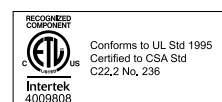


VTS

American
ventus



VTS ensures TOP Quality





01

VTS Group

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02

Units

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03

Technical Parameters

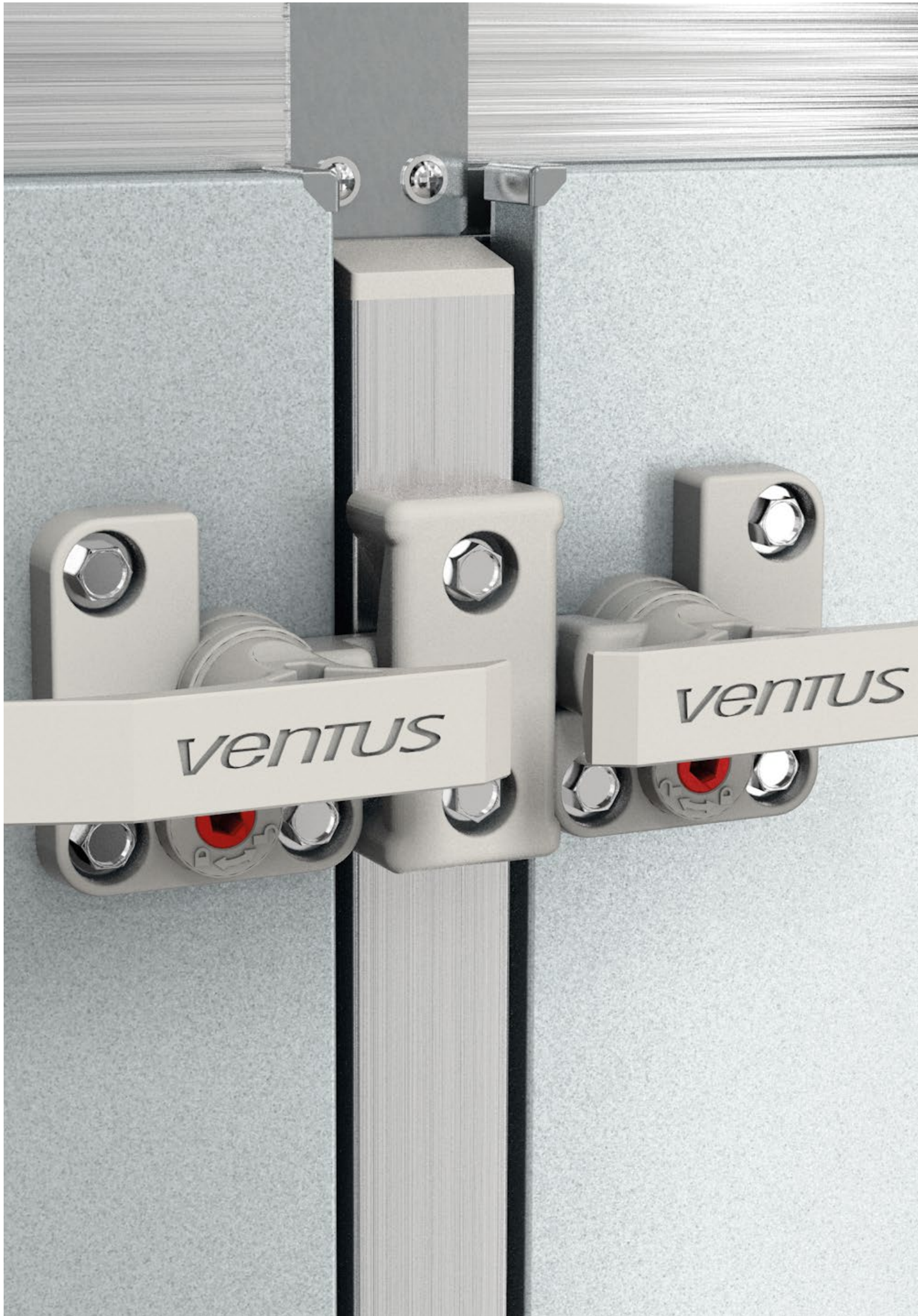
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01

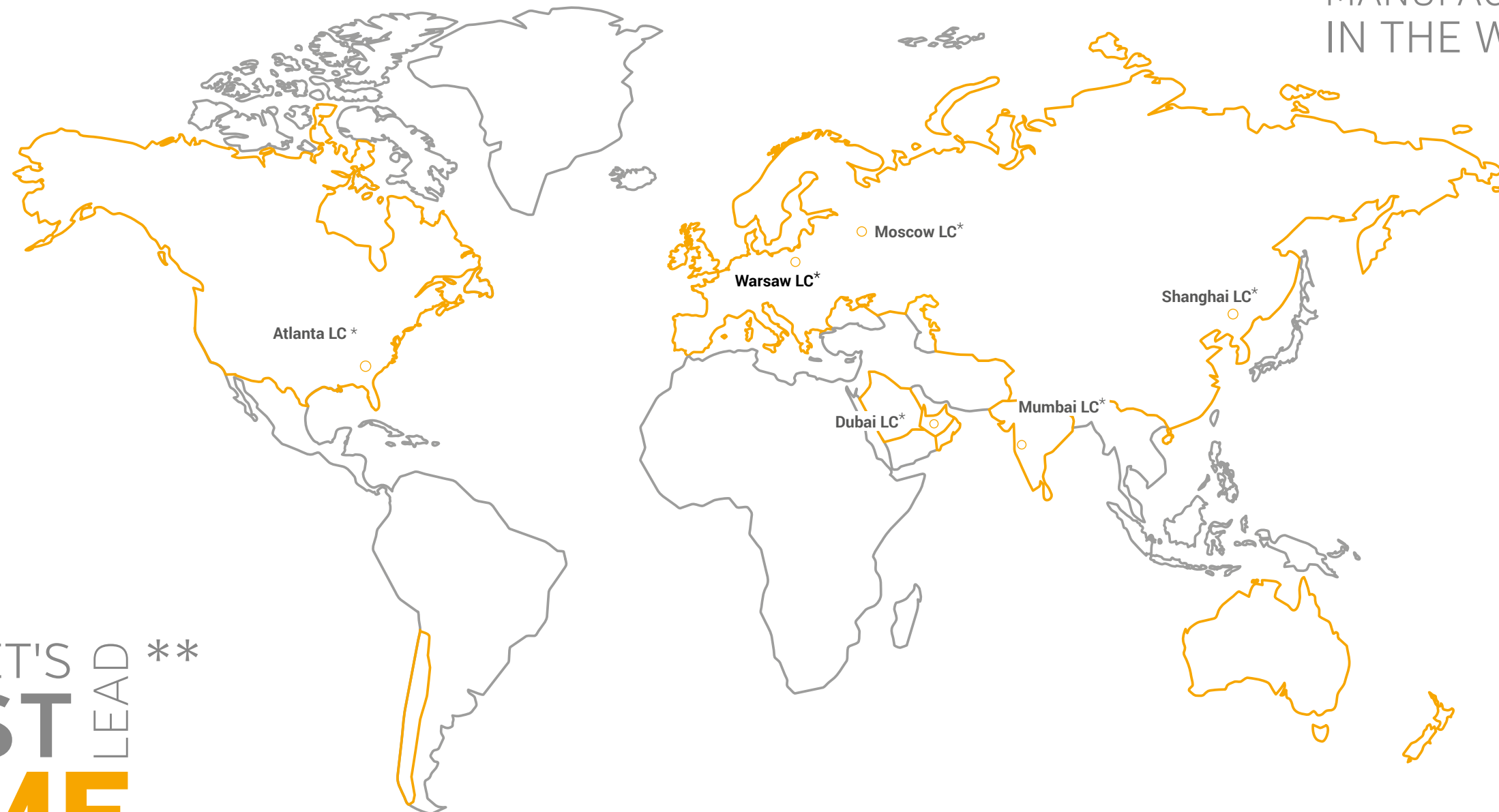
VTS Group



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

OUR MISSION

no. 1 **AHU**
MANUFACTURER
IN THE WORLD



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

* Logistics center

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





3 CONSTITUENTS OF SUCCESS

Consistently Superior quality of products. Unbeatable prices in the market. The shortest lead time. These three constituents 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 the network of 6 efficiently functioning logistics centers: **Atlanta, Dubai, Moscow, Shanghai, Warsaw and Mumbai**. Therefore guarantees 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 them at the **most competitive price and retain their best quality**.

Multilevel quality control systems enables VTS to offer the longest warranty in the market. **5-year guarantee of the trouble free operation of equipment in the standard package**.

