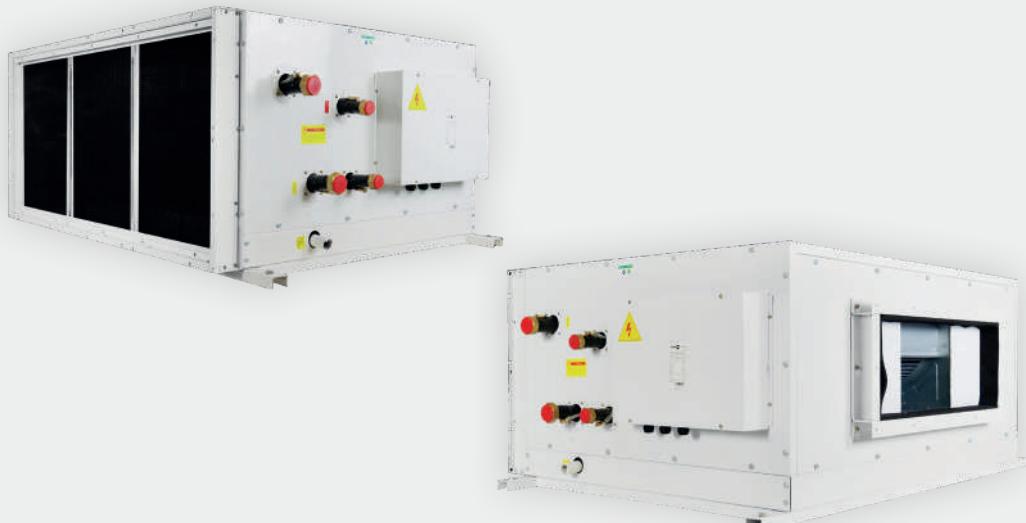


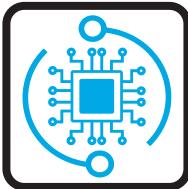
## HAHU - HORIZONTAL MINI AIR HANDLING UNIT



### FEATURES

---

#### CONTROL FLEXIBILITY



Two types of control system: Intelligent control board (I-Control) controlled via Infra-red handset and/or Intelligent wired wall pad or Flexible control (W-Control) permitting operation with external thermostat applications both controls allows configuration for 2 or 4-pipe settings.

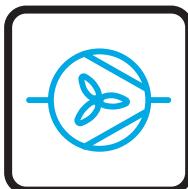
Please refer to page 14 for further information on controls.

#### ENERGY EFFICIENT MOTORS



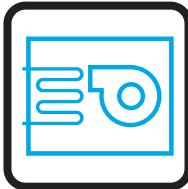
EC motors allow the centrifugal fans to operate at optimum airflow performance, energy efficiency and quiet operation. EC motors include driven control PCB, constant torque, permanent magnet and 3 speeds pre-set or modulating with a 0-10 VDC signal for precise air balancing control.

#### FAN BLOWER



Galvanized steel housing center plate fixed impeller, with riveting compression on the end ring and galvanized steel sheet mounting feet to ensure adequate strength, All impellers and motors are fully balanced according to ANSI/AMCA-204 standard for smooth and quiet operation.

## STRUCTURE



Made from frameless integrated folded steel structure, it uses a sandwich panel consisting of two walls with high-pressure PU foam inner insulation. It has couplings for the connection of ducting and gravity drain pan with insulation for condensation. The unit has an easy access to fans, motors and filters.

## WATER COILS



Built with seamless copper tubes and headers, mechanically expanded into corrugated aluminium fin material for a permanent primary to secondary surface bond. Tested at 35 bar, with maximum operating limits at 20 bar.

## READY TO INSTALL



The Horizontal Mini Air Handling unit range is offered as a complete package including standard items such as the internal drain pan, double sandwich panel insulation of 10mm + 25mm, and a G2 (MERV 4) filter. Furthermore, we offer multiple optional accessories.

