



American
VENTUS

2020



VTS

The image features a 3D metallic logo for 'VTS'. The letters are rendered in a bold, sans-serif font with a brushed metal texture and a slight shadow beneath them. A curved, metallic swoosh arches over the top of the letters, starting from the top of the 'V' and ending at the top of the 'S'. The entire logo is set against a plain white background.



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VTS Group

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ventus

ventus

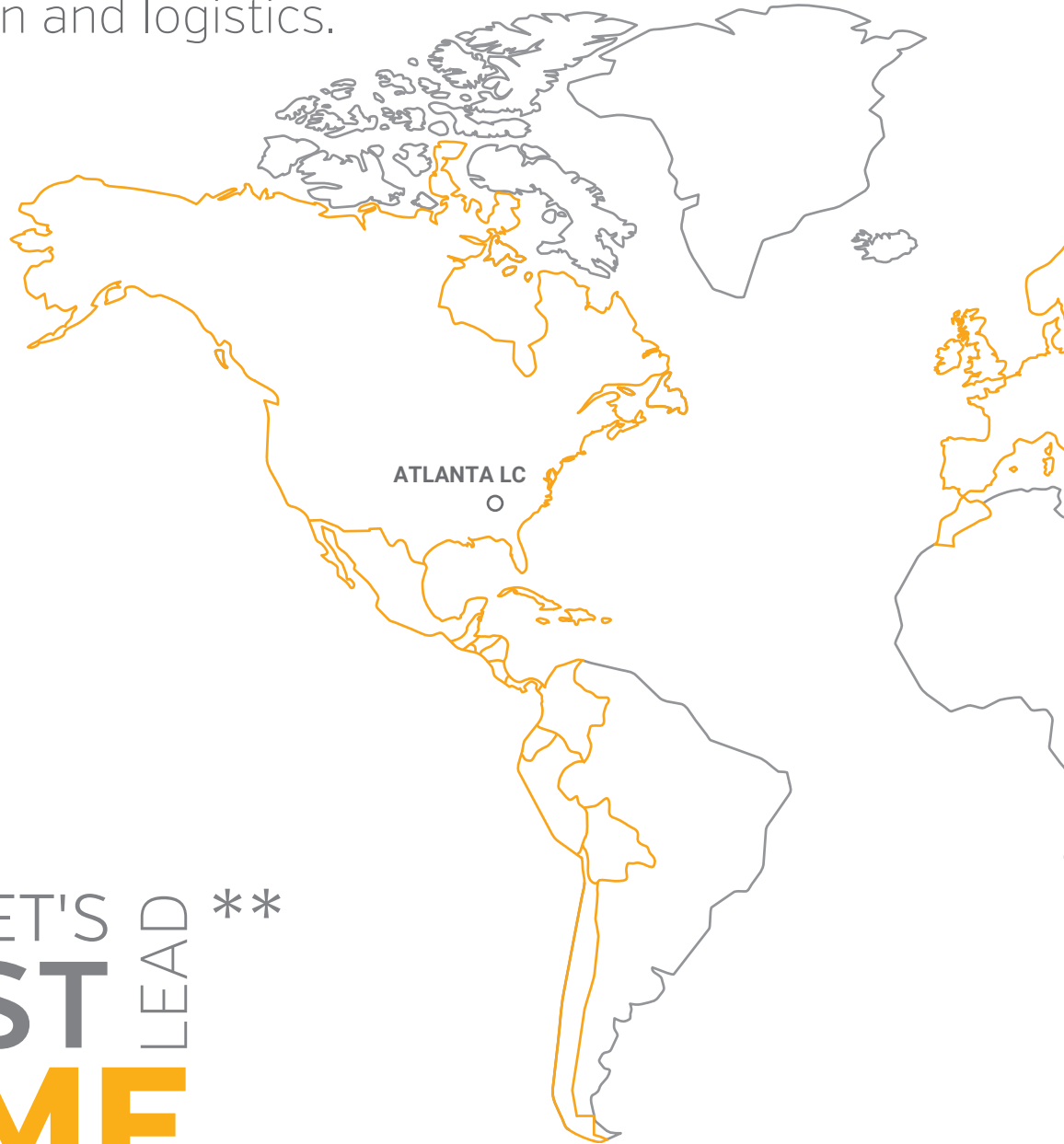


01

VTS Group



VTS GROUP is a manufacturer of technologically advanced equipment for the HVAC Sector; using innovative technologies in the spheres of project research, production and logistics.



MARKET'S **BEST** LEAD **TIME** **

* Logistics center

** Factory will confirm lead time based on the units selected.





OUR MISSION

AHU#1





THE 3 ELEMENTS OF SUCCESS

Consistently superior product quality. Unbeatable market prices. The shortest lead time. These three elements of market policy ensure that VTS is always one step ahead, in every region of the world.

Following the proven assembly method of the automotive Industry, VTS created a network of 5 efficiently functioning logistics centers: **Atlanta, Dubai, Moscow, Warsaw and Bangalore**. Thereby guaranteeing the shortest delivery terms in the market, regardless of the region in the world.

Mass scale production of reproducible devices makes it possible for VTS to offer our product at the **most competitive price while retaining the best quality**.

Multilevel quality control systems enables VTS to offer a **2 year optional warranty for each unit**.

MARKET'S LEAD
BEST TIME

5 LOGISTICS
CENTERS

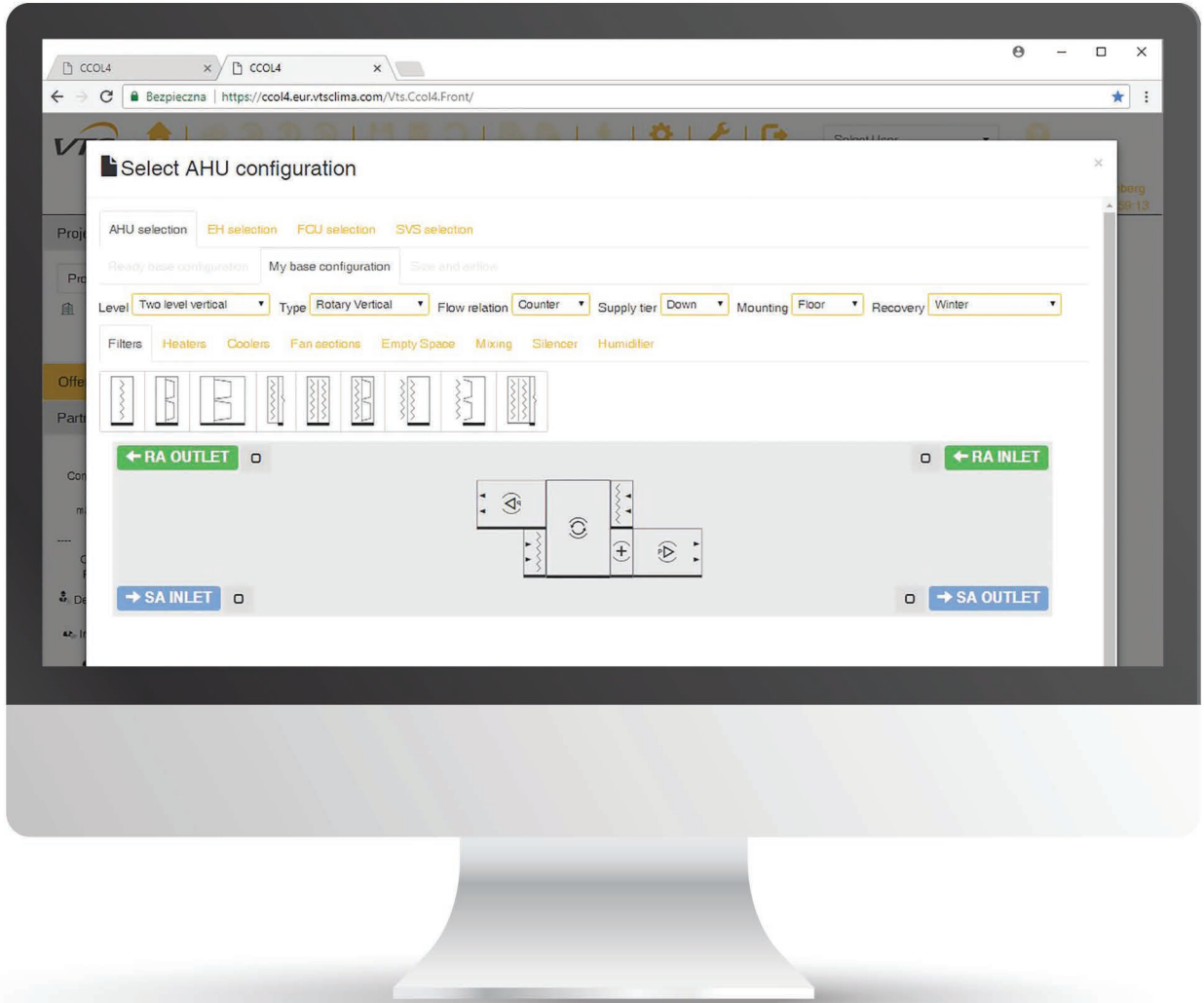
\$ competitive
price

150 000
UNITS
SOLD ANNUALLY

Q the highest
quality

2 optional warranty
YEARS FOR EACH
UNIT







02

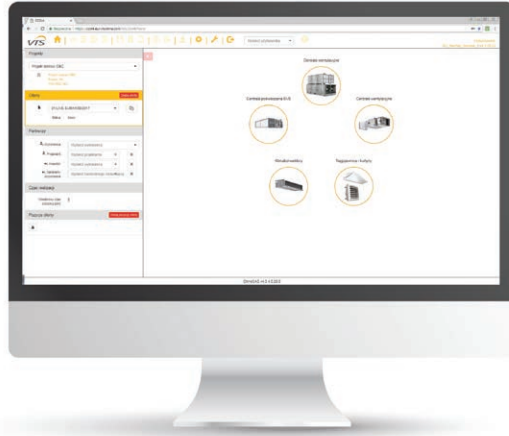
Designer support



ClimaCAD Online 4.0 [CCOL 4]

Customized configuration

User friendly interface



Fast&Easy selection

Integrated with CRM, ERP, WMA system

CCOL 4 IS ADJUST TO

» all browsers



» all operating system



» all devices



DATA EXPORT TO





CCOL 4.0 uses the latest technology and development platforms, which will be accessible from anywhere in the world through our software as service models. All you need is a device with a web browser and access to the internet.

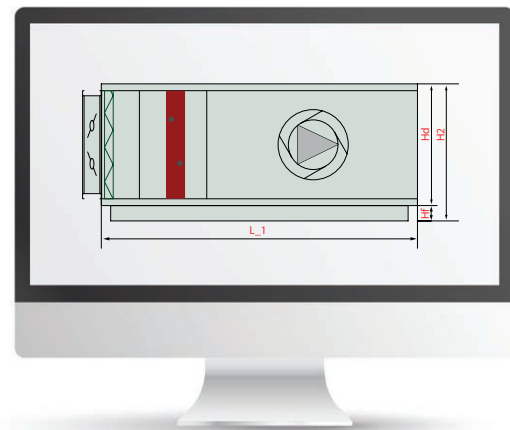
THE VERSATILITY OF DESIGNING

- » unlimited number of device configurations
- » detection of illogical configurations



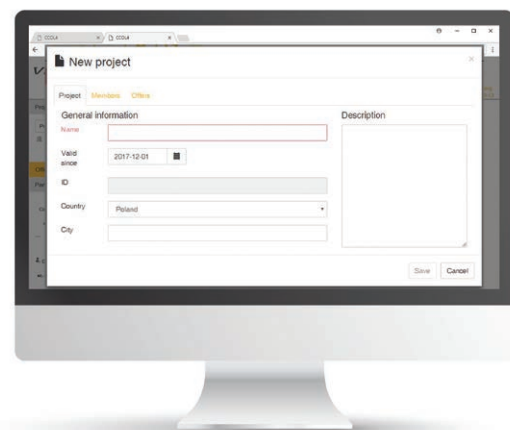
DYNAMIC COUNTING OF DEVICES DIMENSIONS

- » CCOL offers the optimal length of the control panel and the optimal section length adapted to the device functions and device design



MANAGING YOUR OWN DATABASE

- » the possibility of creating your own project database (selection)
- » the possibility of exporting own selections to quotation by VTS technical engineers





VTS BIM - a new approach to digital models of air-handling units

VTS has created the possibility of generating digital models of VENTUS VS and American VENTUS air-handling models on-line. This is possible thanks to the implementation of a new ClimaCAD OnLine 4.0 selection tool, equipped with .rfa (Revit®) files generator.



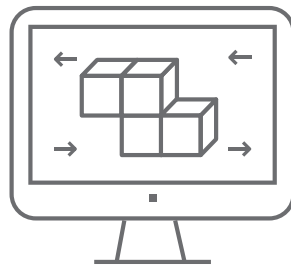
The process of model generation comes down to the following 3 steps:



1 Login to CCOL 4.0 website

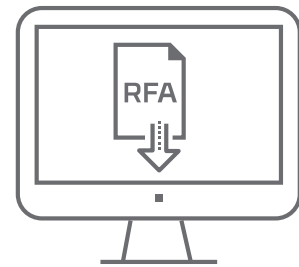
Login to the CCOL 4.0 using the following web address:

www.ccol4.com



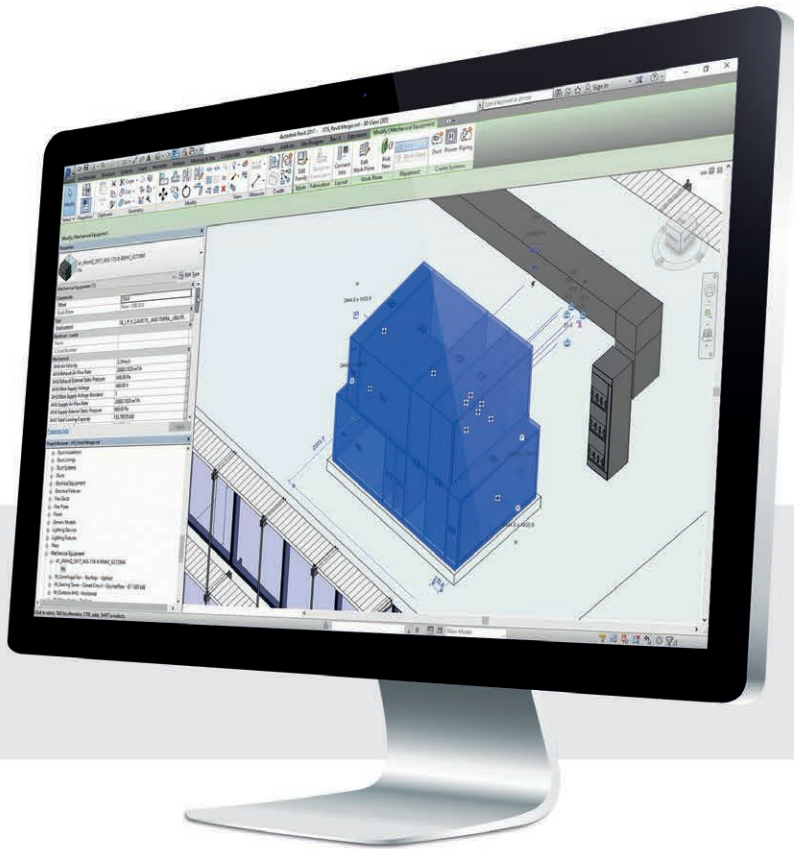
2 Unit configuration

Use the intuitive selection tool to select your Air Handling Unit and set its working parameters to fit the specified project demands.



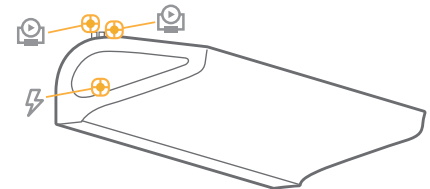
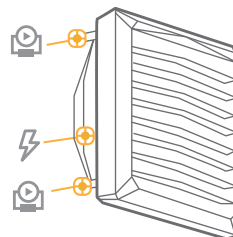
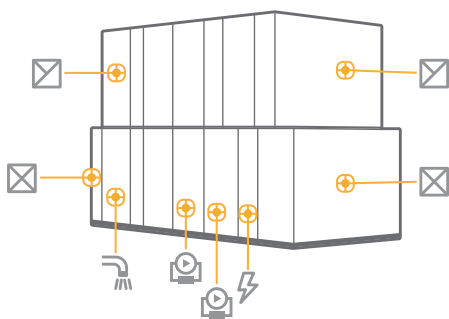
3 Data export to .rfa file

In order to generate a model in .rfa file, it is enough to enter the name and surname plus the email address of the person dedicated to receive the file. The system will automatically send a link to download the model. The entire process lasts approximately 15 minutes.



The release of families for the Autodesk Revit® environment by VTS makes it easier to design agencies for model the building installations on the basis of using the same platform. At present the on-line generator is a unique solution in BIM environment. It enables the generation of a VENTUS air-handling unit model practically in no time in any configuration and with any parameters.

As a result, the client receives:



The generated objects contain detailed parameters connectors:

- » air systems,
- » hydraulic systems,
- » sanitary systems,
- » electric systems,

as well as the complete dimensional data, the device **maintenance zone** and the service (**repair**) zone.

VTS also provides digital models of WING air curtains and VOLCANO air heaters.

The models contain:

- » parametrized electric and hydraulic connectors,
- » mount options vertically and horizontally,
- » presentation of the range of air stream,
- » parameter of any inclination angle of an air heater in relation to the horizontal plane.

Models can be downloaded from: <https://vtsgroup.com/us/vts-bim>





03

Units



AVS



from **800 CFM**
to **38 000 CFM**
in total **capacity**



premium efficiency motors
energy recovery system:

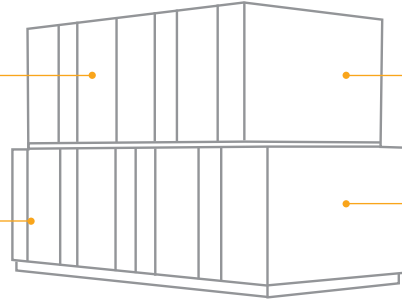
- cross-flow plate
- energy wheel



2 000 h
salt spray test
resistance
on the external coating

right or left hand
inspection site

fully assembled unit
or delivered by
sections



inlet and outlet
locations

2 inch polyurethane
sandwich panels
which eliminates
thermal bridges





AVS LITE



from **800 CFM**
to **4 000 CFM**
in total **capacity**



premium efficiency motors
energy recovery system:

- cross-flow plate
- energy wheel



2 000 h
salt spray test
resistance
on the external coating



from **800 CFM**
to **4 000 CFM**
in total **capacity**



premium
efficiency
motors

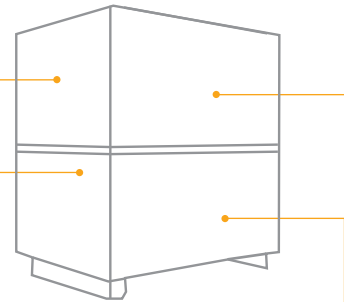
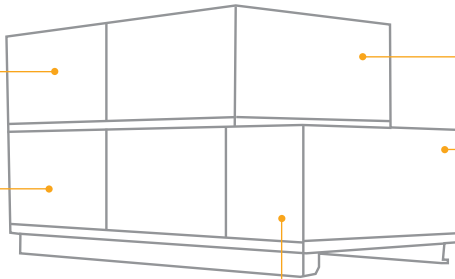


2 000 h
salt spray test
resistance
on the external coating

right or left hand
inspection site

factory
assembled unit

right or left hand
inspection site



inlet and outlet
locations

horizontal
or vertical
configurations.

