

VTS ECO HIGHWALL SERIES

MDL: PROFESSIONAL GRADE HVAC SOLUTIONS



INVESTING IN QUALITY, RELIABILITY & PERFORMANCE



Management Service

ISO 9001 QUALITY

WORLD LEADING DESIGN AND TECHNOLOGY

Equipped with the latest air-conditioning test rooms and manufacturing technology, we produce over 50,000 fan coil units each year, all conforming to the highest international standards of quality and safety.

Every product is manufactured to meet the stringent requirements of the internationally recognized ISO 9001 standard for quality assurance in design, development and production.



ETL SAFETY STANDARDS

THE HIGHEST STANDARDS OF MANUFACTURING

In order to guarantee the very highest standards and performance, we manage every stage in the manufacturing of our products. Throughout the production process we maintain strict control, starting with our extensive resources in research and development through to the design and manufacturing of almost every individual component, from molded plastics to unit and controller assembly.

All products conform to UL standard for Safety for Heating and Cooling Equipment UL1995 4th Edition, October 14, 2011.

All products conform to CSA standard for Safety for Heating and Cooling Equipment CSA C22.2 No.236-11, 4th Edition, October 14 2011.



WEEE MARK

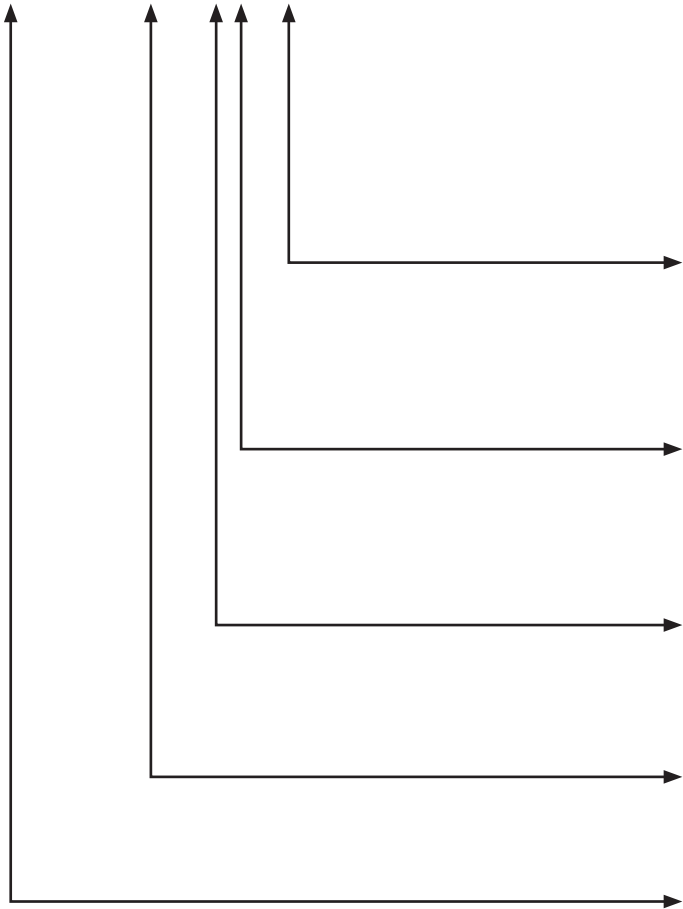
THE HIGHEST STANDARDS OF MANUFACTURING

Our highly trained staff and strict quality control methods enable us to produce products with an exceptional reputation for reliability and efficiency, maintained over many years. As well as full CE certification and ISO 9001, several products ranges have UL/ETL safety approval in the USA and Canada, Eurovent performance and sound certification as well as ROHS compliance for Europe, giving you the confidence of knowing our company is the right choice when selecting fan coil units.

All products conform to the "WEEE" directive to guarantee correct standards of environmental solutions.

MODEL CODE NOMENCLATURE

VTS0-0/09/UY/T



T	Standard Control (suitable for thermostat control or 0-10v)
M	Complete Control (MODBUS internal control with sensors)

Y	115V.1PH.60HZ
X	220V.1PH.60HZ

CONFIGURATION	
U	2 Pipe configuration
H	Not variable

Unit Size	04/06/12/15/18/20/24/30
-----------	-------------------------

UNIT ORIENTATION	
VERANO High Wall	

GENERAL DESCRIPTION

This highwall unit is designed to meet and exceed demanding requirements for efficiency, quiet operation and appearance. The sleek profile and elegantly styled cabinet complements any interior design theme, while the microprocessor assures accurate environmental control.

