

# DAH SERIES

## Air Handling Units



# Introduction To DAH Series Of Air Handling Units



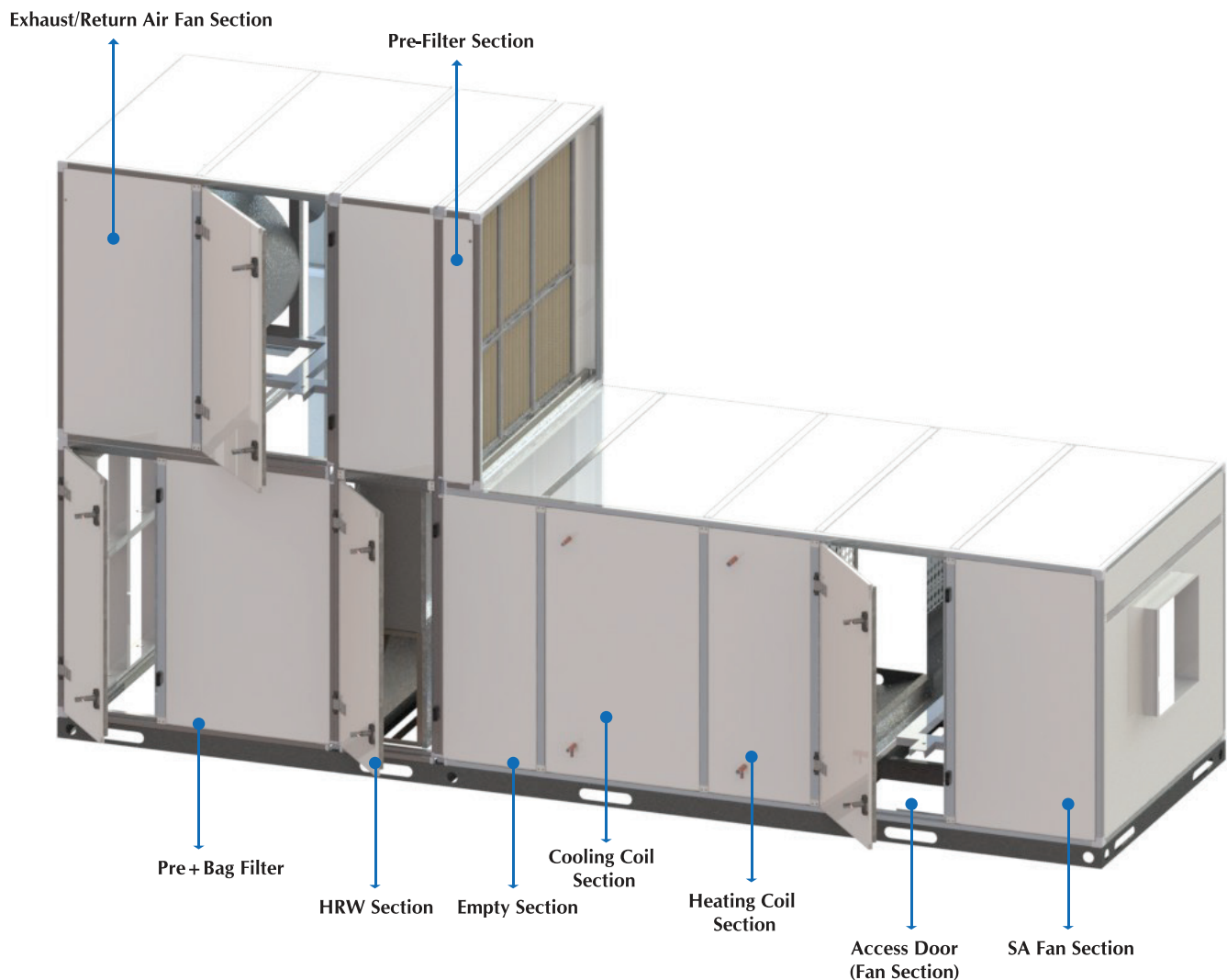
DYN AIR® is the industrial division of Maico Italia S.p.A. and is a well known brand name at global level in the industrial ventilation and plant engineering sector. Technological expertise, high production capacities, strong research and investment policies together with a personalized back-up service focused on customer needs have, for over 30 years, been the qualities that distinguish our company: Italian excellence renowned throughout the world and an industrial concern fortified by belonging to Maico Holding GmbH, the German group that leads the way in the ventilation industry.

## Experience and high technology at your service

Living in a market in continuous evolution, DYN AIR® bases its force on a step by step project follow-up in close collaboration with the customer to create tailored and highly reliable solutions.

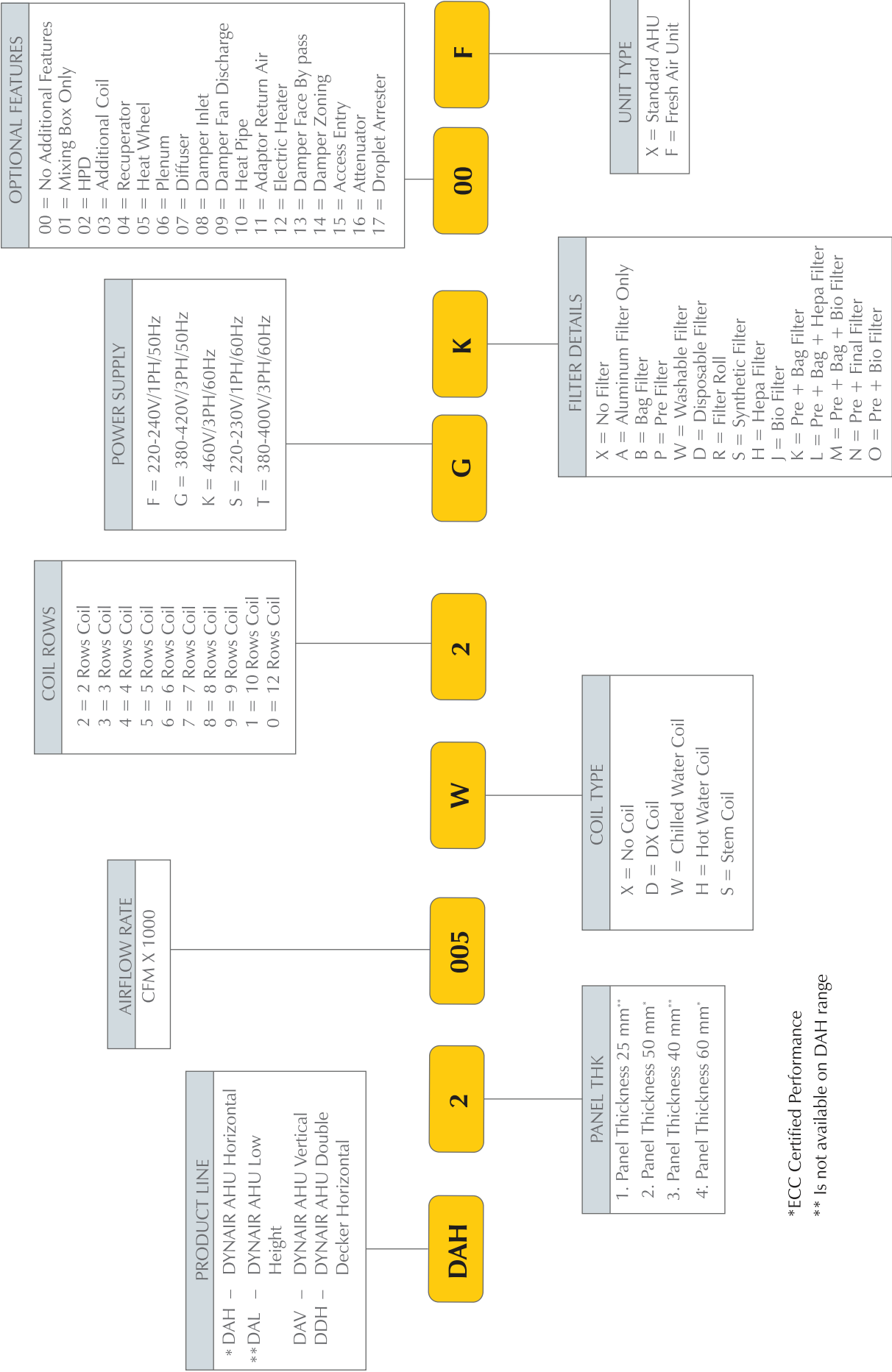


## DAH series New generation AHU



Standard AHU Model (For Reference only)





\*ECC Certified Performance  
\*\* Is not available on DAH range

# Special Features Of Dynair Air Handling Units



## General Information:

DAH series is the new generation of Air Handling Units from Dynair. These units are designed to meet the environmental, hygienic and engineering demands of the new era.