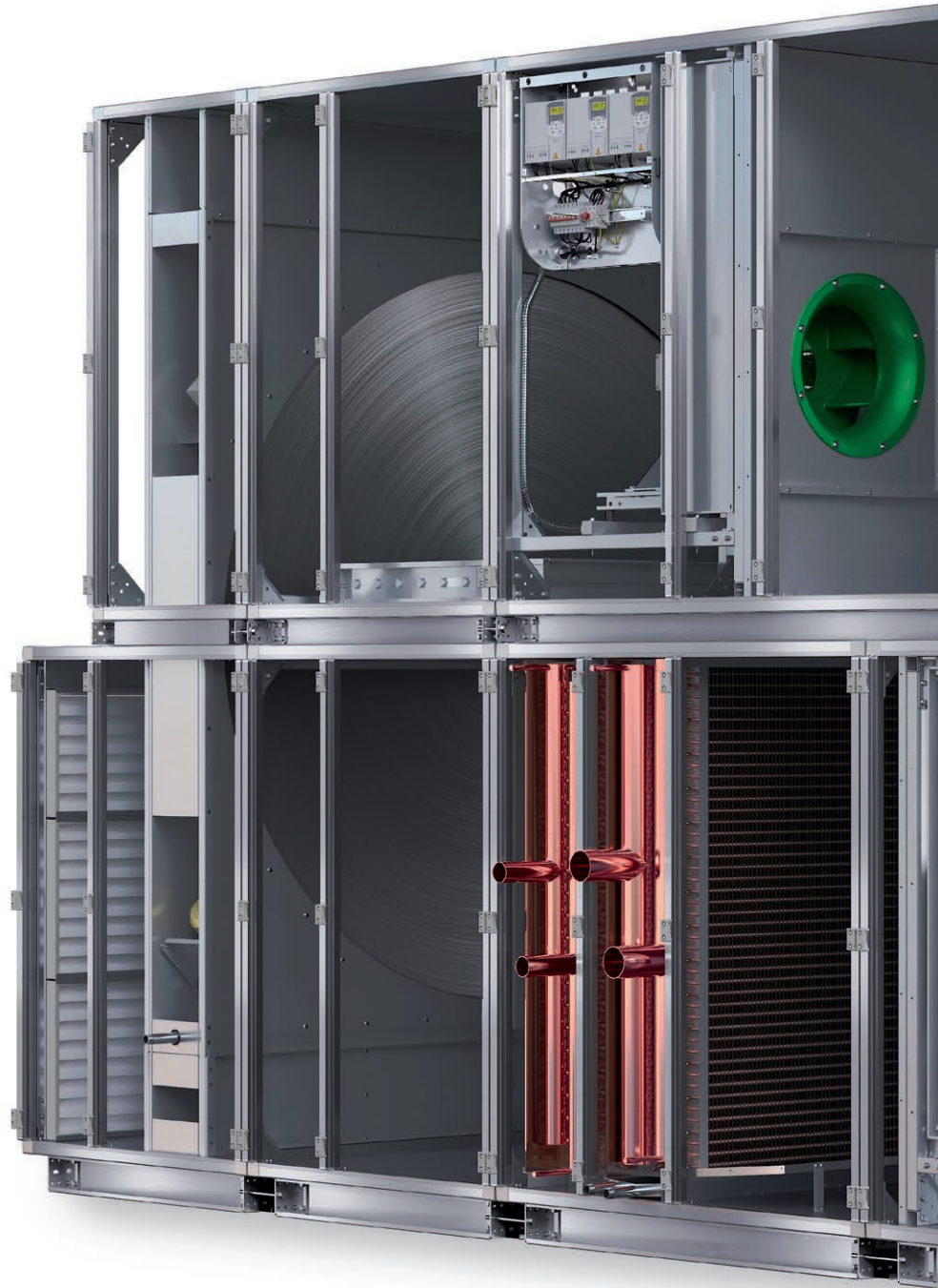
2 inch polyurethane
sandwich panels
which eliminates
thermal bridges

inlet and outlet
locations





American
VENTUS



RELIABLE
AND TIGHT
CONSTRUCTION



TOP QUALITY
COMPONENTS



INTELLIGENT
CONTROLS
SYSTEMS



SAFETY
OF USE

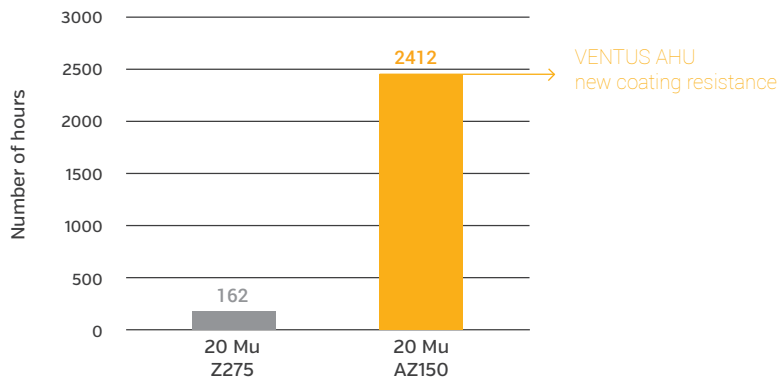


DESIGN



MORE THAN 2,000 HOURS SALT SPRAY TEST PROTECTION

RESISTANCE TO CORROSION



Salt spray test according to ASATMB - 117



CASING SKIN

- » high rigidity and durability of the AHU structure
- » low absorption of heat radiation and UV
- » perfect resistance to weather conditions

FAN SECTION CAGE

- » high longitudinal stiffness of the structure
- » easy section assembly

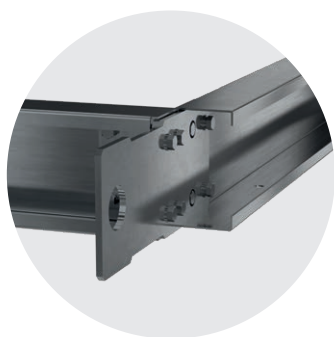


**ALUMINUM
POSTS**
AS **STANDARD**
FOR ALL TYPES
OF UNITS



Z PROFILE

AVS040-AVS085



C PROFILE

AVS100-AVS380



CURB READY RAILS

AVS040-AVS380

GALVANIZED STEEL SUPPORT
AS **STANDARD**
FOR ALL TYPES OF UNITS

CONVENIENT

- » easy transport
- » great profile resistance to deflection

STRUCTURAL POSTS

- » thermally broken as standard
- » high resistance to weather conditions and UV radiation



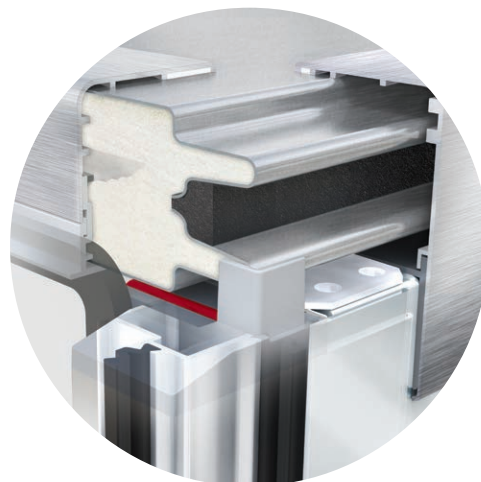
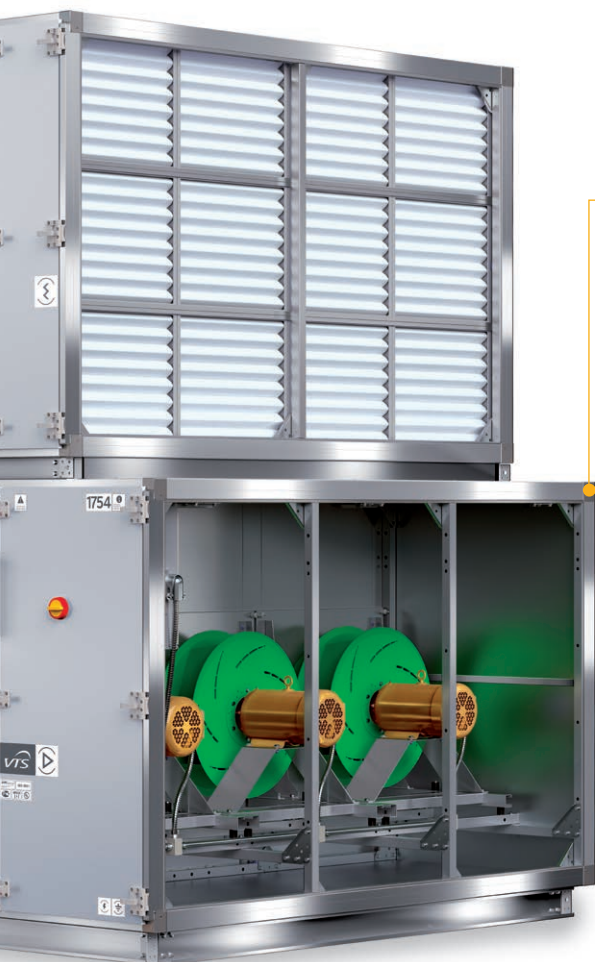
AIR TIGHTNESS



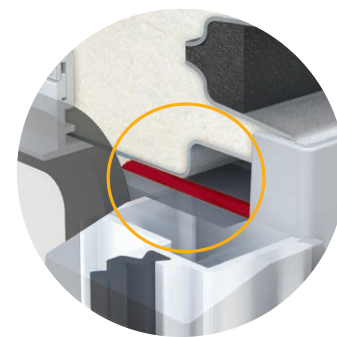
ERGONOMIC INSPECTION PANEL LOCK

- » Highly aesthetic and ergonomic handles securing perfect tightness of inspection panels.

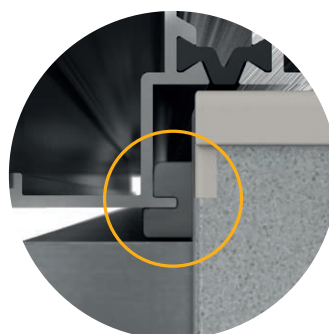
* patent pending; information will be published after it's formal validation.



**THERMAL
BREAK**



**ADDITIONAL
POST SEALING**



**LABYRINTH
SEALING**



**ADDITIONAL
SEALING EDGE**

ALUMINUM STRUCTURAL POSTS WITH AN ADDITIONAL SEALING FIN AND A THERMAL INSERT

- » thermal break as standard - ensures no condensation outside the AHU
- » the fin ensures labyrinth sealing – currently the most effective solution on the market, mainly used in laboratory equipment
- » original solution consisting in the use of symmetrical channel tension filled with a sealing compound, which provides 100% tightness of the connection between the column and construction structure



ROOFTOP APPLICATIONS



SECTIONAL ROOF

- » prevents water penetration during service
- » additional weather protection

VARIABLE INTAKE CONFIGURATIONS

- » top, bottom and side intake options
- » end – optional full face intake damper available units
- » dampers:
 - gear system for even distribution of the torque
 - extruded aluminum construction
 - low leakage
 - double wall blade construction



CURB READY RAILS

- » design -overhangs the side of the curb to avoid the need of flashing
- » integrated lifting lugs

VARIABLE DISCHARGE CONFIGURATION

- » end, top, bottom and side discharge options
- » optional discharge dampers and full end discharge dampers available



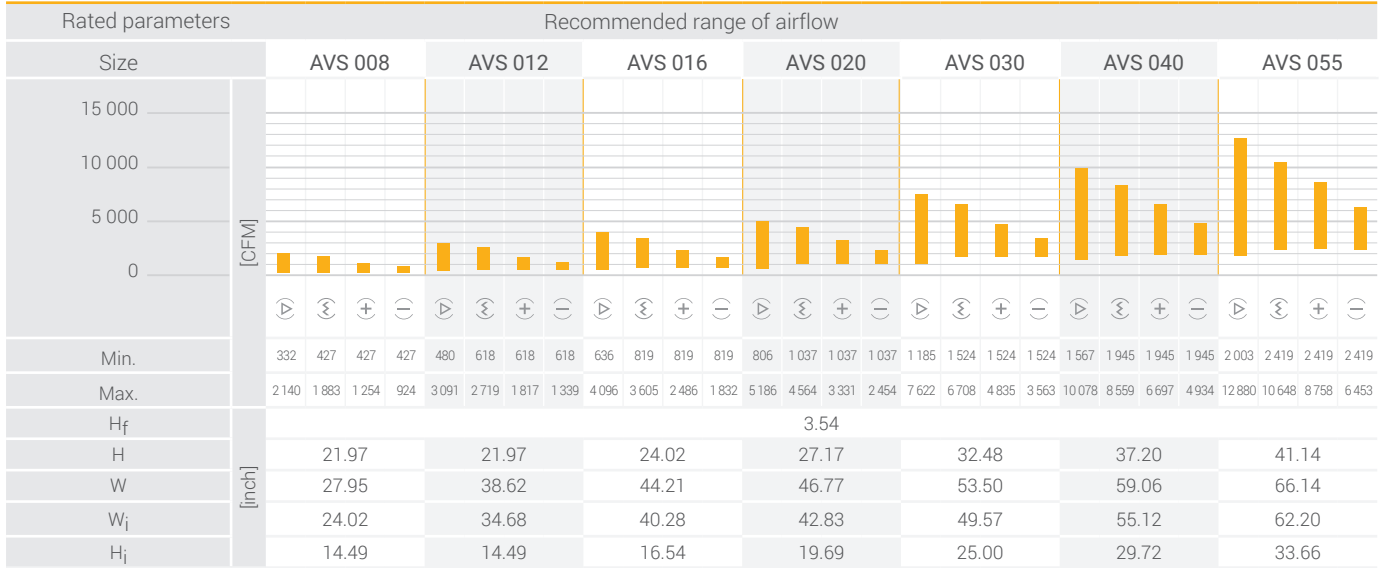


04

Technical
Parameters



AVS 8-55 - SUPPLY & EXHAUST



Main configuration	DE*	Basic configurations						
AVS-XXX-R-V	-	44.26	44.26	44.26	44.26	58.65	58.65	73.05
AVS-XXX-R-FV	-	58.65	58.65	58.65	58.65	73.05	73.05	87.45
AVS-XXX-R-FHV	-	73.05	73.05	73.05	73.05	87.45	87.45	101.85
AVS-XXX-R-FCV	✓	73.05	73.05	73.05	73.05	87.45	87.45	101.85
AVS-XXX-R-FHCV	✓	87.45	87.45	87.45	87.45	101.85	101.85	116.24
AVS-XXX-R-FHCV	✓	101.85	101.85	101.85	101.85	101.85	101.85	116.24
AVS-XXX-R-FHCV	✓	101.85	101.85	101.85	101.85	116.24	116.24	130.64
AVS-XXX-R-FGHV	-	87.45	87.45	87.45	87.45	101.85	101.85	116.24
AVS-XXX-R-FGV	-	73.05	73.05	73.05	73.05	87.45	87.45	101.85
AVS-XXX-R-FGCVH	✓	101.85	101.85	101.85	101.85	116.24	116.24	130.64
AVS-XXX-R-FGCVH	✓	116.24	116.24	116.24	116.24	116.24	116.24	130.64

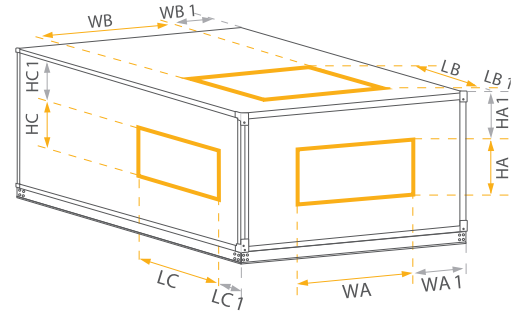
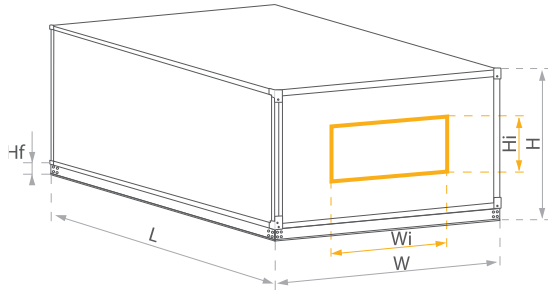
Units with external filters instead of internal are shorter by 14.4 inches

		Additional functions						
Empty section	L _{min}	29.86	29.86	29.86	29.86	29.86	29.86	29.86
	L _{max}	29.86	29.86	29.86	29.86	29.86	29.86	29.86
Mixing box	L	29.86	29.86	29.86	29.86	29.86	29.86	29.86

* Include Droplet Eliminator after Cooling Coil



DIMENSIONS - AVS 8-55 - SUPPLY & EXHAUST



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)

UNIT	WA	HA	WA1	HA1
AVS 008	21.65	12.13	3.15	3.15
AVS 012	32.32	12.13	3.15	3.15
AVS 016	37.91	14.17	3.15	3.15
AVS 020	40.47	17.32	3.15	3.15
AVS 030	47.20	22.64	3.15	3.15
AVS 040	52.76	27.36	3.15	3.15
AVS 055	59.84	31.30	3.15	3.15

END (FS)

UNIT	WA	HA	WA1	HA1
AVS 008	17.99	7.99	5.03	5.23
AVS 012	25.98	7.99	6.33	5.23
AVS 016	34.02	7.99	5.13	6.23
AVS 020	25.98	12.01	10.43	5.83
AVS 030	34.02	12.01	9.83	8.53
AVS 040	40.47	17.32	9.29	8.19
AVS 055	47.20	22.64	9.47	7.48

Top (US)

UNIT	WB	LB	WB1	LB1
AVS 008	17.99	7.99	5.03	4.33
AVS 012	25.98	7.99	6.33	4.33
AVS 016	34.02	7.99	5.13	4.33
AVS 020	25.98	12.01	10.43	4.33
AVS 030	34.02	12.01	9.83	4.33
AVS 040	40.47	17.32	9.29	8.27
AVS 055	47.20	22.64	9.47	5.31

Top (US)

UNIT	WB	LB	WB1	LB1
AVS 008	17.94	7.94	5.00	11.46
AVS 012	25.94	7.94	6.34	11.46
AVS 016	33.94	7.94	5.16	11.46
AVS 020	25.94	11.94	10.43	9.46
AVS 030	33.94	11.94	9.80	9.46
AVS 040	47.20	22.64	5.93	8.66
AVS 055	52.76	27.36	6.69	8.66

UNIT CODING

AVS - XXX - R/L - EM / HC / EM

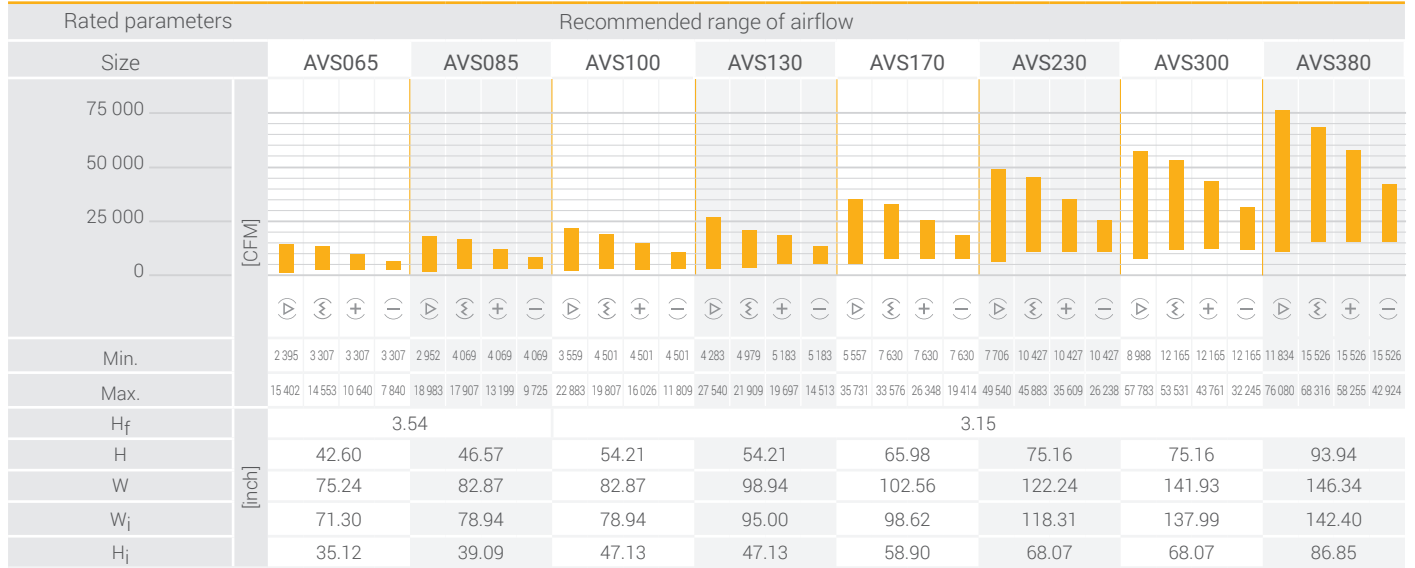
- AVS - type of AHU family
- XXX - size of unit (equal to the rated air flow in cfm)
- R/L - inspection side (R- right, L-left)
- EM - symbols of additional functions upstream main functions
- HC - symbols of main thermodynamic functions (basic functions)
- EM - symbols of additional functions downstream main functions
- Length depends on AHU equipment

Side (BS)

UNIT	HC	LC	HC1	LC1
AVS 008	10.94	7.94	4.33	3.74
AVS 012	10.94	7.94	4.33	3.74
AVS 016	12.94	7.94	4.33	3.74
AVS 020	15.94	11.94	4.33	3.82
AVS 030	20.94	11.94	4.33	3.98
AVS 040	16.26	14.96	6.89	8.70
AVS 055	24.13	14.96	6.89	6.73



AVS 65-380 - SUPPLY & EXHAUST



Main configuration	DE*	Basic configurations							
AVS-XXX-R-V	-	73.05	73.05	58.65	58.65	73.05	73.05	73.05	73.05
AVS-XXX-R-FV	-	87.45	87.45	73.05	73.05	87.45	87.45	87.45	87.45
AVS-XXX-R-FHV	-	101.85	101.85	87.45	87.45	101.85	101.85	101.85	101.85
AVS-XXX-R-FCV	✓	101.85	101.85	87.45	87.45	101.85	101.85	101.85	101.85
AVS-XXX-R-FHCV	✓	116.24	116.24	101.85	101.85	116.24	116.24	116.24	116.24
AVS-XXX-R-FHCVH	✓	130.64	130.64	116.24	116.24	130.64	130.64	130.64	130.64
AVS-XXX-R-FGHV	-	116.24	116.24	101.85	101.85	116.24	116.24	116.24	116.24
AVS-XXX-R-FGV	-	101.85	101.85	87.45	87.45	101.85	101.85	101.85	101.85
AVS-XXX-R-FGCVH	✓	130.64	130.64	116.24	116.24	130.64	130.64	130.64	130.64

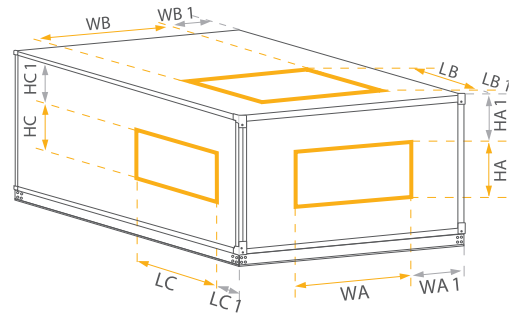
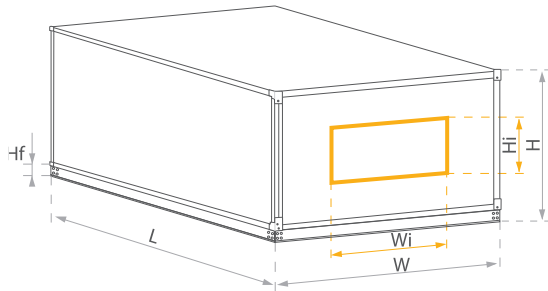
Units with external filters instead of internal are shorter by 14.4 inches

