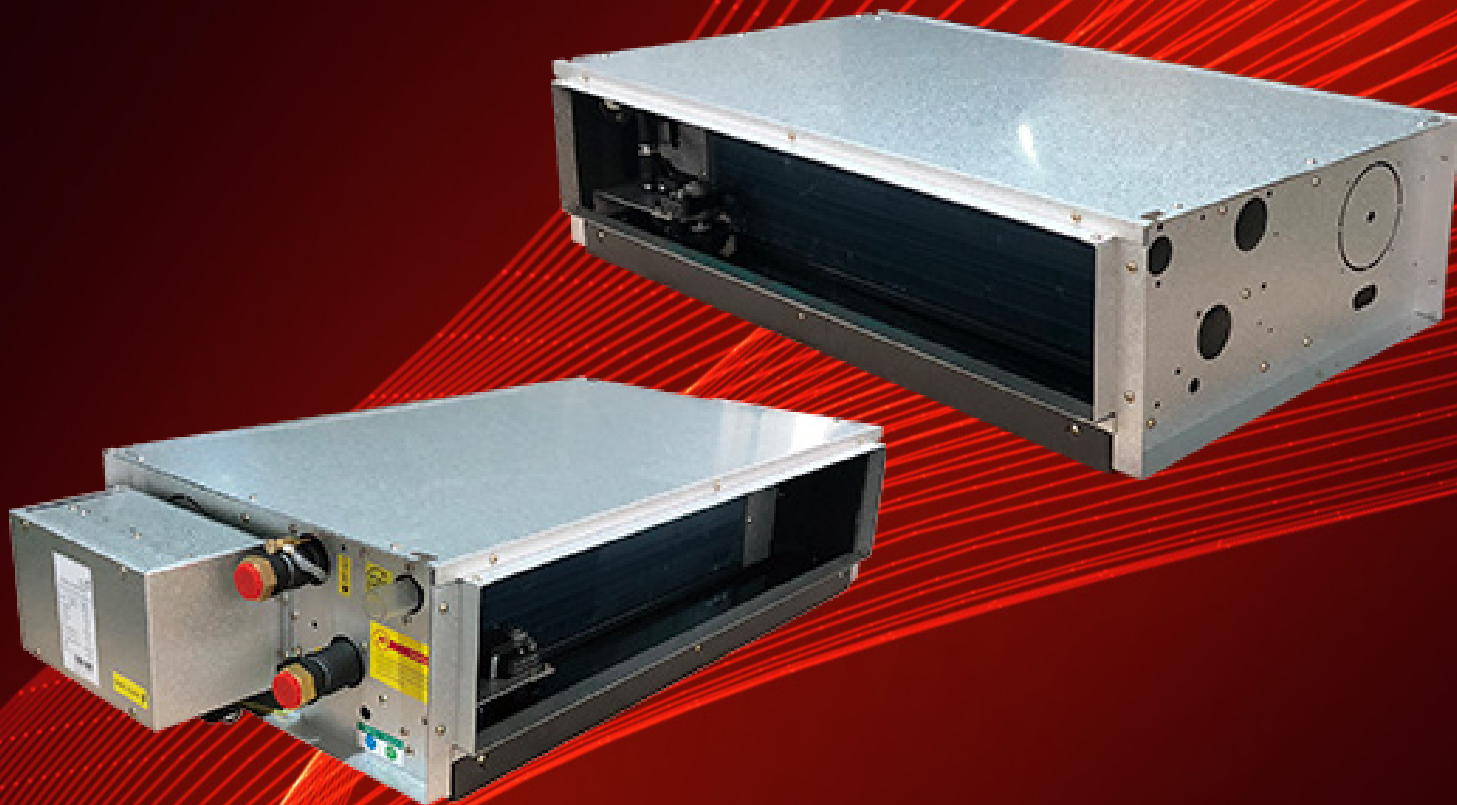


VHL HORIZONTAL, DUCTED, SLIM FAN COIL UNITS

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

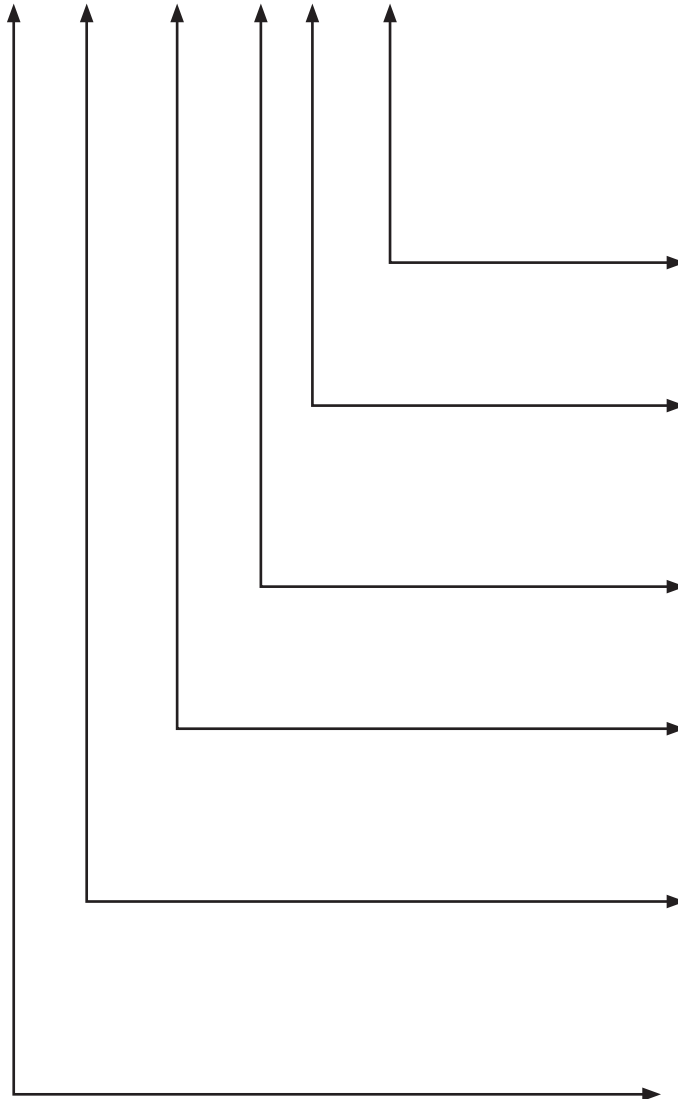
THE HIGHEST STANDARDS OF MANUFACTURING

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

VHLO-0/1600/3/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

COILS	
2 Pipe	3, 4 or 6 Rows
4 Pipe	3+1, 3+2, 4+1, 4+2

Unit Size

UNIT ORIENTATION	
0	Standard

VHL	Horizontal Fan Coil, Low Static, Ducted
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TECHNICAL DATA

GENERAL DESCRIPTION

The Slim Duct Fan Coil is designed to meet and exceed the demanding requirements for efficiency and quiet operation.

STRUCTURE

The structure is made from heavy gauge galvanized steel panels with couplings for the connection of ducting and a gravity drain pan with insulation for condensation. Optional internal, fire resistant insulation is available to provide both thermal and acoustic insulation. Insulation is also fitted on the top of coil.

CONDENSATE PANS

Positive sloped drain pans are made of steel with powder coated finish, coated with self-extinguishing closed cell expanded polyethylene with thermal insulating properties.

COILS

Constructed with seamless copper tubes and headers. The tubes are mechanically expanded into corrugated aluminum fin material for a permanent primary to secondary surface bond. Coils are tested at 435 PSI and recommended for operation at 232 PSI. Coils include manual air vent and water purge valves.

FAN WHEELS-HOUSING

Fan Wheels-Housing are double inlet forward curved centrifugal type. Wheels are statically and dynamically balanced for smooth, quiet operation. The housing is constructed from heavy gauge galvanized steel with die-formed inlet cones.

EC MOTOR

The unit is using EC motor include driven controls PCB, a constant torque, permanent magnet, brushless DC motor with preliminary 3-speed setting that allow for precise air balancing. The driven PCB needs to interface with the thermostat.

AIR FILTER

Easily removable and washable and is made from self-extinguishing acrylic with an efficiency of class MERV 2-4.

COMPLETE CONTROL (M-TYPE)

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

STANDARD CONTROL (T-TYPE)

It is suitable for connecting with an external 24 V AC thermostat which sends H/M/L control signal to EC motor. The PCB includes zone control application, simple error diagnostic and electric heater control (optional).

