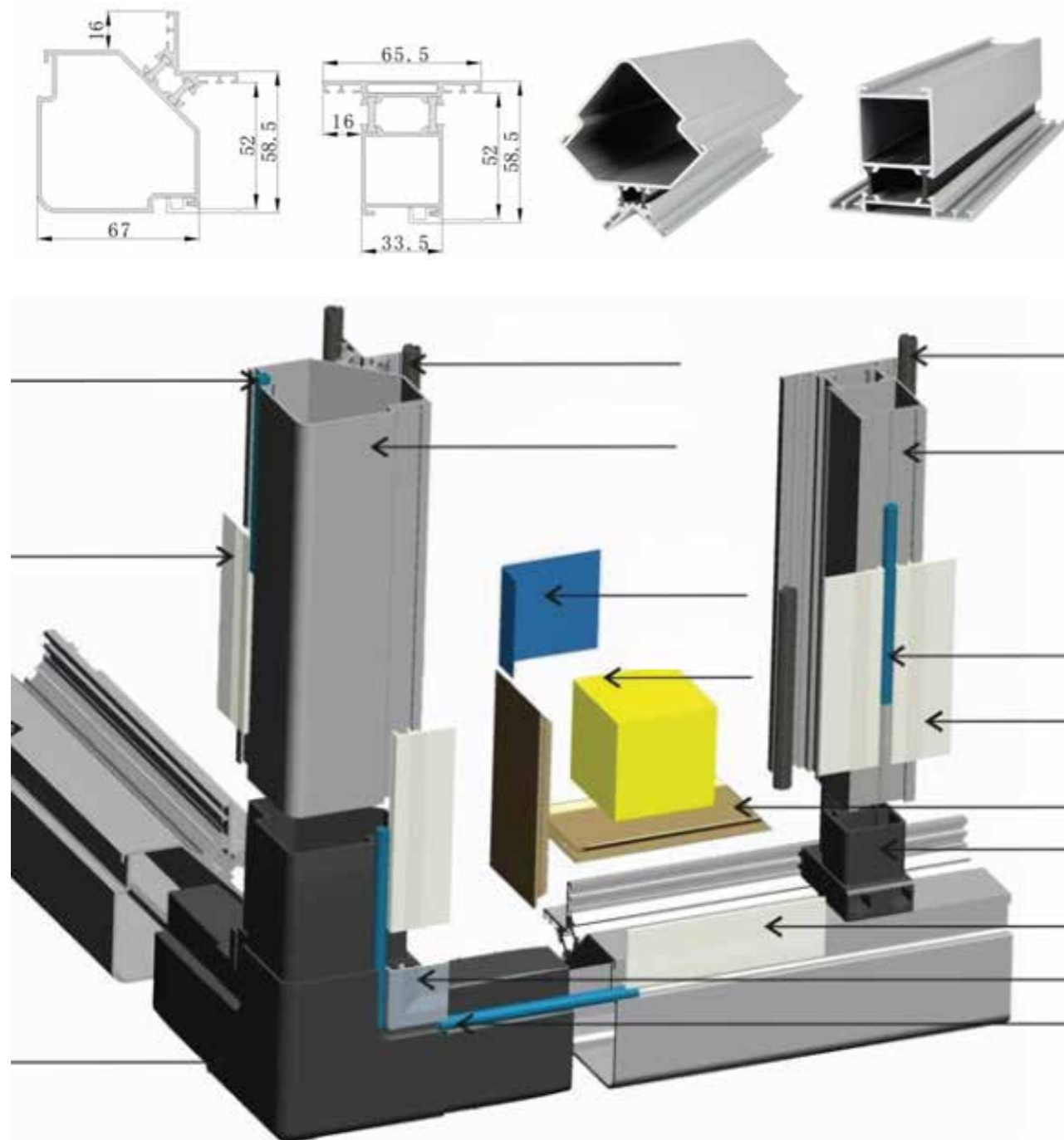
S: 25mm
D: 50 mm
TB: 50mm Thermal Break

UNIT COMPONENT

B: BLOWER
C: COIL
F: FILTER
M: MIXING BOX
HW: HEAT WHEEL
DHW: DEHUMIDIFIER
HX: HEAT EXCHANGER
.....