MARKET'S LEAD **
BEST TIME

6 LOGISTICS
CENTERS

\$ competitive
price

85 000
UNITS
SOLD ANNUALLY

Q the highest
quality

5 YEARS **guarantee** ***
FOR EACH
DEVICE

** Factory will confirm lead time based on the units selection.
*** Optional 5 year guarantee available.





02

Units



RELIABLE
AND TIGHT
CONSTRUCTION



TOP QUALITY
COMPONENTS



INTELLIGENT
CONTROLS
SYSTEMS

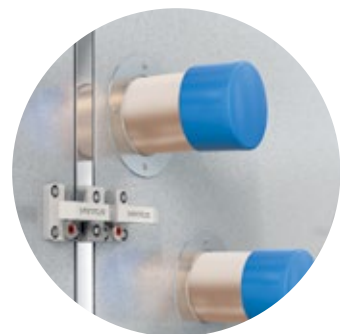


SAFETY
OF USE



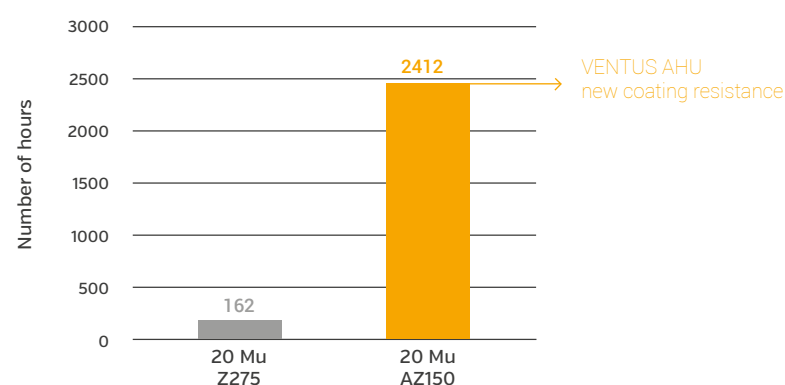


DESIGN



**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



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



Z PROFILE
AVS040-AVS085



C PROFILE
AVS100-AVS380

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

CONVENIENT

- » easy transport
- » great profile resistance to deflection

STRUCTURAL POSTS

- » thermal break as standard
- » high resistance to weather conditions and UV radiation

FAN SECTION CAGE

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



AIR TIGHTNESS

**SMART
HINGE
SYSTEM***

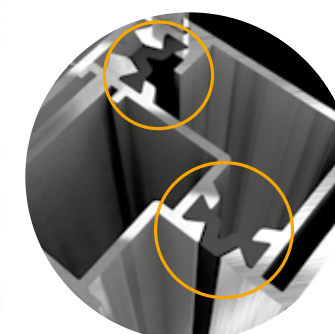
**VTS
PATENTED
SOLUTION**



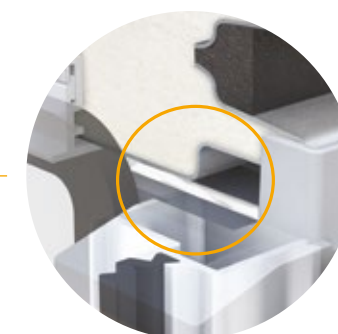
INSPECTION PANELS EQUIPPED WITH THE OPEN / CLOSE SMART SYSTEM AND NEW PROTECTIVE CORNERS

- » easy to use, enabling quick opening and closing of the inspection panel
- » smart hinge - prevents seal damage when the panel is opened (VTS proprietary and patented solution)
- » perfect ergonomics with an integrated handle and hinge function
- » low risk of damage to panel

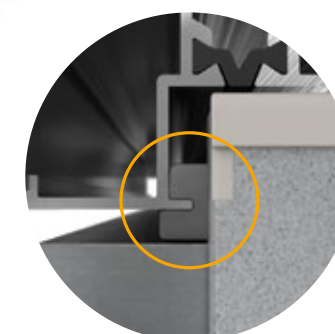
* patent pending; information will be published after it's formal validation.



**THERMAL
BREAK**



**ADDITIONAL
POST SEALING**



**LABYRINTH
SEALING**



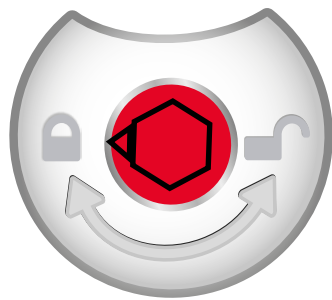
**ADDITIONAL
SEALING EDGE**

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

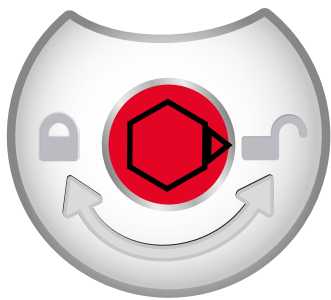
- » thermal break as standard - ensures no condensation outside the AHU
- » the fin ensures labyrinth sealing – currently the most effective solution on the market, mainly used in laboratory equipment
- » original solution consisting in the use of symmetrical channel tension filled with a sealing compound,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



SAFETY OF USE



Handle locked



Handle unlocked

HANDLE OPEN PROTECTION

- » full safety against accidental opening of the fan section

STEEL COVER OF THE PLENUM FAN

- » protection during fan operation



CONTROLS



HMI MAIN i LX



HMI SMART

New range of controllers					
		ULTRA+	SMART	MAIN	LX
Source of Heating / Cooling	1 source	■	■	■	■
	2 sources		■	■	■
	3 sources			■	■
	4 and more sources				■
Communication with master system	Modbus / IP			■	■
	WebServer			■	■
	BacNET			■	■
Functions	Dual method of heating coil freeze protection (low limit thermostat on the air and water side)		■	■	■
	Energy recovery systems frost protection (temperature sensor downstream energy recovery section)		■	■	■
	Measurement and control of the constant air volume (CAV)			■	■
	Measurement and maintenance of air volume based on system required pressure (VAV)			■	■
	Control of the concentration of carbon dioxide in the air			■	■
	Air humidity control			■	■
	Pre-heater control for extreme low temperatures (maximization of the energy recovery performance)				■



03

Technical
Parameters



AVS PRODUCT RANGE

American
VENTUS

The American VENTUS Air Handling units have been designed to give the **flexibility of a Semi-Custom unit** with our modular configuration.

Our AVS line is available in ten nominal airflow sizes **from 4,000 CFM up to 38,000 CFM.**

As standard, all our AVS units have a **2,000 hour salt spray test resistance** on the external coating.



The units can be configured for different inlet and outlet locations for easy duct connection and right or left hand configuration.

VTS Air Handlers can be shipped as a fully assembled unit or delivered by sections for easier handling and space restrictions on the building.

In addition, VTS units are made with a high durability 2 inch polyurethane sandwich panels which minimize vibration, noise and eliminates thermal bridges compared with typical blower coils and air handling units. This construction significantly reduces the emission of power level through the casing; enabling the quiet operation of our AHUs.

The innovative casing design also enables operation of our units in a plethora of climate conditions, from the tundras of Siberia to the deserts of the Middle East. Without the risk of any internal or external condensation.



BVS PRODUCT RANGE

American
VENTUS

Our VENTUS BVS line is available in nine nominal airflow sizes **from 800 CFM up to 8,500 CFM**, while the cooling capacities are available from 0.5 to 30 tons.

The compact air handlers BVS are available in either **horizontal** (model BVS) or **vertical** configurations.

The VENTUS BVS units are available also with **energy recovery systems** such as: energy wheel and cross-flow plate exchanger.



Horizontal units are typically floor mounted, however they can be installed as a ceiling suspended unit.

Vertical units are typically floor mounted. The units can be configured for different inlet and outlet locations for easy duct connection and right or left hand configuration with airflow to the back of the head.

VTS compact air handlers offer a wide range of application and flexibility between the blower coil unit and the packaged units.



In addition, VTS units are made with a high durability polyurethane sandwich panels which minimize vibration, noise and eliminate thermal bridges compared with typical blower coils and air handling units. This significantly reduces the emission of acoustic power level through the casing, enabling to keep quiet operation of our AHUs.

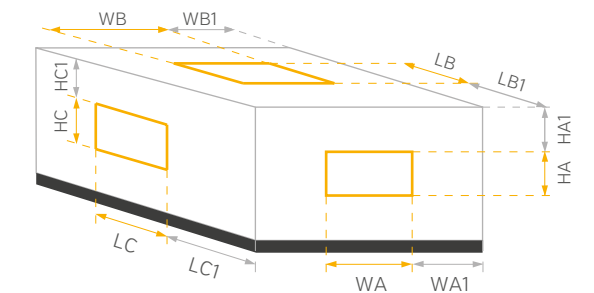
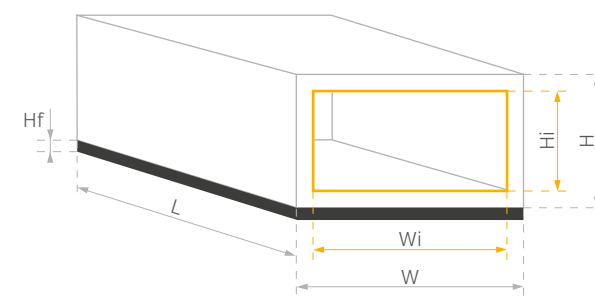