## KEY POINTS

- Auto Dynamic Balancing with I-Control
- External Static Pressure up to 350 Pa.
- Compact dimension with Cooling capacity more than 60 kW and 9000 m<sup>3</sup>/h of airflow available.
- Internal Drain Pan



## ACCESSORIES

- IR Handset or Wired Wall Pad (Available with I-Control)
- Thermostat Controller (Available with W-Control)
- G4 (Merv 8) or F8 (MERV 14) Filters
- Electric heater up to 9kW
- 2 or 3 Way On/Off & Modulating Valves
- Belimo Valve Kit
- Integrated Condensate Pump
- Supply/Return air Plenum
- Stainless Steel Drain Pan

\*Please refer to page 80 for further information and accessories.

## TECHNICAL SPECIFICATIONS

Hydronic Horizontal Mini Air Handling Unit, 5R, 2 Pipe with **EC Motor**

UNIT GENERAL SPECS	HAHU-5R-[Size]-V-ECM		200	300	400	600	800		
	Configuration		2-pipe						
	Number of Fan Blowers		1			2			
	Power Supply (V/Ph/Hz)		220 - 240/1/50 - 60						
AIR	Total Air Flow	H	m <sup>3</sup> /h	2222	3160	4093	6321	8186	
		M		1912	2703	3495	5407	6990	
		L		1361	1916	2475	3833	4950	
	External Static Pressure	H	Pa	120					
		M							
		L							
COOLING	Total Cooling Capacity	H	kW	14.67	20.89	26.13	40.34	50.83	
		M		13.06	18.51	23.07	35.74	44.88	
		L		10.09	14.13	17.62	27.28	34.27	
	Sensible Cooling Capacity	H		10.27	14.50	18.40	28.29	35.80	
		M		9.09	12.72	16.06	24.81	31.25	
		L		6.91	9.59	12.13	18.70	23.60	
	Heating Capacity	H		13.66	19.36	24.70	37.81	48.10	
		M		12.16	17.15	21.81	33.49	42.47	
		L		9.40	13.09	16.65	25.57	32.43	
HEATING	Max. Electric Heater Capacity		kW	4.5	6	7.5	9		
	Pressure Level (Outlet)		dB(A)	73/68/64	78/73/69	80/75/71	81/76/72	83/78/73	
	Pressure Level (Inlet + Radiated)			70/65/61	75/70/66	77/72/68	78/73/69	80/75/70	
	Power Level (Outlet)			82/77/73	87/82/78	89/84/80	90/85/81	92/87/82	
	Power Level (Inlet + Radiated)			79/74/70	84/79/75	86/81/77	87/82/78	89/84/79	
ELECTRICAL	Power Input	H	W	412	850	1015	1700	2030	
		M		375	650	850	1,300	1,530	
		L		320	350	500	700	1000	
	Running Current (H)		A	3.58	7.39	8.83	14.78	17.65	
HYDRONIC	Cooling Water Flow Rate	H	L/h	2514	3582	4480	6916	8714	
		M		2239	3173	3955	6126	7694	
		L		1730	2422	3020	4677	5874	
	Cooling Pressure Drop	H	kPa	29.9	64.2	30.1	48.5	43.5	
		M		24.3	51.6	24.0	39.0	34.7	
		L		15.3	31.7	14.8	24.0	21.4	
	Heating Water Flow Rate	H	L/h	2342	3318	4234	6482	8246	
		M		2085	2939	3739	5741	7281	
		L		1611	2244	2854	4383	5559	
	Heating Pressure Drop	H	kPa	22.1	47.1	22.8	36.3	33.2	
		M		17.9	37.9	18.2	29.2	26.5	
		L		11.3	23.3	11.2	17.9	16.3	

### Eurovent Testing Conditions:

#### a. Cooling mode (2-pipe):

- Return air temperature: 27°C DB/19°C WB
- Inlet/ outlet water temperature: 7°C/ 12°C