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

GENERAL PRODUCT SPECIFICATIONS

VHL - 3 ROW, 2 PIPE, HORIZONTAL, DUCTED, SLIM UNITS

VHL - 3 ROW - [SIZE]				1	2	3	
UNIT CONFIGURATION	CONFIGURATION			2-PIPE			
	NUMBER OF FAN BLOWERS			2	3	4	
	POWER SUPPLY		V/PH/HZ	115/1/60 220/1/60			
	OPERATION CONTROL			~M: Complete Control ~T: Standard Control.			
PERFORMANCE DATA	AIR	AIR FLOW	H	CFM	500	800	1041
			M		382	559	782
			L		147	235	335
		ESP	H	IN.WG	0.05	0.05	0.05
			M		0.05	0.05	0.05
			L		0.05	0.05	0.05
	COOLING	TOTAL COOLING CAPACITY	H	BTU/Hr	13400	22540	28862
			M		10982	17152	23411
			L		5151	8665	12009
		SENSIBLE COOLING CAPACITY	H	BTU/Hr	9359	15528	20006
			M		7548	11608	15965
			L		3522	5844	8090
	HEATING	HEATING CAPACITY	H	BTU/Hr	20832	35040	44867
			M		17072	26664	36394
			L		8008	13470	18669
		MAX. ELECTRIC HEATER CAPACITY @ 220V		kW	1	2	3
	MAX. ELECTRIC HEATER CAPACITY @ 115V		0.5		1	1.5	
	SOUND	SOUND PRESSURE LEVEL (OUTLET)		dB(A)	46/37/19	49/40/25	50/41/26
		SOUND PRESSURE LEVEL (INLET+ RADIATED)			49/40/25	52/43/28	53/44/29
		SOUND POWER LEVEL (OUTLET)			55/46/31	58/49/34	59/50/35
		SOUND POWER LEVEL (INLET +RADIATED)			58/49/34	61/52/37	62/53/38
	ELECTRICAL	FAN MOTOR POWER	H	W	50	82	100
			M		23	40	43
			L		11	1	17
FAN MOTOR RUNNING CURRENT @ 220V		H	A	0.43	0.71	0.87	
FAN MOTOR RUNNING CURRENT @ 115V		H		0.86	1.42	1.74	
HYDRAULIC	COOLING WATER FLOW RATE	H	GPM	2.65	4.45	5.7	
		M		2.17	3.39	4.62	
		L		1.02	1.71	2.37	
	COOLING PRESSURE DROP	H	FT/ HEAD	0.39	0.63	0.4	
		M		0.28	0.4	0.28	
		L		0.08	0.12	0.09	
	HEATING WATER FLOW RATE	H	GPM	2.65	4.45	5.7	
		M		2.17	3.39	4.62	
		L		1.02	1.71	2.37	
	HEATING PRESSURE DROP	H	FT/ HEAD	0.35	0.57	0.36	
		M		0.25	0.36	0.25	
		L		0.07	0.11	0.08	
WATER CONTENT			GAL	0.208	0.35	0.475	
CONSTRUCTION AND PACKING DATA	WATER CONNECTIONS	TYPE		SOCKET (NPT Threaded)			
		In	INCH	NPT 3/4			
	Out	1					
	CONDENSATE DRAINAGE CONNECTION		INCH	31 1/2	48 5/8	61 13/16	
	DIMENSIONS			19 7/8			
				7 7/8			
NET WEIGHT			LBS	44	62	77	

TEST CONDITIONS

COOLING CONDITIONS (2-PIPE OR 4-PIPE)

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

HEATING CONDITIONS (2-PIPE)

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

(ALL DIMENSIONS ARE APPROXIMATE WITHIN 1/16 OF AN INCH OF THOSE INDICATED)