3. AIR HANDLING UNIT FEATURES

Thermal Break Aluminum profile and Panel



AIRTEK Air Handling Unit is designed in accordance BS EN 1886 and certified by Eurovent. It is constructed of high strength extruded aluminum pentapost and internal post with double modular skin insulation material. The patented frame channel design allows three identical pieces to be bolted together to form a composite corner piece. Both of this features form the rigid frame of the AHU. The unit wall is made up by Double Skin Polyurethane foam (PU) insulation panel with 0.5 mm high strength pre-painted steel as external skin and 0.5 mm galvanized steel (GI) as internal skin.

Besides, there are optional thicknesses: 0.8mm, 1.0mm and 1.2mm of skin material. The PU foam insulation thickness can be 25mm or 50mm with density 40 kg/m³, which provides an overall thermal conductivity, $k=0.017$ W/(m.K).

Blower & Motor Section

Fans are used extensively in air-conditioning for circulating air over coils. The fan type includes forward, backward, airfoil wheel fan, twin fans with double width double inlet (DWDI) centrifugal fan. The first low cost option will be forward curved fans which are generally used for low static pressure applications. The blade of fan is constructed of galvanized steel. It consists of blade which has tips curving forward that is in the direction of rotation of fan wheel.

Fan performance of all these fans have been tested and measured in accordance to AMCA Standard 210. The sound level is measure and rated in accordance with AMCA Standard 300. The fan bearing provided will have a minimum life of 200,000 hours, and are available as high as 1,000,000 hours. Bearing are selected for minimum noise level and minimum device. The bearing is lubricated for life and maintenance free, lubrication is optional. Fan is dynamically and statically balanced to Standard ISO 1940. The fan shaft is manufactured from C45 carbon steel. It is coated with a layer of anti-corrosion varnish.



Motor is internally mounted integral to an isolated fan assembly. Standard motor shall be horizontal foot mounting, induction motor, squirrel cage, totally enclosed fan-cooled (TEFC or TEFV) with IP 55 protection and class F insulation. Motor capacity cannot be undersized but oversized for desired running capacity. For the desired operation speed between fan and motor, different poles (2, 4, 6 and 8 poles) can be consider.

The fan in AHU can create substantial vibration that will transform to panels / casing and consequently widespread the generated sound waves. To avoid this, spring or rubber isolator is mounted between the fan compartment and therest of the AHU to prevent the transmission of noise and vibration into panels.



Coil & Drain Pan

Coil is installed such that unit casing enclose headers and return bends. Coil is designed based on the maximum utilization of available cross section area to achieve the most efficient heat transfer. Coil connections should be factory sealed with grommets on interior and gasket sleeve between outer wall and liner where each pipe extends through the unit casing to minimize air leakage and condensation inside panel assembly. Coils shall be removable through side and/ or top panels of unit without the need to remove and disassemble the entire section from the unit.

Coil constructed with aluminum corrugated fins and seamless copper tubes. Copper fins and hydrophilic fins are anti-corrosive materials which are optional. The fins are designed purposely for better heat transfer efficiency and moisture carry-over limit performance. Capacity, water pressure drop and selection procedure is designed in accordance with ARI Standard 410.



Airtek cooperate with CIG for coil line production, all coil under Test strict inspection before shipment. The optional for Pharmaceutical/ Oil and gas/ Food process is D-Coating. It can stand for corrosion and killing the mold/ bacterial

D-Coat Technology

Advantage

- Dry Surface, increase efficiency
- Reduce Dirt and Dust Collection
- Less Maintenance
- Corrosion Protection
- Reduce Mold and Bacteria, Ag+ technology (Silver ion), No Biofilm
- Very Thin, not effect heat exchange or air flow