#### b. Heating mode (2-pipe):

- Return air temperature: 20°C
- Inlet water temperature: 45°C/40°C

## TECHNICAL SPECIFICATIONS

Hydronic Horizontal Mini AHU, 5R+2 (Auxiliary Heating Coil), 4 Pipe with **EC Motor**

UNIT GENERAL SPECS	HAHU-5R+2-[Size]-P-ECM		200	300	400	600	800		
	Configuration		4-pipe						
	Number of Fan Blowers		1			2			
	Power Supply (V/Ph/Hz)		220 - 240/1/50 - 60						
AIR	Total Air Flow	H	m <sup>3</sup> /h	1999	3000	3942	6000	7884	
		M		1773	2603	3400	5206	6801	
		L		1286	1862	2424	3724	4847	
	External Static Pressure	H	Pa	120					
		M							
		L							
COOLING	Total Cooling Capacity	H	kW	13.46	20.00	25.37	38.62	49.35	
		M		12.36	18.05	22.67	34.86	44.10	
		L		9.63	13.78	17.40	26.61	33.84	
	Sensible Cooling Capacity	H		9.39	13.86	17.84	27.02	34.71	
		M		8.54	12.38	15.76	24.14	30.67	
		L		6.58	9.35	11.97	18.23	23.29	
		H		13.28	19.15	24.65	37.25	47.26	
		M		12.19	17.28	22.03	33.62	42.23	
		L		9.50	13.20	16.90	25.67	32.40	
SOUND	Pressure Level (Outlet)		dB(A)	73/68/64	78/73/69	80/75/71	81/76/72	83/78/73	
	Pressure Level (Inlet + Radiated)			70/65/61	75/70/66	77/72/68	78/73/69	80/75/70	
	Power Level (Outlet)			82/77/73	87/82/78	89/84/80	90/85/81	92/87/82	
	Power Level (Inlet + Radiated)			79/74/70	84/79/75	86/81/77	87/82/78	89/84/79	
ELECTRICAL	Power Input	H	W	412	850	1015	1700	2030	
		M		375	650	850	1,300	1,530	
		L		320	350	500	700	1000	
	Running Current (H)		A	3.58	7.39	8.83	14.78	17.65	
HYDRONIC	Cooling Water Flow Rate	H	L/h	2308	3428	4349	6620	8460	
		M		2118	3095	3887	5976	7560	
		L		1650	2363	2982	4562	5801	
	Cooling Pressure Drop	H	kPa	25.7	59.3	28.5	44.8	41.2	
		M		22.0	49.3	23.3	37.3	33.7	
		L		14.0	30.4	14.5	22.9	20.9	
	Heating Water Flow Rate	H	L/h	1138	1641	2113	3193	4051	
		M		1045	1481	1888	2882	3620	
		L		814	1131	1448	2200	2778	
	Heating Pressure Drop	H	kPa	15.0	34.4	16.6	48.8	26.7	
		M		12.9	28.6	13.6	40.6	21.8	
		L		8.2	17.6	8.4	25.0	13.5	

## EUROVENT TESTING CONDITIONS:

## a. Cooling mode (4-pipe):

- Return air temperature: 27°C DB/19°C WB.
- Inlet/ outlet water temperature: 7°C/ 12°C

## b. Heating mode (4-pipe):

- Return air temperature: 20°C
- Inlet water temperature: 65°C/55°C

## LOOKING FOR DIFFERENT CONFIGURATIONS?

While the most common configurations are specified in the previous sections, we have many more available with over +2,500 product configurations in our portfolio.

**Here is a sneak peak of different configurations available for this range.**

Further information can be accessed through:

**PASelect** Selection software

**Polar Air CS** website

By **contacting your sales representative**

### +2 PIPE CONFIGURATIONS AVAILABLE



**6 Row Coil** configurations are available for applications requiring higher capacity. Other advantages include:

**Enhanced Heat Transfer Efficiency:** Larger surface area ensures better heat exchange and allows for operating with warmer chilled water temperatures typical with air to water heat pumps.