The Air Handling Units are based on the modular paneling concepts to offer a wider range of units, versatile and suitable for any comfort or industrial application. The DAH series has a total of 18 unit sizes with airflow ranging from 1500 to 40,000 CFM and a total static pressure up to 1500 pa (6" WG).

DAH units are suitable for both indoor and outdoor installations and are a perfect choice for mosques, schools, hospitals, cinemas, supermarkets, residential and industrial buildings.

All units are packed in modules and are wrapped with PVC film. The sections with total height or width exceeding the container size will be delivered in CKD form.



"Dynair is participating in the EUROVENT CERTIFICATION program for Air Handling Units. The range DYNNAIR - DAH is certified under the number 10.05.475 and presented on [www.eurovent-certification.com](http://www.eurovent-certification.com)"

## THE PHYSICAL CHARACTERISTICS

- ▶ Thermal transmittance: Class T2
- ▶ Thermal bridges: Class TB2
- ▶ Casing leakage: Class L1
- ▶ Filter bypass leakage: Class F7
- ▶ Casing deflection: Class D1

## Indoor Air Quality (IAQ):

IAQ deals with the content of interior air that could affect health and comfort of building occupants.

The IAQ may compromise of microbial contaminants, or any mass or energy stressor that can induce health effects. In many large, commercial, and conditioned spaces the occupants have virtually no control over their environment, The space could be filled with dust, smoke, chemical vapor, pesticide sprays, fine carbon dust from copying machines, etc and we may not even know about it.

due to the pollutants mentioned above, it has been observed that air in a conditioned area can be up to ten times more polluted than the air outside, which may pose a great health risk due to its high level of concentration. Therefore, it is safe to conclude that the IAQ plays an important and major role in the health state of the conditioned spaces we work and live in.

Dynair FAHU ensures your "IAQ" requirements to make your environment fresh and healthy.



## Casing and Construction

The construction of Air Handling Units are of pentapost design and have strong three way angle joints of reinforced nylon corners to form a rigid frame structure. Nylon corners ensure the thermal break effect on the corners of the structure. Rigid framework comprises an assembly of externally chamfered extruded aluminum profiles & nylon corner joints.

## Thermo-Break Profile

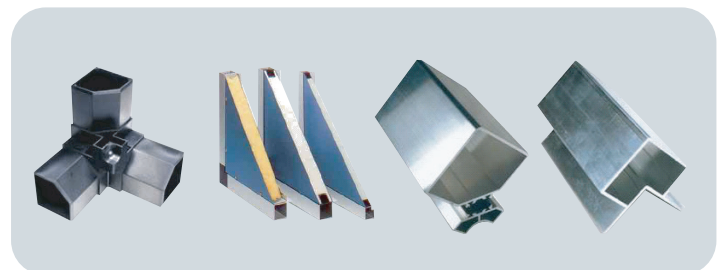
Thermal Break Profiles are used to eliminate the heat loss caused by thermal conduction from the exterior surface to the interior of the casing. These options are generally advised for outdoor installations.

## Inner and Outer skin

The outer skin is a standard pre-coated GI sheet & inner skin is a GI sheet. The double skin is to retain the insulation, keep the internal surface clean and to have a smooth surface. This eliminates the chance of dirt and bacteria accumulation. Thus it is suitable for hygienic applications such as pharmaceutical industries, hospitals, operation theatres, surgery rooms, food processing industries etc.

## Insulation

The insulation comprises of Poly Urethane Foam (PUF) with a density of 40 kg/m<sup>3</sup>.



## Selection of AHU

### On the basis of panel thickness

- a) Double skin 25mm/40mm (not available in DAH)
- b) Double skin 50mm/60mm

### On the basis of orientation

- a) Horizontal unit
- b) Vertical unit

# Fan, Cooling Coil & Horseshoe Heat Pipe Section



## Fan Section

All fans are high efficiency AMCA certified with minimum turbulence for quiet & efficient operation.

Fans are Double Inlet Double Width (DIDW), Forward Curve or Backward Curve or Aerofoil Centrifugal fans. Fan wheel is dynamically and statically balanced for smooth and quiet operations. Fan housing and frame is made of galvanised steel material.

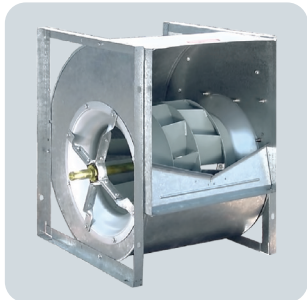
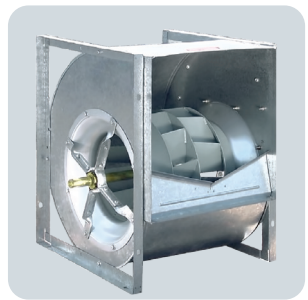
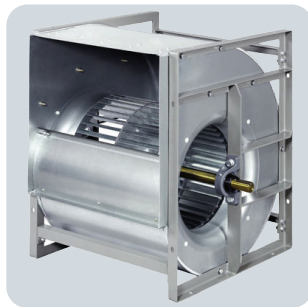
The fan wheel is made up of galvanised sheet for Forward Curved fans, The Backward Curve and Aerofoil fans are made of high quality MS material (treated and painted) cold rolled sheet steel.

The bearings are high quality and they are selected to minimise the AHU noise level. The bearings are pre-lubricated, sealed and self aligned. These bearings are self aligning pillow blocks ball bearing above 710mm dia fan.



Various options available on types of fans used in DYNAIR DAH unit are:

**DIDW, Forward Curved Centrifugal Fan.**



**DIDW, Backward Curved Centrifugal Fan.**

**DIDW, Aerofoil Backward Curved Centrifugal Fan.**

## Coil Section

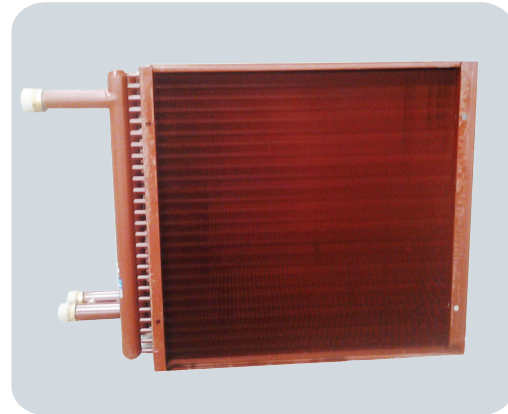
Cooling coils are manufactured from the copper tubes with aluminium fins; pressure bonded to the tubes through mechanical expansion and are all housed in galvanised steel frames. Headers are threaded or flanged type connection and include air vents.

End plates are made of GI Sheet with die formed holes that provide a parallel surface to the coil tube for strong brazing joints. Standard Female Pipe Thread (FPT) vent and drain.

a) V-Baffled / Corrugated Type fin which is die-formed. Fin collars are fully-dram to provide accurate control of fin spacing and maximum contact with tubes.

b) All coil assemblies are leak tested under water at 350 PSIG air.

**Optional:** Copper fins with Copper tubes or Copper tubes with Aluminum fins with Herasite or Copon blue to withstand the extreme atmospheric conditions. This also protects the coil against salt water oxidation and airborne pollutants. In addition, it enhances the life durability and finish of the coil with minimum loss of heat transfer.



Chilled water coil

## Horseshoe Heat pipe

Horseshoe heat pipes are compact and highly efficient heat transfer devices designed to provide both pre cool and reheat in applications where both the temperature and humidity must meet requirements as well as solve high humidity problems.



## Drain Pan

The Drain Pan is designed with a positive slope which ensures the complete discharge of condensate water quickly. This reduces the unwanted microbial & mildew growth. The condensate Drain Pan is mandatory in helping discharge of the excess moisture (condensation) that results from the cooling process. There are drain end connections on both sides of the unit. The Drain Pan is constructed of GI sheet and painted for corrosion resistance.