Certificate

- ASTM B117 : 10,000 Hrs Salt Spray Test
- ASTM G21 : Resistance to Fungi
- ASTM G22 : Resistance to Bacteria
- Indirect Food Contact Notification from FDA
- ASTM D-5894 : UV Exposed 2,000 Hrs <D-Coat UV>

Full Corrosion Protection for HVAC

D-COAT™ Super Hydrophobic

6-30 Micron Thickness

JOTUN

ASTM G21, Resistance to Fungi, Testing of GREEN COAT- SH and SHM, Super Hydrophobic (SHE) coated aluminum panels

ASTM G22, Resistance to Bacteria, Testing of GREEN COAT- ACH and ACHM, Super Hydrophobic (SHE) coated aluminum panels

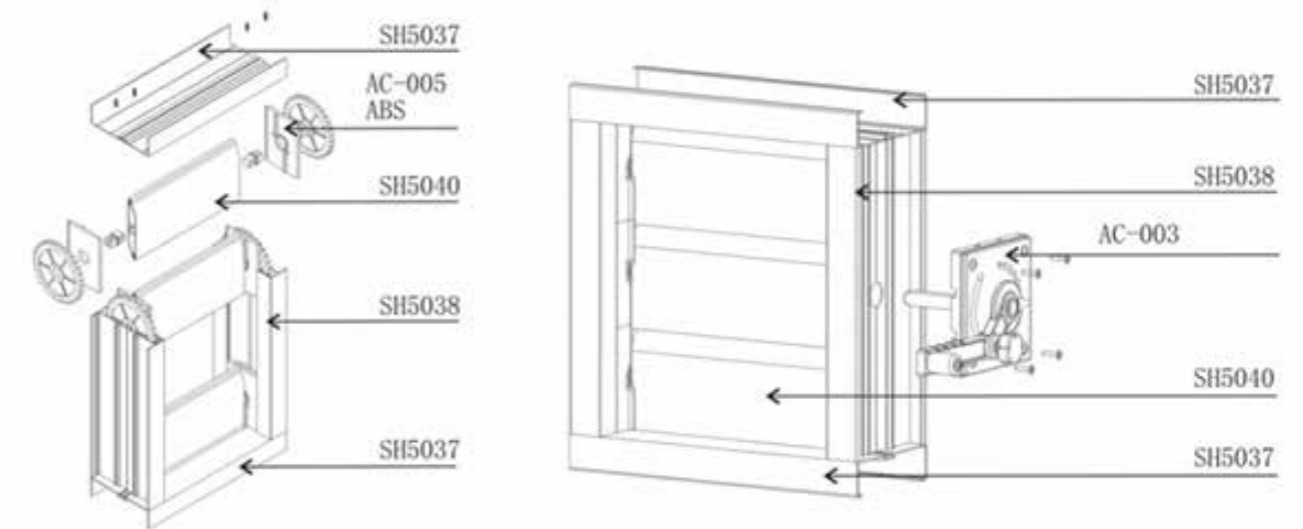
Results of the above testing: as per attached report

Coil with D-Coating will be blue color, with all test certificates. Drain pan will be SS 304 optional for all special requirements