CABINET

The stylish cabinet is constructed of durable flame resistant acrylonitrile-butadiene-styrene (ABS) plastic. The silver white color and rounded corners provide its modern look.

WATER COIL

The water coil has a large heat transfer surface and utilizes the latest fin profile technology. It combines an advanced technological approach with the security of a traditional design regarding tube thickness. The water coil is also equipped with an air vent valve and a water purge valve.

INTEGRAL HOSES

The integral hose is a synthetic elastomer tube, with stainless steel outer braiding and brass connectors, which enables quick, low cost connections with no brazing.

BLOWER AND MOTOR

The unit incorporates specially designed and tested EC motors, allowing the blower wheel to provide optimum performance in airflow-efficiency and quiet operation.

FILTERS

Washable, easy-to-remove, fine mesh air filters are standard for all highwall models. Tabs located on the front of the unit can be unsnapped, allowing the filter to be easily slid downward and removed. No tools or dismantling is required.

AIR GRILLE DISTRIBUTION

All units are equipped with both deflector blades and independent directional vanes, enabling supply air to be automatically distributed, and air flow and direction to be customized.

STANDARD CONTROL

The PCB (printed circuit board) microprocessor control board relays control the operation of the indoor-fan motor, water valves (ON/OFF or modulating) and electric heater (if fitted), to maintain room conditions at a user-defined set point. Temperature settings, fan speeds and other control functions can be changed by the infrared handset or wired wall pad (*currently not available in North America*).

COMPLETE CONTROL

A 24 V AC signal from the thermostat which working power is from C and R or from indoor room to terminal G(G/G0/G1) supplies power to the blower motor. When G(G/G0/G1) is powered ON, the vane motor is working and open the vane at maximum position. When G(G/G0/G1) is powered OFF, the vane motor will close the vane. The condensate pump will run continuously, as long as coil temperature is less than 59°F. Alarm interlock relay for unit failure notification in limited PCB. Normally open or normally closed contacts are available for field connection.