AVS SUPPLY & EXHAUST

[CFM] RECOMMENDED RANGE OF AIRFLOW										
80 000										
70 000										
60 000										
50 000										
40 000										
30 000										
20 000										
10 000										
Size	AVS 040	AVS 055	AVS 065	AVS 085	AVS 100	AVS 130	AVS 170	AVS 230	AVS 300	AVS 380
H _f [inch]	3.54				3.15					
H [inch]	37.2	41.1	42.6	46.6	54.2	54.2	66.0	75.2	75.2	93.9
W [inch]	59.1	66.1	75.2	82.9	82.9	98.9	102.6	122.2	146.3	146.3
W _i [inch]	55.1	62.2	71.3	78.9	78.9	95.0	98.6	118.3	138.0	142.4
H _i [inch]	29.7	33.7	35.1	39.1	47.1	47.1	58.9	68.1	68.1	86.9
Basic configurations										
Unit Size Main configurations	AVS 040	AVS 055	AVS 065	AVS 085	AVS 100	AVS 130	AVS 170	AVS 230	AVS 300	AVS 380
AVS-XXX-R-C	73.1	87.4	87.4	87.4	87.4	87.4	101.8	101.8	101.8	101.8
AVS-XXX-R-H	73.1	87.4	87.4	87.4	87.4	87.4	101.8	101.8	101.8	101.8
AVS-XXX-R-HC	87.4	101.9	101.9	101.9	101.9	101.9	116.3	116.3	116.3	116.3
AVS-XXX-R-CH	87.4	101.9	101.9	101.9	101.9	101.9	116.3	116.3	116.3	116.3
AVS-XXX-R-HCH	101.9	116.3	116.3	116.3	116.3	116.3	130.6	130.6	130.6	130.6
AVS-XXX-R-V	44.3	58.7	58.7	58.7	58.7	58.7	73.1	73.1	73.1	73.1
AVS-XXX-R-FV	58.7	73.1	73.1	73.1	73.1	73.1	87.4	87.4	87.4	87.4
Additional functions										
Empty section	L _{min}	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
	L _{max}	28.8	28.8	28.8	43.2	43.2	43.2	43.2	43.2	43.2
Mixing box	L	28.8	28.8	28.8	43.2	43.2	43.2	43.2	43.2	43.2
Silencer	L	43.2	43.2	43.2	43.2	43.2	57.6	57.6	57.6	57.6



AVS: DIMENSIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
AVS 40	52.8	27.4	3.1	3.1
AVS 55	59.8	31.3	3.1	3.1
AVS 65	68.9	32.8	3.1	3.1
AVS 85	76.6	36.7	3.1	3.1
AVS 100	76.6	44.8	3.1	3.1
AVS 130	92.6	44.8	3.1	3.1
AVS 170	96.3	56.5	3.1	3.1
AVS 230	115.9	65.7	3.1	3.1
AVS 300	135.6	65.7	3.1	3.1
AVS 380	140.0	84.5	3.1	3.1

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 40	40.5	17.3	9.3	7.9
AVS 55	47.2	22.6	9.5	4.9
AVS 65	47.2	22.6	14.0	4.9
AVS 85	59.8	31.3	11.5	7.9
AVS 100	59.8	31.3	11.5	7.9
AVS 130	76.6	36.7	11.2	4.9
AVS 170	76.6	36.7	13.0	4.9
AVS 230	104.3	36.7	9.0	4.9
AVS 300	124.0	36.7	9.0	4.9
AVS 380	128.0	36.7	9.2	4.9

UNIT CODING

AVS - XXX - R/L - EMS / HC / SEM

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)
 EMS - symbols of additional functions upstream main functions
 HC - symbols of main thermodynamical functions (basic functions)
 SEM - symbols of additional functions downstream main functions
 Length depends on AHU equipment

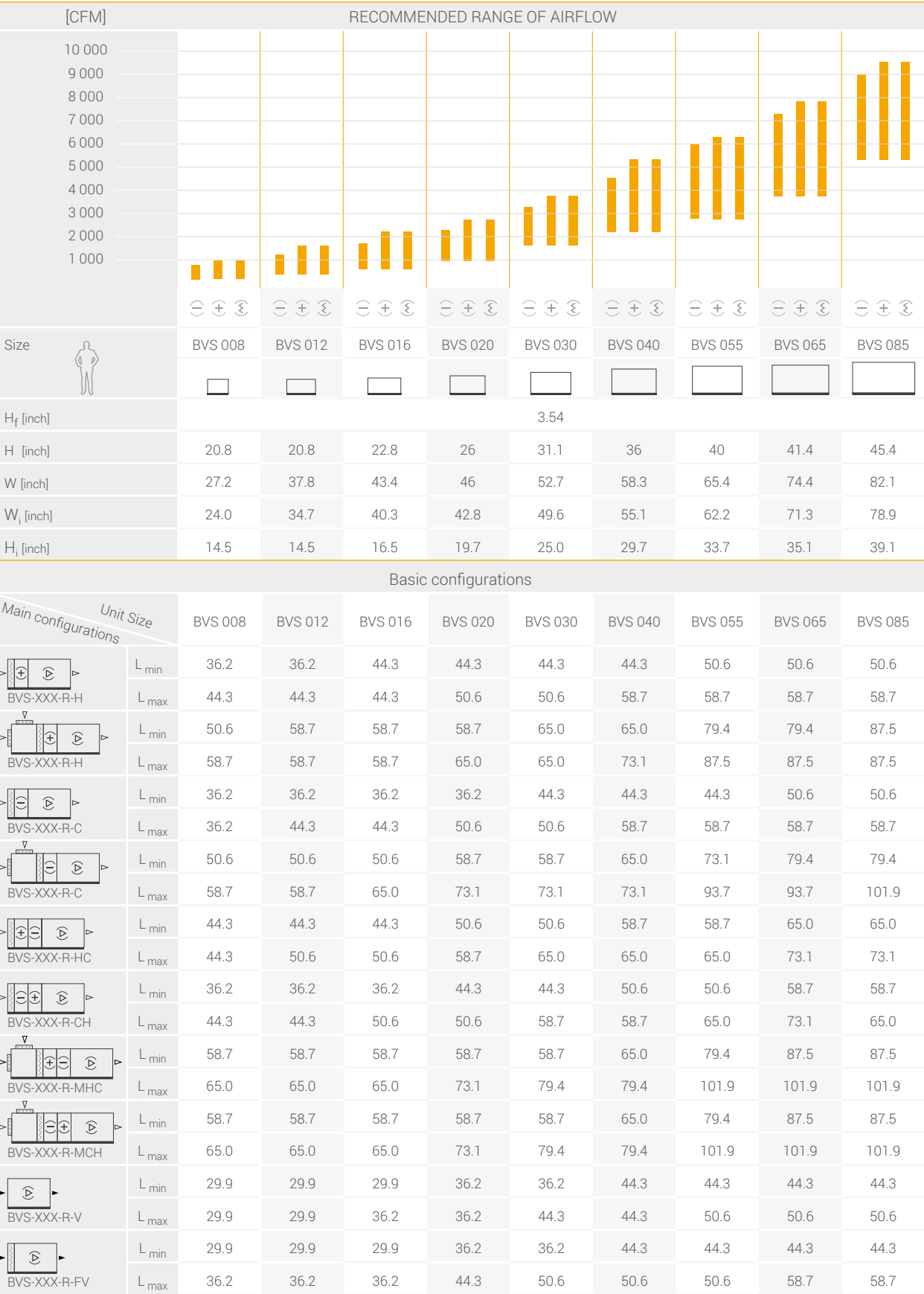
END (FS)				
UNIT	WA	HA	WA1	HA1
AVS 40	40.5	17.3	9.3	9.9
AVS 55	47.2	22.6	9.5	9.3
AVS 65	47.2	22.6	14.0	10.0
AVS 85	59.8	31.3	11.5	7.6
AVS 100	59.8	31.3	11.5	11.5
AVS 130	76.6	36.7	11.2	8.7
AVS 170	76.6	36.7	13.0	14.6
AVS 230	104.3	36.7	9.0	19.2
AVS 300	124.0	36.7	9.0	19.2
AVS 380	128.0	36.7	9.2	28.6

Top (US)				
UNIT	WB	LB	WB1	LB1
AVS 40	47.2	22.6	5.9	8.3
AVS 55	52.8	27.4	6.7	8.3
AVS 65	59.8	31.3	7.7	4.9
AVS 85	59.8	31.3	11.5	4.9
AVS 100	59.8	31.3	11.5	4.9
AVS 130	75.3	29.1	11.8	4.9
AVS 170	76.6	36.7	13.0	4.9
AVS 230	104.3	36.7	9.0	4.9
AVS 300	124.0	36.7	9.0	8.3
AVS 380	128.0	36.7	9.2	8.3

Side (BS)				
UNIT	LC	HC	LC1	HC1
AVS 40	15.0	16.3	6.5	8.7
AVS 55	15.0	24.1	6.5	6.7
AVS 65	15.0	24.1	6.5	7.5
AVS 85	29.1	28.1	6.5	7.5
AVS 100	29.1	35.9	6.5	7.6
AVS 130	29.1	35.9	6.5	7.6
AVS 170	29.1	47.8	6.5	7.5
AVS 230	29.1	59.6	6.5	6.2
AVS 300	29.1	59.6	6.5	6.2
AVS 380	29.1	75.3	6.5	7.7



