



**Double Skin - Air Handling Units**

## UNIQUE DOUBLE SKIN AIR HANDLING UNIT

The units are designed to meet specific customer needs. The construction details enable, a great deal of flexibility to meet varying capacity requirements and provide solution for all type of application air Psychometric needs and space constraints.

Each unit is designed and manufactured to exacting need of customer.

- Double skin AHU provide **High Indoor Air Quality** since sand-witch pressure injected PUF insulated panels reduces risk of dirt accumulation, eliminates chances of moisture absorption and erosion of internal insulation. Further AHU interior can be periodically cleaned with wet mop.
- **Corrosion resistant** stainless steel drain pan with adequate slope assures quick and complete drainage of condensed moisture ensuring no stagnant water and minimizes microbial growth.
- **Flexible construction** enables that various sections/ component can be arranged in a manner to suit specific application requirement
- High PUF density provides better thermal insulation and **sound attenuation properties** and thus reduces casing breakout noise.

## SALIENT FEATURES

Application	:	Cooling, Heating, Dehumidification, Humidification in shopping malls, offices, restaurants, health care, multiplex, clean rooms and all type of industrial application
Wide capacity range	:	2040 CMH to 59500 CMH
Comfort to Industrial	:	Static pressure range from 250 Pa to 1500 Pa

## PRODUCT RANGE

### 1. Horizontal Floor Mounted (UHF series)

These units are suitable for large air quantity. The modular design allow flexible combination of component to suit specific application. These AHU's are ideal for large commercial / office / industrial / hospitality / healthcare application.



### 2. Unitary Vertical Floor Mounted (UVF series)

These units are preferred when floor space is at a premium. Vertical units are units designed with filter coil & fan all arranged in a vertical frame. The advantage of these units are they occupy less floor space. Floor Plates where low ceiling height is a constraint multiple vertical units can be used to advantage. Where no AHU rooms are provided exposed units with supply air plenum can be used.



### 3. Ceiling Suspended Hide Away Type (CD / CB series)

These units are suspended from ceiling slab above false ceiling and thus require no floor space & AHU rooms. These units are suitable for commercial comfort application where space is at a premium. Multiple units can be used for multi tenant application where individual space control is required.



These Air Handling Units are manufactured in our Modern factory which is well equipped with sheet metal forming and PUF injection machine.

# CONSTRUCTION FEATURES

## CASING

- Rigid corrosion resistant extruded aluminium hollow framework held together with fiber glass corner joints.
- Double skin sand-witched panels with inner skin of 24 G (0.6 mm) plain galvanized steel sheets & outer skin of 24 G (0.6 mm) pre-coated galvanized steel sheet.
- Casing Panels are injected with high pressure PUF insulation having density of  $38\pm 2$  kg/m<sup>3</sup>. Standard AHU models have 25 mm thick panel.
- Die cast aluminium hinges and nylon handle on each access door.
- Assembly is done using self drilling and self tapping galvanized sheet metal screws.
- Horizontal & Vertical Units are skid mounted. The base frame is rugged in construction made from galvanized steel sheet.
- Standard AHU is having fan coil & pre-filter arranged in Draw through arrangement.

## FAN & MOTOR

- Fans are centrifugal, DIDW forward curved. Fans are energy efficient & AMCA certified. Horizontal / Vertical AHU fans are belt driven while ceiling suspended AHU's have both direct and belt driven models.
- Motors are TEFC, Squirrel Cage Induction type with class 'F' insulation conforming to IS 325. Motors are suitable for 3 phase  $415\pm 10\%$  V,  $50\pm 5\%$  Hz AC supply. Direct driven motors are suitable for single phase 220 V, 50 Hz AC supply. Energy efficient level 1 motor as per IS 12615 can be provided on request.
- Fan & Motor are mounted on common extruded aluminium channel base frame.
- The combined fan motor base frame is mounted on suitable vibration isolator to minimize vibration transmission.
- The fans are connected to the casing through fire resistant canvass.
- AHU outlet shall have flanged connection for duct connection.
- AHU can have either of the following air discharge orientation, Up Blast/ Top Horizontal/ Bottom Horizontal