VTS SERIES TECHNICAL DATA

GENERAL SPECIFICATION

VTS - [SIZE]				04	06	12	15	18	20	24	30	
UNIT CONFIGURATION	CONFIGURATION			2-PIPE								
	NUMBER OF FAN BLOWERS			TWIN								
	POWER SUPPLY		V/PH/Hz	115/1/60 or 220/1/60								
	OPERATION CONTROL			~M: Complete Control ~T: Standard Control								
PERFORMANCE DATA	AIR	AIR FLOW	H	CFM	218	294	294	379	464	576	635	729
			M	171	218	218	294	435	447	576	635	
			L	129	171	171	218	335	353	353	447	
	COOLING	COOLING CAPACITY	H	BTU/Hr	4158	6967	8394	10207	12602	16293	18174	20249
			M		3497	5534	6277	8394	11069	13254	16293	17493
			L		2833	4620	5486	6339	9040	11393	11393	13254
		SENSIBLE COOLING CAPACITY	H		2936	4889	5822	7126	8808	11171	12499	13969
			M		2458	3856	4313	5822	7702	9034	11171	12018
			L		1979	3202	3754	4357	6247	7734	7734	9034
	HEATING	HEATING CAPACITY	H	BTU/Hr	6653	11147	13430	16331	20163	26069	29078	32398
			M		5595	8854	10043	13430	17710	21206	26069	27989
			L		4533	7392	8778	10142	14464	18229	18229	21206
		MAX. ELECTRIC HEATER CAPACITY@115V			1700			2500				
	MAX. ELECTRIC HEATER CAPACITY@220V		3400			5100						
	ELECTRICAL	FAN MOTOR POWER	H	W	13	18	18	26	30	30	40	50
			M		10	13	13	20	20	20	30	40
			L		6	10	10	13	13	15	19	25
		FAN MOTOR RUNNING CURRENT @ H 115V		A	0.16	0.284	0.284	0.364	0.544	0.696	1.04	1.5
		FAN MOTOR RUNNING CURRENT @ H 220V		A	0.08	0.142	0.142	0.182	0.272	0.348	0.52	0.75
	SOUND	SOUND PRESSURE LEVEL		dB(A)	31/26/24	39/31/26	40/33/28	45/34/31	49/44/37	43/39/36	47/43/37	50/47/40
SOUND POWER LEVEL		40/35/33	48/40/35		49/42/37	54/43/40	58/53/46	52/48/45	56/52/46	59/56/49		
HYDRAULIC	COOLING WATER FLOW RATE	H	GPM	0.83	1.39	1.68	2.03	2.52	3.25	3.63	4.04	
		M		0.70	1.10	1.25	1.68	2.20	2.65	3.25	3.49	
		L		0.56	0.92	1.09	1.26	1.81	2.27	2.27	2.65	
	COOLING PRESSURE DROP	H	FT.WG	6.18	7.53	6.37	8.92	6.12	11.92	14.33	17.33	
		M		4.61	5.09	3.88	6.37	4.91	8.33	11.92	13.42	
		L		3.23	3.75	3.09	3.95	3.48	6.47	6.47	8.33	
	HEATING WATER FLOW RATE		GPM	Same as "Cooling Water Flow Rate"								
	HEATING PRESSURE DROP	H	FT.WG	4.95	6.03	5.09	7.13	4.89	9.53	11.47	13.87	
		M		3.69	4.07	3.11	5.09	3.93	6.67	9.53	10.73	
L		2.58		3.00	2.47	3.16	2.79	5.17	5.17	6.67		
WATER CONTENT		GAL	0.01	0.02	0.03	0.03	0.05	0.07	0.07	0.07		
CONSTRUCTION AND PACKING DATA	WATER CONNECTIONS	Type	Socket (NPT Threaded Female)									
		In/Out	1/2									
	CONDENSATE DRAINAGE CONNECTION		INCH	0.63								
	DIMENSIONS	L	INCH	34.45				41.34				
		W		8.66				9.25				
		H		11.81				12.2				
NET WEIGHT		lbs	24.3	26.5	28.7	28.7	30.9	35.3	35.3	35.3		

COOLING MODE (2-PIPE)

- Return air temperature: 80°F DB/ 67°F WB.
- Inlet/outlet water temperature: 45°F/55°F.

HEATING MODE (2-PIPE)

- Return air temperature: 70°F.
- Inlet water temperature: 140°F.
- Water flow-rate: same as cooling mode.

ACCORDING TO AHR STANDARD 440

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment.

SOUND POWER AND PRESSURE DATA

SOUND POWER

A-WEIGHTED SOUND POWER DB(A)		31.0	29.2	27.8	43.1	33.9	29.9	43.1	33.9	29.9	50.1	37.1	33.6
Sound Power in 1/3 Octave-bands (unit dB)	31.5Hz	4.6	10.4	11.5	2.3	0.9	4.1	11.5	0.9	4.1	10.3	5.4	8.9
	63Hz	3.1	3.5	4.9	0.8	5.5	3.4	10.0	5.5	3.4	13.0	3.8	2.3
	125Hz	6.2	7.5	6.2	7.8	8.4	5.5	17.0	8.4	5.5	22.2	11.7	8.7
	250Hz	17.5	13.5	10.1	21.1	22.5	17.8	30.3	22.5	17.8	38.3	25.3	23.7
	500Hz	23.0	17.8	13.0	25.9	26.6	21.2	35.1	26.6	21.2	41.7	30.5	26.1
	1000Hz	19.8	15.2	12.8	23.1	21.1	16.3	32.3	21.1	16.3	40.2	26.4	20.9
	2000Hz	16.0	15.2	14.8	16.8	16.9	15.1	26.1	16.9	15.1	35.8	20.4	17.0
	4000Hz	15.4	15.6	15.4	9.1	15.8	15.3	18.3	15.8	15.3	26.1	16.4	15.9
	8000Hz	14.6	14.6	14.3	5.5	14.9	14.4	14.8	14.9	14.4	17.1	14.9	14.7
	16000Hz	7.4	8.6	7.8	-1.2	7.8	7.9	8.0	7.8	7.9	7.9	7.9	8.0
Speed	H	M	L	H	M	L	H	M	L	H	M	L	
MODEL	VTS-04			VTS-06			VTS-12			VTS-15			

