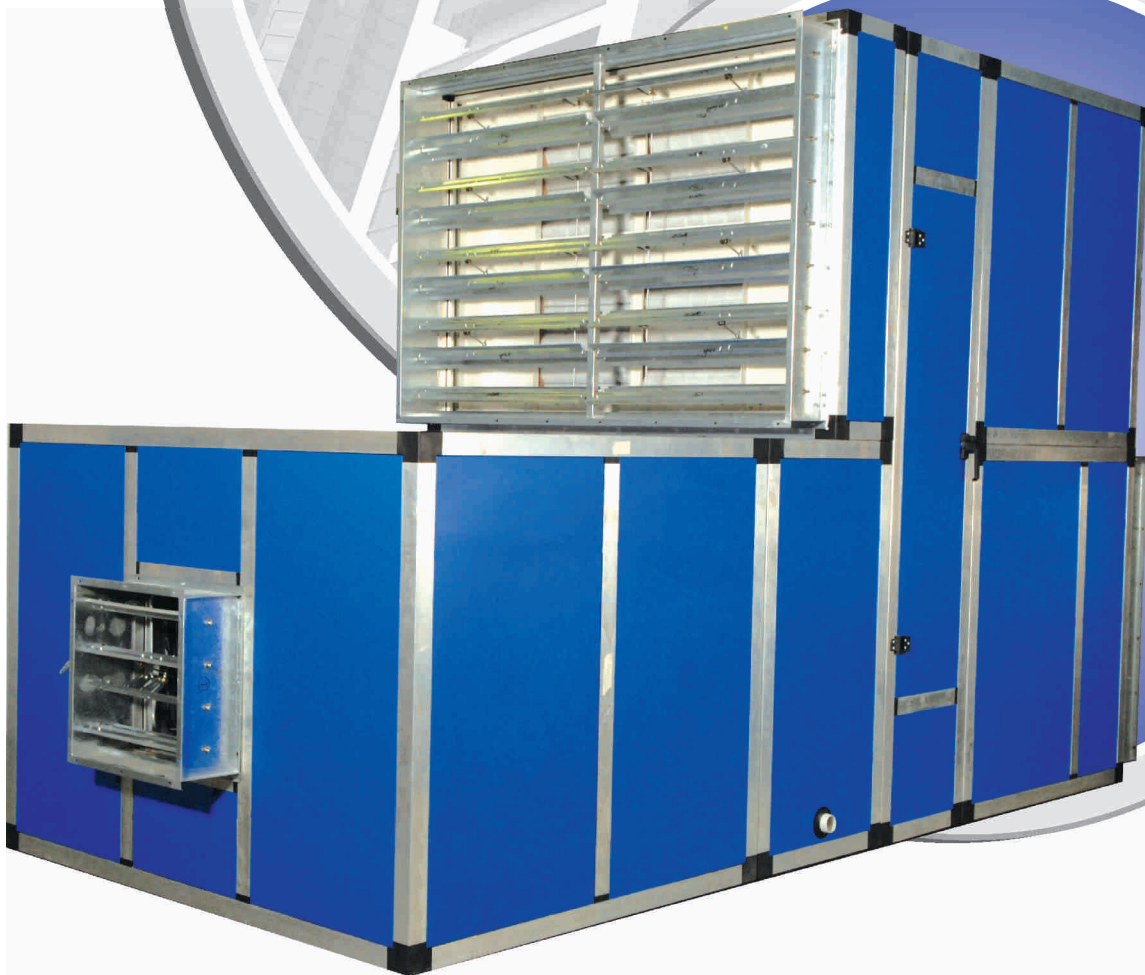




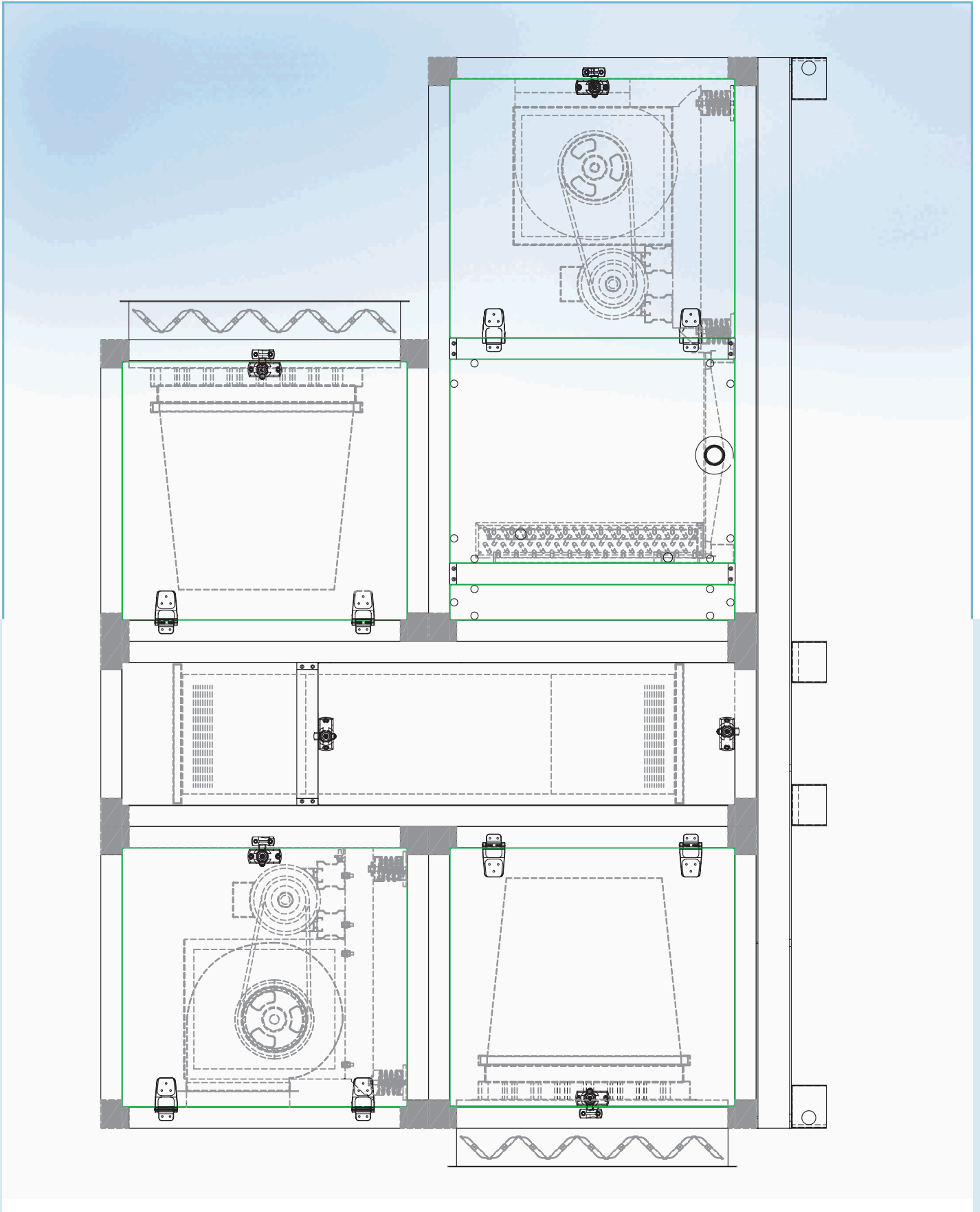
# Double Skin Air Handling Units



*Making Life Cool...*



# Double Skin Air Handling Units





# Double Skin Air Handling Units

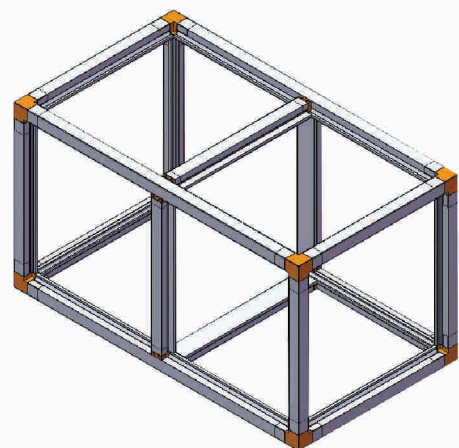
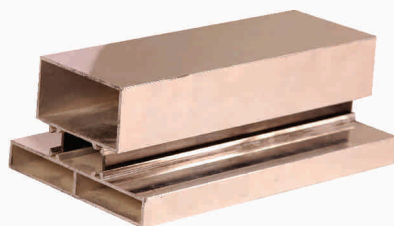
## Features