		Additional functions							
Empty section	L _{min}	29.86	29.86	29.86	29.86	29.86	29.86	29.86	29.86
	L _{max}	29.86	44.26	44.26	44.26	44.26	44.26	44.26	44.26
Mixing box	L	29.86	44.26	44.26	44.26	44.26	44.26	44.26	44.26

* Include Droplet Eliminator after Cooling Coil



DIMENSIONS - AVS 65-380 - SUPPLY & EXHAUST



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
AVS 065	68.94	32.76	3.15	3.15
AVS 085	76.57	36.73	3.15	3.15
AVS 100	76.57	44.76	3.15	3.15
AVS 130	92.64	44.76	3.15	3.15
AVS 170	96.26	56.54	3.15	3.15
AVS 230	115.94	65.71	3.15	3.15
AVS 300	135.63	65.71	3.15	3.15
AVS 380	140.04	84.49	3.15	3.15

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 065	47.20	22.64	14.02	5.31
AVS 085	59.84	31.30	11.52	8.27
AVS 100	59.84	31.30	11.52	8.27
AVS 130	76.57	36.73	11.18	5.31
AVS 170	76.57	36.73	12.99	5.31
AVS 230	104.33	36.73	8.96	5.31
AVS 300	124.02	36.73	8.96	5.31
AVS 380	127.95	36.73	9.19	5.31

END (FS)				
UNIT	WA	HA	WA1	HA1
AVS 065	47.20	22.64	14.02	8.23
AVS 085	59.84	31.30	11.52	5.87
AVS 100	59.84	31.30	11.52	9.88
AVS 130	76.57	36.73	11.18	7.17
AVS 170	76.57	36.73	12.99	13.07
AVS 230	104.33	36.73	8.96	17.64
AVS 300	124.02	36.73	8.96	17.64
AVS 380	127.95	36.73	9.19	27.05

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 065	59.84	31.30	7.70	5.31
AVS 085	59.84	31.30	11.52	5.31
AVS 100	59.84	31.30	11.52	5.31
AVS 130	75.31	29.13	11.81	5.31
AVS 170	76.57	36.73	12.99	5.31
AVS 230	104.33	36.73	8.96	5.31
AVS 300	124.02	36.73	8.96	8.66
AVS 380	127.95	36.73	9.19	8.66

Side (BS)				
UNIT	HC	LC	HC1	LC1
AVS 065	24.13	14.96	6.89	7.46
AVS 085	28.07	29.13	6.89	7.48
AVS 100	35.94	29.13	6.89	7.56
AVS 130	35.94	29.13	6.89	7.56
AVS 170	47.76	29.13	6.89	7.54
AVS 230	59.57	29.13	6.89	6.22
AVS 300	59.57	29.13	6.89	6.22
AVS 380	75.31	29.13	6.89	7.74

UNIT CODING

AVS - XXX - R/L - EM / HC / EM

- AVS - type of AHU family
- XXX - size of unit (equal to the rated air flow in cfm)
- R/L - inspection side (R- right, L -left)
- EM - symbols of additional functions upstream main functions
- HC - symbols of main thermodynamic functions (basic functions)
- EM - symbols of additional functions downstream main functions
- Length depends on AHU equipment



AVS 8-55 - CROSS-FLOW PLATE










Rated parameters			Recommended range of airflow																									
Size				AVS 008			AVS 012			AVS 016			AVS 020			AVS 030			AVS 040			AVS 055						
10 000	[CFM]																											
7 500																												
5 000																												
2 500																												
0																												
Min.		446	427	427	697	618	618	846	819	819	1 067	1 037	1 037	1 526	1 524	1 524	2 089	1 945	1 945	2 732	2 419	2 419						
Max.		1 699	1 254	924	2 650	1 817	1 339	3 218	2 486	1 832	4 058	3 331	2 454	5 799	4 835	3 563	7 939	6 697	4 934	10 386	8 758	6 453						
H _f		3.54																										
H	[inch]	21.97			21.97			24.02			27.17			32.48			37.20			41.14								
W		27.95			38.62			44.21			46.77			53.50			59.06			66.14								
W _i		24.02			34.68			40.28			42.83			49.57			55.12			62.20								
H _i		14.49			14.49			16.54			19.69			25.00			29.72			33.66								

Main configuration DE*		Basic configurations						
 AVS-XXX-R-FPV/FVPD_cd	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	101.85	101.85	101.85	101.85	130.64	130.64	159.44
 AVS-XXX-R-FPV/FVPD_cu	L2	101.85	101.85	101.85	101.85	130.64	130.64	159.44
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPV/FPDV_pd	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	L1	101.85	101.85	101.85	101.85	130.64	130.64	159.44
 AVS-XXX-R-FPV/FPDV_pu	L2	101.85	101.85	101.85	101.85	130.64	130.64	159.44
	L1	116.24	116.24	116.24	116.24	145.04	159.44	188.23
 AVS-XXX-R-FPHV/FVPD_cd	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPHV/FVPD_cu	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPHV/FPDV_pd	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPHV/FPDV_pu	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
 AVS-XXX-R-FPMHV/FVMPD_cd	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPMHV/FVMPD_cu	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



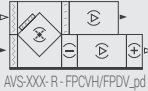
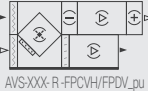
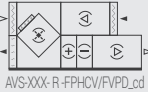
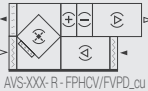
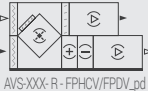
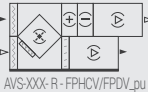
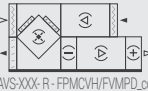
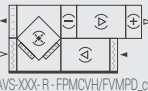
Main configuration DE*		Basic configurations							
 AVS-XXX-R-FPCV/FVPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPCV/FVPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPCV/FPDV_pd	-	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPCV/FPDV_pu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
 AVS-XXX-R-FPCV/FPDV_pu	-	L2	130.64	130.64	130.64	130.64	145.04	145.04	173.83
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
 AVS-XXX-R-FPMC/FVMPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPMC/FVMPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	145.04	145.04	173.83
 AVS-XXX-R-FPCVH/FVPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
 AVS-XXX-R-FPCVH/FVPD_cu	-	L2	145.04	145.04	145.04	145.04	159.44	159.44	188.23
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83

[inch]

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck


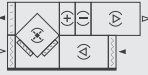



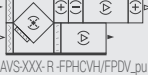




Main configuration		DE*	Basic configurations						
 AVS-XXX-R-FPCVH/FPDV_pd	-	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	-	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	159.44	159.44	188.23
 AVS-XXX-R-FPCVH/FPDV_pu	-	L2	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	-	L2	145.04	145.04	145.04	145.04	159.44	159.44	188.23
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
 AVS-XXX-R-FPHCV/FVPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	159.44	159.44	188.23
 AVS-XXX-R-FPHCV/FVPD_cu	-	L2	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	-	L2	145.04	145.04	145.04	145.04	159.44	159.44	188.23
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
 AVS-XXX-R-FPHCV/FPDV_pd	-	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	-	L2	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	159.44	159.44	188.23
 AVS-XXX-R-FPHCV/FPDV_pu	-	L2	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
	-	L2	145.04	145.04	145.04	145.04	159.44	159.44	188.23
	✓	L1	101.85	101.85	101.85	116.24	130.64	145.04	173.83
 AVS-XXX-R-FPMCVH/FVMPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	159.44	159.44	188.23
 AVS-XXX-R-FPMCVH/FVMPD_cu	-	L2	130.64	130.64	130.64	130.64	159.44	159.44	188.23
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	-	L2	145.04	145.04	145.04	145.04	159.44	159.44	188.23
	✓	L1	116.24	116.24	116.24	116.24	145.04	145.04	173.83

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck




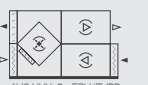
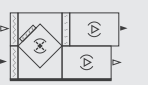
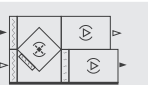



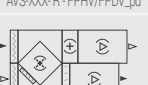


Main configuration DE*		Basic configurations							
 AVS-XXX-R-FPMHCV/FVMPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	130.64	130.64	130.64	130.64	159.44	159.44	188.23
 AVS-XXX-R-FPMHCV/FVMPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	159.44	159.44	188.23
 AVS-XXX-R-FPHCVH/FVPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	173.83	173.83	202.63
 AVS-XXX-R-FPMHCVH/FVMPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	159.44	159.44	159.44	159.44	173.83	173.83	202.63
 AVS-XXX-R-FPHCVH/FPDV_pd	-	L2	116.24	116.24	116.24	130.64	145.04	159.44	188.23
	✓	L1	145.04	145.04	145.04	145.04	173.83	173.83	202.63
 AVS-XXX-R-FPHCVH/FPDV_pu	-	L2	116.24	116.24	116.24	130.64	145.04	159.44	188.23
	✓	L1	159.44	159.44	159.44	159.44	173.83	173.83	202.63
 AVS-XXX-R-FPHCVH/FVPD_cd	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	145.04	145.04	145.04	145.04	173.83	173.83	202.63
 AVS-XXX-R-FPHCVH/FVPD_cu	-	L2	116.24	116.24	116.24	116.24	145.04	145.04	173.83
	✓	L1	159.44	159.44	159.44	159.44	173.83	173.83	202.63

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



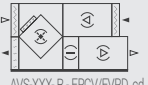

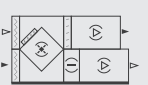





AVS 65-380 - CROSS-FLOW PLATE

Rated parameters			Recommended range of airflow																							
Size	AVS065			AVS085			AVS100			AVS130			AVS170			AVS230			AVS300			AVS380				
60 000	[CFM]																									
45 000	[CFM]																									
30 000	[CFM]																									
15 000	[CFM]																									
0	[CFM]																									
Min.	3 307	3 307	3 307	4 185	4 069	4 069	4 501	4 501	4 501	5 070	5 183	5 183	7 630	7 630	7 630	10 427	10 427	10 427	12 165	12 165	12 165	15 526	15 526	15 526		
Max.	11 972	10 640	7 840	15 905	13 199	9 725	15 905	16 026	11 809	19 268	19 697	14 513	28 041	26 348	19 414	33 749	35 609	26 238	39 471	43 761	32 245	47 778	58 255	42 924		
H _{fd}	3.54						3.15																			
H _{fu}	0.00			0.00			2.36			2.36			2.36			2.36			2.36			2.36				
H	42.6			46.57			54.21			54.21			65.98			75.16			75.16			93.94				
W	75.24			82.87			82.87			98.94			102.56			122.24			141.93			146.34				
W _i	71.3			78.94			78.94			95.00			98.62			118.31			137.99			142.40				
H _i	35.12			39.09			47.13			47.13			58.90			68.07			68.07			86.85				
Main configuration DE*			Basic configurations																							
 AVS-XXX-R-FPV/FVPD_cd	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	159.44	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
 AVS-XXX-R-FPV/FVPD_cu	L2	159.44	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPV/FPDV_pd	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
	L1	159.44	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
 AVS-XXX-R-FPV/FPDV_pu	L2	159.44	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
	L1	188.23	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPHV/FVPD_cd	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPHV/FVPD_cu	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPHV/FPDV_pd	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPHV/FPDV_pu	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03																	
 AVS-XXX-R-FPMHV/FVMPD_cd	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
 AVS-XXX-R-FPMHV/FVMPD_cu	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	
	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42																	

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck

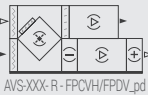
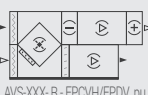
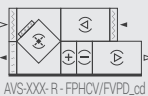
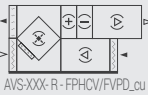
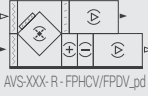
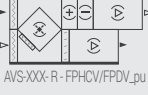

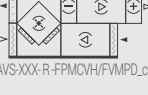


Main configuration DE*		Basic configurations								
 AVS-XXX-R-FPCV/FVPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPCV/FVPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPCV/FVPD_pd	-	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPCV/FVPD_pu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
		L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
 AVS-XXX-R-FPMC/FVMPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPMC/FVMPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPCVH/FVPD_cd	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
		L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPCVH/FVPD_cu	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
		L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
		L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck


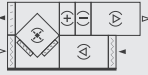



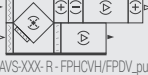




Main configuration		DE*	Basic configurations							
 AVS-XXX-R-FPCVH/FPDV_pd	-	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	-	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPCVH/FPDV_pu	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
 AVS-XXX-R-FPHCV/FVPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPHCV/FVPD_cu	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
 AVS-XXX-R-FPHCV/FPDV_pd	-	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	-	L2	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPHCV/FPDV_pu	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	173.83	159.44	159.44	202.63	202.63	202.63	217.03
 AVS-XXX-R-FPMCVH/FVMPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPMCVH/FVMPD_cu	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	-	L2	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
	✓	L1	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



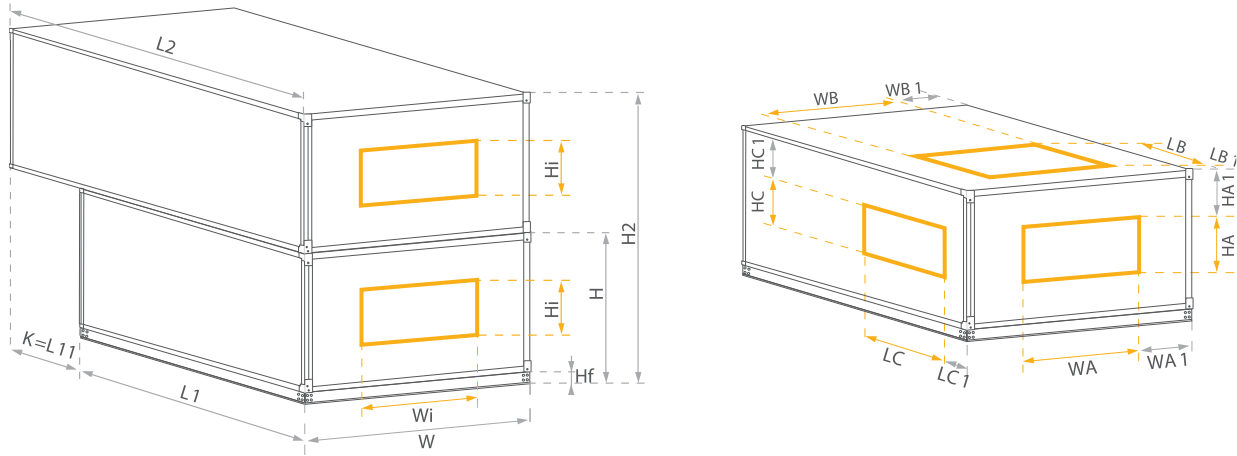
Main configuration DE*		Basic configurations								
 AVS-XXX-R-FPMHCV/FVMPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPMHCV/FVMPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	188.23	202.63	188.23	188.23	231.42	231.42	231.42	245.82
 AVS-XXX-R-FPHCVH/FVPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22
 AVS-XXX-R-FPHCVH/FVMPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22
 AVS-XXX-R-FPHCVH/FPDV_pd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22
 AVS-XXX-R-FPHCVH/FPDV_pu	-	L2	188.23	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22
 AVS-XXX-R-FPHCVH/FVPD_cd	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22
 AVS-XXX-R-FPHCVH/FVPD_cu	-	L2	173.83	188.23	173.83	173.83	217.03	217.03	217.03	231.42
	✓	L1	202.63	217.03	202.63	202.63	245.82	245.82	245.82	260.22

* Include Droplet Eliminator after Cooling Coil


L1- doesn't cover empty space in bottom deck



DIMENSIONS - AVS 8-55 - CROSS-FLOW PLATE



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF) 				
UNIT	WA	HA	WA1	HA1
AVS 008	21.65	12.13	3.15	3.15
AVS 012	32.32	12.13	3.15	3.15
AVS 016	37.91	14.17	3.15	3.15
AVS 020	40.47	17.32	3.15	3.15
AVS 030	47.20	22.64	3.15	3.15
AVS 040	52.76	27.36	3.15	3.15
AVS 055	59.84	31.30	3.15	3.15

END (FS) 				
UNIT	WA	HA	WA1	HA1
AVS 008	17.97	7.97	5.00	5.24
AVS 012	25.97	7.97	6.34	5.24
AVS 016	33.97	7.97	5.16	6.26
AVS 020	25.97	11.97	10.43	5.83
AVS 030	33.97	11.97	9.80	8.50
AVS 040	40.51	17.36	9.29	8.19
AVS 055	47.24	22.68	9.47	7.48

Side (BS) 				
UNIT	HC	LC	HC1	LC1
AVS 008	10.94	7.94	4.33	3.74
AVS 012	10.94	7.94	4.33	3.74
AVS 016	12.94	7.94	4.33	3.74
AVS 020	15.94	11.94	4.33	3.82
AVS 030	20.94	11.94	4.33	3.98
AVS 040	16.26	14.96	6.89	8.70
AVS 055	24.13	14.96	6.89	6.73

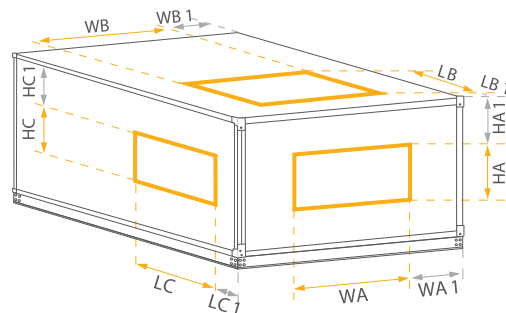
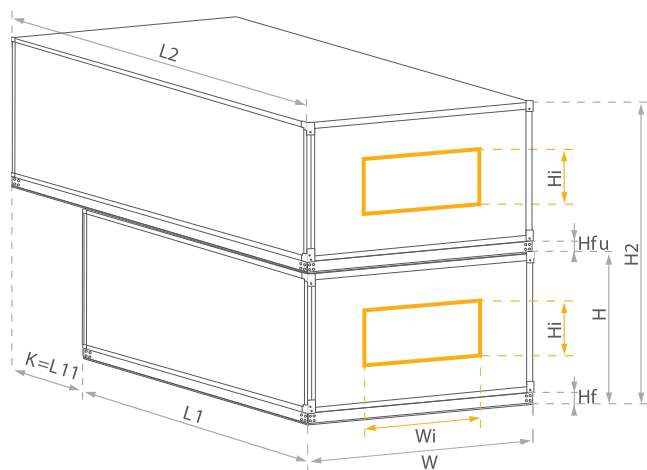
UNIT CODING

AVS - XX

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L-left)
 PHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment



DIMENSIONS - AVS 65-380 - CROSS-FLOW PLATE



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
AVS 065	68.94	32.76	3.15	3.15
AVS 085	76.57	36.73	3.15	3.15
AVS 100	76.57	44.76	3.15	3.15
AVS 130	92.64	44.76	3.15	3.15
AVS 170	96.26	56.54	3.15	3.15
AVS 230	115.94	65.71	3.15	3.15
AVS 300	135.63	65.71	3.15	3.15
AVS 300	140.04	84.49	3.15	3.15

END (FS)				
UNIT	WA	HA	WA1	HA1
AVS 065	47.24	22.68	14.02	8.23
AVS 085	59.88	31.34	11.52	5.87
AVS 100	59.88	31.34	11.52	9.88
AVS 130	76.61	36.77	11.18	7.17
AVS 170	76.61	36.77	12.99	13.07
AVS 230	104.37	36.77	8.96	17.64
AVS 300	124.06	36.77	8.96	17.64
AVS 380	127.99	36.77	9.19	27.05

Side (BS)				
UNIT	HC	LC	HC1	LC1
AVS 065	24.13	14.96	6.89	7.46
AVS 085	28.07	29.13	6.89	7.48
AVS 100	35.94	29.13	6.89	7.56
AVS 130	35.94	29.13	6.89	7.56
AVS 170	47.76	29.13	6.89	7.54
AVS 230	59.57	29.13	6.89	6.22
AVS 300	59.57	29.13	6.89	6.22
AVS 380	75.31	29.13	6.89	7.74

UNIT CODING

AVS - XX

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L -left)
 PHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment



AVS 12 - 65 WITH ENERGY WHEEL

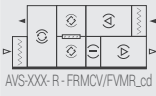
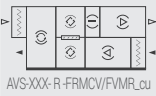
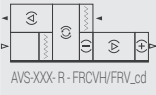
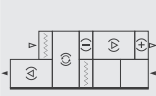

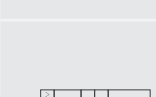
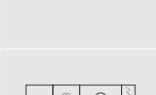
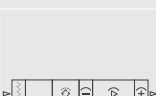
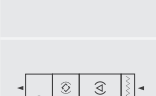
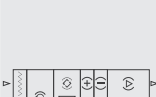
Rated parameters			Recommended range of airflow																				
Size	AVS 012			AVS 016			AVS 020			AVS 030			AVS 040			AVS 055			AVS 065				
12 000	[CFM]																						
8 000	[CFM]																						
4 000	[CFM]																						
0	[CFM]																						
Min.	618	618	618	819	819	819	1037	1037	1037	1524	1524	1524	1945	1945	1945	2419	2419	2419	3307	3307	3307		
Max.	2179	1817	1399	2664	2486	1832	4068	3331	2454	5869	4835	3563	7364	6697	4934	9536	8758	6453	12205	10640	7840		
H _f	3.54																						
H	21.97			24.02			27.17			32.48			37.20			41.14			42.60				
W	38.62			44.21			46.77			53.50			59.06			66.14			75.24				
W _i	34.68			40.28			42.83			49.57			55.12			62.20			71.30				
H _i	14.49			16.54			19.69			25.00			29.72			33.66			35.12				
H ₂	40.39			44.49			50.79			61.42			70.87			78.74			81.65				