## COILS

- Can be either Chilled water / Hot water / brine / direct expansion type.
- Galvanized sheet steel end plates shall hold the copper tube pack.
- The coil tubes are plain copper having 12.7 mm OD. The coil tube arrangement is multi circuited with choice of 2/4/6/8 row deep in the direction of air flow.
- Tubes are mechanically expanded for better bonding with aluminium fins for efficient heat transfer.
- Free flow aluminium fin configuration provide better heat transfer and less air pressure drop. Depending on application, one can choose from 8/10/12 FPI fins spacing.
- Water / brine coils are self draining and vented type.
- Coil header shall be of copper

## DRAIN PAN

- Wide drain pan facilitates quick draining of condensate. Drain pan is fabricated out of corrosion resistance 22 G stainless steel. To avoid surface condensation, drain pan is insulated with closed cell insulation.

## FILTER

- Standard units are provided with sliding box type pre-filter with synthetic non woven media. The filter is of EU 4 grade as per EN 779 standard. The filters are washable type and are 50 mm thick for floor mounted and 25 mm thick for ceiling suspended.

## ACCESSORY (UHF series only)

- Access door in fan / fine & HEPA filter section (as applicable).
- Marine lamp in fan section for better visibility.
- View port in fan section
- Door limit switch to switch off the motor automatically for personnel safety.



## DOUBLE SKIN HORIZONTAL FLOOR MOUNTED

MODEL NO.	AIR QTY.		FAN		AHU OUTLET	COIL FACE AREA		MOTOR	OVERALL DIMENSION		
	CFM	CMH	Dia (mm())	Nos.	Size	Sqft.	Sqmt.	KW	H (mm)	W (mm)	L (mm)
UHF 02	2000	3400	250 x 250	1	289 x 331	4	0.37	0.75	800	1000	1275
UHF 03	3000	5100	300 x 300	1	341 x 395	6	0.56	1.5	875	1225	1400
UHF 04	4000	6800	375 x 375	1	404 x 471	8	0.74	1.5	950	1375	1475
UHF 05	5000	8500	450 x 450	1	478 x 557	10	0.93	3.7	1075	1500	1700
UHF 06	6000	10200	450	1	568 x 568	12	1.11	3.7	1200	1550	1900
UHF 07	7000	11900	450	1	568 x 568	14	1.30	3.7	1225	1700	1925
UHF 08	8000	13600	500	1	638 x 638	16	1.49	3.7	1275	1775	2000
UHF 09	9000	15300	500	1	638 x 638	18	1.67	5.5	1275	1900	2000
UHF 10	10000	17000	560	1	714 x 714	20	1.86	5.5	1425	1950	2150
UHF 11	11000	18700	560	1	714 x 714	22	2.04	5.5	1500	2050	2225
UHF 12	12000	20400	630	1	800 x 800	24	2.23	5.5	1550	2100	2300
UHF 14	14000	23800	630	1	800 x 800	28	2.60	7.5	1700	2200	2300
UHF 15	15000	25500	710	1	898 x 898	30	2.79	7.5	1700	2300	2475
UHF 16	16000	27200	710	1	898 x 898	32	2.97	7.5	1700	2450	2475
UHF 17	17000	28900	710	1	898 x 898	34	3.16	7.5	1700	2600	2475
UHF 18	18000	30600	710	1	898 x 898	36	3.34	9.3	1750	2600	2500
UHF 20	20000	34000	800	1	1006 x 1006	40	3.72	11	1850	2750	2650
UHF 22	22500	38250	800	1	1006 x 1006	45	4.18	11	2050	2750	2750
UHF 25	25000	42500	900	1	1130 x 1130	50	4.65	15	2300	2750	2950
UHF 26	26500	45050	900	1	1130 x 1130	53	4.92	15	2400	2750	2950
UHF 28	28500	48450	900	1	1130 x 1130	57	5.30	15	2450	2800	2950
UHF 30	30000	51000	1000	1	1266 x 1266	60	5.57	15	2550	2900	3100
UHF 32	32500	55250	1000	1	1266 x 1266	65	6.04	15	2650	2900	3100
UHF 35	35000										