A-WEIGHTED SOUND POWER DB(A)		53.7	48.6	41.3	46.8	43.4	40.1	49.8	46.8	40.1	55.7	52.1	43.4
Sound Power in 1/3 Octave-bands (unit dB)	31.5Hz	3.6	3.9	11.5	16.8	8.3	12.3	12.8	16.8	12.3	17.1	9.4	8.3
	63Hz	22.3	14.5	11.1	17.2	11.2	11.8	12.3	17.2	11.8	22.4	18.0	11.2
	125Hz	27.2	20.4	15.0	21.2	18.5	14.9	23.0	21.2	14.9	26.0	25.2	18.5
	250Hz	42.3	36.1	29.5	32.8	29.7	25.5	35.0	32.8	25.5	40.6	38.1	29.7
	500Hz	45.8	40.3	35.1	38.4	36.5	33.0	41.5	38.4	33.0	47.0	44.6	36.5
	1000Hz	43.9	38.5	31.4	36.2	32.9	29.3	39.9	36.2	29.3	46.3	42.1	32.9
	2000Hz	40.7	33.8	24.4	29.4	25.4	26.7	33.7	29.4	26.7	40.9	36.6	25.4
	4000Hz	31.7	24.5	17.9	21.3	18.8	32.2	24.6	21.3	32.2	33.8	28.3	18.8
	8000Hz	20.4	16.1	15.0	15.5	15.8	33.0	16.9	15.5	33.0	21.2	18.6	15.8
	16000Hz	8.2	10.7	7.8	6.9	6.9	27.1	10.9	6.9	27.1	8.2	7.0	6.9
Speed	H	M	L	H	M	L	H	M	L	H	M	L	
MODEL	VTS-18			VTS-20			VTS-24			VTS-30			

SOUND PRESSURE

A-WEIGHTED SOUND POWER DB(A)		21.8	20	18.6	33.8	24.6	20.7	33.8	24.6	20.7	40.9	27.9	24.3
Sound Pressure in 1/3 Octave-bands (unit: dB)	31.5Hz	-4.7	1.2	2.2	11.5	-8.4	-5.1	2.3	-8.4	-5.1	1.1	-4.6	-3.8
	63Hz	-6.1	-5.7	-4.3	10.0	-3.8	-5.9	0.8	-3.8	-5.9	3.8	-6.2	-5.4
	125Hz	-3.0	-1.7	-3.1	17.0	-0.8	-3.8	7.8	-0.8	-3.8	12.9	1.7	2.5
	250Hz	8.2	4.3	0.9	30.3	13.2	8.6	21.1	13.2	8.6	29.0	15.3	16.1
	500Hz	13.8	8.6	3.8	35.1	17.3	11.9	25.9	17.3	11.9	32.4	20.5	21.3
	1000Hz	10.6	5.9	3.5	32.3	11.9	7.1	23.1	11.9	7.1	31.0	16.4	17.2
	2000Hz	6.8	6.0	5.6	26.1	7.7	5.9	16.8	7.7	5.9	26.6	10.3	11.1
	4000Hz	6.2	6.4	6.2	18.3	6.6	6.1	9.1	6.6	6.1	16.9	6.3	7.1
	8000Hz	5.4	5.4	5.1	14.8	5.7	5.1	5.5	5.7	5.1	7.8	4.9	5.7
	16000Hz	-1.9	-0.6	-1.5	8.0	-1.4	-1.3	-1.2	-1.4	-1.3	-1.3	-2.2	-1.4
Speed	H	M	L	H	M	L	H	M	L	H	M	L	
MODEL	VTS-04			VTS-06			VTS-12			VTS-15			