Drain Pan is insulated from bottom to avoid any condensate water dripping inside the casing.

Optional: A Drain Pan fabricated from Stainless Steel of SS-316L grade.



## Filter Section:

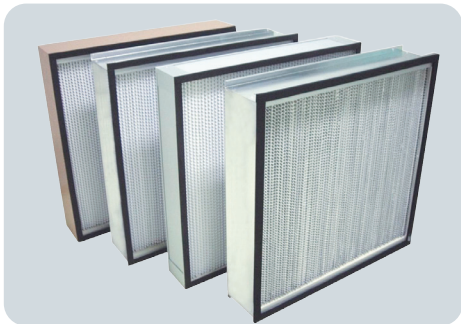
The filter comprises of high quality synthetic filter media. The media is thermally bonded with progressive density to have high dust holding capacity and low initial pressure drop. The filters' efficiency is tested in accordance with EN-779 standard.

## Options of Filter and Pre Filter:

The media in pleated construction is housed in galvanized aluminium cassette type frame supported with aluminium mesh on air leaving side.

## Bag Filter:

The pockets are housed in galvanized aluminium flange type frame. These pockets are welded at edges into a rigid and aerodynamic shape to reduce the pressure drop. Special welded spacers ensure full media utilization.



## Absolute Filter / HEPA Filter:

These filters are generally used in hospitals, pharmaceutical, electronics and clean room applications. The filter features high efficiency micro-glass paper pleated to form compact media pack. Filters are scanned for leak-free construction. The filter utilizes a continuous sheet of wet laid micro-fibre media that is deep pleated and can operate in applications with 100% humidity. Super flow, H13 Filters efficiency conforms to 99.997% down to 0.3 micron particle size at rated flow as per EN 1822 standard.



## Bio Filter:

Bio-filter cell is the ideal choice for customers wishing to upgrade a non-HEPA installation to a HEPA installation. Bio filter is ideally suited for variable air volume and turbulent air flow systems.

Bio cell displays low media resistance which results in lower energy costs and longer service life. The filter is designed for use in clean areas in the pharmaceutical, microelectronic, semi-conductor and healthcare industries in which high efficiency air filtration on fine particulates is required. Temperature limit: 90°C.



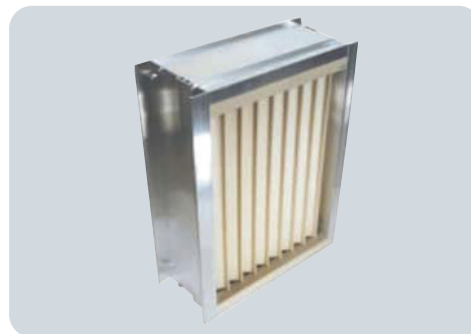
## Droplet Eliminator:

At Dynair we earnestly strive to offer our customers the best productivity as well as longevity of our merchandise.

When the Air-handling Unit is faced with a higher air velocity due to an increase in power (greater than 500 FPM or 2.5 m/s), a water carry over results. To help evade such detrimental results the Moisture or Droplet Eliminator is recommended.

The Droplet Eliminator is specially designed to meet any usable needs in the air treatment.

The extruded aluminium frame fitted with screws is extremely solid and gives sturdiness to the whole structure.



## Dampers:

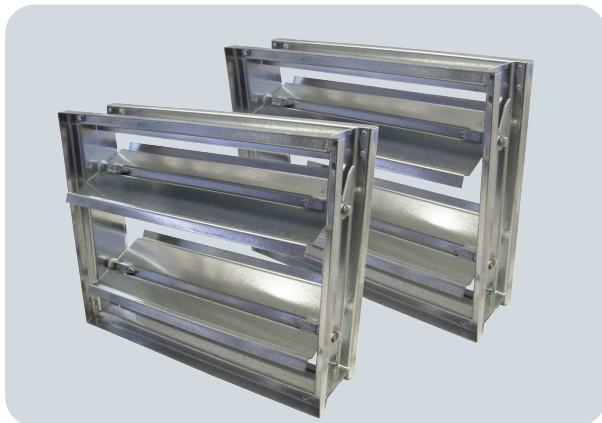
Different types of air volume control sections are available to meet the needs of the air treatment process.

The volume control dampers have been designed to provide positive control of air within the air-conditioning system. Dampers are constructed from high quality Aerofoil design aluminium / galvanized extrusion and suitable for flanged connection within square or rectangular shape.

Blades are mainly pivoted on PVC bushes and operate through PVC gear system. A wide range of control options are available and include motorized and manual operation. Blades ensure 100% fresh or re-circulated air.

The dampers can be used to vary the initial pressure drop. The dampers can be supplied with an extended shaft to permit the mounting of a manual or motorised control.

Dampers can be supplied in different types & materials on request: like Parallel blades and Opposed blades.

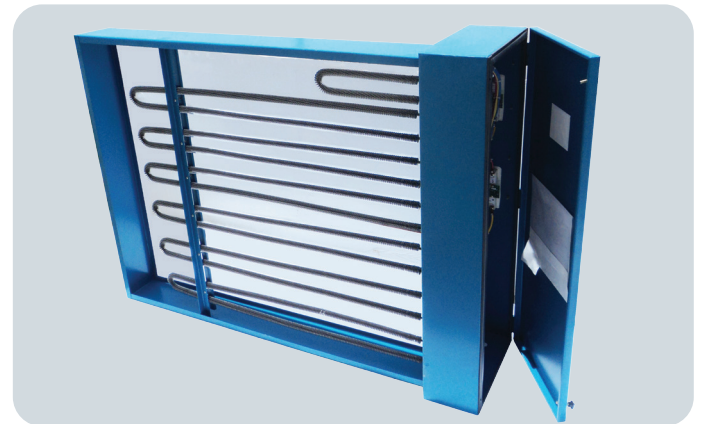


## Electric Heater:

Another prominent option of the Air Handling Units is the electric heater; manufactured from a "U-Shaped" finned heater element built into a galvanized steel frame and positioned in the unit that permits easy removal. Respecting safety guidelines, the safety controls uses a high temperature cut out mechanism specifically designed for stage control.

The advantages of having a finned tubular electric heater in comparison to an open coiled one are:

- Better safety results
- Protection against foreign particles in the air
- Better durability
- More even temperature
- Ease of replacement in case of any failure.



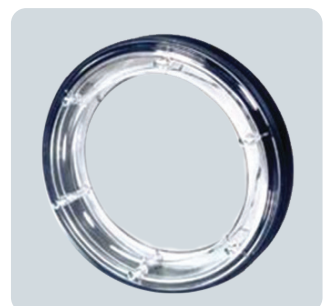
## Accessories

### Hinges and Handles:

There is a double access standard door provided for each section of the Air Handling Unit comprising of the fan and filter. These doors offer easy entrance for the serviceability of both sections. The hinges and handles offered are with two different options, one made of black Nylon and the other of Aluminium die cast powder coated. Both types of hinges provide adequate strength and safety to the door. An optional feature is the unhinged door where the door is completely taken off the actual unit and reattached through a key and internal lock.

### View Port and Marine Light:

A view port 'window' is present on the fan door panel which facilitates the monitoring and maintenance of specified areas. While a lamp / switch option using marine lighting helps provide enough light for greater visibility.



## Heat Recovery Wheel (optional):

Heat wheel is used to conserve the energy by exchanging energy between the supply and exhaust streams. Various types of heat recovery wheels are provided.

Operating on air to air principle of heat transfer, Heat Recovery Wheel provides a way of recovering air conditioning energy in hot and humid climates. The Heat wheels used are EUROVENT certified and ensures best performance.

## Rotary Heat Recovery Wheel (Thermal Wheel):

Heat wheels are revolving cylinders consisting of an air permeable matrix with large interior surface. The matrix is cooled as cold air is passed through the wheel. This cools the fresh air stream when the cooled rotating wheel comes in line with the supply air stream.

Heat wheels recover both sensible heat and latent heat and gives efficiency as high as 85%. These are mainly used where there is a demand of high percentage of fresh air intake like in hospitals, research labs, schools and pharmaceutical labs. Heat Recovery wheels are recommended to acquire green Building certification by LEED.



## Motors & Drives:

Fan Motors are TEFC, foot mounted 4pole, IP55 protected. The motors are mounted on a adjustable base by which belt tension can be easily adjusted. The complete motor drive assembly is mounted on a frame suspended on isolators & anti-vibration pads so as to arrest all transmitting vibrations to the body.