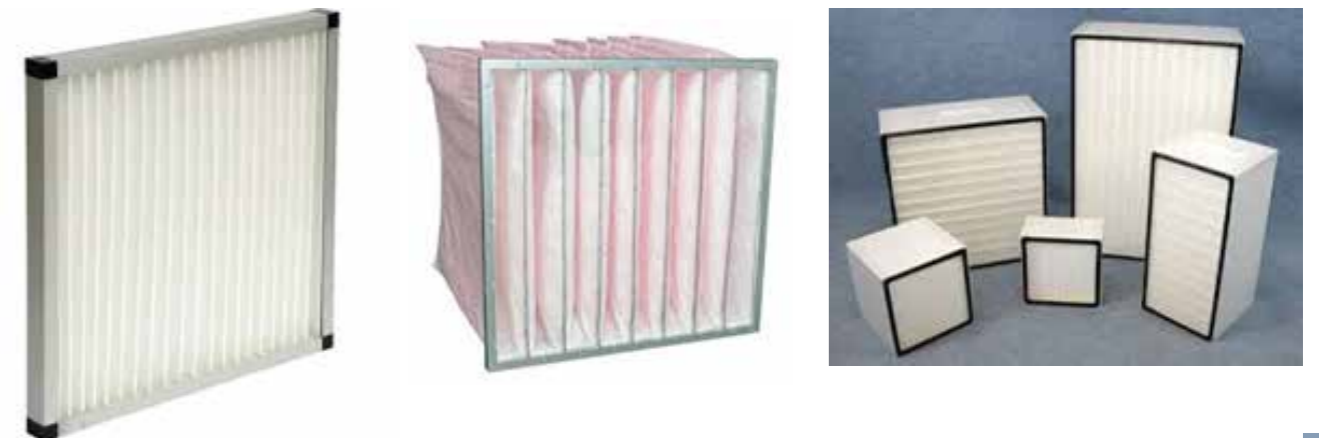
Mixing box & Damper

Mixing box complete with dampers are specially designed to minimize the stratification of entering air streams for maximum efficiency. Damper are assembly within a rigid extruded aluminum frame. Damper are opposed blade type and available in both flat and double skinned aerofoil section. Blades are formed from extruded aluminum. Gaskets are provided to minimize leakage of air.



Primary/ Bag/ Hepa Filter

It plays a major role in maintaining good indoor air quality by filtration. There are wide ranges of filter options which are provided by prominent filter manufacturer. We has been designed to handle primary, secondary & HEPA filtration.

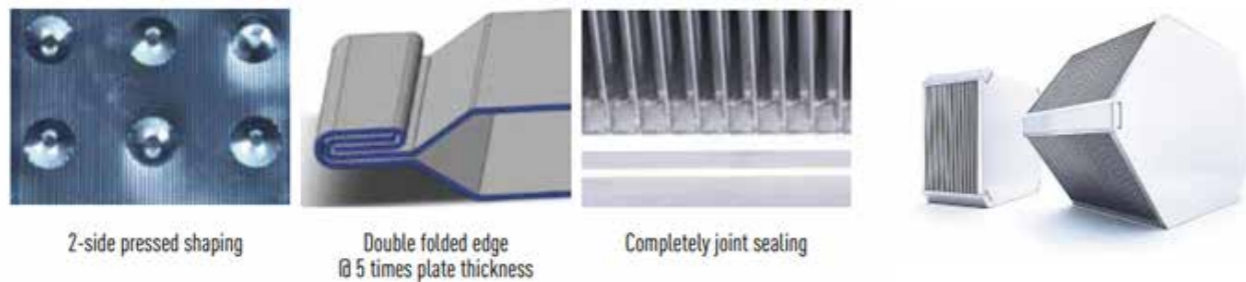


4. Other Components as Optional for Special Design

Pleat Heat Exchanger

Two neighbor aluminum foils form a channel for fresh or exhaust air stream. Heat is transferred when the air streams flow crossly through the channels, and fresh air and exhaust air is totally separated

Main Features: Sensible heat recovery total separation of fresh air & exhaust air streams/ Heat recovery efficiency up to 80%/ 2-side press shaping./ Double folded edge completely joint sealing./Resistance of pressure difference up to 2500Pa. Under pressure of 700Pa, air leakage less than 0.6%

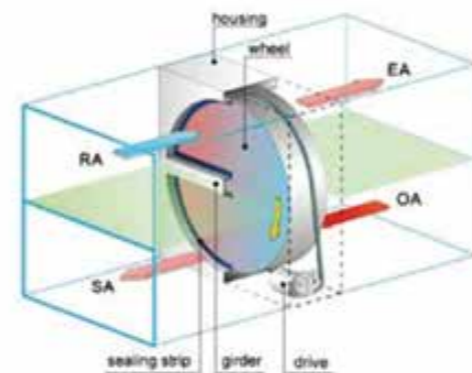


Heat Wheel

Rotary heat exchanger is composed of alveolate heat wheel, case, drive system and sealing parts. the exhaust and outdoor air pass through half of the wheel separately, when the wheel rotates, the heat and moisture are exchanged between the exhaust and outdoor air. the energy recovery efficiency is up to 70% to 90%.