Main configuration DE*		Basic configurations						
 AVS-XXX-R-FRV/FRV_Cd	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRV/FRV_Cu	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRHV/FRV_Cd	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L1	101.85	101.85	101.85	116.24	116.24	130.64	130.64
	L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRHV/FRV_Cu	L2	101.85	101.85	101.85	116.24	116.24	130.64	130.64
	L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L11	43.19	43.19	43.19	57.59	57.59	71.99	71.99
 AVS-XXX-R-FRMHV/FVMR_Cd	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
	L1	130.64	130.64	130.64	145.04	145.04	159.44	159.44
	L11	116.24	116.24	116.24	130.64	130.64	145.04	145.04
 AVS-XXX-R-FRMHV/FVMR_Cu	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L1	101.85	101.85	101.85	116.24	116.24	130.64	130.64
	L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRCV/FRV_Cd	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L1	116.24	116.24	116.24	116.24	116.24	130.64	130.64
	L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRCV/FRV_Cu	L2	101.85	101.85	101.85	116.24	116.24	130.64	130.64
	L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L11	43.19	43.19	43.19	57.59	57.59	71.99	71.99
 AVS-XXX-R-FRCV/FRV_Cu	L2	101.85	101.85	101.85	116.24	116.24	130.64	130.64
	L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
	L11	43.19	43.19	43.19	57.59	57.59	71.99	71.99

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



Main configuration DE*		Basic configurations							
 AVS-XXX-R-FRMCV/FVMR_cd	-	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	130.64	130.64	130.64	145.04	145.04	159.44	159.44
	✓	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	145.04	145.04	145.04	145.04	145.04	159.44	159.44
 AVS-XXX-R-FRMCV/FVMR_cu	-	L2	130.64	130.64	130.64	145.04	145.04	159.44	159.44
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
	✓	L2	130.64	130.64	130.64	145.04	145.04	159.44	159.44
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
 AVS-XXX-R-FRCVH/FRV_cd	-	L2	101.85	101.85	101.85	116.24	116.24	130.64	130.64
		L1	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
	✓	L2	101.85	101.85	101.85	116.24	116.24	130.64	130.64
		L1	159.44	159.44	159.44	159.44	159.44	173.83	173.83
		L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRCVH/FRV_cu	-	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	101.85	101.85	101.85	116.24	116.24	130.64	130.64
		L11	57.59	57.59	57.59	71.99	71.99	86.39	86.39
	✓	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	101.85	101.85	101.85	116.24	116.24	130.64	130.64
		L11	57.59	57.59	57.59	71.99	71.99	86.39	86.39
 AVS-XXX-R-FRHCV/FRV_cd	-	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
	✓	L2	87.45	87.45	87.45	101.85	101.85	116.24	116.24
		L1	130.64	130.64	130.64	130.64	130.64	145.04	145.04
		L11	28.80	28.80	28.80	43.19	43.19	57.59	57.59
 AVS-XXX-R-FRHCV/FRV_cu	-	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
		L11	57.59	57.59	57.59	71.99	71.99	86.39	86.39
	✓	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	87.45	87.45	87.45	101.85	101.85	116.24	116.24
		L11	57.59	57.59	57.59	71.99	71.99	86.39	86.39
 AVS-XXX-R-FRMCVH/FVMR_cd	-	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	145.04	145.04	145.04	159.44	159.44	173.83	173.83
	✓	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	159.44	159.44	159.44	159.44	159.44	173.83	173.83
 AVS-XXX-R-FRMCVH/FVMR_cu	-	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
	✓	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
 AVS-XXX-R-FRMHCV/FVMR_cd	-	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	145.04	145.04	145.04	159.44	159.44	173.83	173.83
	✓	L2	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L1	159.44	159.44	159.44	159.44	159.44	173.83	173.83
 AVS-XXX-R-FRMHCV/FVMR_cu	-	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
	✓	L2	145.04	145.04	145.04	159.44	159.44	173.83	173.83
		L1	116.24	116.24	116.24	130.64	130.64	145.04	145.04
		L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



AVS 85-380 WITH ENERGY WHEEL

Rated parameters			Recommended range of airflow																																																																																																																																																															
Size			AVS085			AVS100			AVS130			AVS170			AVS230			AVS300			AVS380																																																																																																																																													
60 000 40 000 20 000 0	[CFM]		[Bar chart showing airflow ranges for each model and direction]																																																																																																																																																															
		Min.	4 069	4 069	4 069	4 501	4 501	4 501	4 979	5 183	5 183	7 630	7 630	7 630	10 427	10 427	10 427	12 165	12 165	12 165	15 526	15 526	15 526																																																																																																																																											
		Max.	15 121	13 198	9 724	15 122	16 026	11 809	21 698	19 697	14 513	23 578	26 348	19 414	32 704	35 609	26 238	45 678	43 761	32 245	48 968	58 255	42 924																																																																																																																																											
			⊖	+	⊖	⊖	+	⊖	⊖	+	⊖	⊖	+	⊖	⊖	+	⊖	⊖	+	⊖	⊖	+	⊖																																																																																																																																											
	[inch]	<table border="1"> <tr> <td>H_{fd}</td> <td>3.54</td> <td colspan="18">3.15</td> </tr> <tr> <td>H_{fu}</td> <td>0.00</td> <td colspan="3">2.36</td> <td colspan="3">2.36</td> <td colspan="3">2.36</td> <td colspan="3">2.36</td> <td colspan="3">2.36</td> <td colspan="3">2.36</td> </tr> <tr> <td>H</td> <td>46.57</td> <td colspan="3">54.21</td> <td colspan="3">54.21</td> <td colspan="3">65.98</td> <td colspan="3">75.16</td> <td colspan="3">75.16</td> <td colspan="3">93.94</td> </tr> <tr> <td>W</td> <td>82.87</td> <td colspan="3">82.87</td> <td colspan="3">98.94</td> <td colspan="3">102.56</td> <td colspan="3">122.24</td> <td colspan="3">141.93</td> <td colspan="3">146.34</td> </tr> <tr> <td>W_i</td> <td>78.94</td> <td colspan="3">78.94</td> <td colspan="3">95.00</td> <td colspan="3">98.62</td> <td colspan="3">118.31</td> <td colspan="3">137.99</td> <td colspan="3">142.4</td> </tr> <tr> <td>H_i</td> <td>39.09</td> <td colspan="3">47.13</td> <td colspan="3">47.13</td> <td colspan="3">58.9</td> <td colspan="3">68.07</td> <td colspan="3">68.07</td> <td colspan="3">86.85</td> </tr> <tr> <td>H₂</td> <td>89.61</td> <td colspan="3">107.64</td> <td colspan="3">107.64</td> <td colspan="3">131.18</td> <td colspan="3">149.53</td> <td colspan="3">149.53</td> <td colspan="3">187.09</td> </tr> </table>																					H _{fd}	3.54	3.15																		H _{fu}	0.00	2.36			2.36			2.36			2.36			2.36			2.36			H	46.57	54.21			54.21			65.98			75.16			75.16			93.94			W	82.87	82.87			98.94			102.56			122.24			141.93			146.34			W _i	78.94	78.94			95.00			98.62			118.31			137.99			142.4			H _i	39.09	47.13			47.13			58.9			68.07			68.07			86.85			H ₂	89.61	107.64			107.64			131.18			149.53			149.53			187.09		
H _{fd}	3.54	3.15																																																																																																																																																																
H _{fu}	0.00	2.36			2.36			2.36			2.36			2.36			2.36																																																																																																																																																	
H	46.57	54.21			54.21			65.98			75.16			75.16			93.94																																																																																																																																																	
W	82.87	82.87			98.94			102.56			122.24			141.93			146.34																																																																																																																																																	
W _i	78.94	78.94			95.00			98.62			118.31			137.99			142.4																																																																																																																																																	
H _i	39.09	47.13			47.13			58.9			68.07			68.07			86.85																																																																																																																																																	
H ₂	89.61	107.64			107.64			131.18			149.53			149.53			187.09																																																																																																																																																	

Main configuration DE*		Basic configurations						
 AVS-XXX-R-FRV/FRV_cd	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L1	116.24	101.85	101.85	116.24	116.24	116.24	116.24
 AVS-XXX-R-FRV/FRV_cu	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L1	57.59	43.19	43.19	57.59	57.59	57.59	57.59
 AVS-XXX-R-FRHV/FRV_cd	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L1	130.64	116.24	116.24	130.64	130.64	130.64	130.64
 AVS-XXX-R-FRHV/FRV_cu	L2	130.64	116.24	116.24	130.64	130.64	130.64	130.64
	L1	116.24	101.85	101.85	116.24	116.24	116.24	116.24
 AVS-XXX-R-FRMHV/FVMR_cd	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	L1	173.83	159.44	159.44	173.83	173.83	173.83	173.83
 AVS-XXX-R-FRMHV/FVMR_cu	L2	173.83	159.44	159.44	173.83	173.83	173.83	173.83
	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
 AVS-XXX-R-FRCV/FRV_cd	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L1	130.64	116.24	116.24	130.64	130.64	130.64	130.64
	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
 AVS-XXX-R-FRCV/FRV_cu	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L1	130.64	116.24	116.24	130.64	130.64	130.64	130.64
	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
 AVS-XXX-R-FRHV/FRV_cu	L2	130.64	116.24	116.24	130.64	130.64	130.64	130.64
	L1	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	L11	71.99	57.59	57.59	71.99	71.99	71.99	71.99

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



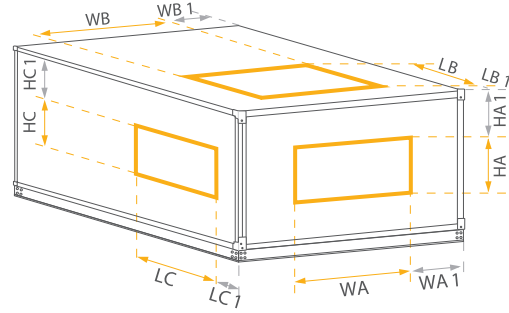
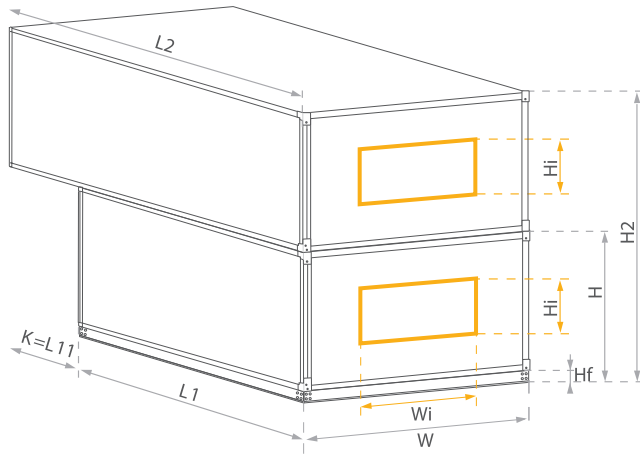
Main configuration DE*		Basic configurations							
	-	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L1	173.83	159.44	159.44	173.83	173.83	173.83	173.83
	✓	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L2	173.83	159.44	159.44	173.83	173.83	173.83	173.83
	-	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	✓	L2	173.83	159.44	159.44	173.83	173.83	173.83	173.83
	-	L2	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	-	L1	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	✓	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
	-	L2	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	-	L1	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	✓	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	✓	L11	86.39	71.99	71.99	86.39	86.39	86.39	86.39
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	✓	L11	86.39	71.99	71.99	86.39	86.39	86.39	86.39
	-	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	-	L1	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	✓	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
	-	L2	116.24	101.85	101.85	116.24	116.24	116.24	116.24
	-	L1	145.04	130.64	130.64	145.04	145.04	145.04	145.04
	✓	L11	57.59	43.19	43.19	57.59	57.59	57.59	57.59
	-	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L1	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	✓	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	✓	L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	✓	L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
	-	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L1	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	✓	L2	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	✓	L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40
	-	L2	188.23	173.83	173.83	188.23	188.23	188.23	188.23
	-	L1	159.44	145.04	145.04	159.44	159.44	159.44	159.44
	✓	L11	14.40	14.40	14.40	14.40	14.40	14.40	14.40

* Include Droplet Eliminator after Cooling Coil


L1- doesn't cover empty space in bottom deck



DIMENSIONS -AVS 12 - 65 WITH ENERGY WHEEL



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF) 				
UNIT	WA	HA	WA1	HA1
AVS 012	32.32	12.13	3.15	3.15
AVS 016	37.91	14.17	3.15	3.15
AVS 020	40.47	17.32	3.15	3.15
AVS 030	47.20	22.64	3.15	3.15
AVS 040	52.76	27.36	3.15	3.15
AVS 055	59.84	31.30	3.15	3.15
AVS 065	68.94	32.76	3.15	3.15

END (FS) 				
UNIT	WA	HA	WA1	HA1
AVS 012	25.97	7.97	6.34	5.24
AVS 016	33.97	7.97	5.16	6.26
AVS 020	25.97	11.97	10.43	5.83
AVS 030	33.97	11.97	9.80	8.50
AVS 040	40.51	17.36	9.29	8.19
AVS 055	47.24	22.68	9.47	7.48
AVS 065	47.24	22.68	14.02	8.23

Side (BS) 				
UNIT	HC	LC	HC1	LC1
AVS 012	10.94	7.94	4.33	3.74
AVS 016	12.94	7.94	4.33	3.74
AVS 020	15.94	11.94	4.33	3.82
AVS 030	20.94	11.94	4.33	3.98
AVS 040	16.26	14.96	6.89	8.70
AVS 055	24.13	14.96	6.89	6.73
AVS 065	24.13	14.96	6.89	7.46

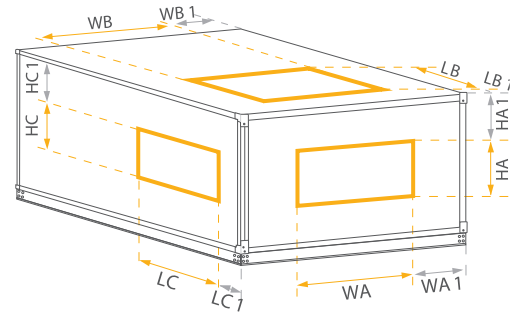
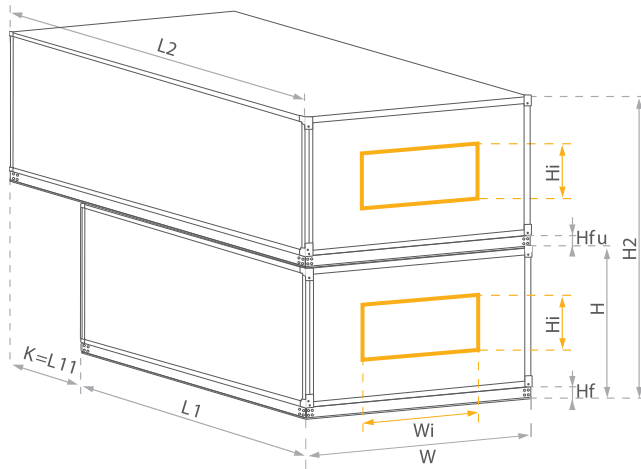
UNIT CODING

AVS - XX

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L -left)
 PHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment



DIMENSIONS -AVS 85-380 WITH ENERGY WHEEL



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF) 				
UNIT	WA	HA	WA1	HA1
AVS 085	76.57	36.73	3.15	3.15
AVS 100	76.57	44.76	3.15	3.15
AVS 130	92.64	44.76	3.15	3.15
AVS 170	96.26	56.54	3.15	3.15
AVS 230	115.94	65.71	3.15	3.15
AVS 300	135.63	65.71	3.15	3.15
AVS 380	140.04	84.49	3.15	3.15

END (FS) 		 		
UNIT	WA	HA	WA1	HA1
AVS 085	59.88	31.34	11.52	5.87
AVS 100	59.88	31.34	11.52	9.88
AVS 130	76.61	36.77	11.18	7.17
AVS 170	76.61	36.77	12.99	13.07
AVS 230	104.37	36.77	8.96	17.64
AVS 300	124.06	36.77	8.96	17.64
AVS 380	127.99	36.77	9.19	27.05

Side (BS) 			
UNIT	HC	LC	LC1
AVS 085	28.07	29.13	7.48
AVS 100	35.94	29.13	7.56
AVS 130	35.94	29.13	7.56
AVS 170	47.76	29.13	7.54
AVS 230	59.57	29.13	6.22
AVS 300	59.57	29.13	6.22
AVS 380	75.31	29.13	7.74

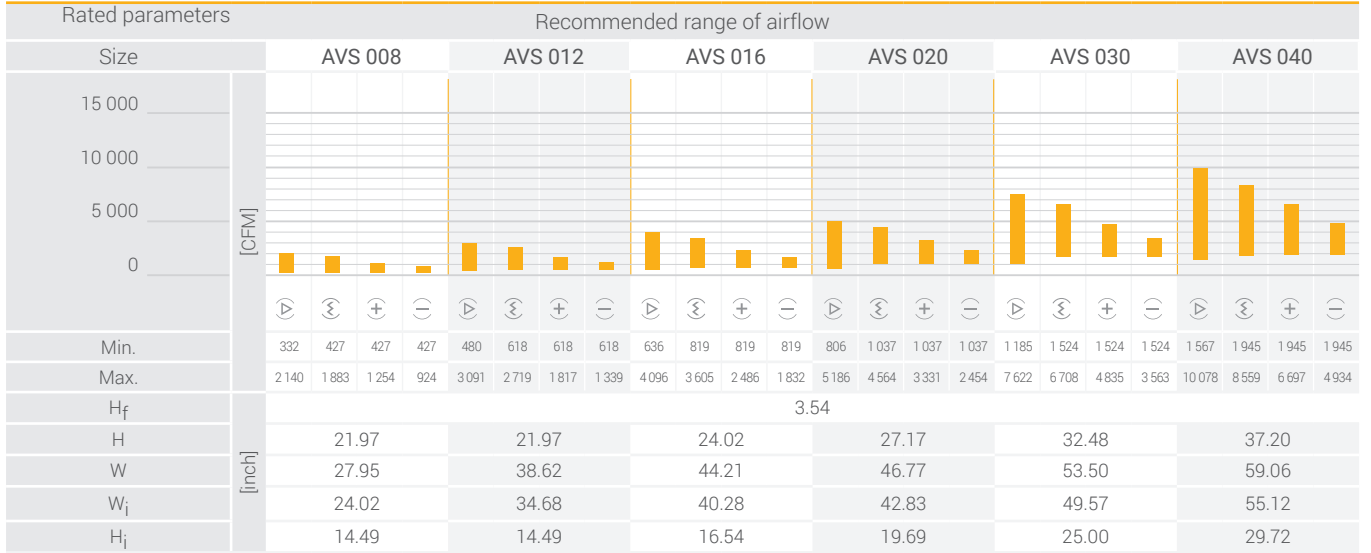
UNIT CODING

AVS - XX

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L -left)
 PHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment



AVS LITE 8-40 - SUPPLY & EXHAUST



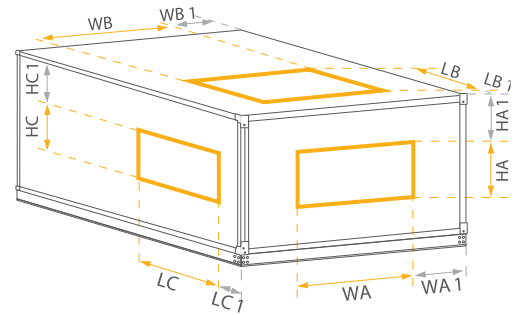
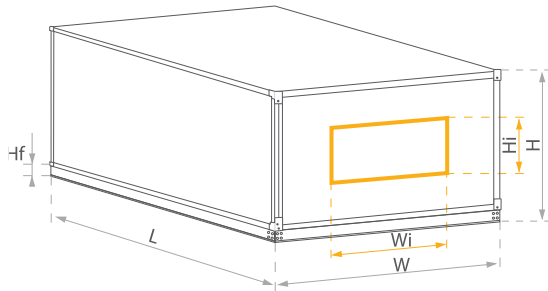
Main configuration		Basic configurations					
	L1	29,9	29,9	44,3	44,3	44,3	44,3
	L1	44,3	44,3	44,3	44,3	58,69	58,69
	L1	44,3	44,3	58,69	58,69	58,69	58,69
	L1	44,3	58,69	58,69	58,69	58,69	58,69
	L1	44,3	58,69	58,69	58,69	58,69	58,69
	L1	58,69	58,69	58,69	58,69	73,09	73,09
	L1	58,69	58,69	73,09	73,09	73,09	73,09
	L1	58,69	73,09	73,09	73,09	73,09	73,09
	L1	58,69	73,09	73,09	73,09	73,09	73,09

Units with external filters instead of internal are shorter by 14.4 inches

		Additional functions					
Empty section	L _{min}	29.86	29.86	29.86	29.86	29.86	29.86
	L _{max}	29.86	29.86	29.86	29.86	29.86	29.86
Mixing box	L	29.86	29.86	29.86	29.86	29.86	29.86



DIMENSIONS - AVS LITE 8-40 - SUPPLY & EXHAUST



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
AVS 008	21.65	12.13	3.15	3.15
AVS 012	32.32	12.13	3.15	3.15
AVS 016	37.91	14.17	3.15	3.15
AVS 020	40.47	17.32	3.15	3.15
AVS 030	47.20	22.64	3.15	3.15
AVS 040	52.76	27.36	3.15	3.15