Flexible duct connection is provided to avoid transmission between fan discharge and casing panel. Fan motors are suitable for  $415 \pm 10\%$  volts, 50/60Hz, 3 phase power supply,

Motors are designed specially for quiet operation. The fan and motor combination selected for the particular required performance are most efficient, so that noise level and power consumption are lowest.

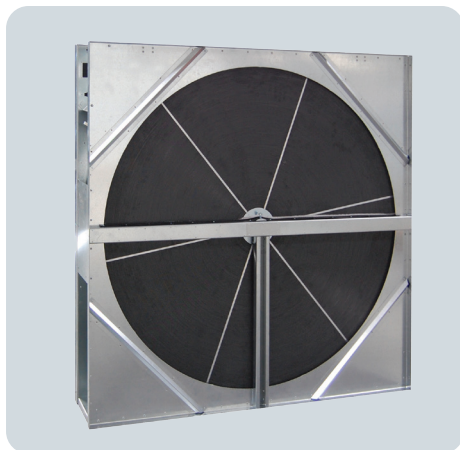
Motors are designed specially for quiet operation.

## Isolator:

A rigidly mounted machine transmits its internal vibratory forces directly to the supporting structure. However, by inserting resilient mountings, called vibration isolators, between the machine & supporting structure, the magnitude of transmitted vibration can be reduced to only a fraction of the original.

## VFD (optional):

A Variable-Frequency Drive (VFD) is an optional feature to the system for controlling the rotational speed of an alternating current (AC) electric motor by controlling the frequency of the electrical power supplied to the motor.



## Plate Heat Exchangers

Plate heat exchangers have no moving parts. Their function requires no electrical connection. There are therefore no extra running cost or operation cost involved in such technology.

Plate heat exchangers are extraordinarily resistant to dirt build up, therefore no special maintenance is required.

Applications : Hospitals , Operation theater etc

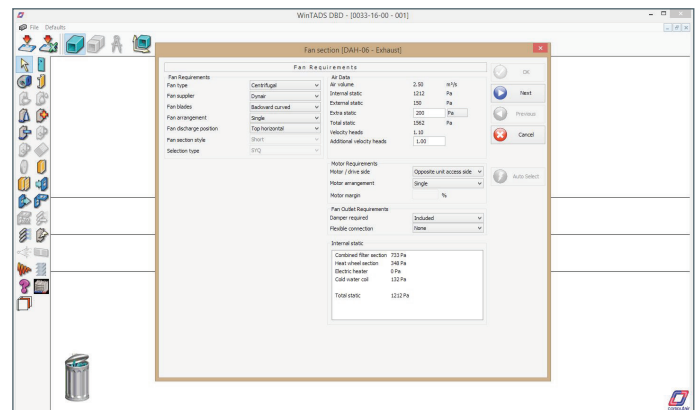
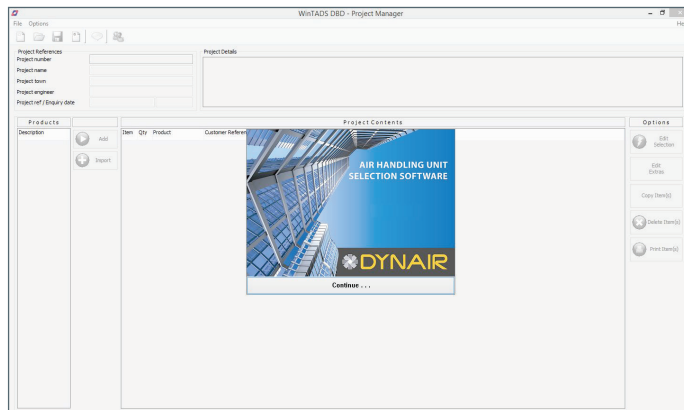
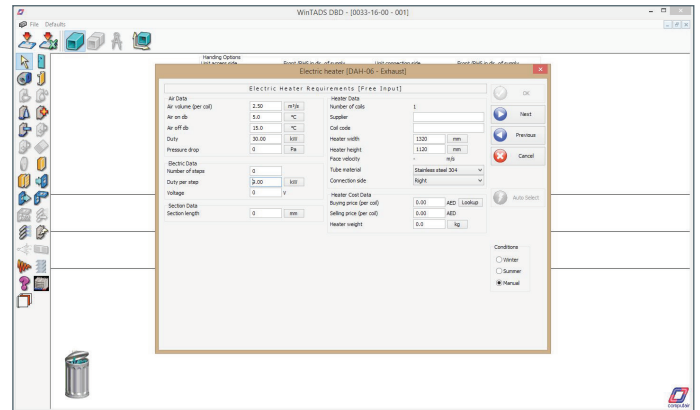


## AHU Selection Software:

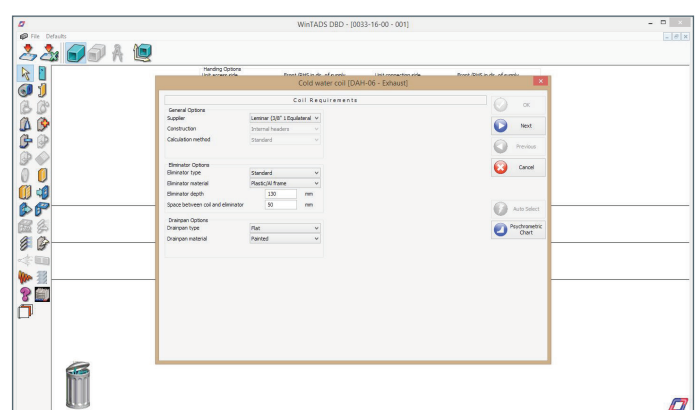
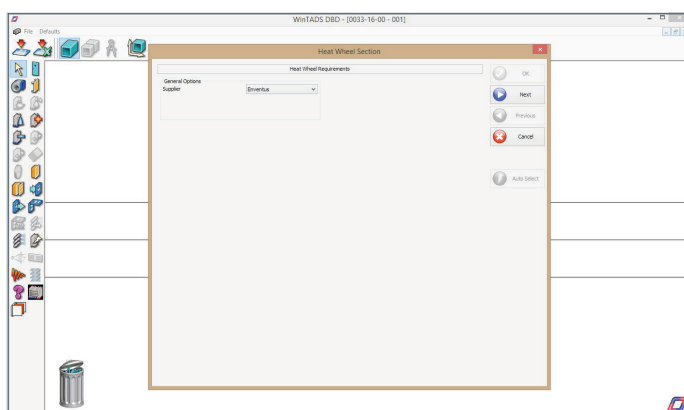
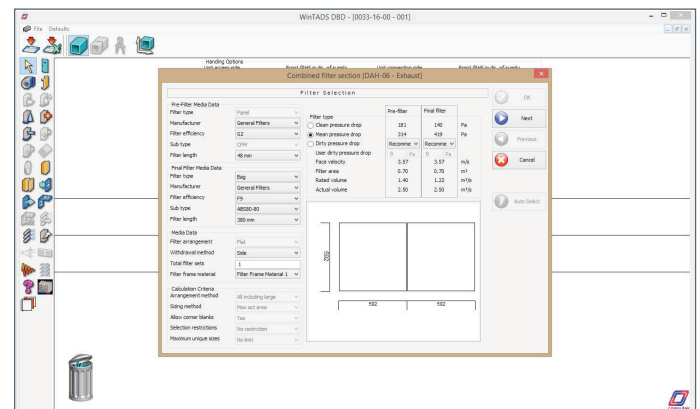
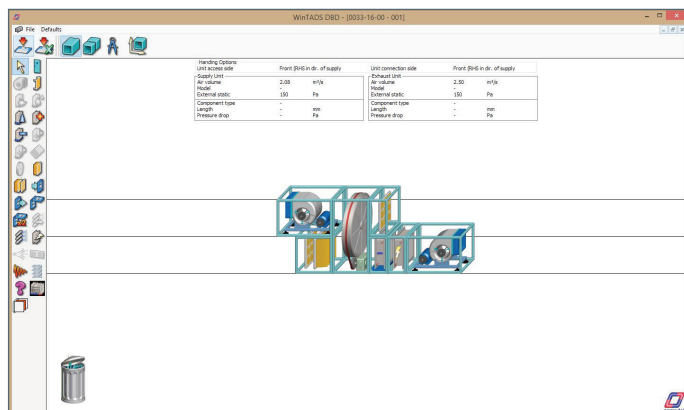
DYNIAIR's AHU Selection Software provides the complete details of design and submittal generated for the Air Handling Units. The system is integrated so as to eliminate wherever possible the re-entry of information and thereby minimise data entry errors. The program is user-friendly and maintained wherever practical for the customers.