A-WEIGHTED SOUND POWER DB(A)		37.5	34.2	30.9	40.5	37.5	30.9	46.5	42.9	34.2
Sound Pressure in 1/3 Octave-bands (unit: dB)	31.5Hz	7.6	-0.9	3.1	3.6	7.6	3.1	7.9	0.1	-0.9
	63Hz	7.9	2.0	2.5	3.1	7.9	2.5	13.2	8.8	2.0
	125Hz	12.0	9.3	5.7	13.7	12.0	5.7	16.8	16.0	9.3
	250Hz	23.6	20.5	16.3	25.8	23.6	16.3	31.3	28.8	20.5
	500Hz	29.1	27.3	23.8	32.3	29.1	23.8	37.7	35.4	27.3
	1000Hz	27.0	23.7	20.1	30.7	27.0	20.1	37.1	32.9	23.7
	2000Hz	20.2	16.2	17.4	24.5	20.2	17.4	31.6	27.4	16.2
	4000Hz	12.1	9.6	23.0	15.4	12.1	23.0	24.5	19.1	9.6
	8000Hz	6.3	6.5	23.8	7.7	6.3	23.8	12.0	9.3	6.5
	16000Hz	-2.3	-2.4	17.9	1.7	-2.3	17.9	-1.0	-2.2	-2.4
Speed	H	M	L	H	M	L	H	M	L	
MODEL	VTS-20			VTS-24			VTS-30			

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment.

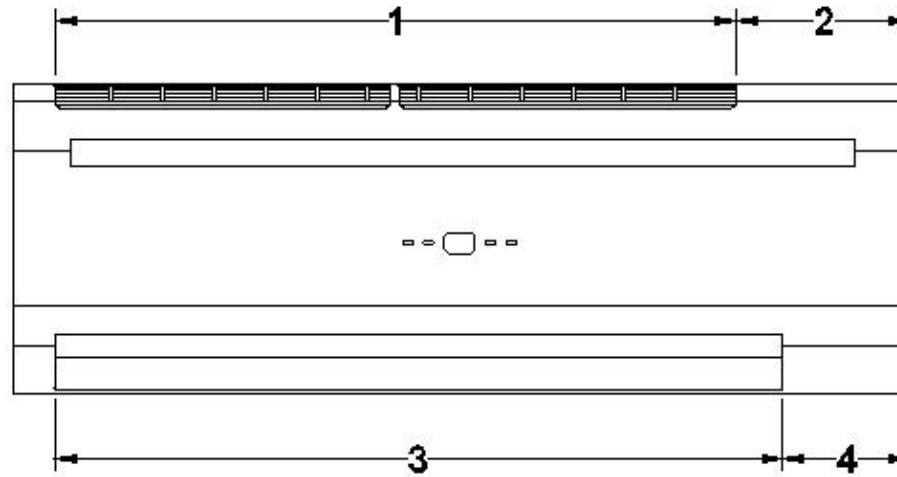
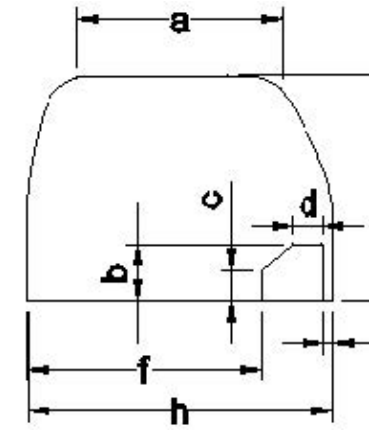
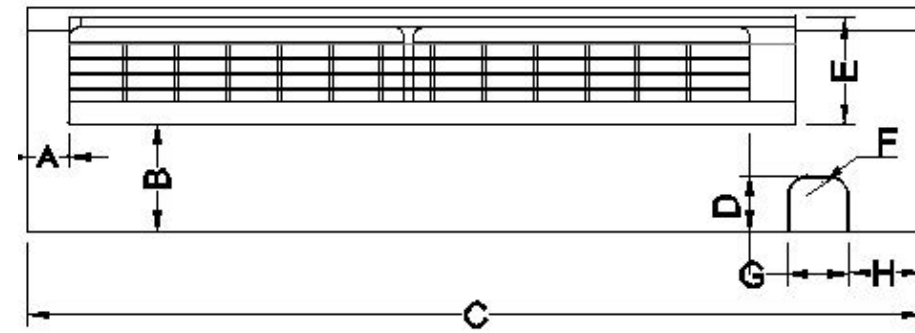
COIL DATA