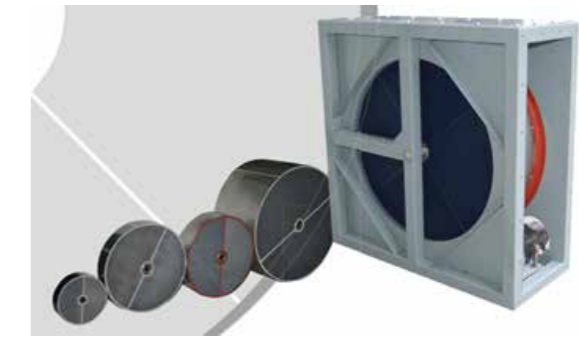
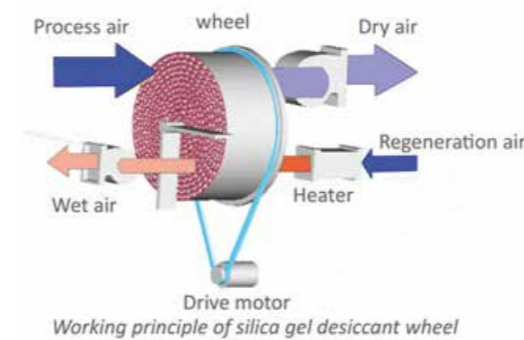
Main Features

- 3A Molecular sieve coating of total heat wheel selectively absorbs moisture and expels odors
- Interior spokes are used to mechanically bond the rotor's laminations.
- Double sealing system
- Double purge sector
- Self cleaning
- life-time-lubricated bearing of easy maintenance



Dehumidifier Wheel/ Desiccant Wheel

The easy dry desiccant wheel works on the principle of sorption, which is the adsorption or the absorption process by which a desiccant removes water vapor directly from the air. The air to be dried passes through the desiccant wheel and the desiccant removes the water vapor directly from the air and holds it while rotating. As the moisture-laden desiccant passed through the regeneration sector, the water vapor is transferred to a heated airstream, which is exhausted to the outside. This process is continuous, allowing for highly effective and uninterrupted dehumidification.



Humidifier & Electric heater

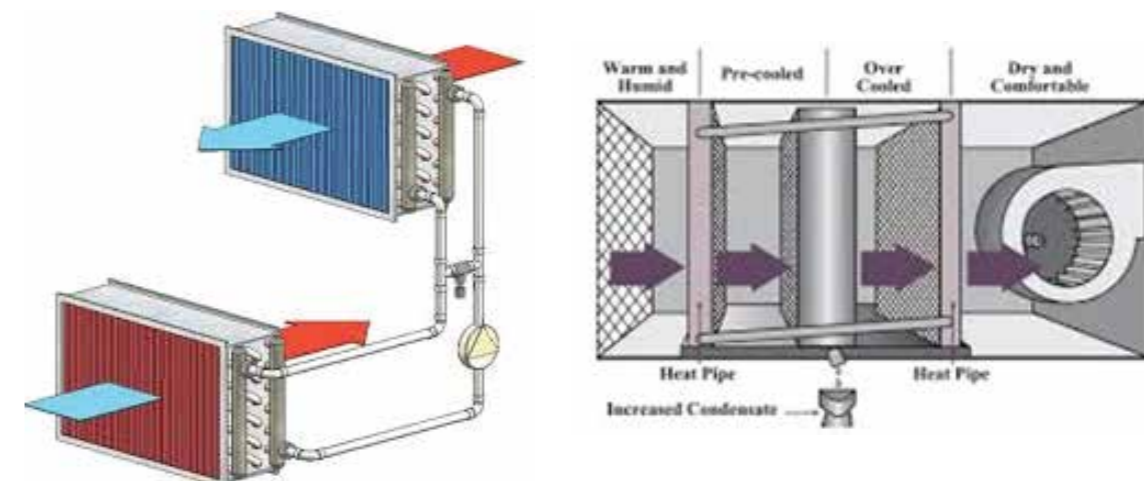
There are a few humidifiers are used commercially in AHU. First is electrode steam humidifier, which is categorized as BFDT series, the second generation, high precision, intellectualized electrode humidifier. It requires an empty section to be installed. It is a device which is used to increase the 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 loop will be built up through salt minerals in the water. Therefore, water will be heated up and boiled until vapor is generated continuously. Quality of water in the region must be considered because it reduces the steam capacity. (Softened water cannot be used).