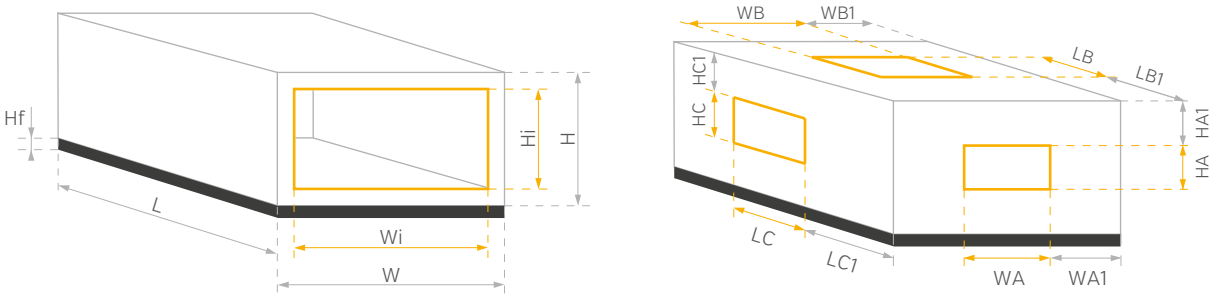
BVS SUPPLY & EXHAUST



L [inch]



BVS: DIMENSIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)					END (FS)				
UNIT	WA	HA	WA1	HA1	UNIT	WA	HA	WA1	HA1
BVS 008	20.9	11.3	2.8	2.8	BVS 008	18.0	8.0	4.6	4.8
BVS 012	31.5	11.3	2.8	2.8	BVS 012	26.0	8.0	5.9	4.8
BVS 016	37.1	13.4	2.8	2.8	BVS 016	34.0	8.0	4.7	5.8
BVS 020	39.7	16.5	2.8	2.8	BVS 020	26.0	12.0	10.0	5.4
BVS 030	46.4	21.9	2.8	2.8	BVS 030	34.0	12.0	9.4	8.1
BVS 040	52.0	26.6	2.8	2.8	BVS 040	48.0	12.0	5.1	10.4
BVS 055	59.1	30.5	2.8	2.8	BVS 055	48.0	16.0	8.7	10.4
BVS 065	68.1	32.0	2.8	2.8	BVS 065	60.0	16.0	7.2	11.1
BVS 085	76.0	36.0	2.8	2.8	BVS 085	60.0	20.0	11.0	11.1

Top (US)					Side (BS)				
UNIT	WB	LB	WB1	LB1	UNIT	LC	HC	LC1	HC1
BVS 008	18.0	8.0	4.6	3.5	BVS 008	8.0	11.0	3.5	3.3
BVS 012	26.0	8.0	5.9	3.5	BVS 012	8.0	11.0	3.5	3.3
BVS 016	34.0	8.0	4.7	3.5	BVS 016	8.0	13.0	3.5	3.3
BVS 020	26.0	12.0	10.0	3.5	BVS 020	12.0	16.0	3.5	3.4
BVS 030	34.0	12.0	9.4	3.5	BVS 030	12.0	21.0	3.5	3.6
BVS 040	48.0	12.0	5.1	3.5	BVS 040	12.0	21.0	3.5	5.9
BVS 055	48.0	16.0	8.7	3.5	BVS 055	16.0	30.0	3.5	3.4
BVS 065	60.0	16.0	7.2	3.5	BVS 065	16.0	30.0	3.5	4.1
BVS 085	60.0	20.0	11.0	3.5	BVS 085	20.0	35.0	3.5	3.6

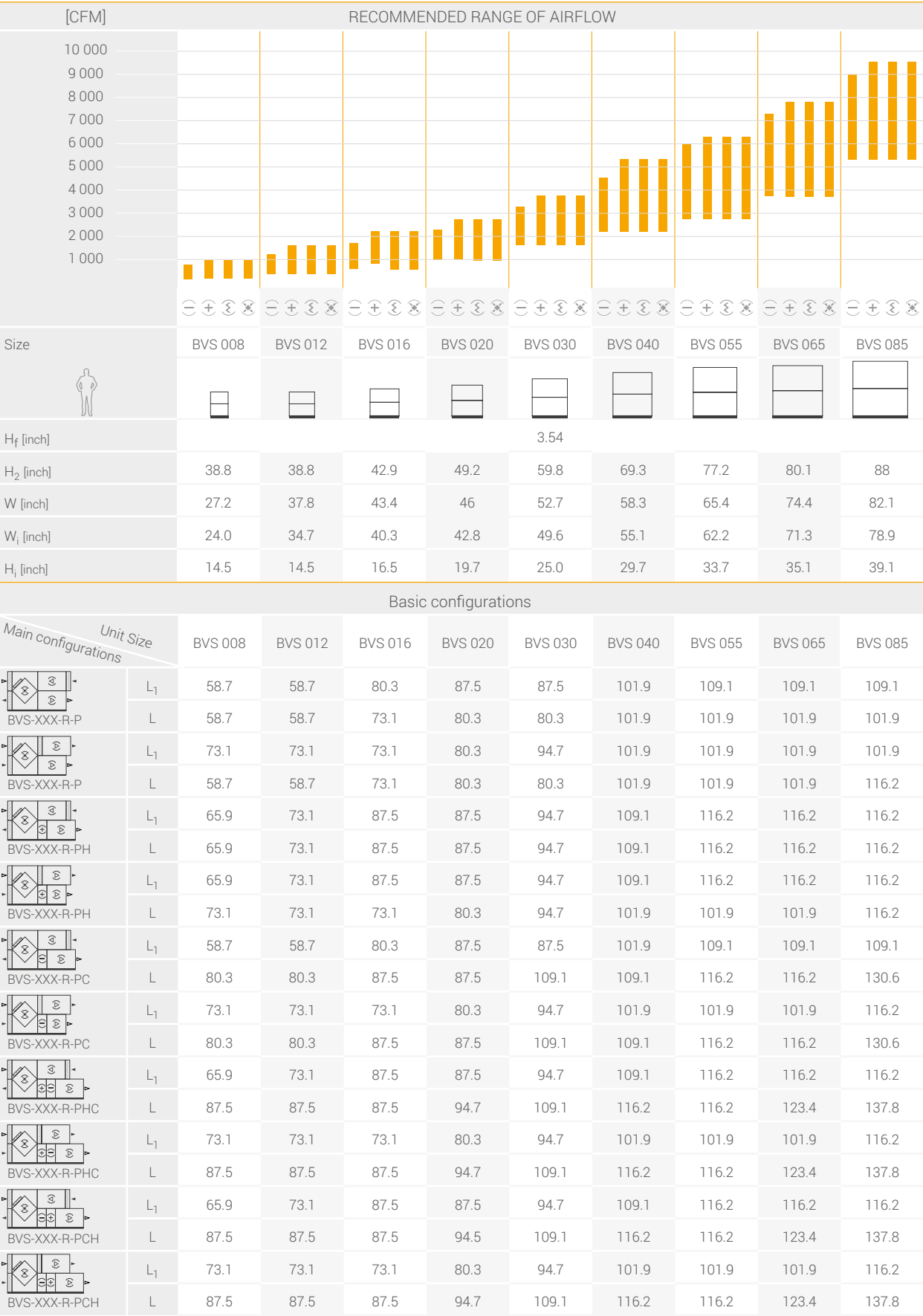
UNIT CODING

BVS - XXX - R/L - HC

- BVS - 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)
- HC - symbols of main thermodynamical functions (basic functions)
- Length depends on AHU equipment



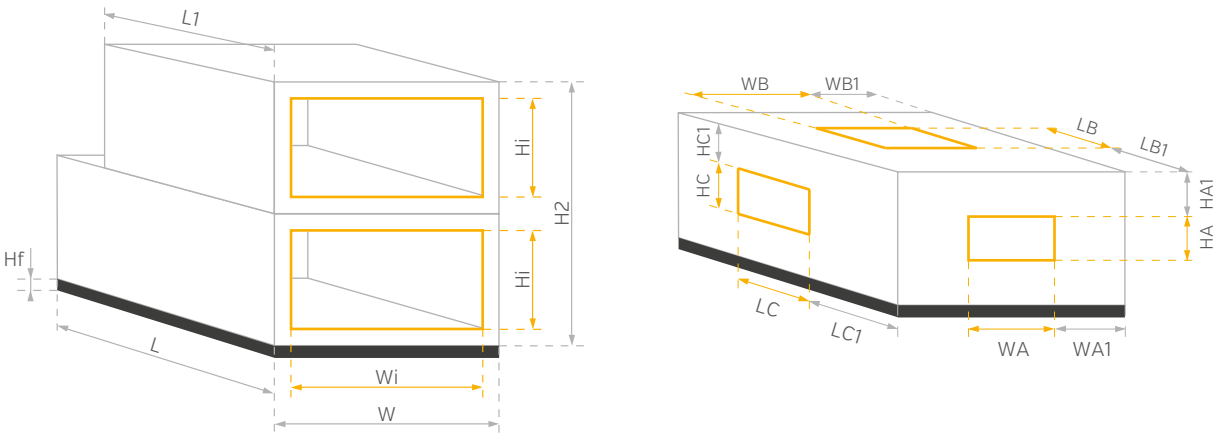
BVS WITH CROSS-FLOW PLATE



L [inch]