END (FS)				
UNIT	WA	HA	WA1	HA1
AVS 008	17.99	7.99	5.03	5.23
AVS 012	25.98	7.99	6.33	5.23
AVS 016	34.02	7.99	5.13	6.23
AVS 020	25.98	12.01	10.43	5.83
AVS 030	34.02	12.01	9.83	8.53
AVS 040	40.47	17.32	9.29	8.19

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 008	17.99	7.99	5.03	4.33
AVS 012	25.98	7.99	6.33	4.33
AVS 016	34.02	7.99	5.13	4.33
AVS 020	25.98	12.01	10.43	4.33
AVS 030	34.02	12.01	9.83	4.33
AVS 040	40.47	17.32	9.29	8.27

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 008	17.94	7.94	5.00	11.46
AVS 012	25.94	7.94	6.34	11.46
AVS 016	33.94	7.94	5.16	11.46
AVS 020	25.94	11.94	10.43	9.46
AVS 030	33.94	11.94	9.80	9.46
AVS 040	47.20	22.64	5.93	8.66

UNIT CODING

AVS - XXX - R/L - EM / HC / EM

- AVS - type of AHU family
- XXX - size of unit (equal to the rated air flow in cfm)
- R/L - inspection side (R- right, L -left)
- EM - symbols of additional functions upstream main functions
- HC - symbols of main thermodynamic functions (basic functions)
- EM - symbols of additional functions downstream main functions
- Length depends on AHU equipment

Side (BS)				
UNIT	HC	LC	HC1	LC1
AVS 008	10.94	7.94	4.33	3.74
AVS 012	10.94	7.94	4.33	3.74
AVS 016	12.94	7.94	4.33	3.74
AVS 020	15.94	11.94	4.33	3.82
AVS 030	20.94	11.94	4.33	3.98
AVS 040	16.26	14.96	6.89	8.70



AVS LITE 8-40 - CROSS-FLOW PLATE

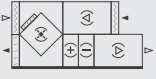


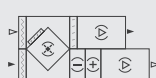



Rated parameters			Recommended range of airflow															
Size	AVS 008			AVS 012			AVS 016			AVS 020			AVS 030			AVS 040		
10 000																		
7 500																		
5 000																		
2 500																		
0																		
Min.	446	427	427	697	618	618	846	819	819	1 067	1 037	1 037	1 526	1 524	1 524	2 089	1 945	1 945
Max.	1 699	1 254	924	2 650	1 817	1 339	3 218	2 486	1 832	4 058	3 331	2 454	5 799	4 835	3 563	7 939	6 697	4 934
H _f	3.54																	
H	21.97			21.97			24.02			27.17			32.48			37.20		
W	27.95			38.62			44.21			46.77			53.50			59.06		
W _i	24.02			34.68			40.28			42.83			49.57			55.12		
H _i	14.49			14.49			16.54			19.69			25.00			29.72		

Main configuration DE*		Basic configurations					
 AVS-XXX-R-FPV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	58,69	58,69	73,09	87,49	87,49	101,89
 AVS-XXX-R-FPV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	58,69	58,69	73,09	87,49	87,49	101,89
 AVS-XXX-R-FPHV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	73,09	73,09	87,49	87,49	87,49	101,89
 AVS-XXX-R-FPHV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	73,09	73,09	87,49	87,49	87,49	101,89
 AVS-XXX-R-FPCV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	73,09	73,09	87,49	87,49	101,89	116,28
 AVS-XXX-R-FPCV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	73,09	73,09	87,49	87,49	101,89	116,28

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck









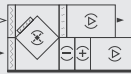
Main configuration DE*		Basic configurations					
 AVS-XXX-R-FPHCV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	✓	L1	73,09	73,09	87,49	101,89	101,89
 AVS-XXX-R-FPHCV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	✓	L1	73,09	73,09	87,49	101,89	101,89
 AVS-XXX-R-FPCHV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	✓	L1	73,09	73,09	87,49	101,89	101,89
 AVS-XXX-R-FPCHV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	✓	L1	73,09	73,09	87,49	101,89	101,89
 AVS-XXX-R-FPV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	✓	L1	73,09	73,09	73,09	87,49	101,89
 AVS-XXX-R-FPV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	✓	L1	73,09	73,09	73,09	87,49	101,89
 AVS-XXX-R-FPHV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	✓	L1	87,49	87,49	87,49	87,49	101,89

[inch]

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



Main configuration DE*		Basic configurations					
 AVS-XXX-R-FPHV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	87,49	87,49	87,49	87,49	101,89	101,89
 AVS-XXX-R-FPCV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	87,49	87,49	87,49	87,49	116,28	116,28
 AVS-XXX-R-FPCV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	87,49	87,49	87,49	87,49	116,28	116,28
 AVS-XXX-R-FPHCV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	87,49	87,49	87,49	101,89	116,28	116,28
 AVS-XXX-R-FPHCV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	87,49	87,49	87,49	101,89	116,28	116,28
 AVS-XXX-R-FPCHV/FVPD_cd	L2	58,69	58,69	87,49	87,49	87,49	101,89
	L1	87,49	87,49	87,49	101,89	116,28	116,28
 AVS-XXX-R-FPCHV/FPDV_pd	L2	73,09	73,09	73,09	87,49	101,89	101,89
	L1	87,49	87,49	87,49	101,89	116,28	116,28

[inch]

* Include Droplet Eliminator after Cooling Coil

L1- doesn't cover empty space in bottom deck



AVS LITE 12 - 40 WITH ENERGY WHEEL

Rated parameters			Recommended range of airflow														
Size	AVS 012			AVS 016			AVS 020			AVS 030			AVS 040				
12 000	[CFM]																
8 000																	
4 000																	
0																	
Min.			618	618	618	819	819	819	1 037	1 037	1 037	1 524	1 524	1 524	1 945	1 945	1 945
Max.			2 179	1 817	1 339	2 664	2 486	1 832	4 068	3 331	2 454	5 869	4 835	3 563	7 364	6 697	4 934
H _f			3.54														
H			21.97			24.02			27.17			32.48			37.20		
W			38.62			44.21			46.77			53.50			59.06		
W _i			34.68			40.28			42.83			49.57			55.12		
H _i	14.49			16.54			19.69			25.00			29.72				
H ₂	40.39			44.49			50.79			61.42			70.87				

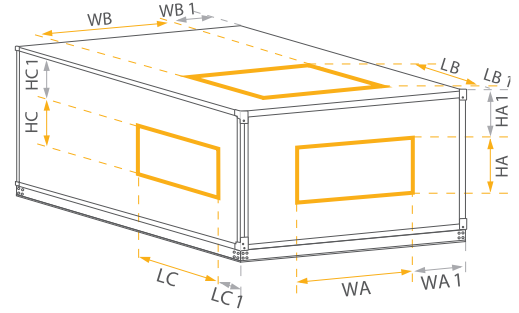
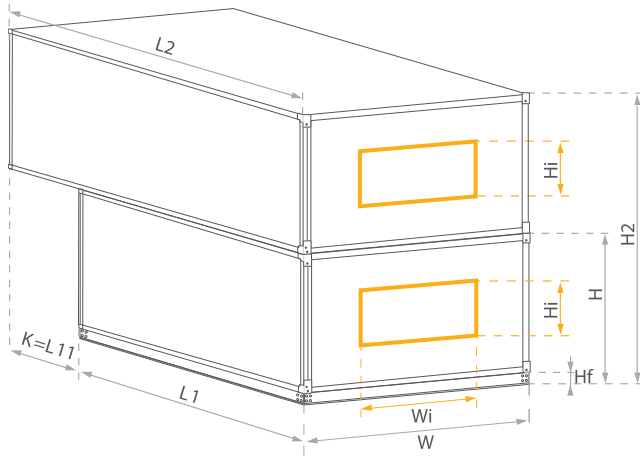
Main configuration DE*		Basic configurations				
 AVS-XXX-R-FRV/FVR_cd	L2	58,69	73,09	73,09	73,09	73,09
	L1	58,69	58,69	73,09	73,09	73,09
 AVS-XXX-R-FRV/FRV_pd	L2	58,69	73,09	73,09	73,09	73,09
	L1	58,69	58,69	73,09	73,09	73,09
 AVS-XXX-R-FRHV/FVR_cd	L2	58,69	73,09	73,09	73,09	73,09
	L1	73,09	73,09	73,09	73,09	73,09
 AVS-XXX-R-FRHV/FRV_pd	L2	58,69	58,69	73,09	73,09	73,09
	L1	73,09	73,09	73,09	73,09	73,09
 AVS-XXX-R-FRCV/FVR_cd	L2	58,69	73,09	73,09	73,09	73,09
	L1	73,09	73,09	73,09	87,49	87,49
 AVS-XXX-R-FRCV/FRV_pd	L2	58,69	58,69	73,09	73,09	73,09
	L1	73,09	73,09	73,09	87,49	87,49
 AVS-XXX-R-FRHCV/FVR_cd	L2	58,69	73,09	73,09	73,09	73,09
	L1	73,09	73,09	87,49	87,49	87,49
 AVS-XXX-R-FRHCV/FRV_pd	L2	58,69	58,69	73,09	73,09	73,09
	L1	73,09	73,09	87,49	87,49	87,49
 AVS-XXX-R-FRCHV/FVR_cd	L2	58,69	73,09	73,09	73,09	73,09
	L1	73,09	73,09	87,49	87,49	87,49
 AVS-XXX-R-FRCHV/FRV_pd	L2	58,69	58,69	73,09	73,09	73,09
	L1	73,09	73,09	87,49	87,49	87,49

* Include Droplet Eliminator after Cooling Coil



L1- doesn't cover empty space in bottom deck



DIMENSIONS AVS LITE 8-40 - CROSS-FLOW PLATE



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF) 					
UNIT	WA	HA	WA1	HA1	
AVS 008	21.65	12.13	3.15	3.15	
AVS 012	32.32	12.13	3.15	3.15	
AVS 016	37.91	14.17	3.15	3.15	
AVS 020	40.47	17.32	3.15	3.15	
AVS 030	47.20	22.64	3.15	3.15	
AVS 040	52.76	27.36	3.15	3.15	

END (FS) 						
UNIT	WA	HA	WA1	HA1		
AVS 008	17.97	7.97	5.00	5.24		
AVS 012	25.97	7.97	6.34	5.24		
AVS 016	33.97	7.97	5.16	6.26		
AVS 020	25.97	11.97	10.43	5.83		
AVS 030	33.97	11.97	9.80	8.50		
AVS 040	40.51	17.36	9.29	8.19		

Side (BS) 							
UNIT	HC	LC	HC1	LC1			
AVS 008	10.94	7.94	4.33	3.74			
AVS 012	10.94	7.94	4.33	3.74			
AVS 016	12.94	7.94	4.33	3.74			
AVS 020	15.94	11.94	4.33	3.82			
AVS 030	20.94	11.94	4.33	3.98			
AVS 040	16.26	14.96	6.89	8.70			

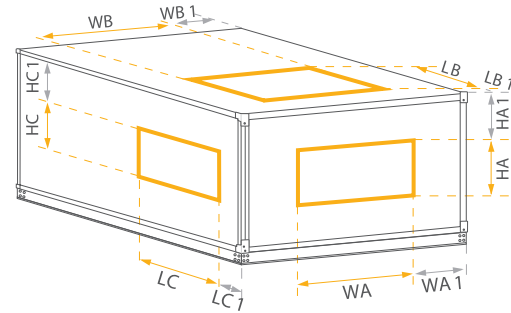
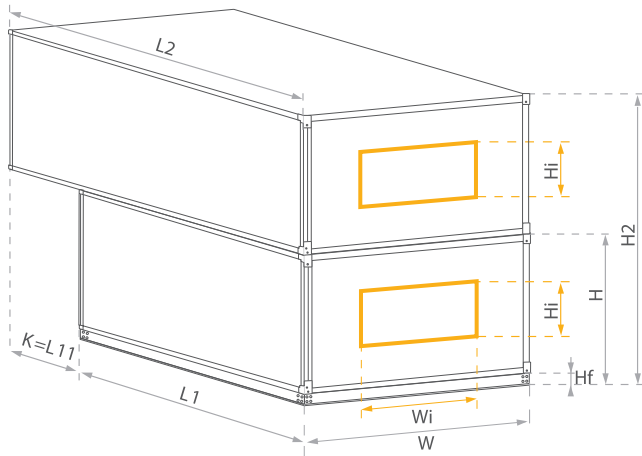
UNIT CODING

AVS - XX

- AVS - type of AHU family
- XXX - size of unit (equal to the rated air flow in cfm*0.001)
- R/L - inspection side (R- right, L-left)
- PHC - symbols of main thermodynamic functions (basic functions)
- Length depends on AHU equipment



DIMENSIONS - AVS LITE 12 - 40 WITH ENERGY WHEEL



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
AVS 012	32.32	12.13	3.15	3.15
AVS 016	37.91	14.17	3.15	3.15
AVS 020	40.47	17.32	3.15	3.15
AVS 030	47.20	22.64	3.15	3.15
AVS 040	52.76	27.36	3.15	3.15

END (FS)				
UNIT	WA	HA	WA1	HA1
AVS 012	25.97	7.97	6.34	5.24
AVS 016	33.97	7.97	5.16	6.26
AVS 020	25.97	11.97	10.43	5.83
AVS 030	33.97	11.97	9.80	8.50
AVS 040	40.51	17.36	9.29	8.19

Side (BS)				
UNIT	HC	LC	HC1	LC1
AVS 012	10.94	7.94	4.33	3.74
AVS 016	12.94	7.94	4.33	3.74
AVS 020	15.94	11.94	4.33	3.82
AVS 030	20.94	11.94	4.33	3.98
AVS 040	16.26	14.96	6.89	8.70

UNIT CODING

AVS - XX

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L-left)
 PHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment



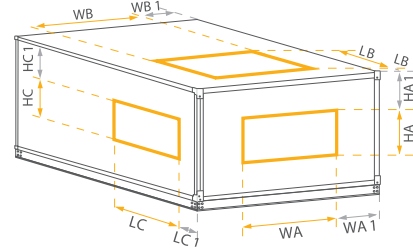
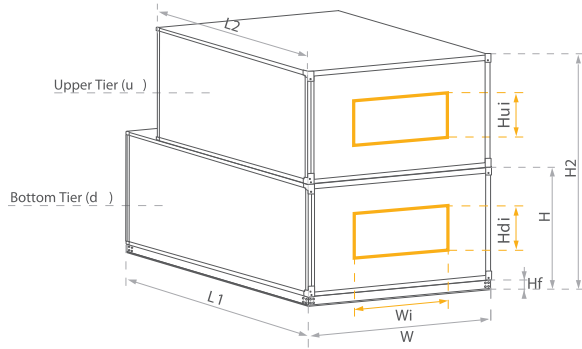
AVS - VERTICAL CONFIGURATIONS

Rated parameters		Recommended range of airflow																								
Size		AVS 008				AVS 012				AVS 016				AVS 020				AVS 030				AVS 040				
15 000 10 000 5 000 0	[CFM]																									
		Min.	332	427	427	427	480	618	618	618	636	819	819	819	806	1037	1037	1037	1185	1524	1524	1524	1567	1945	1945	1945
		Max.	2140	1883	1254	924	3091	2719	1817	1339	4096	3605	2486	1832	5186	4564	3331	2454	7622	6708	4835	3563	10078	8559	6697	4934
		H _{fd}	3.54																							
H _{fu}	0.00		0.00				0.00				0.00				0.00				0.00							
H	21.97		21.97				24.02				27.17				32.48				37.20							
W	27.95		38.62				44.21				46.77				53.50				59.06							
W _i	24.02		34.68				40.28				42.83				49.57				55.12							
H _{ui}	19.69		19.69				19.69				25.00				25.00				29.72							
H _{di}	14.49		14.49				16.54				19.69				25.00				29.72							
H ₂	45.59		45.59				47.64				56.10				61.42				70.87							

		Basic configurations						
 AVS(v)-XXX-R-HV	L2	L [inch]	29.86	29.86	29.86	29.86	29.86	29.86
	L1		29.86	29.86	29.86	29.86	29.86	29.86
 AVS(v)-XXX-R-CV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		29.86	29.86	29.86	29.86	29.86	29.86
 AVS(v)-XXX-R-HCV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		29.86	29.86	29.86	29.86	29.86	29.86
 AVS(v)-XXX-R-HCV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		29.86	29.86	29.86	29.86	29.86	29.86
 AVS(v)-XXX-R-MHV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		58.65	58.65	58.65	58.65	58.65	58.65
 AVS(v)-XXX-R-MCV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		58.65	58.65	58.65	58.65	58.65	58.65
 AVS(v)-XXX-R-MHCV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		58.65	58.65	58.65	58.65	58.65	58.65
 AVS(v)-XXX-R-MCHV	L2		29.86	29.86	29.86	29.86	29.86	29.86
	L1		58.65	58.65	58.65	58.65	58.65	58.65



DIMENSIONS - VERTICAL CONFIGURATIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)

Unit	WA	HA	WA1	HA1
AVS008	21.63	17.31	3.13	3.13
AVS012	32.31	17.31	3.13	3.13
AVS016	37.94	17.31	3.13	3.13
AVS020	40.50	22.63	3.13	3.13
AVS030	47.19	22.63	3.13	3.13
AVS 040	52.75	27.38	3.13	3.13

END FULL (FF)

Unit	WA	HA	WA1	HA1
AVS008	21.31	11.81	3.28	3.28
AVS012	32.00	11.81	3.28	3.28
AVS016	37.62	13.86	3.28	3.28
AVS020	40.19	17.01	3.28	3.28
AVS030	46.87	22.32	3.28	3.28
AVS 040	52.44	27.05	3.28	3.28

END (FS)

Unit	WA	HA	WA1	HA1
AVS008	18.00	8.00	4.60	11.12
AVS012	26.00	8.00	5.90	11.12
AVS016	34.00	8.00	4.70	10.62
AVS020	26.00	12.00	10.00	11.94
AVS030	34.00	12.00	9.40	11.94
AVS 040	48.00	12.00	5.10	16.66

END (FS)

Unit	WA	HA	WA1	HA1
AVS008	17.94	7.94	4.66	4.84
AVS012	25.94	7.94	5.91	4.84
AVS016	33.94	7.94	4.72	5.84
AVS020	25.94	11.94	10.03	5.41
AVS030	33.94	11.94	9.41	8.16
AVS 040	40.50	17.31	9.28	8.22

TOP (US)

Unit	WB	LB	WB1	LB1
AVS008	18.00	8.00	4.60	10.90
AVS012	26.00	8.00	5.90	10.90
AVS016	34.00	8.00	4.70	10.90
AVS020	26.00	12.00	10.00	8.90
AVS030	34.00	12.00	9.40	8.90
AVS 040	48.00	12.00	5.10	8.90

TOP (US)

Unit	WB	LB	WB1	LB1
AVS008	17.94	7.94	4.66	3.91
AVS012	25.94	7.94	5.91	3.91
AVS016	33.94	7.94	4.72	3.91
AVS020	25.94	11.94	10.03	3.91
AVS030	33.94	11.94	9.41	3.91
AVS 040	40.50	17.31	9.28	7.84

Side (BS)

Unit	HC	LC	HC1	LC1
AVS008	8.00	11.00	11.12	9.40
AVS012	8.00	11.00	11.12	9.40
AVS016	8.00	13.00	10.62	8.40
AVS020	12.00	16.00	11.94	6.90
AVS030	12.00	21.00	11.94	4.40
AVS 040	12.00	21.00	16.66	4.40

Side (BS)

Unit	HC	LC	HC1	LC1
AVS008	10.94	7.94	3.34	3.91
AVS012	10.94	7.94	3.34	3.91
AVS016	12.94	7.94	3.34	3.91
AVS020	15.94	11.94	3.41	3.91
AVS030	20.94	11.94	3.66	3.91
AVS 040	16.25	14.94	8.72	6.47

UNIT CODING

AVS - XXX - R/L - RHC

AVS - type of AHU family
 XXX - size of unit (equal to the rated air flow in cfm*0.001)
 R/L - inspection side (R- right, L -left)
 RHC - symbols of main thermodynamic functions (basic functions)
 Length depends on AHU equipment

VTS

24.2°

30.5°



ESC



05

Connection and
controls



CONNECTING POINT

The Connecting Point is the power supply and VFD Enclosure, the internal wiring system of the air-handling unit related to power supply and control of fan motors. It is mounted separately for the supply and exhaust fan sections.

It consists of a casing, a frequency converter (VFD), surge protection, emergency (service) switch, strip connector, factory-produced internal power circuits, and control wiring of the fan drive system (motor-inverter). In the case of vertical air-handling units, an external wired outlet is mounted on the casing and connected to the Connecting Point.

The Connecting Point is equipped with aggregate terminals for power supply circuits; inverter circuits are factory-connected to these terminals.





CONSTRUCTION AND WIRING



THE MAIN BENEFITS OF AIR-HANDLING UNITS EQUIPPED WITH THE CONNECTING POINT ARE AS FOLLOWS:

- » the certainty of correctness of internal connections supplying the motor and the VFD
- » reliability of factory-tested connections and air-handling unit operation
- » on-site time-savings on wiring
- » lower costs of the whole installation
- » factory installation of the service switch
- » clear liability of the producer for the connection and configuration of inverters and motors



CONTROLS

VTS uses control algorithms that have been developed with an emphasis on energy savings, while at the same time maintaining the required parameters of the air supplied and ensuring reliability of our units.

For management of our American VENTUS air handling units we recommend our control application based on PLC controller, supporting all advanced control functions and variable ways of external communication including integration with Building Management Systems.