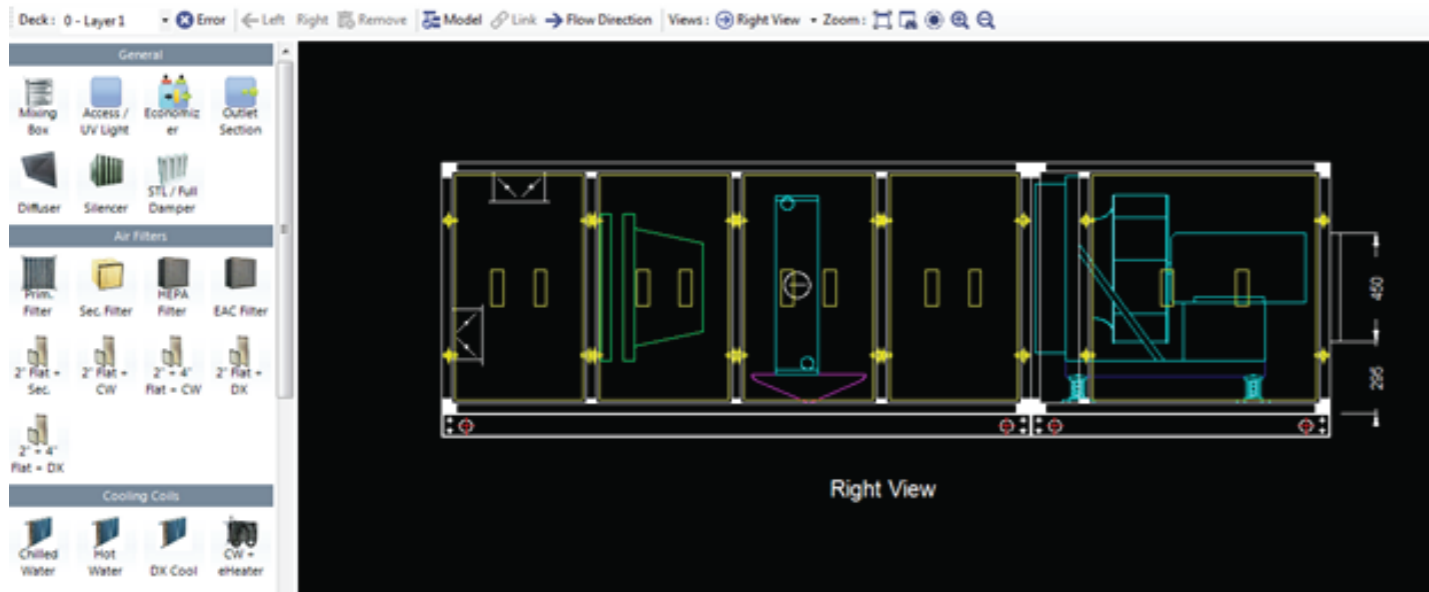
Electric heaters are optional with either single step or multi step of heating process. It depends much on the heating capacity. Heaters are available in 220-230V and the wiring can be in single phase / 3 phase for contractor or thyristor control.



Run around Coil & Heat Pipe

To increasing the heat transfer and Energy saving, the run around coil and heat pipe should be considered. The cost invest also add up for special option.





INDEX

Introduction	1
Identification & Dimension	2
Air handling unit features	3
Other Components as Optional for Special Design	7
Quick selection	9