BVS: DIMENSIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
BVS 008	20.9	11.3	2.8	2.8
BVS 012	31.5	11.3	2.8	2.8
BVS 016	37.1	13.4	2.8	2.8
BVS 020	39.7	16.5	2.8	2.8
BVS 030	46.4	21.9	2.8	2.8
BVS 040	52.0	26.6	2.8	2.8
BVS 055	59.1	30.5	2.8	2.8
BVS 065	68.1	32.0	2.8	2.8
BVS 085	76.0	36.0	2.8	2.8

END (FS)				
UNIT	WA	HA	WA1	HA1
BVS 008	18.0	8.0	4.6	4.8
BVS 012	26.0	8.0	5.9	4.8
BVS 016	34.0	8.0	4.7	5.8
BVS 020	26.0	12.0	10.0	5.4
BVS 030	34.0	12.0	9.4	8.1
BVS 040	48.0	12.0	5.1	10.4
BVS 055	48.0	16.0	8.7	10.4
BVS 065	60.0	16.0	7.2	11.1
BVS 085	60.0	20.0	11.0	11.1

Side (BS)				
UNIT	LC	HC	LC1	HC1
BVS 008	8.0	11.0	3.5	3.3
BVS 012	8.0	11.0	3.5	3.3
BVS 016	8.0	13.0	3.5	3.3
BVS 020	12.0	16.0	3.5	3.4
BVS 030	12.0	21.0	3.5	3.6
BVS 040	12.0	21.0	3.5	5.9
BVS 055	16.0	30.0	3.5	3.4
BVS 065	16.0	30.0	3.5	4.1
BVS 085	20.0	35.0	3.5	3.6

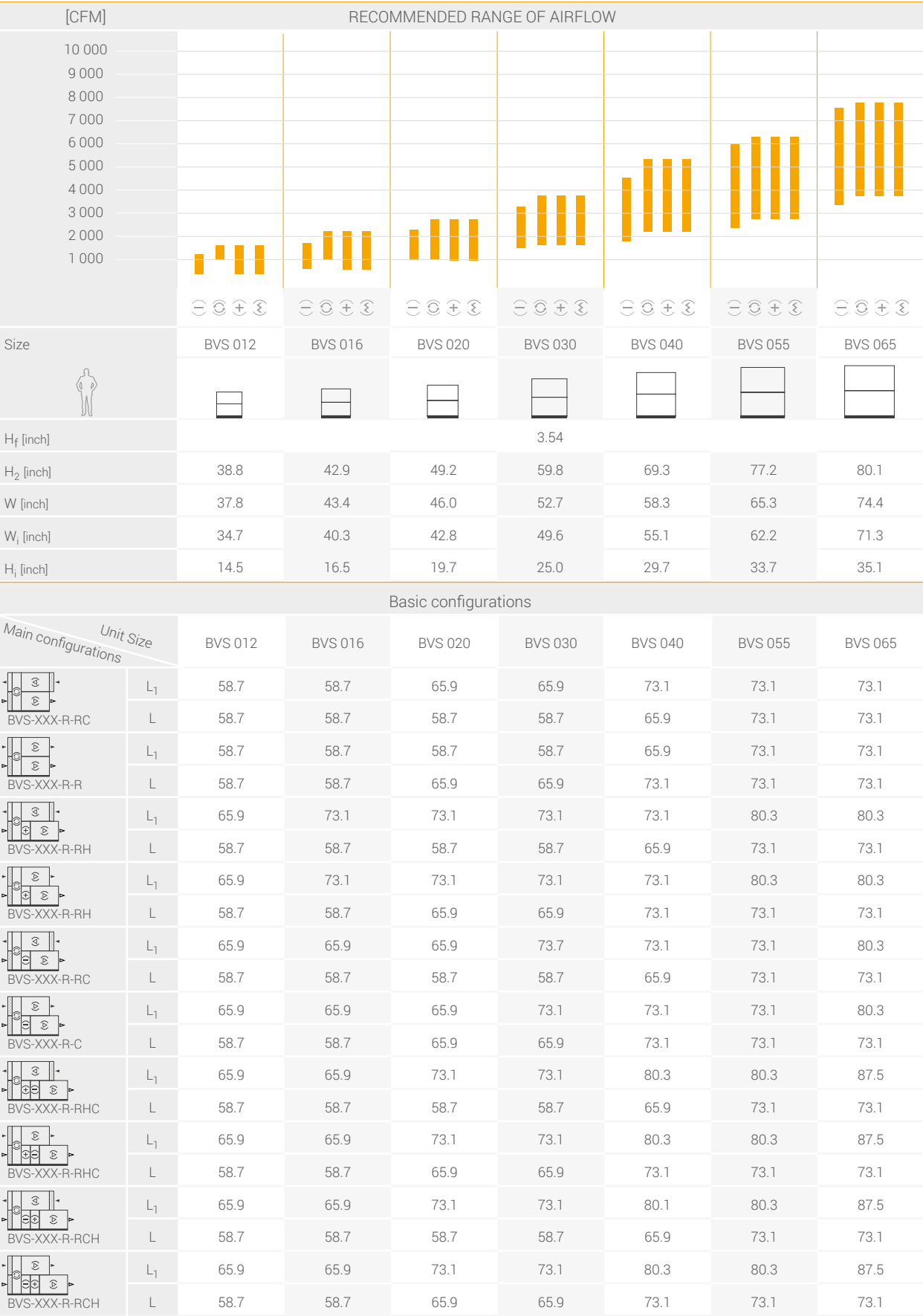
UNIT CODING

BVS - XX

BVS - 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 thermodynamical functions (basic functions)
Length depends on AHU equipment



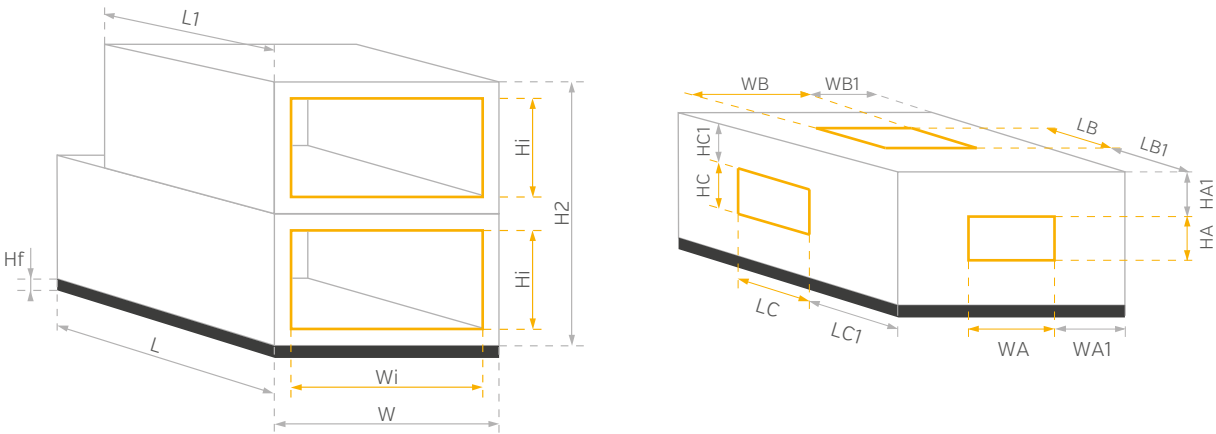
BVS WITH ENERGY WHEEL



L [inch]



BVS: DIMENSIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)					END (FS)				
UNIT	WA	HA	WA1	HA1	UNIT	WA	HA	WA1	HA1
BVS 012	31.5	11.3	2.8	2.8	BVS 012	26.0	8.0	5.9	4.8
BVS 016	37.1	13.4	2.8	2.8	BVS 016	34.0	8.0	4.7	5.8
BVS 020	39.7	16.5	2.8	2.8	BVS 020	26.0	12.0	10.0	5.4
BVS 030	46.4	21.9	2.8	2.8	BVS 030	34.0	12.0	9.4	8.1
BVS 040	52.0	26.6	2.8	2.8	BVS 040	48.0	12.0	5.1	10.4
BVS 055	59.1	30.5	2.8	2.8	BVS 055	48.0	16.0	8.7	10.4
BVS 065	68.1	32.0	2.8	2.8	BVS 065	60.0	16.0	7.2	11.1

Side (BS)	LC	HC	LC1	HC1
UNIT				
BVS 012	8.0	11.0	3.5	3.3
BVS 016	8.0	13.0	3.5	3.3
BVS 020	12.0	16.0	3.5	3.4
BVS 030	12.0	21.0	3.5	3.6
BVS 040	12.0	21.0	3.5	5.9
BVS 055	16.0	30.0	3.5	3.4
BVS 065	16.0	30.0	3.5	4.1