NEW FEATURES

MEASUREMENT AND CONTROL OF THE CONSTANT AIR VOLUME

- » adjustment of the preset constant air volume under changing flow resistance - compensation of changing internal resistance of the AHU (e.g. with varying degrees of air filter dirt, different setpoint of the mixing box, etc.)
- » adjustment of the fan power to the current needs of the installation
- » readiness of the AHU to work with the required performance immediately after installation

CONSTANT PRESSURE CONTROL WITH VARIABLE AIR VOLUME

- » control of constant, preset air pressure at variable volume (efficiency change is carried out through the air distribution system – e.g. VAV controllers)

CO₂

- » automatic modulation of the amount of outside air (keeping the CO₂ concentration below the set value)
- » optimization of consumption of heat and electricity

ELECTRIC HEATER CONTROL

- » smooth control system that adjusts power to the current demand

HUMIDITY CONTROL

- » control over air humidifying - both evaporative and steam
- » supports control of the drying process

MIXING BOX CONTROL

- » smooth control of the mixing box, external signal or as in the CO₂ control function, etc.
- » optimization of the ventilation air to save energy



MAIN ELEMENTS

HMI SERVICE



Function and Application

- » setting and reading of advanced operating parameters of ventilation or supply units
- » management and cancellation of units operational errors is done by full text description
- » management of the controller main calendar

Operation parameters

- » power supply: directly from the UPC3 controller
- » communication port: serial port, RS485 standard
- » communication cable length: max. 3,600ft
- » connection method: 1:1
- » protection class: NEMA 2
- » ambient temperature: -4 +140°F / $\varphi < 85\%$, without condensation

VARIABLE FREQUENCY DRIVES



Function and Application

- » smooth regulation of the AHU air flow by proportional change of the motor-fan unit rotational speed
- » maintaining fixed AHU operating parameters at varying air flow resistance of the ductworks
- » protection of maximal value of motor current
- » controlling of fan start-up with simultaneous protection of maximal value of start-up current
- » integration with external analog and binary signals
- » displaying and modification of fan-set working parameters

Operation parameters

- » supply Frequency: 50/60 Hz (48 Hz to 62 Hz)
- » control
 - method: Type of control: V/f (Scalar); VVW: Voltage vector control; PWM SVM (Space Vector Modulation)
 - output Frequency: 0 to 500 Hz, resolution of 0.015 Hz

- » analog Inputs:
 - 1 insulated input. Levels: (0 to 10) V or (0 a 20) mA or (4 to 20) mA
 - programmable functions
- » digital Inputs:
 - 4 insulated inputs
 - programmable functions:
 - Active high (PNP)
 - Active low (NPN)
- » analog Output
 - 1 insulated output. Level (0 to 10) V or (0 to 20) mA or (4 to 20) mA
 - programmable functions
- » relay Output
 - 1 relay with NA/NF contact.
 - maximum voltage: 240 VAC
 - maximum current 0.5 A
 - programmable functions
- » communication Interface RS 485
 - insulated RS485
 - modbus-RTU protocol with maximum communication of 38.4kbps
- » enclosure
 - NEMA1/IP20



DUCT TEMPERATURE SENSOR



Function and Application

- » measurement of the temperature of supply, exhaust and outside air
- » securing max. and min. temperature of supply air
- » protection against frost on the energy recovery unit via the temperature measurement of air exhausted upstream the energy recovery unit

Operation parameters

- » measurement range: -40°F -158 °F
- » air humidity: 5 - 100 %
- » measuring element: NTC 10k
- » output signal: resistance
- » cables length: max. 300 ft
- » protection class: IP 54

DIFFERENTIAL PRESSURE SWITCH



Function and Application

- » monitoring the filter contamination in the Air Handling Unit by measuring the difference of static pressure before and after the filter
- » control of the operation of a direct driven fan unit in case of cooperation with electric heater

Operation parameters

- » measurement: 0.12-1.20 in WG
– filters of class MERV 6 - 15
- » rated operating voltage: 250V AC (I_{max}=3A)
- » output signal: potential-free contact, NO or NC according to the application
- » switching capacity: 1mln of cycles (at temp. of 140 °F)
- » protection class: NEMA 3
- » ambient temperature: -4 °F +140 °F

LOW LIMIT THERMOSTAT SWITCH



Function and Application

- » when the air temperature drops below the minimum allowable temperature, signal from the thermostat stops AHU fans, closes external air dampers and adjusts control valve of the heater to the max. flow of heating medium
- » switching into permanent alarm condition if the AHU protection is triggered three times within an hour

Operation parameters

- » measurement range: -0.4 +59 °F
- » default switching threshold setting: 41 °F
- » hysteresis: 1.7 - 12K
- » Rated operating voltage: 30 V DC, 230 VAC
- » output signal: potential-free (switchover contact)
- » protection class: NEMA 3



THREE-WAY VALVE WITH ELECTRIC ACTUATOR



Function and Application

- » temperature adjustment of the medium flowing through the hydronic coil
- » quality hydronic heater capacity regulation (system based on additional recirculation pump)
- » quantity hydronic cooler capacity regulation

Operation parameters

- » actuator:
 - adjustment range: 0 -100%
 - supply voltage: 24 V AC/DC
 - input signal: 0-10 V DC
 - rotation angle: 90°
 - protection class: NEMA 2
 - ambient temperature: -22 +122 °F
- » valve:
 - operating characteristics: Equal percentage/proportional Cv: 3 / 4.7 / 7.4 / 19 / 29 / 46 / 68 / 91
 - differential Pressure: 50 psi for typical applications
 - medium temperature: 0°F - 250°F

0-10 V AIR DAMPER ACTUATOR



Function and Application

- » mixing ratio control for outdoor and room-exhausted air (economizer): 0-10 V actuator
- » control of bypass air damper opening level for the Plate Cross-Flow – anti-frost protection of the energy recovery system
- » 0-10 V actuator:
 - actuator with spring return
 - economizer fresh air side
- » actuator with no spring return:
 - economizer return air side
 - by-pass damper for cross-plate based energy recovery system

Operation parameters

- » regulation method: smooth 0-100%
- » supply voltage: 24 VAC
- » input signal: 0 -10 VDC
- » rated torque: 90 in-lbs
- » rotation angle 90°
- » full opening time: 0 10 V: 80 - 90s;
- » spring-forced return: 10s
- » max. air damper area: 43 ft²
- » protection class: NEMA 2
- » ambient temperature: -22 +122 °F

HUMIDITY SENSOR



Function and Application

- » multiple ranges as measurement windows available
- » innovative self-calibrating algorithm
- » long term stability and accuracy

Operation parameters

- » microcontroller based design
- » supply voltage: 24 V AC/DC
- » 1 analogue output (0-10 VDC / 0-20 mA)
- » modbus RTU (RS485) Communication



CONTROL APPLICATIONS LIST

AP - control system application for air supply-exhaust units with cross-flow heat exchanger

Application code	Functions available in particular applications					
	HW	DX	DX	PRC. BPS	MIX. CMBR	SUMMER
AP 32				✓		
AP 41	✓			✓		
AP 33		✓		✓		
AP 36	✓	✓		✓		
AP 37			✓	✓		
AP 40	✓		✓	✓		
AP 160				✓		✓
AP 161	✓			✓		✓
AP 164		✓		✓		✓
AP 165	✓	✓		✓		✓
AP 168			✓	✓		✓
AP 169	✓		✓	✓		✓

AR - control system application for air supply-exhaust units with thermal wheel

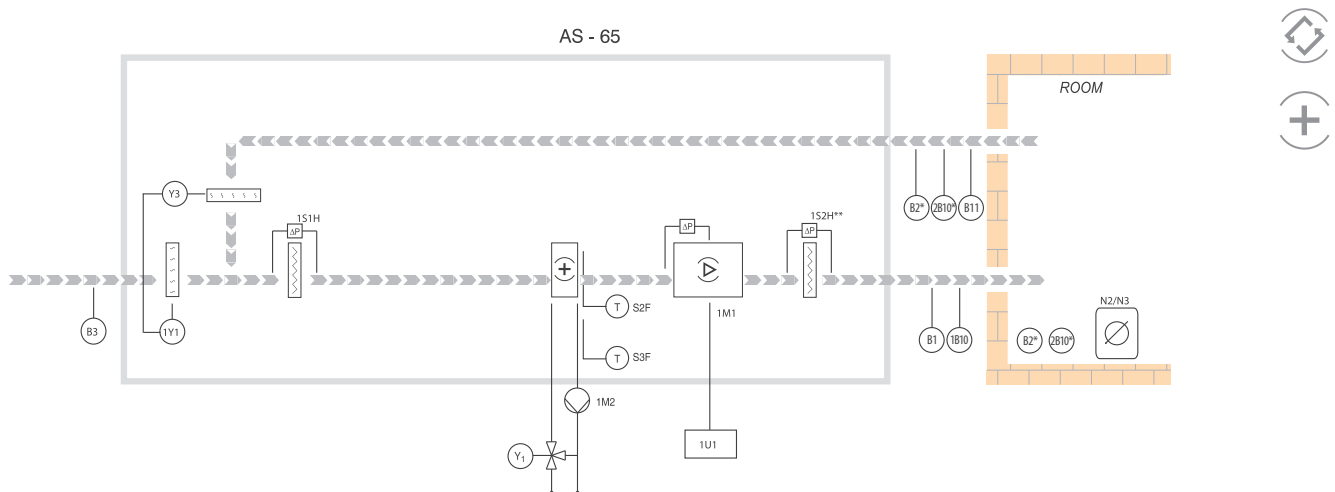
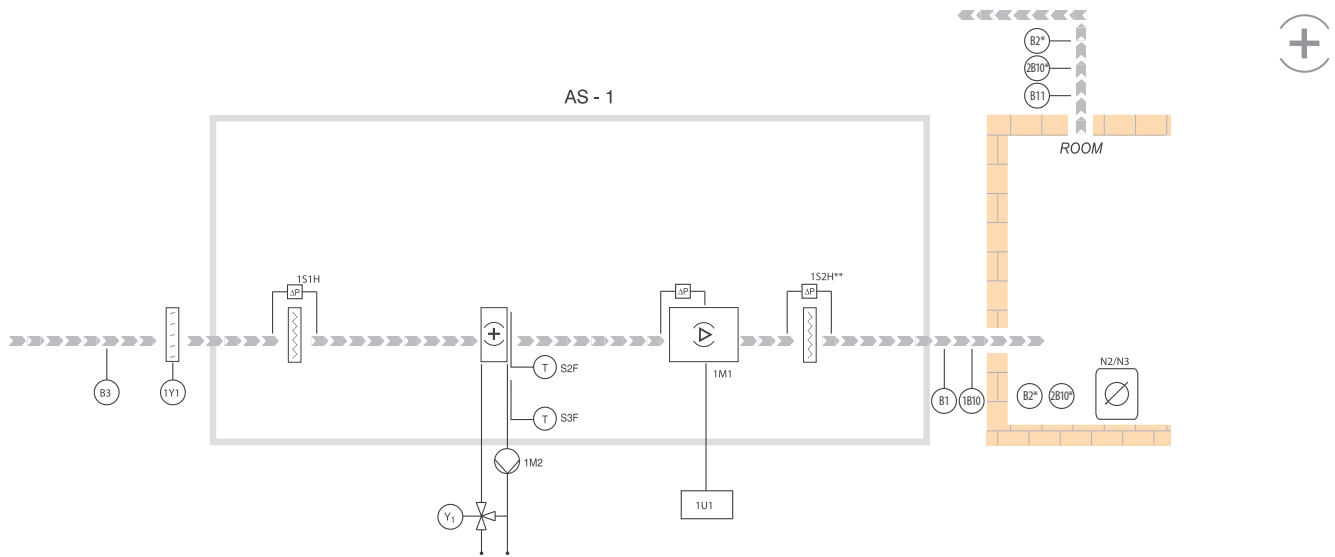
Application code	Functions available in particular applications					
	HW	DX	DX	PRC. BPS	MIX. CMBR	SUMMER
AP 0						
AP 1	✓					
AP 4		✓				
AP 5	✓	✓				
AP 8			✓			
AP 9	✓		✓			
AP 128						✓
AP 129	✓					✓
AP 132		✓				✓
AP 133	✓	✓				✓
AP 136			✓			✓
AP 137	✓		✓			✓

AS - control system application for air supply units

Application code	Functions available in particular applications					
	HW	DX	DX	PRC. BPS	MIX. CMBR	SUMMER
AP 1	✓					
AP 4		✓				
AP 5	✓	✓				
AP 8			✓			
AP 9	✓		✓			
AP 65	✓				✓	
AP 68		✓			✓	
AP 69	✓	✓			✓	
AP 72			✓		✓	
AP 73	✓		✓		✓	
AP 193	✓				✓	✓
AP 196		✓			✓	✓
AP 197	✓	✓			✓	✓
AP 200			✓		✓	✓
AP 201	✓		✓		✓	✓



SUPPLY AHUS



CONTROL

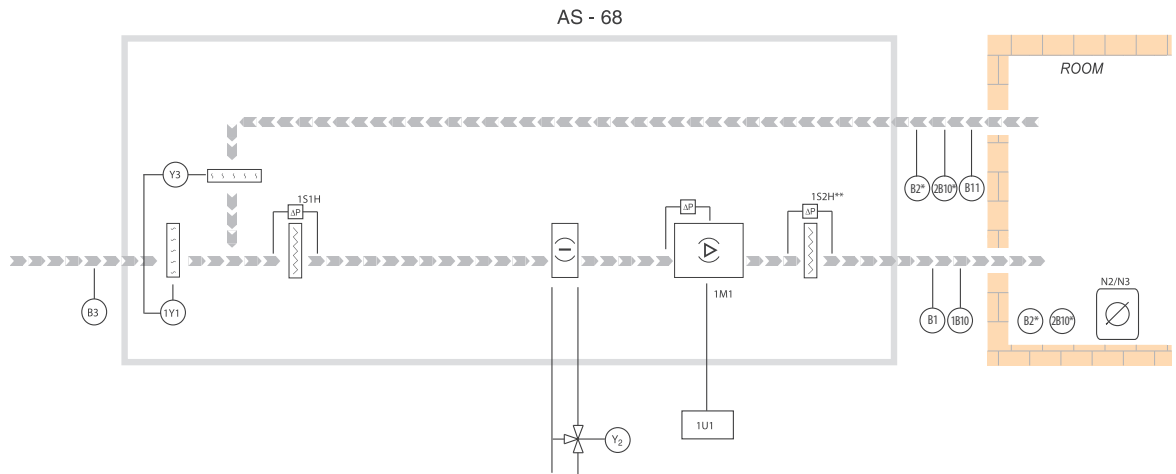
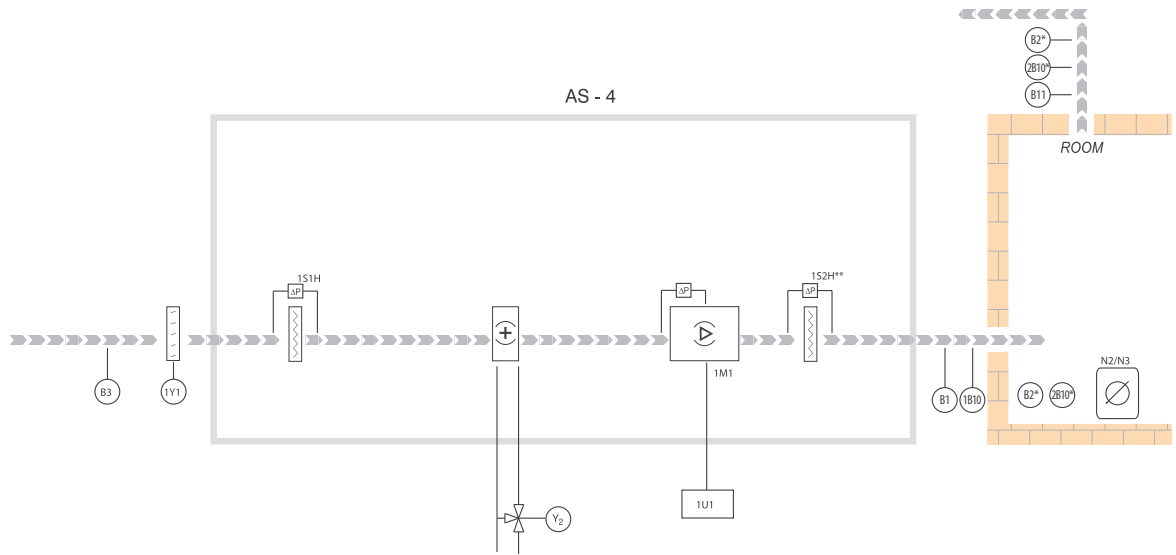
- » control of room temperature, or supply or exhaust air temperature
 - » control of the energy recovery level – first stage of heating/cooling
 - » air flow control
 - » operation according to calendar – temperature, efficiency, operation mode (OPERATION, STAND-BY, STOP)
 - » STAND-BY – maintaining the minimum, set indoor temperature.
- * Initial heating of external air

INFORMATION

- » information on outdoor, supply, exhaust and indoor air temperatures
- » filter contamination info
- » alarm status info
- » analog and digital input and output status info

PROTECTION

- » limiting the allowed supply air temperature
- » fan unit protection – the function is active:
 - if an electric heater is present
- » overload protection of a drive unit
- » anti-frost protection of a water heater
- » protection against overheating of an electric heater
- » optional protection against minimal and maximal temperature of medium returning from the water heater with use of Strap-on temperature sensor, standard NTC 10K
- » the control application layouts have been prepared on the basis of water exchangers
- » the quantity of applied pressure switches for filters depends on the filter configuration