VHL - 3+1 ROW, 4 PIPE, HORIZONTAL, DUCTED, SLIM UNITS

VHL - 3+1 ROW - [SIZE]				1	2	3	
UNIT CONFIGURATION	CONFIGURATION			4-PIPE			
	NUMBER OF FAN BLOWERS			2	3	4	
	POWER SUPPLY		V/PH/HZ	115/1/60 220/1/60			
	OPERATION CONTROL			~M: Complete Control. ~T: Standard Control			
PERFORMANCE DATA	AIR	AIR FLOW	H	CFM	500	800	1041
			M		382	559	782
			L		147	235	335
		ESP	H	in.wg	0.05	0.05	0.05
			M		0.05	0.05	0.05
			L		0.05	0.05	0.05
	COOLING	COOLING CAPACITY	H	BTU/Hr	13400	22540	28862
			M		10982	17152	23411
			L		5151	8665	12009
		SENSIBLE COOLING CAPACITY	H		9359	15528	20006
			M		7548	11608	15965
			L		3522	5844	8090
	HEATING	HEATING CAPACITY	H	BTU/Hr	11533	18600	24733
			M		9500	14367	20133
			L		4733	7633	10833
	SOUND	SOUND PRESSURE LEVEL (OUTLET)		dB(A)	46/37/19	49/40/25	50/41/26
		SOUND PRESSURE LEVEL (INLET + RADIATED)			49/40/25	52/43/28	53/44/29
		SOUND POWER LEVEL (OUTLET)			55/46/31	58/49/34	59/50/35
		SOUND POWER LEVEL (INLET + RADIATED)			58/49/34	61/52/37	62/53/38
	ELECTRICAL	FAN MOTOR POWER	H	W	50	82	100
			M		23	40	43
			L		11	15	17