UNIT CODING

BVS - XXX - R/L - RHC

- BVS - 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 thermodynamical functions (basic functions)
- Length depends on AHU equipment



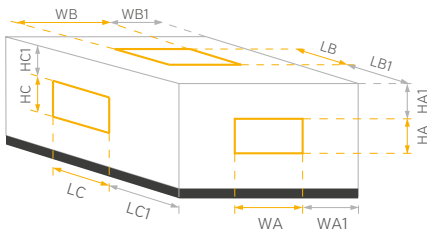
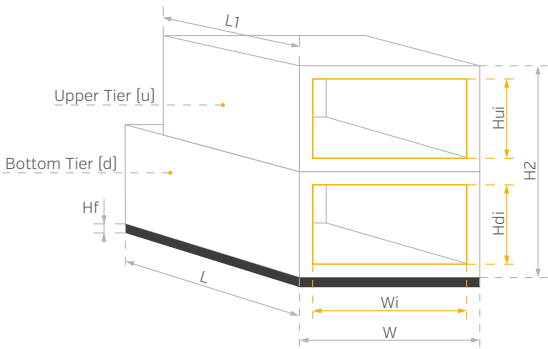
BVS(V) - VERTICAL CONFIGURATIONS

[CFM] RECOMMENDED RANGE OF AIRFLOW						
10 000						
9 000						
8 000						
7 000						
6 000						
5 000						
4 000						
3 000						
2 000						
1 000						
Size	BVS 008	BVS 012	BVS 016	BVS 020	BVS 030	BVS 040
H _f [inch]	3.54					
H _{u i} [inch]	19.7	19.7	19.7	25.0	25.0	29.7
H _{d i} [inch]	14.5	14.5	16.5	19.7	25.0	29.7
H ₂ [inch]	44.0	44.0	46.1	54.5	59.8	69.3
W [inch]	27.2	37.8	43.4	46.0	52.7	58.3
W _i [inch]	24.0	34.7	40.3	42.8	49.6	55.1
Basic configurations						
Unit Size	BVS 008	BVS 012	BVS 016	BVS 020	BVS 030	BVS 040
Main configurations						
BVS(v)-XXX-R-H	29.9	29.9	29.9	29.9	29.9	29.9
BVS(v)-XXX-R-MH	50.6	50.6	50.6	58.7	58.7	58.7
BVS(v)-XXX-R-C	29.9	29.9	29.9	29.9	29.9	29.9
BVS(v)-XXX-R-MC	50.6	50.6	50.6	58.7	58.7	58.7
BVS(v)-XXX-R-HC	29.9	29.9	29.9	29.9	29.9	29.9
BVS(v)-XXX-R-CH	29.9	29.9	29.9	29.9	29.9	29.9
BVS(v)-XXX-R-MHC	50.6	50.6	50.6	58.7	58.7	58.7
BVS(v)-XXX-R-MCH	50.6	50.6	50.6	58.7	58.7	58.7

L [inch]



BVS: DIMENSIONS



AIR INLET / DISCHARGE DIMENSIONS

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
BVS 008	20.9	11.3	2.8	2.8
BVS 012	31.5	11.3	2.8	2.8
BVS 016	37.1	13.4	2.8	2.8
BVS 020	39.7	16.5	2.8	2.8
BVS 030	46.4	21.9	2.8	2.8
BVS 040	52.0	26.6	2.8	2.8

END (FS)				
UNIT	WA	HA	WA1	HA1
BVS 008	18.0	8.0	4.6	4.8
BVS 012	26.0	8.0	5.9	4.8
BVS 016	34.0	8.0	4.7	5.8
BVS 020	26.0	12.0	10.0	5.4
BVS 030	34.0	12.0	9.4	8.1
BVS 040	48.0	12.0	5.1	10.4

TOP (US)				
UNIT	WA	HA	WA1	HA1
BVS 008	18.0	8.0	4.6	3.5
BVS 012	26.0	8.0	5.9	3.5
BVS 016	34.0	8.0	4.7	3.5
BVS 020	26.0	12.0	10.0	3.5
BVS 030	34.0	12.0	9.4	3.5
BVS 040	48.0	12.0	5.1	3.5

Side (BS)				
UNIT	LC	HC	LC1	HC1
BVS 008	8.0	11.0	3.5	3.3
BVS 012	8.0	11.0	3.5	3.3
BVS 016	8.0	13.0	3.5	3.3
BVS 020	12.0	16.0	3.5	3.4
BVS 030	12.0	21.0	3.5	3.6
BVS 040	12.0	21.0	3.5	5.9

END FULL (FF)				
UNIT	WA	HA	WA1	HA1
BVS 008	20.9	16.5	2.8	2.8
BVS 012	31.5	16.5	2.8	2.8
BVS 016	37.1	16.5	2.8	2.8
BVS 020	39.7	21.9	2.8	2.8
BVS 030	46.4	21.9	2.8	2.8
BVS 040	52.0	26.6	2.8	2.8

END (FS)				
UNIT	WA	HA	WA1	HA1
BVS 008	18.0	8.0	4.6	7.2
BVS 012	26.0	8.0	5.9	7.2
BVS 016	34.0	8.0	4.7	6.7
BVS 020	26.0	12.0	10.0	8.0
BVS 030	34.0	12.0	9.4	8.0
BVS 040	48.0	12.0	5.1	12.7

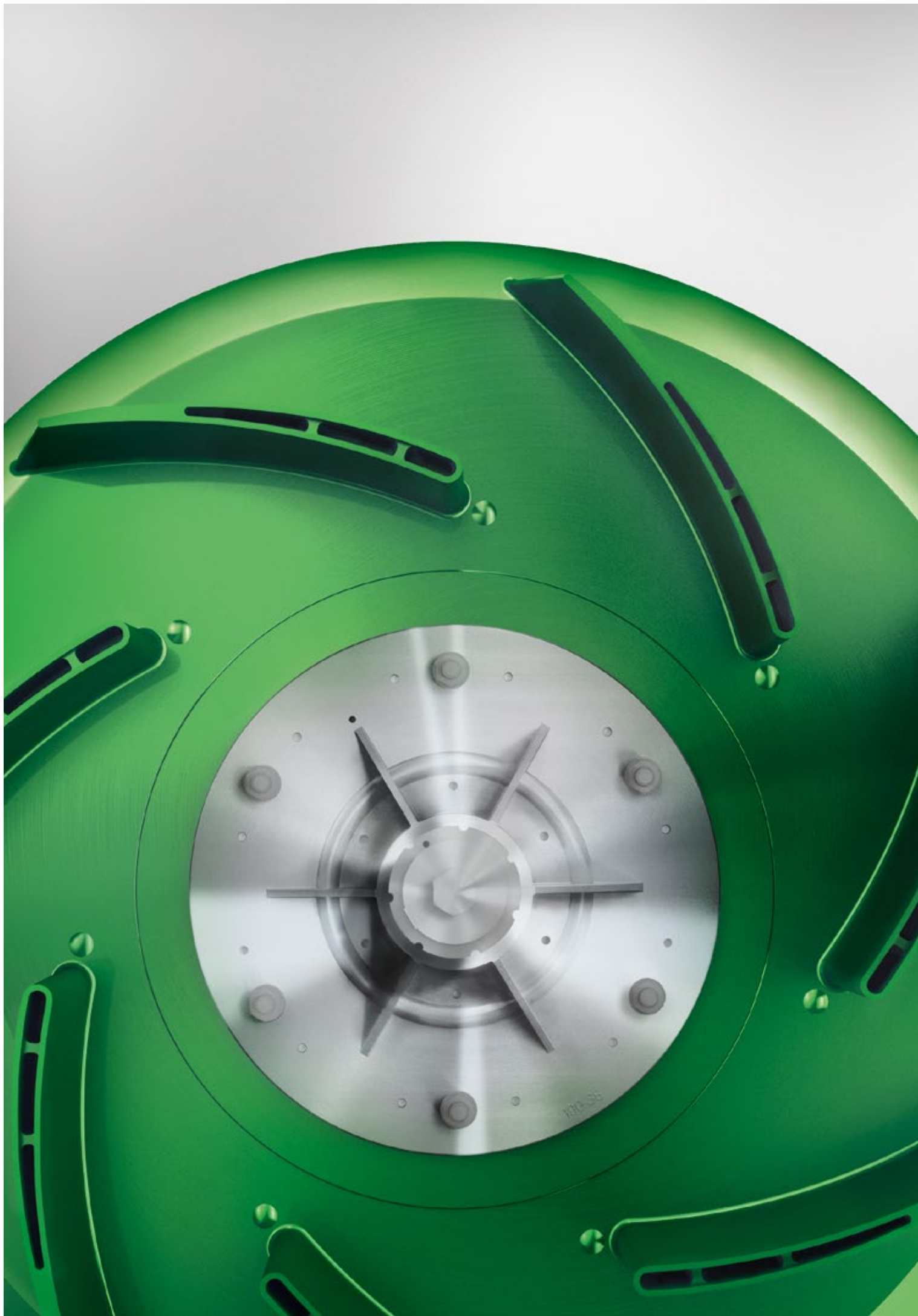
TOP (US)				
UNIT	WA	HA	WA1	HA1
BVS 008	16.6	15.7	4.9	5.8
BVS 012	20.5	15.7	7.8	5.8
BVS 016	26.8	15.7	7.5	4.6
BVS 020	26.8	15.7	8.7	4.6
BVS 030	31.1	20.5	9.9	4.6
BVS 040	31.1	20.5	12.7	4.6