- ▶ The 4AH Series Air Handling units are based on Awal's ADS series. The feature of this series is the Flexible- Modular type construction with 11 basic sizes covering a wide range of air flow from 2890 cu.m/hr to 45,680 cu.m/hr.
- ▶ The combination of width and height dimensions within the basic sizes offers flexibility in sizing the unit to fit into various on-site space requirements
- ▶ The ADS units are offered with double skin panels with 25mm/45mm thickness, fabricated from heavy gauge galvanized steel sheet duly finished with powder coat
- ▶ Fan and Motor assembly is mounted on a common base with suitable vibration Isolators to ensure that they are isolated from the main case structure.
- ▶ Units are manufactured at ISO 9001 Certified facility centre ensuring quality standards for the components used in construction of the units.
- ▶ The Blue skin pre coated outer panels are feature of ADS series which is known for its Aesthetics.
- ▶ All components are standard and interchangeable. The access panels are provided with easily removable fasteners to facilitate easy maintenance.

## Construction

### Frame Work

The structures are assembled by connecting the profiles to aluminium or nylon corners. There are other profiles to complete the structure such as Omega, hat profile used for horizontal and vertical support and to facilitate modular type construction. Thermal Break profiles can be given as optional for extra high ambient outdoor installations.



# Double Skin Air Handling Units



## Panels

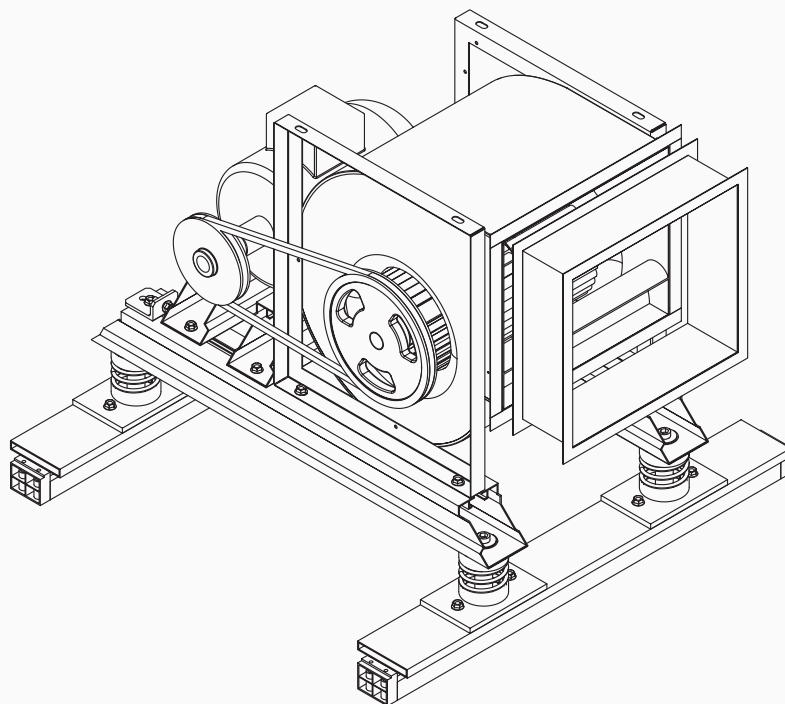
Each of the panels are made up of 0.7mm prepainted sheet and 1.0mm Zinc coated inner panel. These panels are sandwiched with rockwool insulation of uniform density (40 kg/m<sup>3</sup> ensures low thermal conductivity and robust construction. Polyurethane foam can be given as optional.



## Blower Assembly

High energy efficient, fans with backward/forward curved blades with DIDW (double inlet double width) construction are available for various static pressure requirements. The motors are TEFC type with either IP54/IP55 protection, and with class F insulation.

Fan and Motor is mounted on a common extruded aluminum channel base, by using anti Vibration isolators.