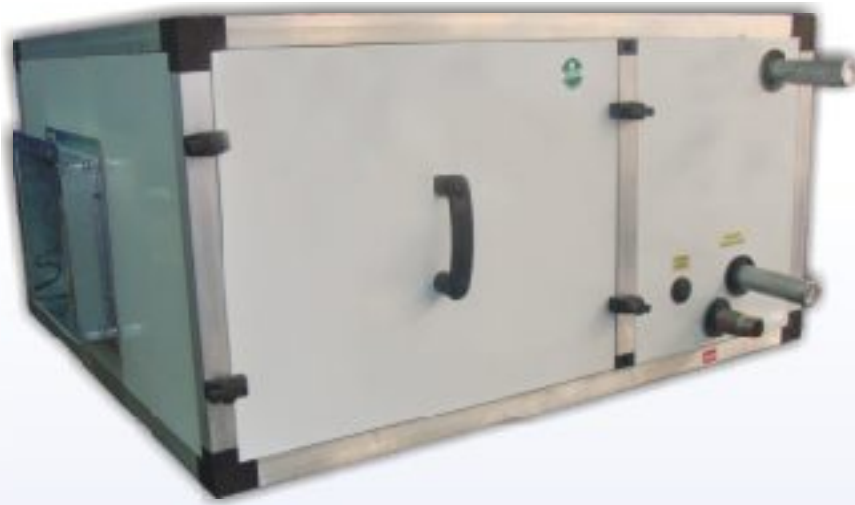
- a) Coil Face area indicated is based on 500 FPM (2.54 m/s) coil face velocity
- b) Motor rating indicated is based on total static pressure of 50 mm WG
- c) Unit Dimensions indicated are approximate only based on "DRAW THRU" arrangement with Fan, Cooling Coil & Pre-filters, Casing Panels thickness considered is 25 mm, Coil considered is of 4 RD
- d) Standard models include forward curved, DIDW Centrifugal Fans
- e) Motors are suitable for 3 Ph, 415 V, 50 Hz, AC
- f) Specifications are subject to change without notice



## **DOUBLE SKIN VERTICAL FLOOR MOUNTED**

MODEL NO.	AIR QTY.		FAN		AHU OUTLET	COIL FACE AREA		MOTOR	OVERALL DIMENSION		
	CFM	CMH	Dia (mm)	Nos.	Size	Sqft.	Sqmt.	KW	H (mm)	W (mm)	L (mm)
UVF 03	3000	5100	300 x 300	1	341 x 395	6	0.56	1.5	1500	1275	650
UVF 04	4000	6800	375 x 375	1	404 x 471	8	0.74	1.5	1625	1350	750
UVF 05	5000	8500	450 x 450	1	478 x 557	10	0.93	2.2	1650	1725	850
UVF 06	6000	10200	300 x 300	2	341 x 395 x 2	12	1.11	3.7	1650	1800	850
UVF 07	7000	11900	375 x 375	2	404 x 471 x 2	14	1.30	3.7	1700	2050	850
UVF 08	8000										

- a) Coil Face area indicated is based on 500 FPM (2.54 m/s) coil face velocity
- b) Motor rating indicated is based on total static pressure of 40 mm WG
- c) Unit Dimensions are approximate. Casing Panels thickness considered is 25 mm, Coil considered is of 4 RD
- d) Standard models include forward curved, DIDW Centrifugal Fans
- e) Motors are suitable for 3 Ph, 415 V, 50 Hz, AC
- f) AHU are with up blast fan discharge
- g) Specifications are subject to change without notice