The software intelligently selects the optimum requirement of Air Handling Units from our standard database and selects the optimum selection as per the customers' specifications.

The software will carry out the calculations and generate sufficient information to have various options available within the program.



## Snapshots of AHU Selection Software:

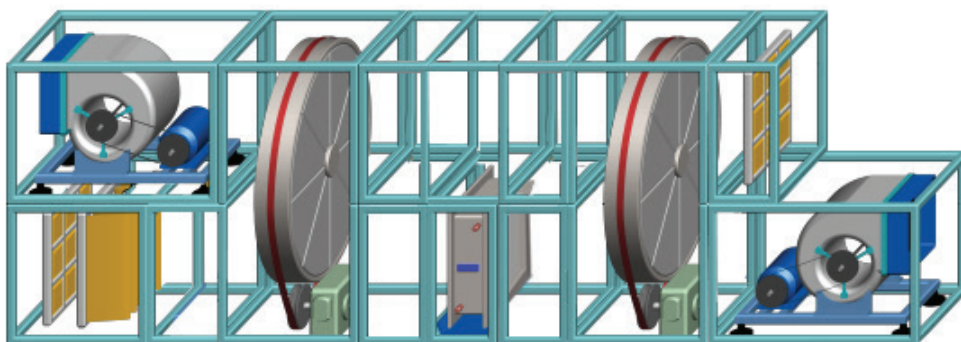
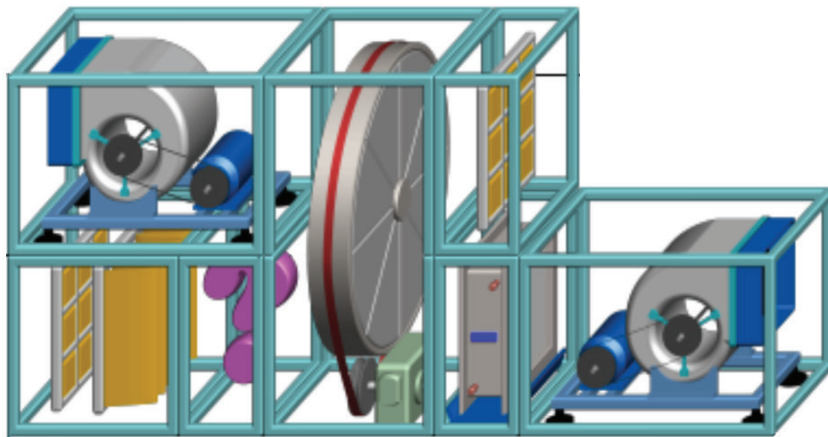


The 3D view of AHU selection gives an idea of the components and the virtual impact of the complete unit. The component selections are calculated from their fundamentals and psychrometric charts.

Equipment vendors 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. The software generates the complete Technical Submittal and the General Assembly Layout of the unit and 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 arrange to assemble the unit as the output generated by software.

The 3D view of AHU selection gives an idea of the components and the virtual impact of the complete unit.



# Typical Output Of AHU Selection Software (Technical Specification)



Date: 8/14/2016

## Technical Specification

Project name : Proposed 2B+G+3 Floors Office & Comm Dubai WinTADS Lite - 1.10.00042.0  
Quotation no : 0072-13-00 / 002

Dynair is participating in the EUROVENT CERTIFICATION Program for Air Handling Units. The range DYNNAIR - DAH is certified under the number 10.05.475 and presented on www.eurovent-certification.com



### CUSTOMER DETAILS

Customer Name  
Address  
Town  
Postcode  
Country

Customer Number



### GENERAL DATA

Product Air handling unit 1 FAHL-2 Double deck (opposite)  
Energy efficiency class (2016) B C External  
SFPv kW/m<sup>3</sup>/s 2.89 SFPv 2.74  
Total weight (each) kg 6661.98 Roof type Canopy  
Outdoor design temperature °C 0.0

Frequency 125Hz 250Hz 500Hz 1kHz 2kHz 4kHz 8kHz dB(A)  
Radiated casework SWL 53 66 80 75 72 58 37 80

### PANEL DATA

Panel internal finish Standard Panel external finish Standard

### CASING DATA

Base frame material Galvanised 1.5mm C-channel Base frame height mm 100

### EXHAUST DATA

Type DAH-17  
External static Pa 300  
Internal skin material Pre Painted GI 0.9mm  
Panel type 50 mm  
SFPv kW/m<sup>3</sup>/s 1.15 SFPv kW/m<sup>3</sup>/s 1.12

### Operating sound power level

Frequency 125Hz 250Hz 500Hz 1kHz 2kHz 4kHz 8kHz dB(A)  
Inlet dB 86 95 88 88 84 76 69 92  
Outlet dB 86 95 88 88 84 76 69 92



Date: 6/2/2016

## Technical Specification

Project name : WinTADS Lite - 1.10.00040.0  
Quotation no : 0036-16-03 / 002

In direction of airflow, the unit comprises:

Section	Width (mm)	Height (mm)	Length (mm)	Baseframe (mm)	Weight (kg)
1	1440	1240	700	Channel (100)	167.13
2	1440	1240	820	Channel (100)	212.99
3	1440	1240	1160	Channel (100)	294.85

### SUPPLY COMPONENTS

OUTLET SECTION	Length: 0mm	Pressure drop: 0Pa
Standard	mm 1320 x 1120 x 130	Nm 4.0
Damper motor	mm 2	External, Opposed blades
Louvre	mm 1320 x 1120 x 70	
COMBINED FILTER SECTION	Length: 700mm	Pressure drop: 248Pa
Pre-filter	General Filters	Face velocity m/s 1.94
Sub type	CFA-W	Initial pressure drop Pa 35
Filter class	G4	Final pressure drop Pa 94
Media length		mm 48
Final filter	General Filters	Initial pressure drop Pa 86
Sub type	ABS80-80	Final pressure drop Pa 280
Filter class	F8	Media length mm 380
Combined filter	Side	Filter size: Qty x W x H mm 2 x 592 x 287
Withdrawal method		mm 2 x 592 x 592
ACCESS		
Access type	Hinged door	Access side Right



Date: 6/2/2016

## Technical Specification

Project name : WinTADS Lite - 1.10.00040.0  
Quotation no : 0036-16-03 / 002

### HORSESHOE HEAT PIPE

Length: 820mm

Heat Pipe Data				
Pre-cool Air on Db	°C	46.0	Air on wb/RH	°C/% 29.0 / 29
Reheat Air off Db	°C	24.0	Air off wb/RH	°C/% 16.9 / 49
Pressure drop	Pa	129	Fin Spacing	FPI 12
Face Height	mm	988	Face Area	m <sup>2</sup> 0.92
Face velocity	m/s	2.19	Tubes High	mm 31
Number of rows		2	Effectiveness	% 32
Pre-cool Saving	kW	26.61	Re-heat Saving	kW 26.61

### Coil Data

Designed for wet conditions				
Coil type	Leminar (3/8" 1 Equilateral)	Connection handling	Right	
Construction	Internal headers	Number of coils	1	
Finned width (per coil)	mm 965	Finned height (per coil)	mm 965	
Number of rows	7	Circuits	32	
Air volume	m <sup>3</sup> /s 2.02	Total duty	kW 120.32	
Sensible duty	kW 56.58	Air on db	°C 35.4	
Air off db	°C 13.5	Air on wb/RH	°C/% 26.7 / 51	
Air off wb/RH	°C/% 13.0 / 95	Fluid on	100% Water	
Fluid flow rate	l/s 2.89	Fluid pressure drop	°C 5.0	
Fluid off	°C 14.5	Fluid pressure drop (Dry)	°C 44.32	
Air pressure drop coil	Pa 162	Air pressure drop coil (Dry)	Pa 121	
Connection type	Screwed BSP (Right)	Connection size	2"	
Fin spacing	12	Face velocity	m/s 2.17	
Drainpan type	Sloping	Drainpan material	Included	
Drain pan insulation	10mm XLPE Foam	Drain plug and air vent	Included	