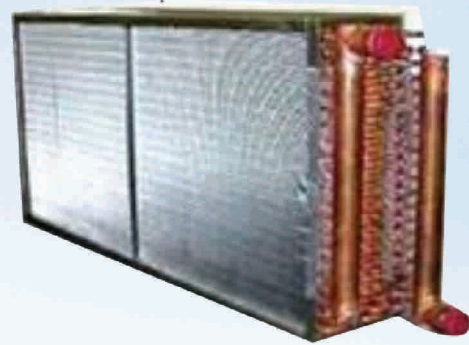


# Double Skin Air Handling Units

## Coils

Coils are sized and designed by the computerized software selection programme and manufactured in our state-of-the-art technology plant, and tested as per the test conditions specified by ARI 410 standards. Corrugated plate type fin is die-formed. Fin collars are full drawn to provide accurate control fin spacing and maximum contact with tubes. All coils are leak tested under water at 315 psig air.

Copper fins with copper tubes or copper tubes with aluminum fins with Herasite-Epoxy coating can be given as option.



## Air Control Devices

The dampers are used for air control and minimize the pressure loss and reduce noise as well. These mixing boxes are configured with opposed blades and driven by polycarbonate gear mechanism to ensure smoothness in operation.

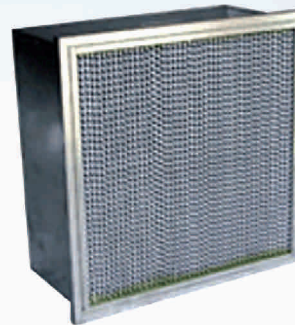


# Double Skin Air Handling Units



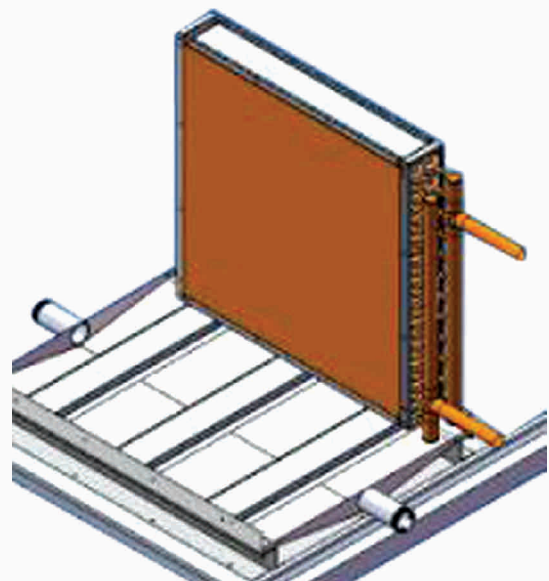
## Filters

Airfiltration is of paramount importance and this ensures best quality of IAQ. Choices of single and multi stage air fliters are available to suit different environmental conditions. Filters are placed in galvanized frames for easier side removal and effortless maintenance. Manometers plug ports are provided to fix manometer and check for filter pressure drops. All filters offered are made to follow ASHRAE and Eurovent conventional standards.



## Condensate Drain Pan

Specially designed drain pan made of GI duly finished with powder coating material and insulated to prevent any condensation. The drain connection is available from both the sides of the drain pan so that it is easy to connect to the main drains at the site.





# Double Skin Air Handling Units

## Electric Heater

The electric heater is manufactured from a U-shaped finned heater built into a heavy galvanized steel frame and positioned in the unit. The safety control use a high temperature cut out specifically designed for step control. The advantage of this type is more even temperature as well as being easily replaced in case of any failure.

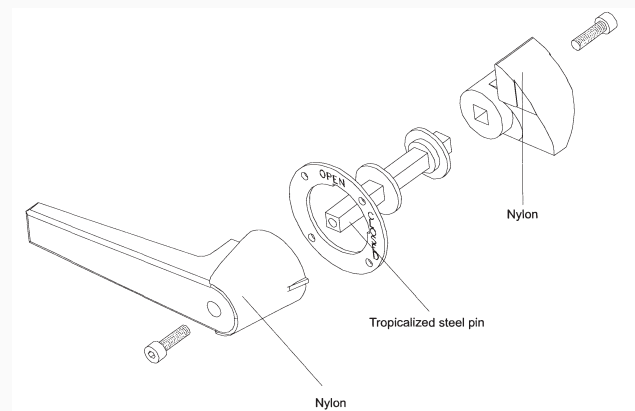
This is provided for additional safety to cut off power supply to the heater in the event of no air flow across two points by differential pressure.