CONTROL

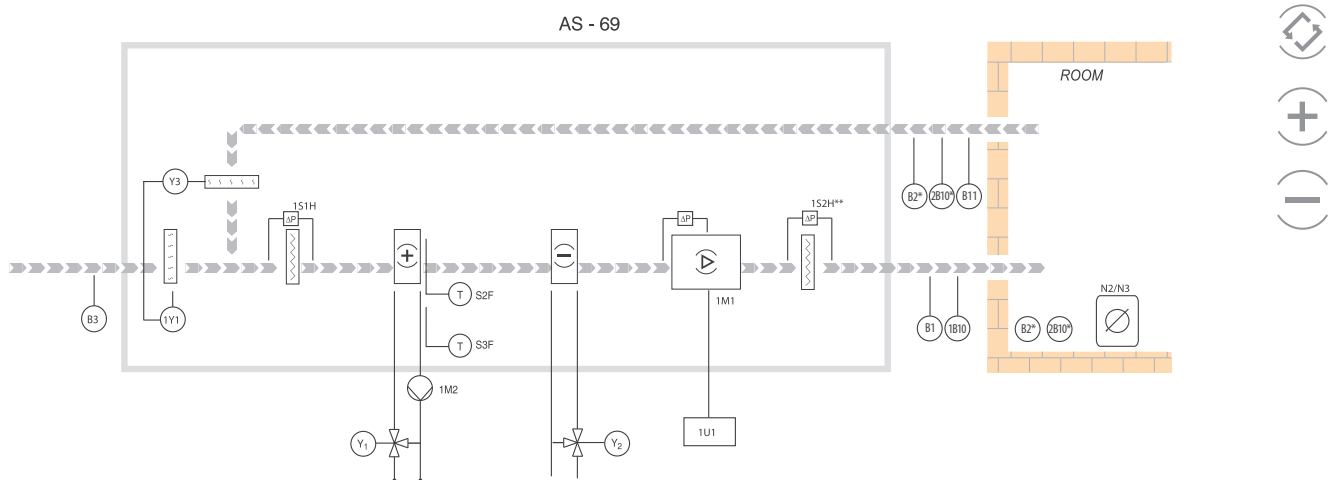
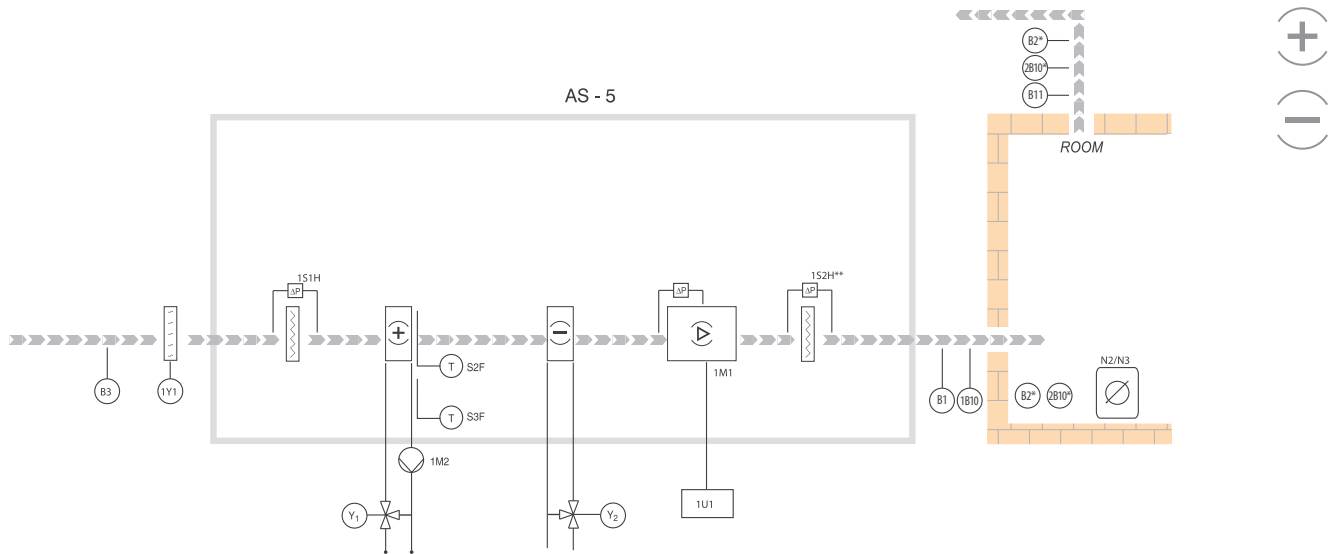
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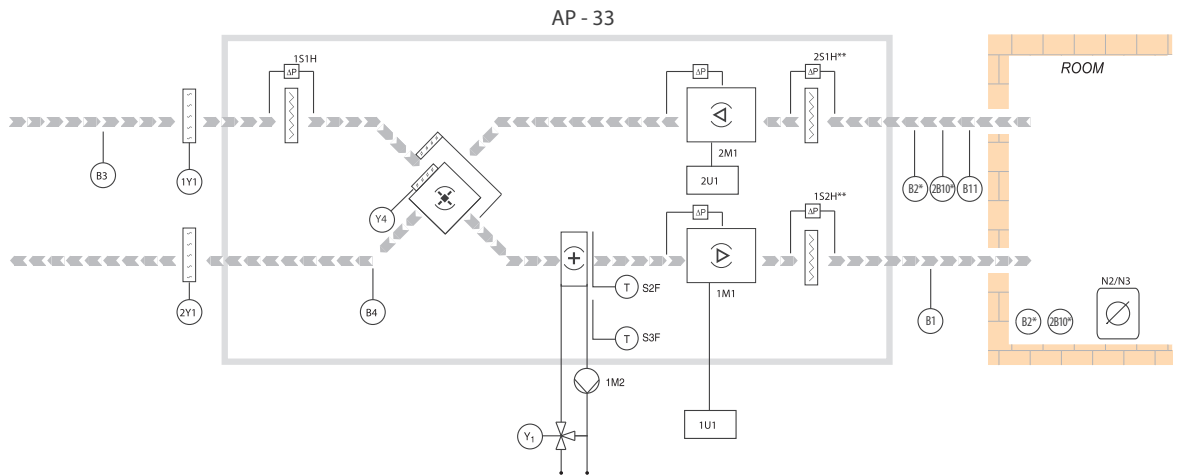
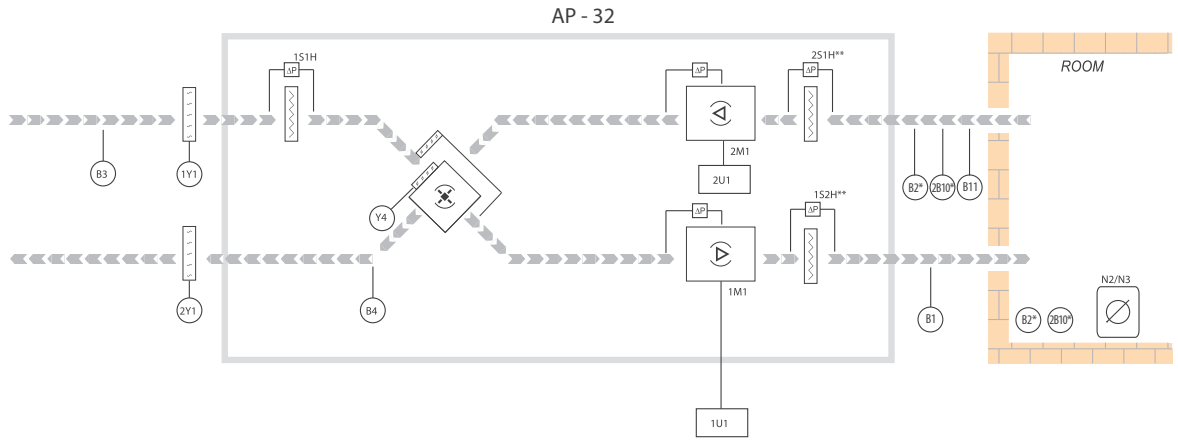
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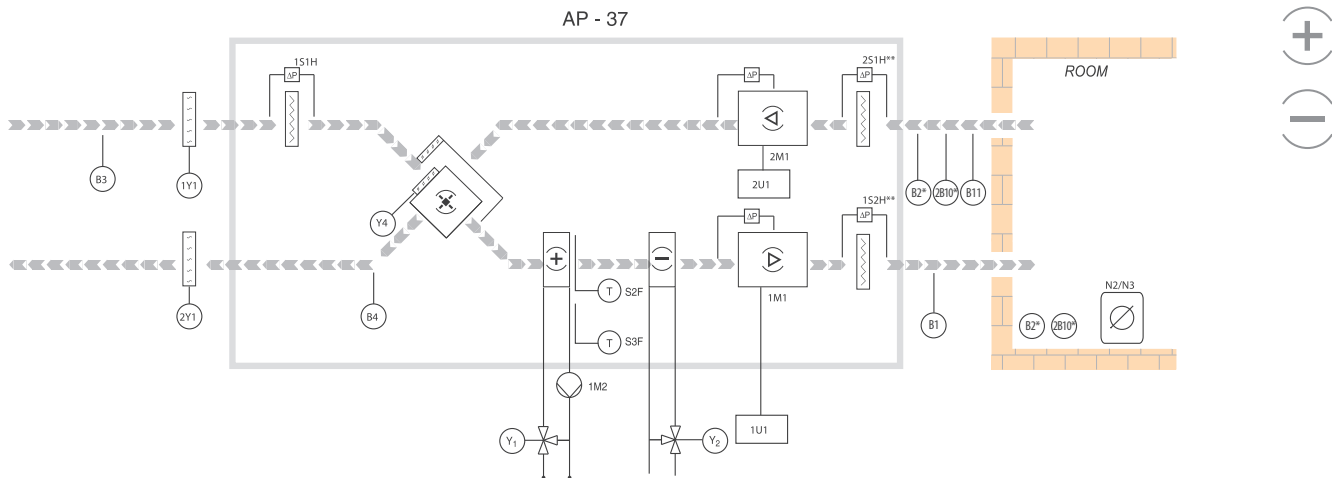
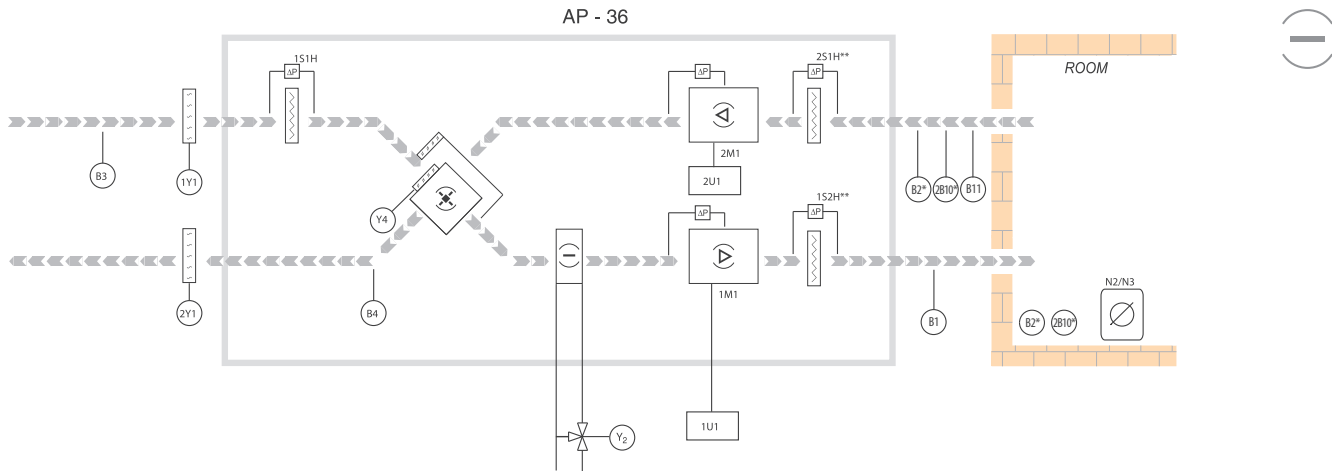
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- » optional Strap-on temperature sensor is not a part of VTS offer



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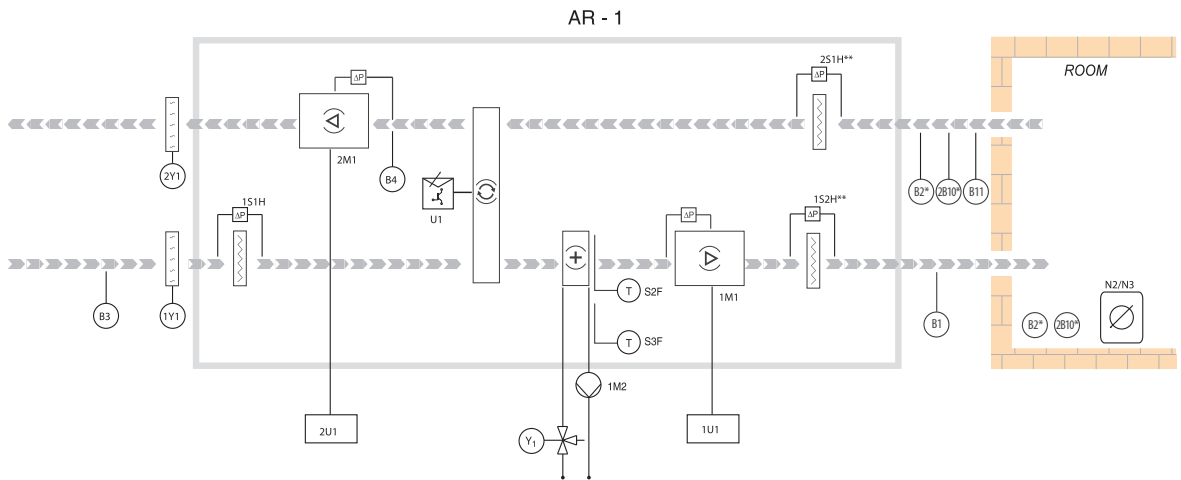
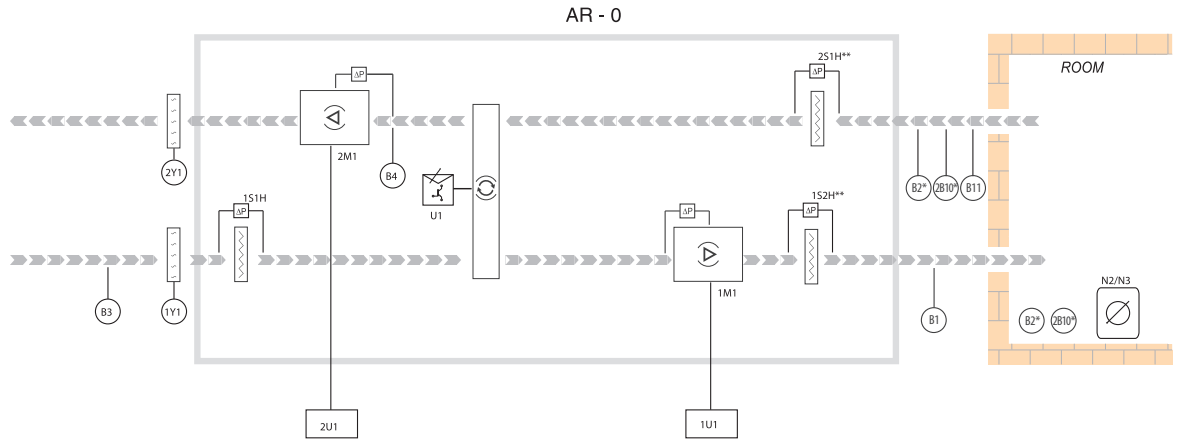
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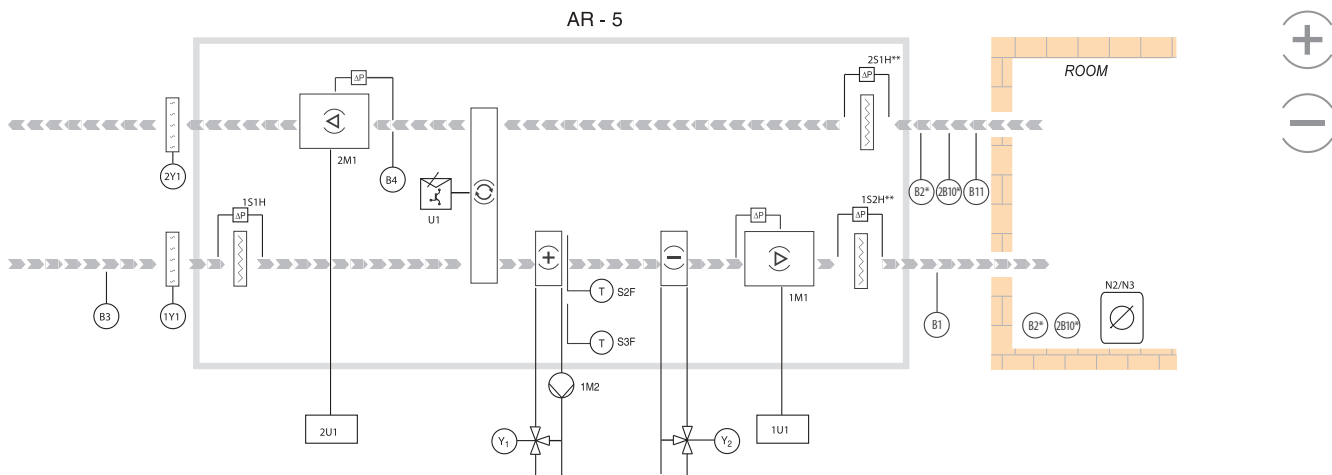
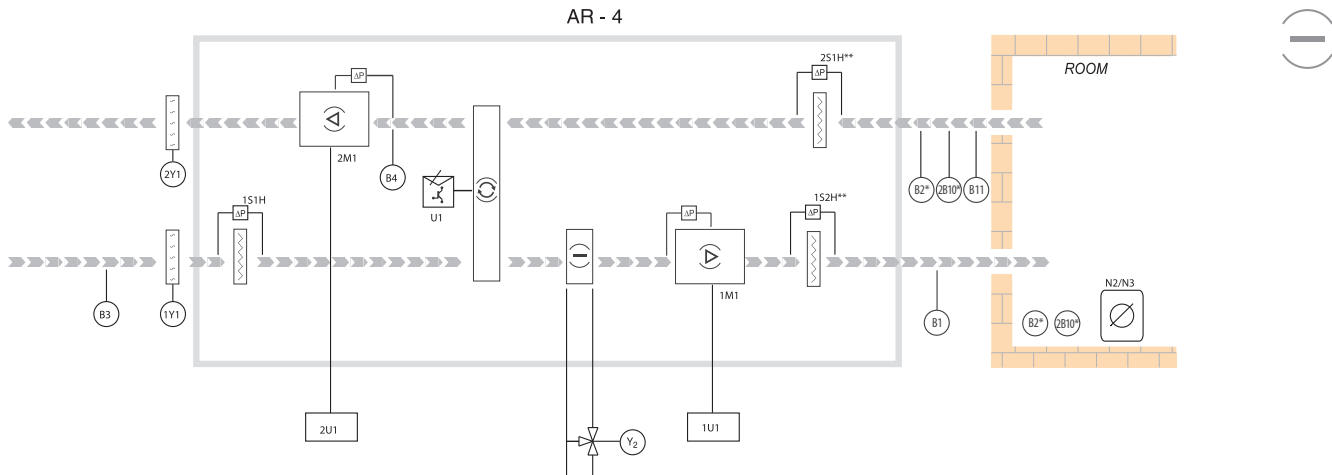
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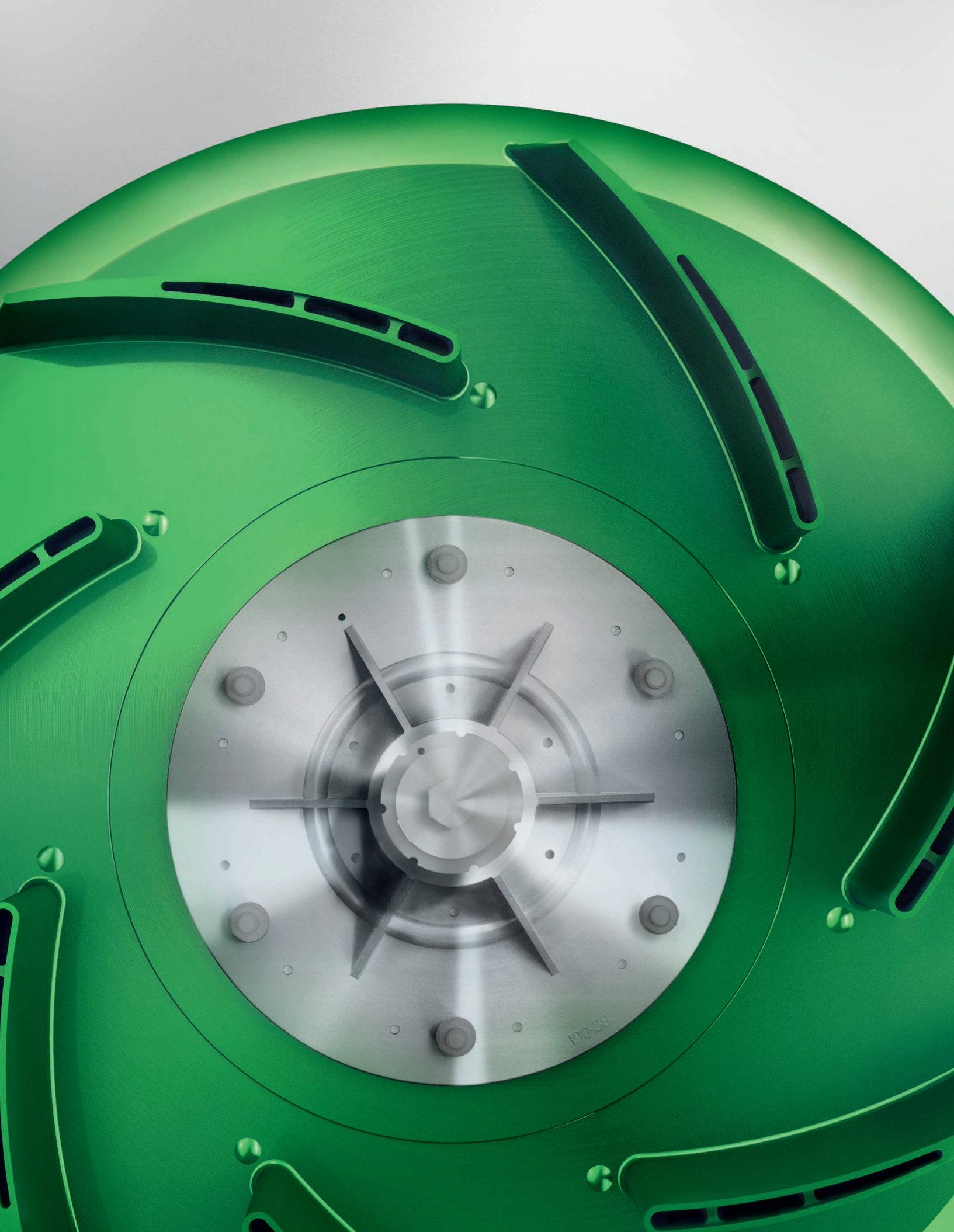
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06

Functions



| Direct drive plenum fan

Energy efficient fans are based on single inlet, air foil backward curved radial impellers with 7 blades made of a composite material to minimize the impeller weight and provide the best operating performance and provide the best dynamically balanced operating performance.



VARIABLE FREQUENCY DRIVE [VFD]

The accurate selection of air flow design and external static pressure with a smooth regulation by proportional change of the motor-fan unit rotational speed. Protection of the maximum value of the motor current, the capability to be integrated with external analog and binary signals and the integration with the BMS system

PLENUM FAN MOTOR

Fans are driven by TEFC (Totally Enclosed Fan Cooled) foot mounted motors with double shielded bearings and range from 1 HP to 15 HP. Nominal frequency: 60 Hz. Insulation class: F. Efficiency class: Premium. Bearings live: $L_{10} = 20,000$ h, $L_{50} = 100,000$ h. Shaft grounding rings available (on request).

Fan sets used in submitted air handling units are available in a wide range of voltages: 115V/1PH/60Hz, 208V/ 1PH/60Hz, 230V/1PH/60Hz, 208V/3PH/60Hz, 230V/3PH/60Hz, 460V/3PH/60Hz, 575V/3PH.