Side (BS)				
UNIT	LC	HC	LC1	HC1
BVS 008	11.0	8.0	9.4	4.5
BVS 012	11.0	8.0	9.4	4.5
BVS 016	13.0	8.0	8.4	5.0
BVS 020	16.0	12.0	6.9	5.0
BVS 030	21.0	12.0	4.4	5.0
BVS 040	21.0	12.0	4.4	5.0

UNIT CODING

BVS - XXX - R/L - RHC

- BVS - type of AHU family
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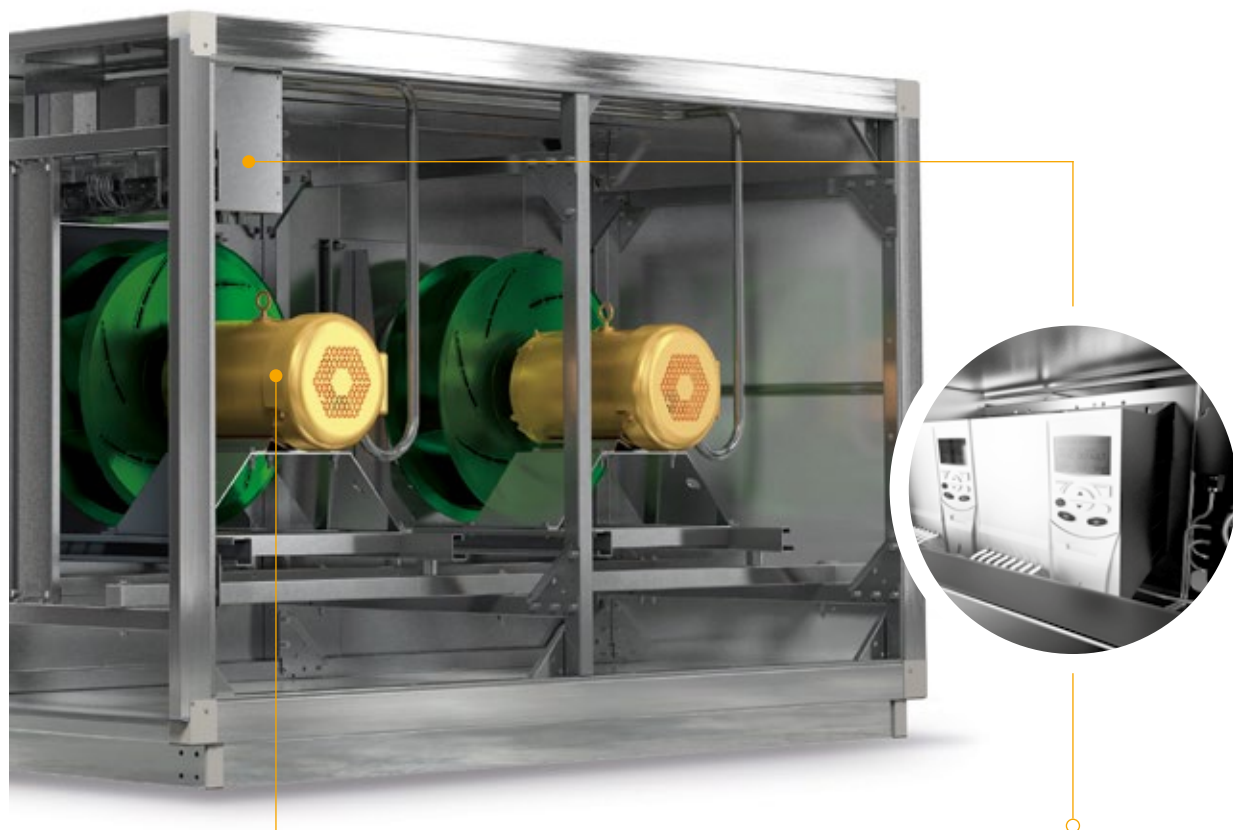
04

Functions



I 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. All dynamically balanced.



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 0.75 HP to 15 HP. Nominal frequency: 60 Hz. Insulation class: F. Efficiency class: Premium. Bearings life: $L_{10} = 20,000$ 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

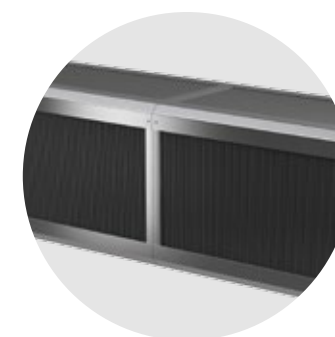


VTS Group certifies that the VS fan series shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The certified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

I Air-to-air energy recovery systems

AIR-TO-AIR ENERGY WHEEL

Indirect energy recovery accumulated in the exhaust air flow its transfer to the counter current supply air flow. Indirect recovery of latent heat (moisture) when the rotor surface temperature on the side of the exhaust air is lower than the supply air dew-point temperature. Energy recovery without total separation of the supply and exhaust air flows (air leakages of 2 to 5 %). Application in block supply-exhaust AHUs.



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.



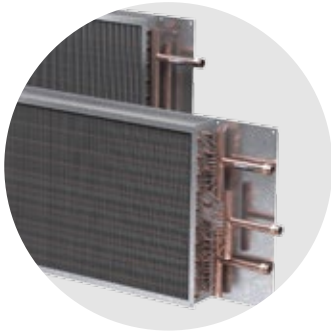
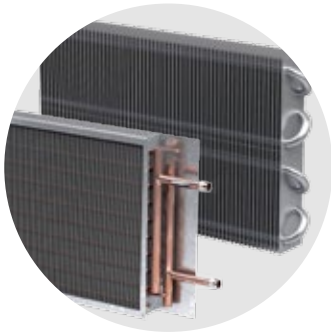
HEATERS



Heaters are available in the following versions:

- hot water heating coils,
- resistant electric heaters,

The hydronic coil performance is designed in accordance to AHRI Standard 410. All coils are to be 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.

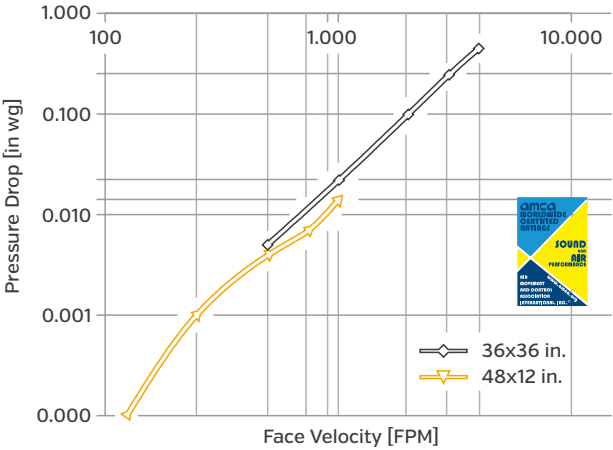
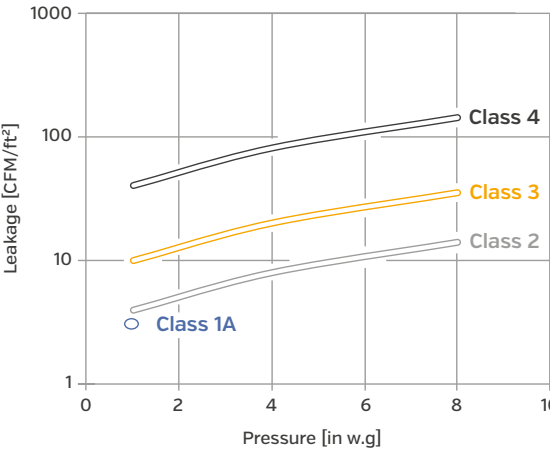
Heating and Cooling hydronic coils are rigorously tested and certified in accordance with the forced circulation air cooling and air heating coils certification program based on AHRI Standard 410.

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.