### FAN SECTION

Length: 1100mm

Pressure drop: 64Pa

Fan type	SYD 355 K	Fan arrangement	Single
Air volume	m <sup>3</sup> /s 2.02	Motor x 1	Run
Air outlet velocity	m/s 9.84	Installed motor power	kW 5.50
Required fan speed	RPM 1522	Max speed	RPM 2000
Motor type	Cantoni/ABB/Weg	Motor speed	RPM 1450
External static pressure	Pa 500	Supply	V/0Hz 415/3/50
Motor pole	4	Current	A 11.0
Total static pressure	Pa 1102	Motor efficiency	% 86
Dynamic pressure	Pa 58	Absorbed motor power	kW 4.83
Fan absorbed power	kW 4.13		
Total pressure	Pa 1160		
Efficiency	% 57		
Fan pulley	BSLAHP029	Motor pulley	BSLAHP030
Fan bush	BSLAHTB003	Motor bush	BSLAHTB003
Beil length	mm 1020	Number of belts	2
Fan sound data SWL			
Frequency	63Hz 125Hz 250Hz 500Hz 1kHz 2kHz 4kHz 8kHz		
Inlet dB	95 96 85 83 80 78 77 71		
Outlet dB	95 96 85 83 80 78 77 71		

### MOTOR EXTRAS

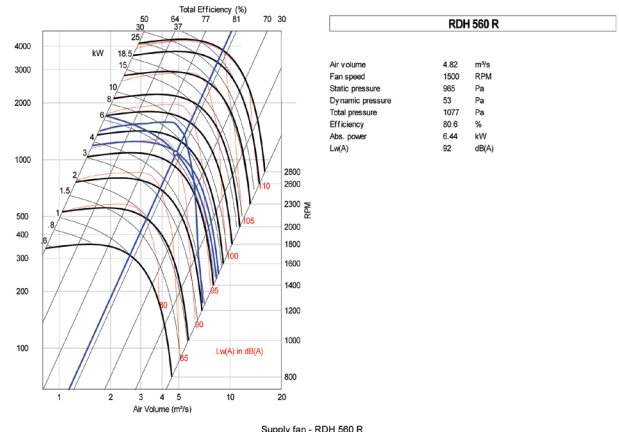
1x Motor Base			
ACCESS			
Access type	Hinged door	Access side	Right
EXTRAS			
1x Light, Marine Light		1x Light switch	
1x View Port		1x Limit Switch	
1x Terminal Box		1x Flexible Duct Connector	



Date: 9/19/2013

## Fan Curve

Project name : WinTADS Lite - 1.2  
Quotation no : 0034-13-00 / 007







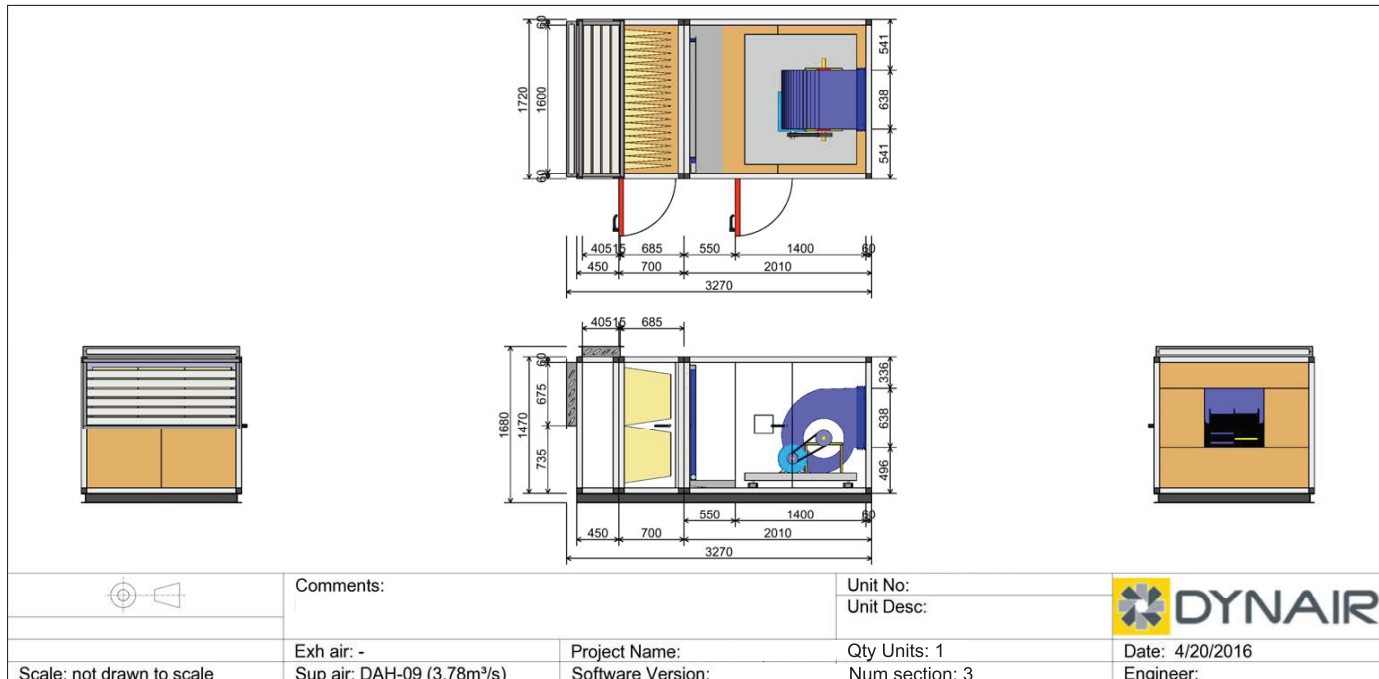
Date: 4/20/2016



## Computer sketches

Project name :  
Quotation no :

WinTADS Lite - 1.10.00039.0



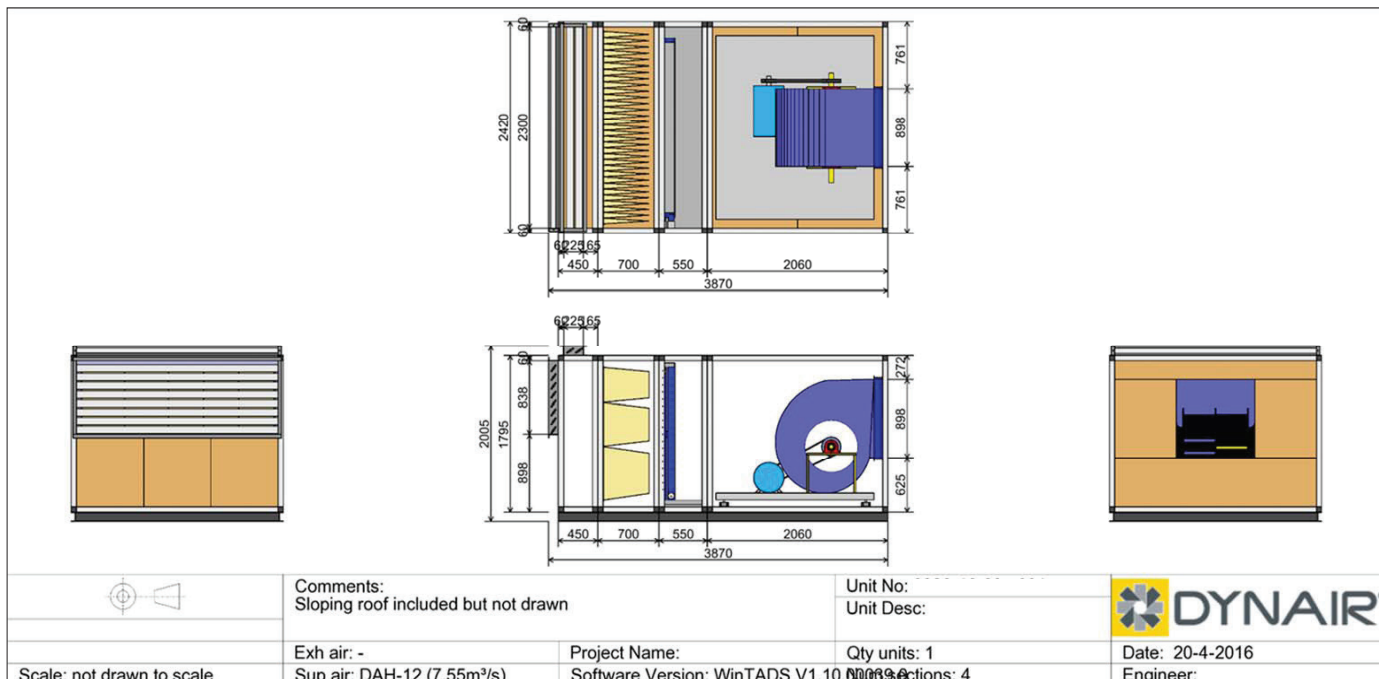
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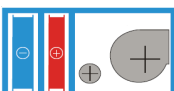
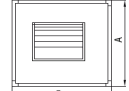