		FAN MOTOR RUNNING CURRENT @ 220V	H	A	0.43	0.71	0.87
	FAN MOTOR RUNNING CURRENT @ 115V	H	0.86		1.42	1.74	
HYDRAULIC	COOLING WATER FLOW RATE	H	GPM	2.65	4.45	5.7	
		M		2.17	3.39	4.62	
		L		1.02	1.71	2.37	
	COOLING PRESSURE DROP	H	FT/HEAD	0.39	0.63	0.4	
		M		0.28	0.4	0.28	
		L		0.08	0.12	0.09	
	HEATING WATER FLOW RATE	H	GPM	1.089	1.76	2.339	
		M		0.898	1.36	1.903	
		L		0.447	0.722	1.023	
	HEATING PRESSURE DROP	H	FT/HEAD	0.56	0.28	0.58	
M		0.4		0.18	0.41		
L		0.12		0.06	0.14		
COOLING WATER CONTENT		GAL	0.208	0.35	0.475		
HEATING WATER CONTENT			0.069	0.116	0.158		
CONSTRUCTION AND PACKING DATA	WATER CONNECTIONS	TYPE		SOCKET (NPT Threaded)			
		In	INCH	NPT 3/4			
	Out	NPT 1/2					
	CONDENSATE DRAINAGE CONNECTION		INCH	31 1/2	48 5/8	61 13/16	
	DIMENSIONS			W	19 7/8		
H				7 7/8			
NET WEIGHT		LBS	44	62	77		

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TEST CONDITIONS

COOLING CONDITIONS (2-PIPE OR 4-PIPE)

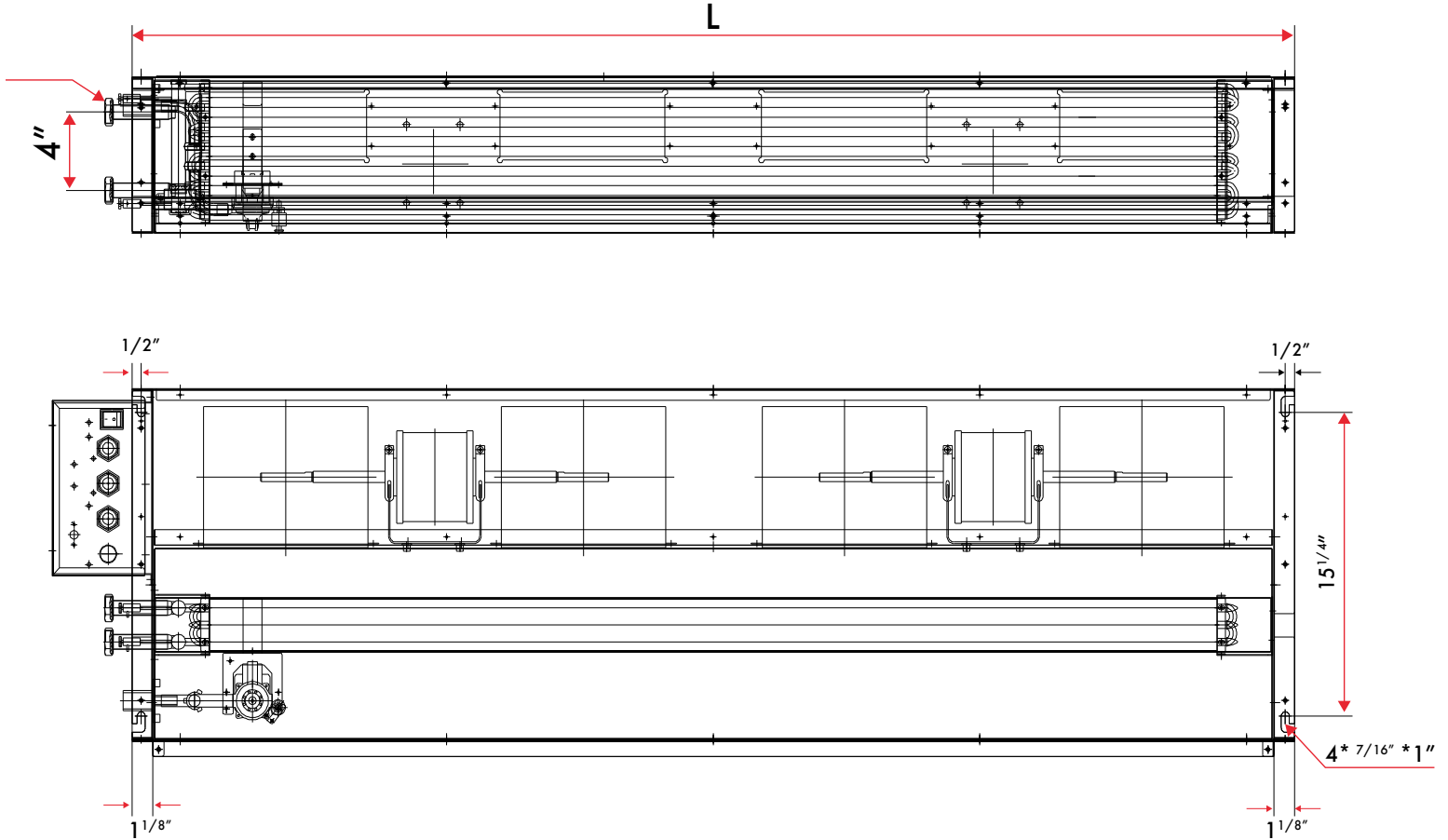
- Return air temperature: DB 80°F/WB 67°F.
- Inlet/ outlet water temperature: 45/55°F.