AMCA



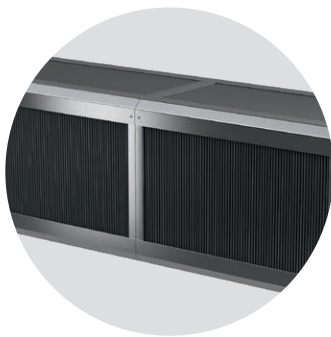
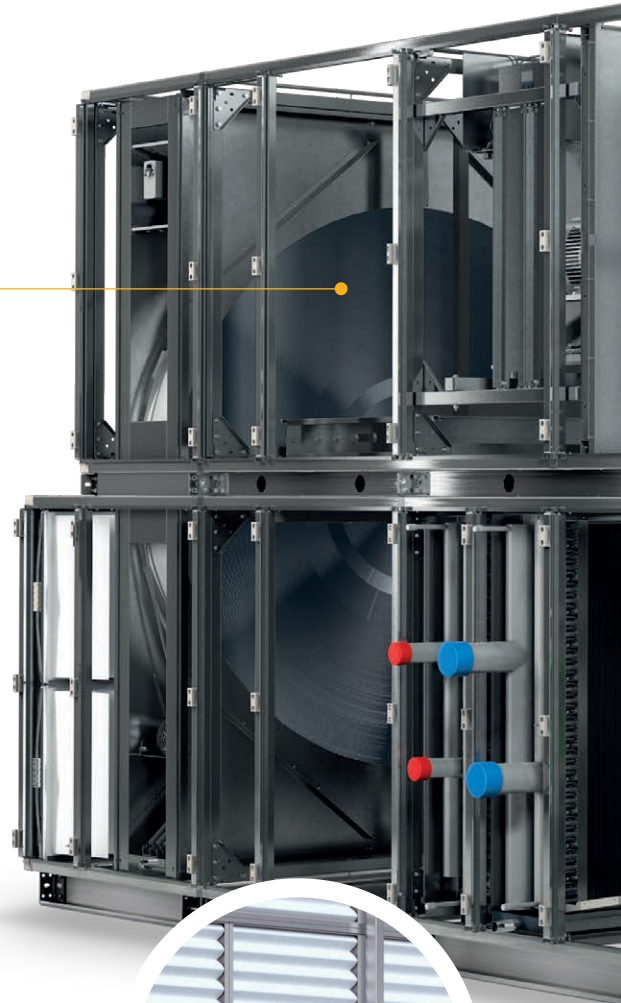
VTS Group certifies that the VS fan series shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The certified ratings for the VS Fans are shown in this catalogue.



| Air-to-air energy recovery systems

AIR-TO-AIR ENERGY WHEEL

The total energy wheel is constructed with 7.9 inch Aluminum coated with non-toxic, non-corrosive Silica gel in a way that allows it to exchange sensible and latent heat between two airstreams, generally outside air and exhaust air. In the cooling mode, the wheel pre-treats the outside air by transferring sensible and latent heat to the exhaust stream. During the heating mode, the wheel pre-treats the outside air with sensible and latent heat from the exhaust air. This energy recovery is done without total separation of the supply and exhaust air flows with air leakages of 2% to 5%.



CROSS-FLOW PLATE

Cross-Flow plate is an indirect energy recovery device, that transfers heat from the exhaust air stream to the entering air stream which will be supplied to the space. Heat recovery at very high separation of the stream of supply and exhaust air (99.9%). Application in block supply-exhaust AHUs.



FLAT PREFILTER

All units have a two or four inches flat prefilter or a combination thereof

- MERV8 two-inch filter.
- MERV13 four-inch filter.



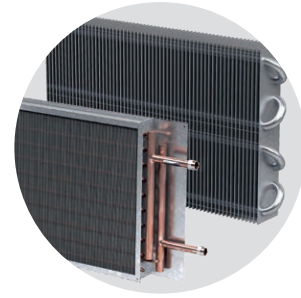
HEATERS



Heaters are available in the following versions:

- hot water heating coils,
- resistant electric heaters,
- DX heating coils,

The hydronic coil performance is designed in accordance to AHRI Standard 410. All coils are of a counter flow design.



COOLING COILS

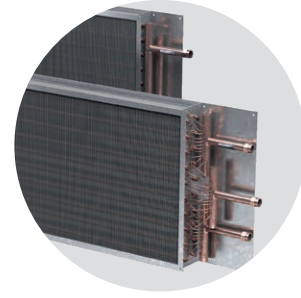


The cooling coils are available either as a hydronic or a DX cooling coils.

The variety of coil types allows a user to select a coil that is optimized for pressure drop and capacity requirements. The cooling coils are mounted over the drainpan to ensure water condensate flowing.

VTS combines comprehensive performance certification by AHRI with thorough laboratory testing and advanced manufacturing methods. Together, these elements help to assure that each VTS product operates predictably and reliably throughout the life of the unit.

Heating and Cooling hydronic coils are rigorously tested and certified in accordance with the forced circulation air cooling and air heating coils certification program based on AHRI Standard 410.

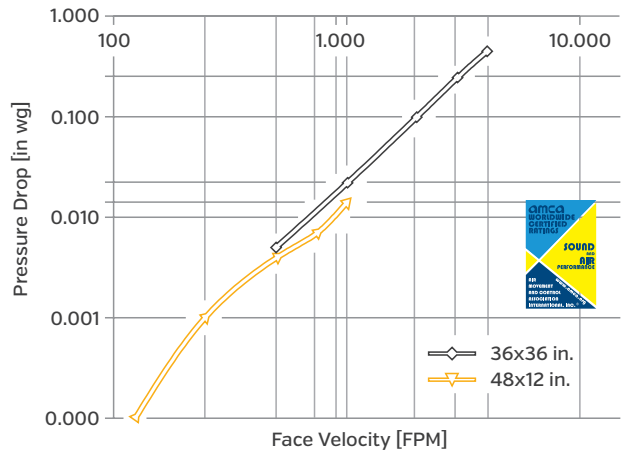
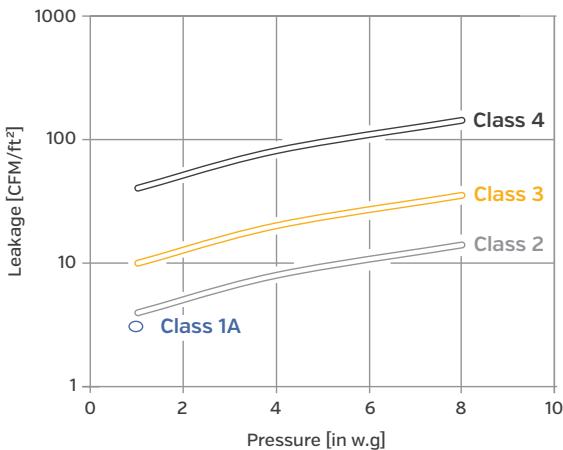


AIR DAMPERS

VTS Group certifies that the dampers shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA International Certified Ratings Seal applies to Air Performance and Air Leakage. The VTS air dampers are in 3-rd class for 1, 4 and 8 in. w.g.

Leakage testing conducted in accordance with AMCA Standard 500-D-07 figure 5.4 Alternate. Data are based on a torque of 10 in-lb/ft² applied to close and seal the damper during the test. Air leakage is based on operation between 32 to 120 F. All data corrected to represent standard air density 0.075 lb/ft³.

Pressure drop testing conducted in accordance with AMCA Standard 500-D-07 figure 5.3. All data corrected to represent standard air density 0.075 lb/ft³.



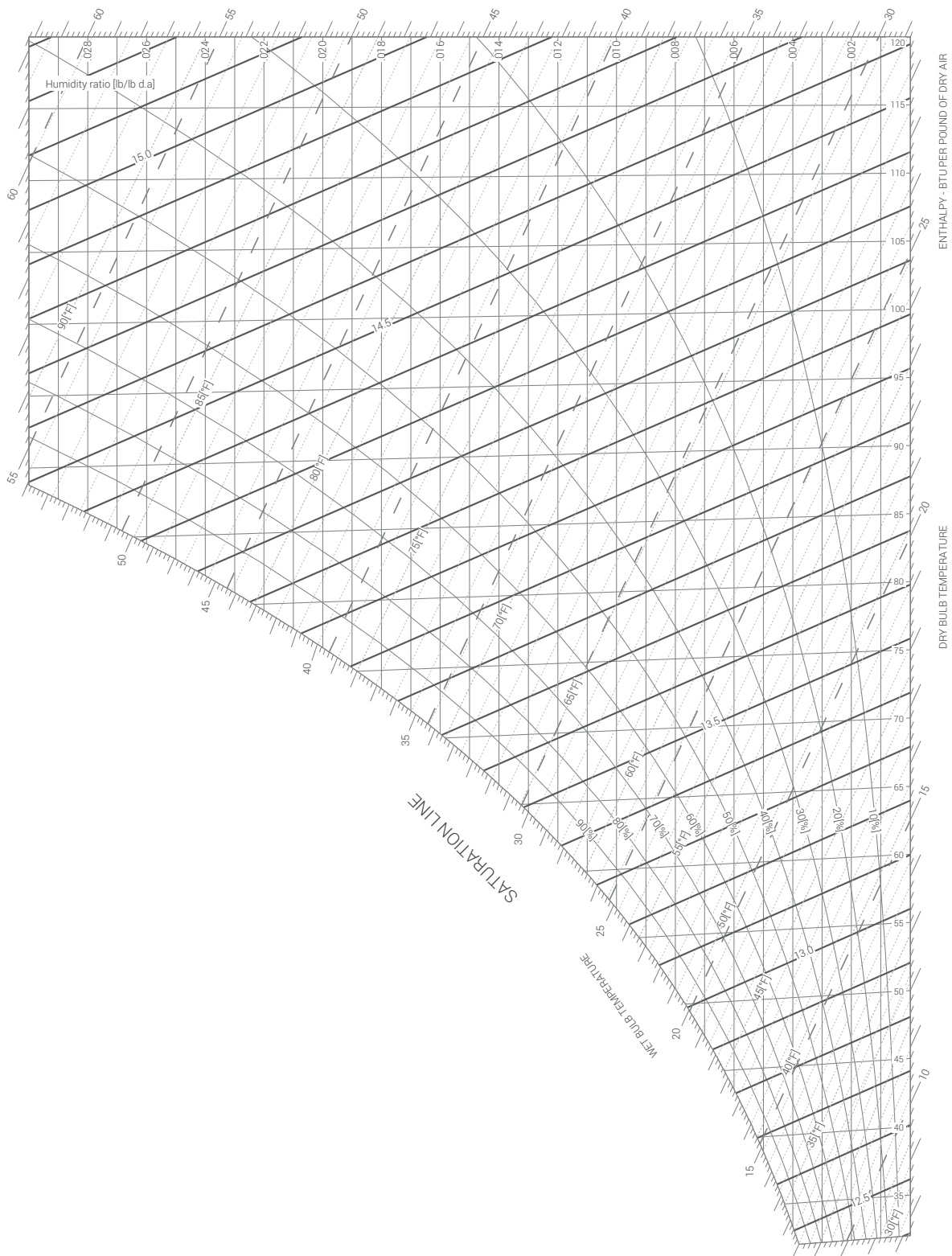


PSYCHROMETRIC CHART

Normal Temperature

Barometric Pressure: 29.921 Inches of Mercury

Sea Level





Certified fan performance data for fans of VS 225-VS 400 sizes

Unit Size	Q [cfm]	Ps [in. wg]	BHP [hp]
VS-225 3450 RPM	1,047	0.004	0.251
	944	0.661	0.277
	841	1.290	0.328
	737	0.195	0.363
	633	2.446	0.374
	522	2.868	0.381
	422	3.056	0.353
	314	3.162	0.300
	158	3.220	0.234
0	3.423	0.158	
VS-250 3450 RPM	1,447	0.015	0.421
	1,300	1.087	0.525
	1,162	2.000	0.645
	1,013	2.892	0.721
	868	3.536	0.747
	720	3.883	0.708
	594	4.065	0.646
	426	4.200	0.537
	283	4.258	0.442
0	4.619	0.250	
VS-315 3450 RPM	3,124	0.011	1.850
	2,824	1.280	2.027
	2,514	2.788	2.244
	2,196	4.281	2.490
	1,887	5.376	2.563
	1,558	6.086	2.485
	1,247	6.391	2.306
	930	6.566	2.059
	529	6.714	1.714
0	7.275	0.945	
VS-355 1750 RPM	2,344	0.001	0.395
	2,119	0.469	0.466
	1,882	0.978	0.516
	1,636	1.462	0.565
	1,396	1.834	0.585
	1,167	2.021	0.561
	937	2.093	0.524
	689	2.141	0.454
	457	2.186	0.382
0	2.300	0.226	
VS-400 1750 RPM	3,212	0.003	0.739
	2,898	0.601	0.838
	2,577	1.269	0.956
	2,245	1.815	1.034
	1,926	2.310	1.079
	1,620	2.585	1.051
	1,281	2.709	0.959
	957	2.770	0.844
	512	2.794	0.690
0	2.921	0.432	

- NOTE 1: Performance certified is for installation Type A, Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).
- NOTE 2: Efficiency ratings are fan static and exclude bearing and/or Power Transmission Losses.
- NOTE 3: VTS America Inc. certifies that the Model VS shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Certified fan performance data for fans of VS 450-VS 630 sizes

Unit Size	Q [cfm]	Ps [in. wg]	BHP [hp]
VS-450 1750 RPM	4,673	0.002	1.206
	4,211	0.526	1.323
	3,740	1.377	1.544
	3,277	2.228	1.766
	2,815	2.909	1.871
	2,334	3.284	1.804
	1,874	3.393	1.662
	1,394	3.460	1.414
	651	3.526	1.056
	0	3.707	0.654
VS-500 1750 RPM	6386	0,000	1,756
	6157	0,606	1,957
	5613	1,638	2,480
	5070	2,449	2,882
	4527	3,071	3,083
	3984	3,525	3,097
	3441	3,842	2,962
	2897	4,047	2,708
	2354	4,163	2,386
	0	4,464	1,032
VS-560 1750 RPM	9064	0,000	2,828
	8240	1,566	4,062
	7441	2,738	4,906
	6643	3,633	5,416
	5844	4,296	5,550
	5045	4,757	5,362
	4247	5,050	4,946
	3448	5,223	4,383
	2649	5,303	3,740
	0	5,420	1,072
VS-630 1750 RPM	13061	0,000	4,651
	11772	1,778	7,038
	10594	3,352	8,646
	9417	4,549	9,611
	8240	5,412	9,853
	7063	6,010	9,504
	5886	6,391	8,713
	4709	6,596	7,641
	3649	6,684	6,568
	0	6,877	2,560

NOTE 1: Performance certified is for installation Type A, Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).

NOTE 2: Efficiency ratings are fan static and exclude bearing and/or Power Transmission Losses.

NOTE 3: VTS America Inc. certifies that the Model VS shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Certified sound pressure level for fans of VS 225 - VS 400 sizes

Unit Size	Ps (in. wg)	Q (cfm)	Lw Loudness	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lw(A) dB(A)	Loudness Sones
VS-225 3450 RPM	0,000	1044	dB	96	75	76	81	79	81	80	82	88	32
			Sones	9,1	3,2	4,5	7,3	7,7	9,9	11,6	15,8		
	1,783	778	dB	92	75	79	83	80	76	69	70	84	21
			Sones	7,0	3,1	5,2	8,0	7,8	7,7	6,0	7,8		
	3,077	507	dB	90	77	82	83	75	72	65	64	82	19,2
			Sones	5,9	3,6	6,4	7,8	6,1	6,1	4,7	5,3		
	3,377	287	dB	92	82	84	81	77	75	67	64	83	20
			Sones	6,7	5,3	7,1	7,3	6,8	7,0	5,3	5,2		
VS-250 3450 RPM	0,013	754	dB	66	68	68	68	67	67	69	61	74	12,4
			Sones	1,0	1,9	2,7	3,2	3,8	4,5	6,0	4,3		
	0,640	580	dB	64	69	67	67	66	63	64	59	71	10,4
			Sones	0,8	2,0	2,7	3,1	3,5	3,5	4,5	4,0		
	1,047	410	dB	68	69	65	65	65	61	58	58	69	9,0
			Sones	1,2	2,0	2,4	2,7	3,2	3,2	3,1	3,6		
	1,111	309	dB	76	73	66	65	65	61	56	54	69	8,9
			Sones	2,2	2,7	2,5	2,8	3,2	3,1	2,8	2,9		
VS-315 3450 RPM	0,007	1625	dB	68	69	73	73	74	76	76	66	82	18,3
			Sones	1,2	2,1	3,7	4,5	5,8	7,7	9,1	5,9		
	0,951	1220	dB	67	70	73	72	71	70	69	65	77	14,2
			Sones	1,0	2,2	3,7	4,2	4,8	5,4	6,1	5,5		
	1,553	880	dB	70	72	72	71	69	67	62	64	74	12,4
			Sones	1,4	2,5	3,5	3,9	4,1	4,5	3,9	5,2		
	1,767	782	dB	80	80	75	72	69	65	60	59	75	12,8
			Sones	2,9	4,7	4,1	4,3	4,3	4,0	3,5	4,1		
VS-355 1750 RPM	0,014	2400	dB	72	73	78	77	77	78	85	71	88	28
			Sones	1,6	2,8	5,1	5,6	6,8	8,5	16,3	8,2		
	1,177	1420	dB	69	73	76	75	76	71	74	60	80	16,6
			Sones	1,2	2,7	4,5	4,9	6,4	5,5	7,8	4,2		
	2,043	1200	dB	71	73	74	73	75	67	63	58	78	13,5
			Sones	1,5	2,7	3,8	4,5	6,0	4,6	4,3	3,6		
	2,164	600	dB	78	79	75	74	75	67	63	57	78	14,3
			Sones	2,5	4,2	4,3	4,6	6,0	4,4	4,1	3,6		
VS-400 1750 RPM	0,001	3296	dB	78	78	81	82	80	79	82	79	88	28
			Sones	2,5	3,8	6,0	7,5	8,0	8,9	13,4	13,4		
	1,303	2636	dB	76	79	81	81	79	74	76	67	84	21
			Sones	2,2	4,1	5,9	7,3	7,6	6,8	9,3	6,4		
	2,674	1648	dB	78	78	79	81	78	66	64	61	82	16,8
			Sones	2,4	4,0	5,5	7,2	7,0	4,2	4,5	4,3		
	2,843	988	dB	87	87	82	81	78	67	64	61	83	19,0
			Sones	4,8	7,2	6,3	7,3	7,3	4,6	4,3	4,3		

NOTE 1: The sound power level ratings shown are in decibels, referred to 10-12 watts, calculated per AMCA Standard 301. Values shown are for outlet LwA sound power levels and outlet hemispherical sone levels for installation type A:Free Inlet, Free Outlet, calculated per AMCA Standard 301. The AMCA Certified Ratings Seal applies to Air performance and sound.

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Certified sound pressure level for fans of VS 450 - VS 630 sizes



Unit Size	Ps (in. wg)	Q (cfm)	Lw Loudness	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lw(A) dB(A)	Loudness Sones
VS-450 1750 RPM	0,001	4673	dB	82	82	88	86	95	86	81	88	96	45
			Sones	3,2	5,1	8,9	9,8	20,4	13,9	11,9	23		
	1,405	3710	dB	82	83	86	85	86	80	79	79	90	31
			Sones	3,3	5,7	8,0	8,8	11,7	6,4	10,6	13,3		
	2,986	2715	dB	82	81	85	84	98	78	73	69	98	40
			Sones	3,2	4,7	7,7	8,5	26	8,7	7,5	7,2		
	3,457	1200	dB	83	87	85	83	101	84	71	67	101	48
			Sones	3,6	7,2	7,6	8,2	32	12,1	6,8	6,6		
VS-500 1750 RPM	0,001	6392	dB	86	88	88	88	87	87	89	81	94	43
			Sones	4,6	7,7	9,2	10,9	12,4	15,2	21	14,8		
	1,144	5886	dB	85	89	88	88	87	86	87	80	93	39
			Sones	4,2	8,0	8,8	10,5	11,8	13,4	17,5	13,7		
	3,424	4120	dB	87	89	86	86	85	82	80	79	90	32
			Sones	4,9	8,1	8,0	9,5	11,0	10,7	11,5	12,6		
	4,163	2354	dB	97	93	86	85	85	81	76	74	89	31
			Sones	9,7	10,4	8,2	9,2	10,8	10,2	9,0	9,4		
VS-560 1750 RPM	0,001	9052	dB	89	91	91	91	90	92	92	84	97	54
			Sones	5,5	9,5	11,2	13,6	15,5	19,1	26	18,5		
	1,566	8240	dB	89	92	91	91	90	89	90	83	96	48
			Sones	5,5	9,5	10,9	13,0	14,5	16,5	22	17,3		
	4,268	5886	dB	90	92	89	89	89	85	84	82	93	39
			Sones	6,2	9,9	9,8	11,6	13,8	13,2	14,4	15,7		
	5,207	3531	dB	100	98	90	89	89	85	79	77	93	38
			Sones	12,4	12,8	10,0	11,2	13,5	12,5	11,0	11,6		
VS-630 1750 RPM	0,001	12796	dB	93	95	95	95	94	94	96	88	101	69
			Sones	7,6	11,5	14,1	17,1	20	24	34	24		
	1,782	11772	dB	92	95	95	95	94	92	94	87	100	62
			Sones	7,1	11,9	13,7	16,6	18,9	21	29	22		
	4,175	9823	dB	92	96	94	94	93	90	90	86	98	53
			Sones	7,0	12,3	12,9	15,6	17,9	17,9	22	21		
	6,387	5886	dB	100	98	93	92	92	88	84	83	96	47
			Sones	12,1	14,3	12,0	14,1	17,0	15,9	14,8	16,6		

NOTE 1: The sound power level ratings shown are in decibels, referred to 10-12 watts, calculated per AMCA Standard 301. Values shown are for outlet LwA sound power levels and outlet hemispherical sone levels for installation type A:Free Inlet, Free Outlet, calculated per AMCA Standard 301. The AMCA Certified Ratings Seal applies to Air performance and sound.

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SYMBOLS AND LABELS

Basic symbols

PROCESS			FUNCTION
Symbol	Graphic	Name	Options of functions
F		AIR FILTRATION	FILTER
V		VENTILATION	FAN
C		AIR COOLING	HYDRONIC COOLING COIL DX COOLING COIL RUN-AROUND COIL
H		AIR HEATING	HYDRONIC HEATING COIL ELECTRIC HEATER DX HEATING STEAM HEATER RUN-AROUND COIL
M		MIXING BOX	MIXING BOX
P		ENERGY RECOVERY	CROSS FLOW PLATE
R		ENERGY RECOVERY	ENERGY WHEEL

Auxiliary symbols

Symbol	Graphic	Name
FC		FLEXIBLE CONNECTION
AD		DAMPER
FLG		FLANGES
E		EMPTY SECTION



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The features mentioned are subject to continuous upgrade and can change any time.
VTS assuring continuous improvement for product and data and reserves the right to change design and specifications without notice.

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