## Accessories

### Hinges and Handles

The access doors of filter, blower sections are provided with hinges and handles. Both Hinges and handles are offered in two different varieties. i.e black nylon and aluminum die cast. An optional feature is the unhinged door where the door is completely taken off the actual unit and re-attached through a key and interlock.



### View port and Marine light

A view port window is fitted on both the fan and filter door panels which facilitates monitoring and maintenance of both the areas. Marine light helps provide enough light for easy visibility.

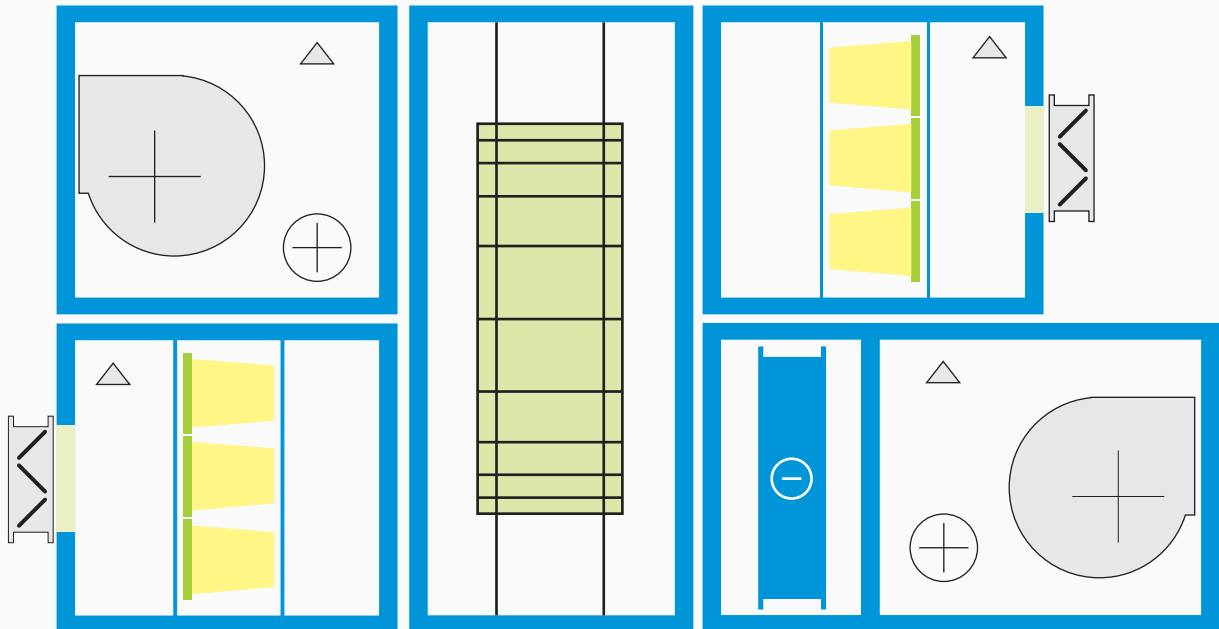


## Energy Recovery

The 4AH series of ADS can be given with Energy recovery system too. There are two ways of doing this.

- Retrieve the energy basically thermal, from return air and use it cool the fresh incoming air. HRW-Use of heat recovery wheels
- Pre cooling the air (aid in removing moisture) and reheat to reach designed conditions. Heat pipes
- Using both (a) and (b)

Our AHU's are supplied with the above options as well on request.







# Double Skin Air Handling Units

## Software Selection

From customer specifications to submittals to manufacturing to delivery of an AHU all these steps are a part of a rather complex, tedious and time consuming journey; however AGMCO has made this journey easier for their clientele by developing a state of the art AHU Selection Program which works from basic principles and rules allowing customized Air Handling Units to be designed by the consumer himself. Where, for

instance, unit parameters are entered and the system automatically displays information allowing the programmer to make the optimum selection based on a customer's individual requirements. The air handler is pictorially built using color coded icons and the system error can check all entries to ensure a viable unit has been designed.