## DOUBLE SKIN CEILING SUSPENDED - DIRECT DRIVEN

MODEL NO.	AIR QTY.		FAN		AHU OUTLET	COIL FACE AREA		MOTOR	OVERALL DIMENSION		
	CFM	CMH	Dia (mm())	Nos.	Size	Sqft.	Sqmt.	Watts	H (mm)	W (mm)	L (mm)
UCD 012	1200	2040	225 x 175	1	262 x 232	2.4	0.22	350	550	820	860
UCD 016	1600	2720	225 x 225	1	262 x 298	3.2	0.30	550	550	985	860
UCD 020	2000	3400	250 x 250	1	289 x 331	4	0.37	550	600	1100	985
UCD 025	2500	4250	300 x 300	1	341 x 395	5	0.46	709	625	1300	1100
UCD 030	3000	5100	225 x 225	2	262 x 298 x 2	6	0.56	550 x 2	550	1550	860
UCD 035	3500	5950	250 x 250	2	289 x 331 x 2	7	0.65	550 x 2	600	1550	985
UCD 040	4000	6800	250 x 250	2	289 x 331 x 2	8	0.74	550 x 2	600	1600	985

- a) Coil Face area indicated is based on 500 FPM (2.54 m/s) coil face velocity
- b) Motor rating indicated is based on total static pressure of 30 mm WG
- c) Unit Dimensions are approximate. Casing Panels thickness considered is 25 mm, Coil considered is of 4 RD
- d) Standard models include forward curved, DIDW Centrifugal Fans
- e) Motors are suitable for 1 Ph, 220 V, 50 Hz, AC
- f) AHU are with bottom horizontal fan discharge
- g) Specifications are subject to change without notice



## **DOUBLE SKIN CEILING SUSPENDED - BELT DRIVEN**

MODEL NO.	AIR QTY.		FAN		AHU OUTLET	COIL FACE AREA		MOTOR	OVERALL DIMENSION		
	CFM	CMH	Dia (mm())	Nos.	Size	Sqft.	Sqmt.	KW	H (mm)	W (mm)	L (mm)
UCB 030	3000	5100	225 x 225	2	262 x 298 x 2	6	0.56	1.5/4	570	1600	1100
UCB 035	3500	5950	250 x 250	2	289 x 289 x 2	7	0.65	1.5/4	625	1700	1250
UCB 040	4000	6800	250 x 250	2	289 x 289 x 2	8	0.74	2.2/4	625	1700	1250
UCB 050	5000	8500	300 x 300	2	341 x 395 x 2	10	0.93	3.7/4	680	2000	1400
UCB 060	6000										

- a) Coil Face area indicated is based on 500 FPM (2.54 m/s) coil face velocity
- b) Motor rating indicated is based on total static pressure of 40 mm WG
- c) Unit Dimensions are approximate. Casing Panels thickness considered is 25 mm, Coil considered is of 4 RD
- d) Standard models include forward curved, DIDW Centrifugal Fans
- e) Motors are suitable for 3 Ph, 415 V, 50 Hz, AC
- f) AHU are with bottom horizontal fan discharge
- g) Specifications are subject to change without notice

## **OPTIONS AVAILABLE**

- Outer & inner skin thickness.
- Inner skin material - Aluminium
- Casing panel thickness 43 mm.
- Extruded Aluminum frame work with thermal break profile.
- Mixing box.
- Backward curved DIDW centrifugal Fan
- Low leakage aluminium damper for supply, return & fresh air.
- 2/ 4 pass PVC mist eliminator
- Fine/HEPA filter section with filter of required EU/ MERV rating.
- Vacant Electric heater Section
- Vacant Humidifier section
- Overhead canopy for out door installation.
- AHU in blow through design
- Two Tier design having heat recovery wheel with separate supply & return air fan.
- Treated Fresh air unit with Heat Pipe.



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