HEATING CONDITIONS (4-PIPE)

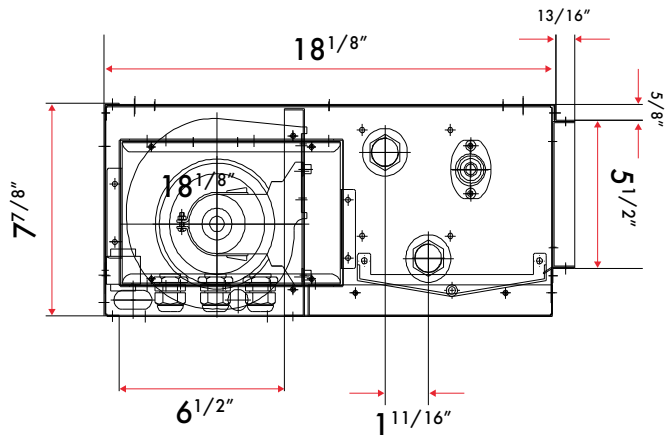
- Return air temperature: 70°F.
- Inlet water temperature: 149/131°F.

(ALL DIMENSIONS ARE APPROXIMATE WITHIN 1/16 OF AN INCH OF THOSE INDICATED)

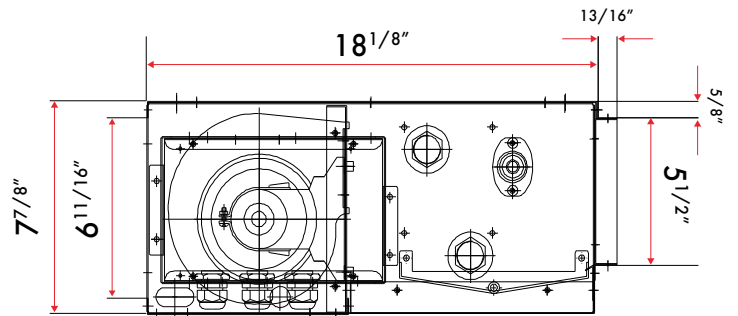
DIMENSIONAL DRAWING OF VHL 2-PIPE UNIT



RETURN AIR FROM BOTTOM



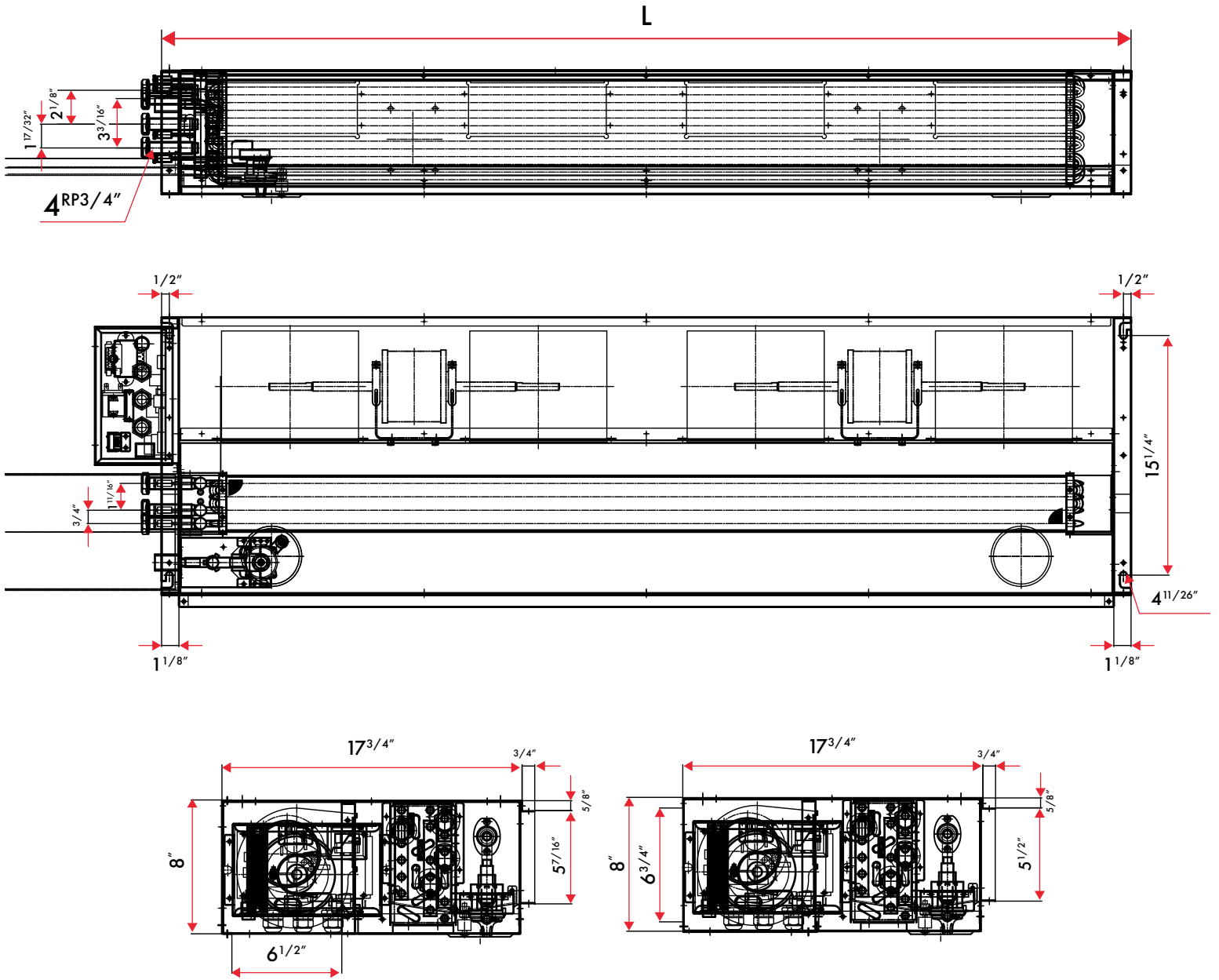
RETURN AIR FROM REAR



MODEL	L (LENGTH)
VHL-01	31 1/2"
VHL-02	45 5/8"
VHL-03	61 13/16"

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DIMENSIONAL DRAWING OF VHL 4-PIPE UNIT



SIZE	1	2	3
L	31 1/2"	48 5/8"	61 3/4"

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OPTIONAL ACCESSORIES

UNIT ACCESSORIES

- Electrical Heaters
 - The electric heater module is supplied for winter heating as an alternative to the auxiliary hot water coil. We offer a complete range of electric heaters kits, which are easy to connect to the control box with a mounting fixture. The electric heater configuration is selectable by DIP switch on the internal control board.
- Valves & Actuator
 - 2-way or 3-way valve with motorized 24V on/off or modulating actuator integrated with SS hose and copper piping connection kits

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
 - **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.
- ABS External LED Receiver
 - IR receiver in ABS housing with up to 70in length prewiring. LED lights show working mode or error code.
- 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 V DC. Working environment: 32-122, 5-95%RH (no condensate). Self-power consumption: <2W. Protection class: IP30.
- STCD Series Thermostats

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.