| Hanging Options  |               |
|------------------|---------------|
| Unit access side | Front of unit |
| Supply Unit      |               |
| Air volume       | 254 cfm       |
| Model            | 35-400        |
| External static  | 1.25 Pa       |
| Component type   | Fan section   |
| Length           | 1440 mm       |
| Pressure drop    | 56 Pa         |

| UNIT CONFIGURATION  |         |         |         |
|---------------------|---------|---------|---------|
| Unit configuration: | Supply  | Extract |         |
| Air volume:         | 254 cfm | 150 cfm | 150 cfm |
| External static:    | 1.25 Pa | 1.25 Pa | 1.25 Pa |

| Type / Filter | Brand / Part | Size      | Qty | Access |
|---------------|--------------|-----------|-----|--------|
| Panel         | 1000x1000    | 1000x1000 | 1   | Front  |

| Area  | Code      | Water test | Pressure | Access |
|-------|-----------|------------|----------|--------|
| Panel | 1000x1000 | 1000x1000  | 1.5 Pa   | Front  |

| Type  | Code      | Speed     | Access |
|-------|-----------|-----------|--------|
| Panel | 1000x1000 | 1000x1000 | Front  |

The component selections are calculated from their fundamentals and psychometric validation charts and predictions are also included for further product precision. Equipment vendor's own selection methods are also utilized to ensure complete technical and financial compatibility, having the system calculate the performance, weight, length and air pressure drop for each component. Once designed, the technical submittals and GA drawings can be generated quickly and the unit can also be sectioned for transportation or site access by using the scale representation. By this stage the complete make up of the unit is determined and a utility is included to allow the shop floor operator to view the panel and mullion layout. Material consumption and labor times are also derived from fundamentals giving the engineer vital information during the design stage itself, thus shortening the cycle time.

# Double Skin Air Handling Units



Dimensional Table  
Pearl ADS Series - AHU Dimensions - Modular Section Wise



| Sr. No. | Model  | Height |      | Width |     | Mixing Box<br>L1 | Empty<br>L2 | Pre-filter<br>L3 | Pre+Bag<br>Filter<br>L4 | Hepa filter<br>L5 | Coil<br>L6 | Coil with droplet<br>Eliminator<br>L7 | Blower & Motor<br>L8 |
|---------|--------|--------|------|-------|-----|------------------|-------------|------------------|-------------------------|-------------------|------------|---------------------------------------|----------------------|
|         |        | A      | B    |       |     |                  |             |                  |                         |                   |            |                                       |                      |
| 1       | ADS-1  | 955    | 1055 | 712   | 712 | 712              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1550                 |
| 2       | ADS-2  | 955    | 1350 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1550                 |
| 3       | ADS-3  | 1055   | 1350 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1550                 |
| 4       | ADS-4  | 1350   | 1600 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1700                 |
| 5       | ADS-5  | 1350   | 1730 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1700                 |
| 6       | ADS-6  | 1350   | 1730 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1700                 |
| 7       | ADS-7  | 1600   | 1730 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 1700                 |
| 8       | ADS-8  | 1730   | 1950 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 2000                 |
| 9       | ADS-9  | 1730   | 2200 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 2000                 |
| 10      | ADS-10 | 1730   | 2200 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 2000                 |
| 11      | ADS-11 | 1950   | 2200 | 712   | 712 | 350              | 712         | 712              | 712                     | 712               | 712        | 850                                   | 2000                 |

Note: All Dimensions are in MM.