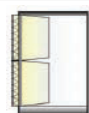



## Computer sketches

Project name :  
Quotation no :

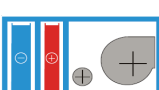
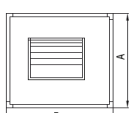
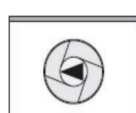

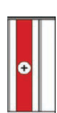




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AHU Model	Airflow Rate		Height	Width	Blower, Motor & Coil	Coil	Electric Heater	Pre-filter	Pre+Bag Filter	Mixing Box
	CFM	CMH	A	B	L1 (Upto 6 row)	L2 (Upto 8 Row)	L4	L5	L6	L8
DAH-1	1500	2549	810	1070	1410	270	450	360	700	360
DAH-2	2000	3398	810	1170	1410	270	450	360	700	360
DAH-3	2500	4248	970	1170	1560	270	450	360	700	360
DAH-4	3000	5097	1080	1290	1560	270	450	360	700	360
DAH-5	3500	5947	1080	1290	1560	270	450	360	700	360
DAH-6	4000	6796	1240	1440	1710	270	450	360	700	360
DAH-7	5000	8495	1240	1440	1710	270	450	360	700	360
DAH-8	6000	10194	1320	1570	1875	270	450	360	700	360
DAH-9	7500	12743	1470	1720	2010	270	450	360	700	450
DAH-10	10000	16990	1570	2270	2260	270	450	360	700	450
DAH-11	12000	20388	1570	2270	2260	270	450	360	700	450

Note:-

- 1) All Dimensions are in mm
- 2) Lengths Shown are of Individual Module (External for 50mm Panel).
- 3) Add 100 mm in the AHU height for base channel.
- 4) Dynair reserve the right, while leaving the essential characteristics the same, to modify the data, photograph and anything else shows in the above without prior warning

											
AHU Model	Airflow Rate		Height	Width	Blower & Motor	Coil	Coil	Electric Heater	Pre-filter	Pre+Bag Filter	Mixing Box
	CFM	CMH	A	B		L2 (1 to 6 Row)	L2 (Upto 8 Row)	L4	L5	L6	L8
DAH-12	15000	25485	1795	2420	2060	550	820	550	360	700	450
DAH-13	18000	30582	2020	2720	2060	550	820	550	360	700	620
DAH-14	20000	33980	2020	2720	2060	550	820	550	360	700	620
DAH-15	24000	40776	2320	2970	2310	550	820	550	360	700	620
DAH-16	30000	50970	2420	3120	2460	550	820	550	360	700	700
DAH-17	35000	59465	2570	3520	2460	550	820	550	360	700	700
DAH-18	40000	67960	2670	3720	2760	550	820	550	360	700	700

Note:-

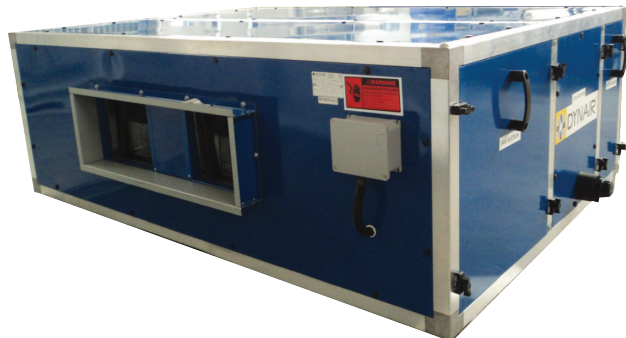
- 1) All Dimensions are in mm
- 2) Lengths Shown are of Individual Module (External for 50mm Panel).
- 3) Add 100 mm in the AHU height for base channel.
- 4) Dynair reserve the right, while leaving the essential characteristics the same, to modify the data, photograph and anything else shows in the above without prior warning

## Fan Section As Per Motor Frame Sizes



AHU Models	Fan Models	Motor		Cabinet Length	
		KW	Frame Sizes	Horizontal Discharge	Vertical Discharge
DAH-1	9/9	0.37 to 1.5	71 to 90	800	
	10/8	0.37 to 1.5	71 to 90	800	
	10/10	0.37 to 1.5	71 to 90	800	
	12/9	0.37 to 3	71 to 100	950	
	12/12	0.37 to 3	71 to 100	950	
DAH-2	10/10	0.37 to 1.5	71 to 90	800	
	12/9	0.37 to 3	71 to 100	950	
	12/12	0.37 to 3	71 to 100	950	
DAH-3	12/9	0.37 to 3	71 to 100	950	
	12/12	0.37 to 3	71 to 100	950	
DAH-4	12/12	0.37 to 3	71 to 100	950	
	15/15	0.37 to 7.5	71 to 132	1100	
DAH-5	12/12	0.37 to 3	71 to 100	950	
	15/15	0.37 to 7.5	71 to 132	1100	
DAH-6	15/15	0.37 to 7.5	71 to 132	1100	
	18/18	0.37 to 7.5	71 to 132	1265	
DAH-7	18/18	0.37 to 7.5	71 to 132	1265	
DAH-8	18/18	0.37 to 7.5	71 to 132	1265	
	500 R	3 to 7.5	100 to 132	1400	
DAH-9	500 R	3 to 22	100 to 180	1650	
	560 R	3 to 22	100 to 180	1650	
DAH-10	500 R	3 to 22	100 to 180	1650	
	560 R	3 to 22	100 to 180	1650	
	630 R	3 to 22	100 to 180	1760	
DAH-11	560 R	3 to 22	100 to 180	1650	
	630 R	3 to 22	100 to 180	1760	
DAH-12	630 R	3 to 22	100 to 180	1760	
	710 R	3 to 22	100 to 180	2000	
DAH-13	710 R	3 to 22	100 to 180	2000	
	800 K	3 to 22	100 to 180	2100	2300
DAH-14	710 R	3 to 22	100 to 180	2000	
	800 K	3 to 22	100 to 180	2100	2300
DAH-15	800 K	3 to 22	100 to 180	2100	2300
	900 K	3 to 22	100 to 180	2250	2700
DAH-16	900 K	3 to 22	100 to 180	2250	2700
	1000 K	3 to 22	100 to 180	2400	2900
DAH-17	900 K	3 to 22	100 to 180	2250	2700
	1000 K	3 to 22	100 to 180	2400	2900
DAH-18	1000 K	3 to 22	100 to 180	2400	2900
	1120 K	3 to 22	100 to 180	2700	3100





## Casing and Construction

The construction of Air Handling Units are of pentapost design and have strong three way angle joints of reinforced nylon corners to form a rigid frame structure. Nylon corners ensure the thermal break effect on the corners of the structure. Rigid framework comprises an assembly of externally chamfered extruded aluminum profiles & nylon corner joints.

## Thermo-Break Profile

Thermal Break Profiles are used to eliminate the heat loss caused by thermal conduction from the exterior surface to the interior of the casing. These options are generally advised for outdoor installations.

## Inner and Outer skin

The outer skin is a standard pre-coated GI sheet & inner skin is a GI sheet. The double skin is to retain the insulation, keep the internal surface clean and to have a smooth surface. This eliminates the chance of dirt and bacteria accumulation. Thus it is suitable for hygienic applications such as pharmaceutical industries, hospitals, operation theatres, surgery rooms, food processing industries etc.

## Insulation

The insulation comprises of Poly Urethane Foam (PUF) with a density of 40 kg/m<sup>3</sup>.