**Improved Latent Capacity:** Increasing the coil surface area allows the air to flow across the coil longer and increase the amount of moisture removed from the air.

### +4 PIPE CONFIGURATIONS AVAILABLE

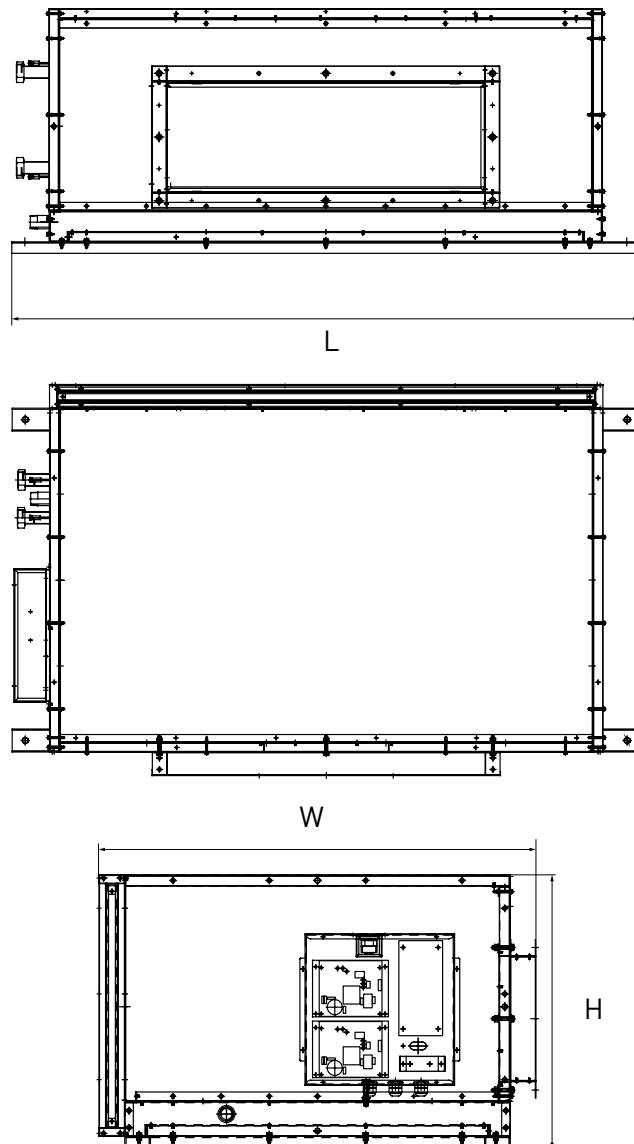


**6 Rows Cooling +2 Row Heating Coil** configurations are available for 4 pipe systems where more heating is required. Other advantages include:

**Enhanced Heat Transfer Efficiency:** Larger surface area ensures better heat exchange and allows for operating with lower hot water temperatures typical with air to water heat pumps.

**Active Humidity Control:** The higher capacity 2-row heating coil provides more reheating of the air which allows the cooling coil to achieve lower dewpoint temperatures and lower space humidity without sacrificing comfort.

## DIMENSIONAL DRAWINGS, DATA &amp; WEIGHTS



HAHU			200	300	400	600	800	
CONSTRUCTION AND PACKING DATA	Water Connections	Type	PT (Threaded Female)					
		In	31.75 (1 1/4)					
	Condensate Drainage Connection	Out	mm [in]	25.4 (1)				
		In		25.4 (1)				
	Heating Water Connections (4P Only)	Out	mm [in]	25.4 (1)				
Dimensions	Dimensions	L	mm	1280	1480	1680	1930	
		W		1120			2130	
		H		640		1190	754	
WEIGHT	Net	kg	From 150 to 165		From 175 to 185	From 186 to 210	From 223 to 250	From 225 to 283