2-PIPE SYSTEMS

MODEL	FIN HEIGHT (IN)	FIN LENGTH (IN)	FINS PER INCH	NO. OF ROWS	NO. OF COPPER	NO. OF CIRCUITS	TUBE DIAMETER (IN)
VTS-04	9.1	26.8	19.5	2	8	2	0.3
VTS-06	9.1	26.8		2	14	3	0.3
VTS-12	9.1	26.8		2	22	4	0.3
VTS-15	9.1	26.8		2	22	4	0.3
VTS-18	14.1	26.8		2	34	5	0.3
VTS-20	14.9	33.3		2	36	6	0.3
VTS-24	14.9	33.3		2	36	6	0.3
VTS-30	14.9	33.3		2	36	6	0.3

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment.

DIMENSIONAL DRAWINGS



MODEL	UNIT DIMENSIONS							
	A	B	C	D	E	F	G	H
VTS-04/06/12/15/18	1.57	4.13	34.45	2.17	4.13	R0.78	2.36	2.91

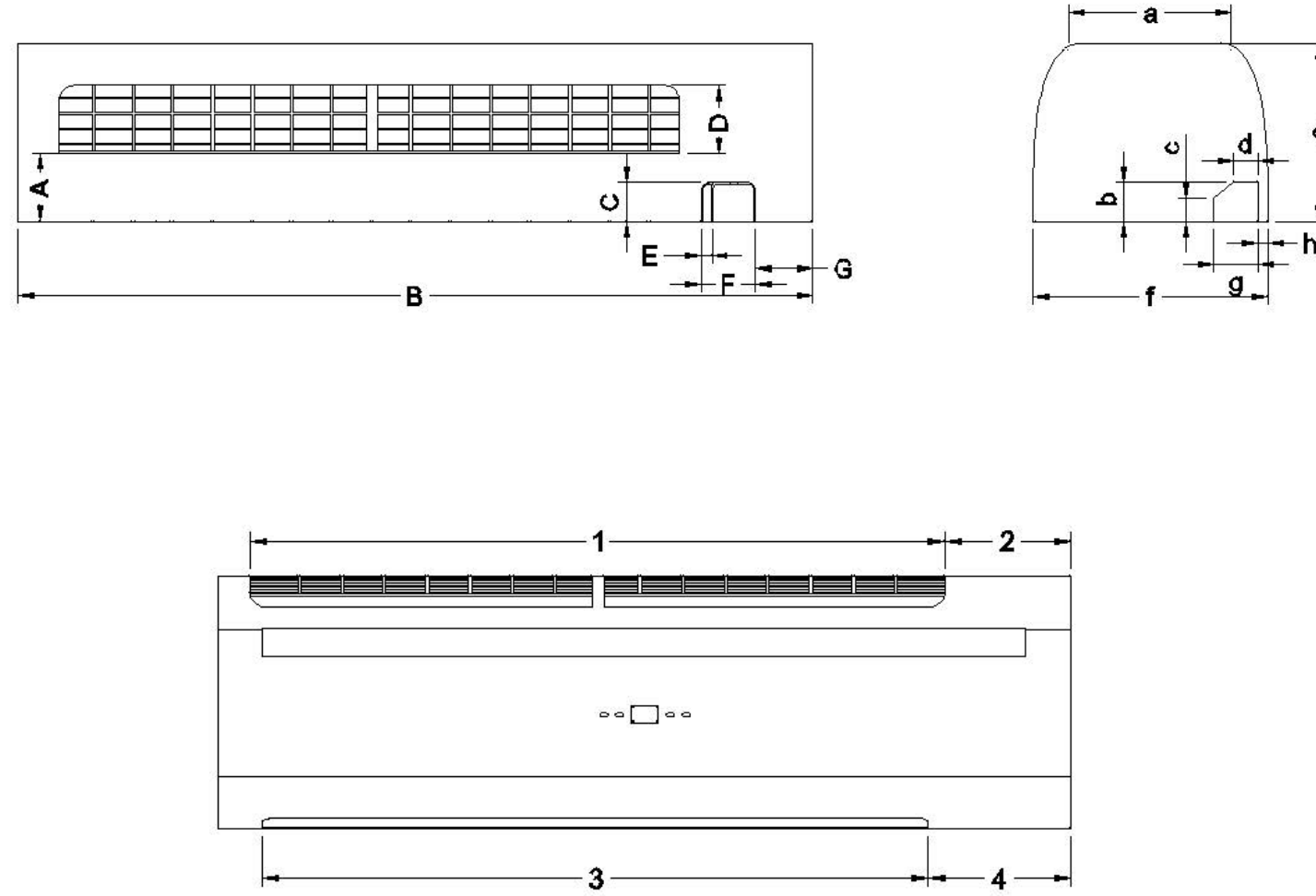
MODEL	UNIT DIMENSIONS							
	a	b	c	d	e	f	g	h
VTS-04/06/12/15/18	7.87	2.17	1.18	1.18	8.66	9.02	0.39	11.81