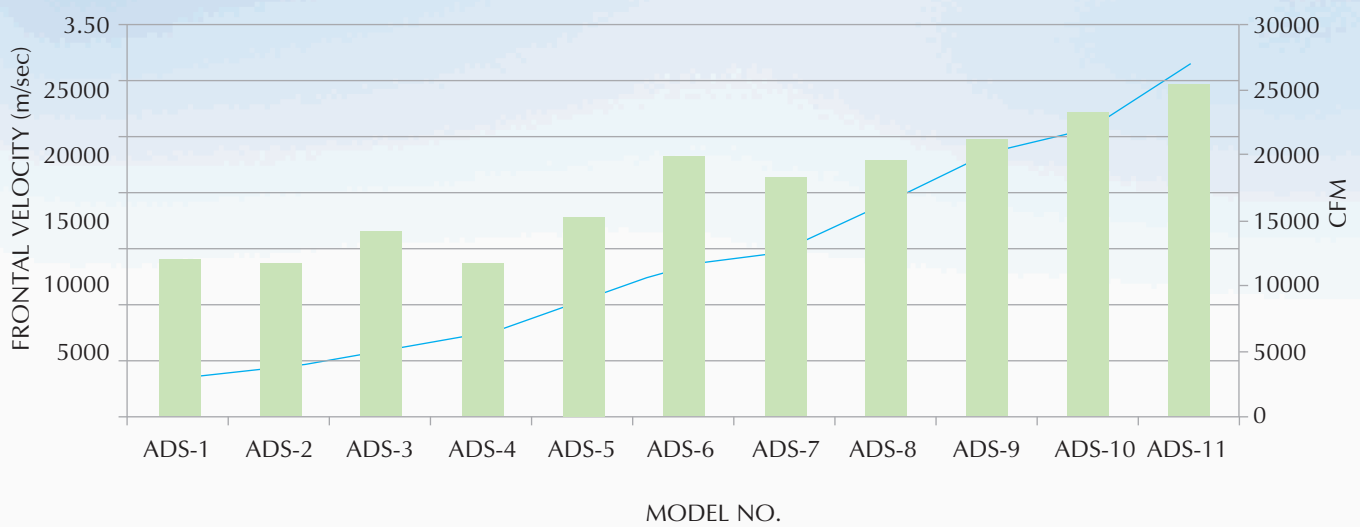
Lengths shown are of individual constructed sections.

In case of 2 or more sections manufactured in a single casing, subtract 60mm from each component from total length.



# Double Skin Air Handling Units

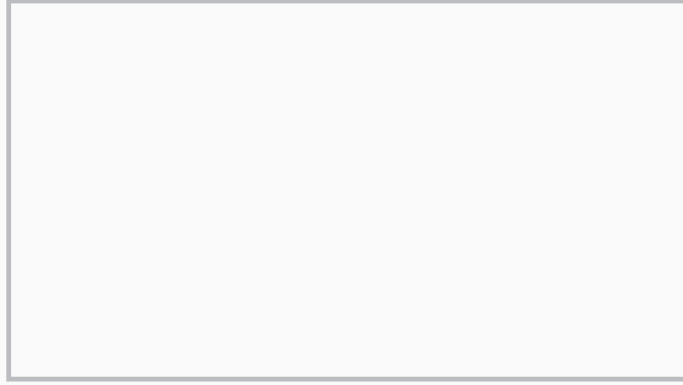
## ADS Series - Quick Selection Charts



## ADS Series - Quick Selection Tables

| Sr. No. | Model  | CFM Band |       | m <sup>3</sup> /Sec | m <sup>3</sup> /Sec | Frontal Velocity (m/Sec) |
|---------|--------|----------|-------|---------------------|---------------------|--------------------------|
| 1       | ADS-1  | 1700     | 3000  | 1.4                 | 1.01                | 1.41                     |
| 2       | ADS-2  | 2250     | 3750  | 1.8                 | 1.29                | 1.37                     |
| 3       | ADS-3  | 3000     | 5000  | 2.4                 | 1.42                | 1.66                     |
| 4       | ADS-4  | 3750     | 6250  | 2.9                 | 2.16                | 1.37                     |
| 5       | ADS-5  | 5250     | 8750  | 4.1                 | 2.34                | 1.77                     |
| 6       | ADS-6  | 6900     | 11500 | 5.4                 | 2.34                | 2.32                     |
| 7       | ADS-7  | 7500     | 12500 | 5.9                 | 2.77                | 2.13                     |
| 8       | ADS-8  | 9750     | 16250 | 7.7                 | 3.37                | 2.27                     |
| 9       | ADS-9  | 12000    | 20000 | 9.4                 | 3.81                | 2.48                     |
| 10      | ADS-10 | 13125    | 21875 | 10.3                | 3.81                | 2.71                     |
| 11      | ADS-11 | 16125    | 26875 | 12.7                | 4.29                | 2.96                     |

## Authorised Distributors



# Approvals\*



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IEC System for Conformity Testing & Certification of Electro-technical  
Equipment and Components under CB Scheme



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\* Approvals are products-specific. For further details contact: [export@awalgulf.com.bh](mailto:export@awalgulf.com.bh)