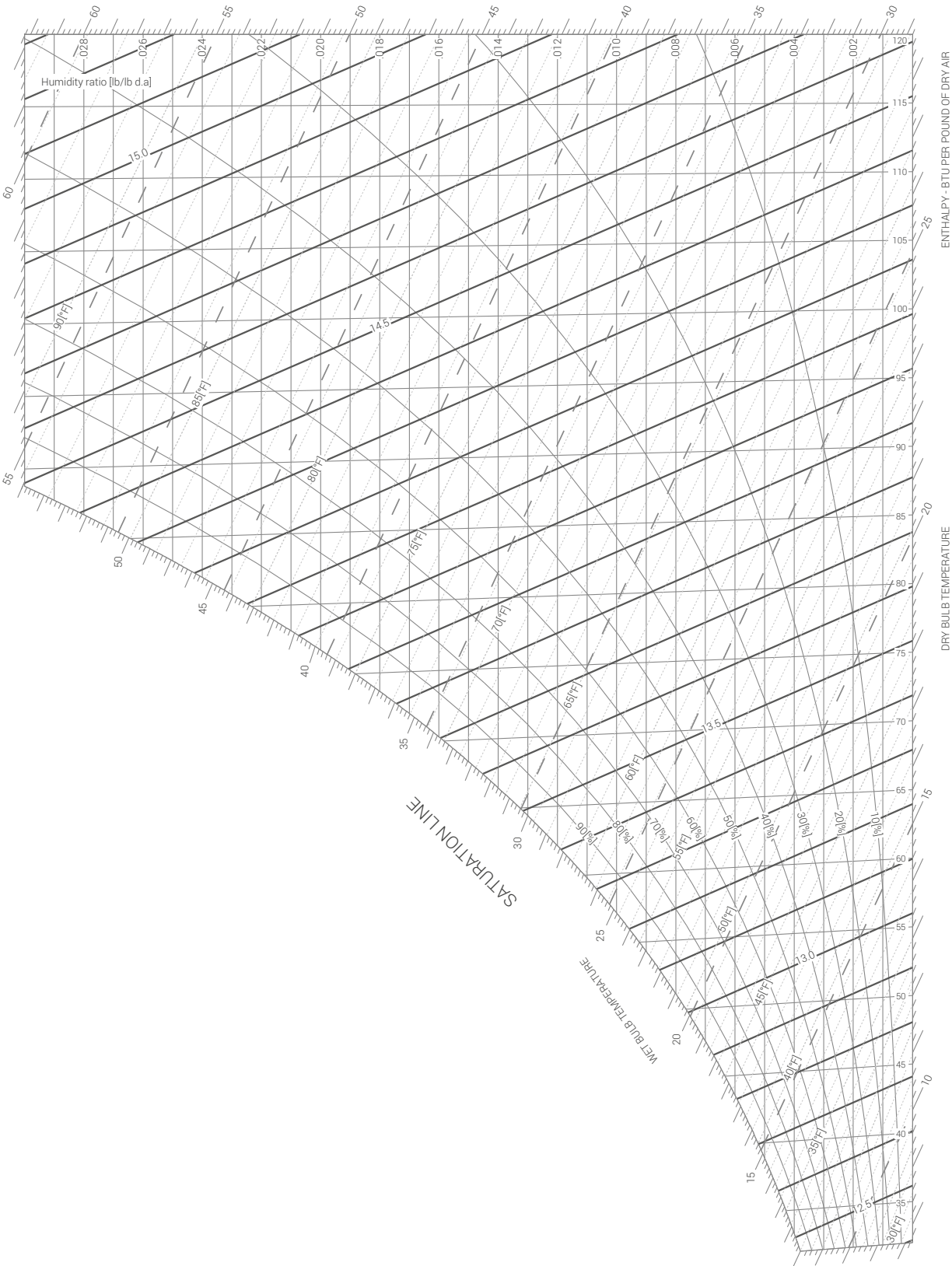
Leakage testing conducted in accordance with AMCA Standard 500-D-07 figure 5.4 Alternate. Data are based on a torque of 10 in-lb/ft2 applied to close and seal the damper during the test. Air leakage is based on operation between 32 to 120 F. All data corrected to represent standard air density 0.075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



VTS PSYCHROMETRIC CHART

Normal Temperature
Barometric Pressure: 29.921 Inches of Mercury
Sea Level





Certified fan performance data for fans
of VS 225-VS 450 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
VS-250 3450 RPM	0	3.423	0.158
	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
VS-315 3450 RPM	283	4.258	0.442
	0	4.619	0.250
	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
VS-355 1750 RPM	930	6.566	2.059
	529	6.714	1.714
	0	7.275	0.945
	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
VS-400 1750 RPM	937	2.093	0.524
	689	2.141	0.454
	457	2.186	0.382
	0	2.300	0.226
	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
VS-450 1750 RPM	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
	4,673	0.002	1.206
	4,211	0.526	1.323
	3,740	1.377	1.544
	3,277	2.228	1.766

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 appurtances (accessories).

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

Certified sound pressure level for fans
of VS 225 - VS 450 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	0.003	1084	dB	91	74	74	78	76	80	81	81	87	29.0
			Sones	6.3	2.9	3.9	6.1	6.4	9.7	12.2	14.9		
	1.786	810	dB	87	74	78	79	76	74	68	70	81	19.1
			Sones	4.8	2.9	5.1	6.4	6.3	6.9	5.8	7.6		
	3.059	538	dB	87	77	80	79	72	70	62	61	79	16.2
			Sones	4.8	3.6	5.8	6.3	5.0	5.4	4.1	4.3		
VS-250 3450 RPM	3.395	280	dB	86	75	78	80	75	74	68	69	81	18.7
			Sones	4.6	3.1	5.1	6.7	6.2	6.7	5.7	7.3		
	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		
VS-315 3450 RPM	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		
	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		
VS-355 1750 RPM	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-400 1750 RPM	0.014	2400	dB	72	73	78	77	77	78	85	71	88	28.0
			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		
VS-450 1750 RPM	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		
	0.009	3296	dB	78	78	81	82	80	79	82	79	88	28.0
			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	21.0
			Sones	2.2	4.1	5.9	7.3	7.6	6.8	9.3	6.4		
VS-450 1750 RPM	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		
	0.001	4673	dB	82	82	88	86	95	86	81	88	96	45.0
			Sones	3.2	5.1	8.9	9.8	20.4	13.9	11.9	23.4		
VS-450 1750 RPM	1.405	3710	dB	82	83	86	85	86	80	79	79	90	31.0
			Sones	3.3	5.7	8.0	8.8	11.7	9.4	10.6	13.3		
	2.986	2715	dB	82	81	85	84	98	78	73	69	98	40.0
			Sones	3.2	4.7	7.7	8.5	25.7	8.7	7.5	7.2		
VS-450 1750 RPM	3.457	1200	dB	83	87	85	83	101	84	71	67	101	48.0
			Sones	3.6	7.2	7.6	8.2	32.0	12.1	6.8	6.6		

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 inlet LwA sound power levels and inlet 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 only.



Customer recommendations

Texas Air Products

Texas Air Products has been incredibly impressed with the quick deliveries. There are so many projects these day that require a quick response time to meet the construction cycle.

VTS is the only factory that can deliver that quickly. When our customers see the quality of the air handler and realize they can have it delivered in one to two weeks, they are just amazed. We took a sample air handler around to various engineers and contractors and everyone was very surprised at the quality compared to similar units on the market. One engineer we work with recently said:

“ **THAT AIR HANDLER IS AWESOME. IT'S QUIET AND WELL BUILT. I PLAN ON SPECIFYING IT AS OFTEN AS I CAN.** ”
Travis McLeod, P.E.
Vice President

Oberlin College Inn Remodel

Oberlin College and Conservatory, noteworthy for being the first integrated and coeducational higher education facility in the United States, recently underwent a remodel of the Campus Inn. The specified air handling manufacturer, was unable to meet the lead time to complete the remodel on time, causing major construction delays and inevitably causing the project to be put on hold.

The VTS team working with the Ohio representative, the Northrich Company went to work. **The project involved 6 air handler units with energy recovery wheels and 2 makeup air handling units.** The equipment was proposed to the college and the design engineers. After close collaboration with the project management team, engineers and other trades VTS was accepted as a suitable substitute for the original design.

“ **HAVING THE INDUSTRY'S FASTEST LEAD TIME, VTS WAS ABLE TO PROVIDE A QUICK AND AFFORDABLE SOLUTION TO GET OBERLIN COLLEGE'S CONSTRUCTION SCHEDULE BACK ON TIME AND BUDGET.** ”
Mike Goetz
Principal

With the submitted product not meeting the customers deadline for delivery we turned to VTS. As a result we were able to **meet expectations on delivery and even had a few weeks to spare.** Not only was the contractor pleased with the speedy delivery but the unit construction was impressive to say the least. The double wall construction and integral vfd's were a substantial upgrade to the specified unit and the engineer was impressed with the the considerable upgrade.

“ **WE WILL BE TURNING TO VTS FOR OUR AIR HANDLING NEEDS IN THE FUTURE.** ”
Robert Boozer
Principal



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
H		AIR HEATING	HYDRONIC HEATING COIL ELECTRIC HEATER STEAM HEATER
M		MIXING BOX	MIXING BOX
P		ENERGY RECOVERY	CROSS FLOW PLATE
R		ENERGY RECOVERY	ENERGY WHEEL
S		SOUND ATTENUATOR	SILENCER

Auxiliary symbols

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



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.

www.vtsgroup.com

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GA 30518 United States of America**