MODEL	UNIT DIMENSIONS			
	1	2	3	4
VTS-04/06/12/15/18	26.18	6.69	27.95	4.92

(ALL DIMENSIONS SHOWN IN INCHES)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment.

DIMENSIONAL DRAWINGS



MODEL	UNIT DIMENSIONS							
	A	B	C	D	E	F	G	H
VTS-20/24/30	3.54	41.34	2.01	3.54	0.59	2.87	2.91	2.91

MODEL	UNIT DIMENSIONS							
	A	B	C	D	E	F	G	H
VTS-20/24/30	8.46	2.05	1.18	1.26	9.25	12.20	2.28	0.51

MODEL	UNIT DIMENSIONS			
	1	2	3	4
VTS-20/24/30	33.66	6.10	32.28	6.89

(ALL DIMENSIONS SHOWN IN INCHES)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment.

OPTIONAL ACCESSORIES

UNIT ACCESSORIES

- Electrical Heaters
 - With 2-stage safety cut out and can be configured as booster or primary heaters. Can be easily installed on site or in the factory via plug-and-play wiring and brackets. Onboard electric heater controller can be configured using easily set DIP switches
- Valves & Actuator
 - 2-way or 3-way valve with motorized 24 V on/off or modulating actuator integrated with SS hose and copper piping connection kits
- Condensate Removal Pump
 - Self-contained condensate removal system for use directly inside the highwall. Factory pre-installed.
- Stainless Steel Drain Pan

CONTROL ACCESSORIES

- Complete Control Board
 - Infra-Red Handset Controller & Wall Holder (*currently not available in North America*)
 - With Global Control functionality for Main and Secondary unit groups.
- Unlimited Wired Wall Pad Controller (*currently not available in North America*)
 - **Features:** 7 day ON/OFF timer program. Addressable Main and Secondary units allowing control of up to 32 secondary units via a single Main Unit with set or check of each unit parameters individually. Error display with addressable error diagnostic (Main unit Wall Pad displays Secondary unit address and error type). One Touch Global Control (Global Control Main Unit Wall Pad controls all units in the group). Complete with Onboard Room Air Temperature Sensor.
- DIP Switch Configuration Service
 - Pre-set DIP switches for master/slave option, 2/4-pipe, Preheat temperature, Operation mode settings.
- Standard Control Board
 - Universal EC Thermostat
 - **Main functions:** 2-pipe, 4-pipe, 2-pipe+floor heating mode, floor heating, and cooling. AC/EC motor 3-speed control. Motorized valve control. 0-10 V DC Modulating valve. EC motor RPM control. Low temperature protection. Remote ON/OFF function. Power supply: 24 V AC or VDC. Working environment: 32-122, 5-95%RH (no condensate). Self-power consumption: <2W. Protection class: IP30.
- STCD Series Thermostats
 - External Connection Plugs
 - Factory Pre-wired units with external accessory plugs for fast & easy connections.

VERANO[®]

BY MDL SOLUTIONS

COMPACT LOWER VOLTAGE FAN COILS AND HYDRONIC HEAT | MDLSOLN.COM

The data presented in this document is correct at time of publication. Illustrations may include optional accessories. Due to continuous research and development, and the desire to improve the quality of our products, MDL Solutions reserves the right to make changes regarding design and specifications without prior notice.