## Selection of AHU

### On the basis of panel thickness

- Double skin 25mm
- Double skin 40mm

## Fan:

- Forward Curved DIDW centrifugal Fan, two fan mounted on a common shaft with vibration isolator & Flexible Sleeve.



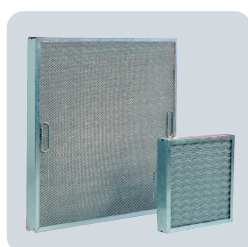
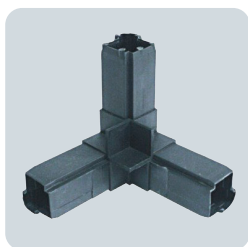
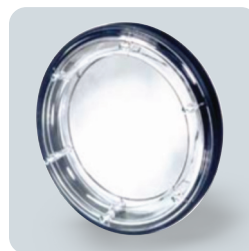
- Transmission: Fixed Pitch Pulley (Optional: Variable Pitch Pulley).

## Motor:

- Fan motors are TEFC, Class F insulation, foot mounted 4 Pole, IP55 protected.

## Accessories:

- Hinges & Handle
- View Port & Marine Light



AHU Model	Volume Flow Rate		DAL Dimensions			Fan Model & Motor Details							Pre Filter - 50/23mm				Operating Weight, Kg.	
			Height	Width	Length	Fan Model	Qty	Fan Opening Size Width x Height	Outlet Velocity	200 Pa ESP	500 Pa ESP	Area	Filter Across Velocity	Sizes	Qty			
	CFM	CMH	A	B	L													
DAL-1	1050	1784	560	1200	1064	DA-T 9/7 L	1	232*262	8.07	0.55	0.75	0.24	2.06	600*400	1	145	165	
DAL-2	1560	2650	560	1240	1064	DA-T 9/9 L	1	298*262	9.42	0.75	1.1	0.40	1.84	500*400	2	145	165	
DAL-3	1980	3364	560	1745	1064	DA-T 7/7 L2	1	259*228*2	7.91	1.5	1.5	0.60	1.56	500*400	3	200	240	
DAL-4	2500	4248	560	1745	1104	DA-T 7/7 L2	1	259*228*2	9.98	1.5	1.5	0.60	1.97	500*400	3	220	240	
DAL-5	3020	5131	560	1745	1104	DA-T 8/8 L2	1	287*256*2	9.69	1.5	2.2	0.60	2.38	500*400	3	230	250	
DAL-6	3540	6014	560	2200	1204	DA-T 9/9 L2	1	298*262*2	10.69	2.2	2.2	0.80	2.09	500*400	4	325	345	
DAL-7	3960	6728	610	2200	1204	DA-T 10/10 L2	1	331*289*2	9.76	2.2	3	0.80	2.34	500*400	4	340	370	
DAL-8	4580	7781	700	2130	1204	DA-T 12/9 L2	1	309*341*2	10.25	2.2	3	0.95	2.28	400*500 & 500*500	1 & 3	345	385	
DAL-9	5000	8495	700	2130	1204	DA-T 12/9 L2	1	309*341*2	11.19	2.2	3	0.95	2.48	400*500 & 500*500	1 & 3	360	400	
DAL-10	5470	9294	700	2100	1254	DA-T 12/12 L2	1	395*341*2	9.58	3	3	1.12	2.31	610*610	3	390	430	
DAL-11	5900	10024	700	2100	1254	DA-T 12/12 L2	1	395*341*2	10.33	3	4	1.12	2.49	610*610	3	390	430	
DAL-12	6425	10916	800	2335	1304	DA-T 15/11 L2	1	373*404*2	10.06	3	3	1.30	2.33	305*610 & 610*610	1 & 3	420	460	
DAL-13	6940	11791	800	2335	1304	DA-T 15/11 L2	1	373*404*2	10.86	3	4	1.30	2.51	305*610 & 610*610	1 & 3	425	465	
DAL-14	7465	12683	800	2640	1304	DA-T 15/15 L2	1	471*404*2	9.25	4	4	1.49	2.37	610*610	4	440	480	
DAL-15	7980	13558	800	2640	1304	DA-T 15/15 L2	1	471*404*2	9.89	4	5.5	1.49	2.53	610*610	4	460	500	

## Notes:

- 1) All Dimensions are in mm.
- 2) Lengths Shown are of Total Section including Fan, Coil & Pre-Filter.
- 3) Please add 80mm for 25mm panel of extrusion in height and width.
- 4) Above mentioned length dimensions are with 4 row cooling coil.
- 5) Dynair reserve the right, while leaving the essential characteristics the same, to modify the data, photograph and anything else shows in the above without prior warning.



Eurovent Certita Certification S.A.S. - 48/50, rue de la victoire - 75009 PARIS FRANCE  
R.C.S. PARIS 513 133 637 - NAF 7120B

Accreditation #5-0517 Products and Services Certification  
according to NF EN ISO/CEI 17065:2012 - Scope available on  
[www.cofrac.fr](http://www.cofrac.fr).  
COFRAC is signatory of EA MLA, list of EA members is available in  
<http://www.european-accreditation.org/ea-members>

## Certification Diploma N° : 10.05.475

Eurovent Certita Certification certifies that

### Air Handling Units

from

**MAICO Gulf LLC**

Located at

P.O. BOX 9014 - PLOT NO.P299&301 - AL Ghail Industrial Park  
RAS AL KHAIMAH, United Arab Emirates

Range

DAH

Software for calculation of performances

Wintads Lite 1.10.000.40.0

Trade name

DYNNAIR

have been assessed according the requirements of following standard

**OM-5-2016\_AHU\_- \_rev1**

The list of certified products is displayed at :

<http://www.eurovent-certification.com>

Manufacturing places

Ras Al Khaimah, United Arab Emirates

**MAICO Gulf LLC**

is authorised to use the EUROVENT CERTIFIED PERFORMANCE mark

in accordance with the rules specified in the Operational Manual

**OM-5-2016\_AHU\_- \_rev1**

Erick MELQUIOND

President

Approval date : 2010/05/06

Re-checked on : 2016/09/15

Valid until : 2017/03/31

Sr. No.	Dust Spot Efficiency ASHRAE 52.1	Arrestance ASHRAE 52.1	MERV Rating ASHRAE 52.2	EN779	Eurovent	Filter Type
1.	Less than 20%	60-80%	MERV 1-7	G2	EU2	Disposable Panel, Natural Fiber, Glass Fiber (Mainly Pre-commissioning Filter)
2.	Less than 20%	80-90%	MERV 8	G3	EU3	Disposable Panel, Natural Fiber, Glass Fiber, Automatic Roll Filter, Al. Filter.
3.	20-30%	90-94%	MERV 9	G4	EU4	Synthetic media filter, Washable Pre-Filter, Pocket filter (Bag filter), Mini – pleat panel filter.
4.	30-35%	90-94%	MERV 9	G4	EU4	Disposable pleated, pocket filter (Mainly Pre-filter)
5.	40-55%	95-98%	MERV 10	F5	EU5	Synthetic media filter, disposable pleated, Pocket filter ( Bag filter), Mini pleat rigid filter.
6.	60-80%	96-99%	MERV 11-12	F6	EU6	Disposable pleated, Pocket filter ( Bag filter), Mini pleat rigid filter, Mini pleat rigid filter.
7.	80-90%	98-99%	MERV 13	F7	EU7	Pocket filter (Bag filter), Rigid box filter, Mini pleat rigid filter.
8.	90-95%	99%	MERV 14	F8	EU8	Pocket filter (Bag filter), Rigid box filter, Mini pleat rigid filter.
9.	95%+	99%+	MERV 15	F9	EU9	Pocket filter (Bag filter) , Mini pleat rigid filter.
10.	95% DOP	NA	MERV 16	H10	EU10	Semi absolute filter, Mini pleat semi absolute.
11.	98% DOP	NA	MERV 16	H11	EU11	Semi –absolute filter
12.	99.97% @ 0.3μ	NA	NA	H12/	EU12/	HEPA Filter
	99.97% @ 0.3μ			H13	EU13	
13.	99.999% @ 0.3μ	NA	NA	H14	EU14	HEPA Filter
14.	99.9995% @ 0.12μ	NA	NA	U15	EU15	ULPA Filter







MAICOPlot-I-02, (Part-1), Khed City, Rajgurunagar Pune - 410 505 Tel: +91 77 678 000



Code : DAH/09/16

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