

PDWD

Double Skin Ducted

Sizes: 4 sizes
Models: 2-pipe · 4-pipe
Rows: 3R · 3R+1 · 4R · 4R+2 · 6R
Cooling: 4.3 - 37.1 kW
Heating: 3.8 - 35.1 kW
Air Flow: 575 - 5820 m3/h



Download IOMs & Revits
SCAN QR CODE



Model shown: PDWD High ESP · size 800

Applications needing **superior insulation benefit** from double skin casing that creates a **thermal barrier**, maintaining coolness or warmth depending on the active mode. **Ideal for tropical climates.**



FRONT RIGHT



BACK LEFT



SIDE RIGHT

Project Applications & References



Government: Post Offices · Courthouses · Town Halls · Embassies · Prisons · Military & Emergency Spaces



Healthcare: Hospitals · Clinics · Nursing Homes · Treatment Centers · Laboratories · Morgues



Commercial: Supermarkets · Stores · Shopping Malls · Gyms/Sports Facilities · Museums/Theaters · Airports



Industrial: Factories · Plants · Data Centers · Warehouses/Distribution Centers · Agricultural



Pharmascience

2024 · Canada (Quebec)
Industrial (Laboratory & Offices)

New construction
EC motor
2-pipe model



College Hill

2024 · New Zealand
Industrial (Warehouse)

Retrofit
EC motor
2-pipe model



Key Features & Components

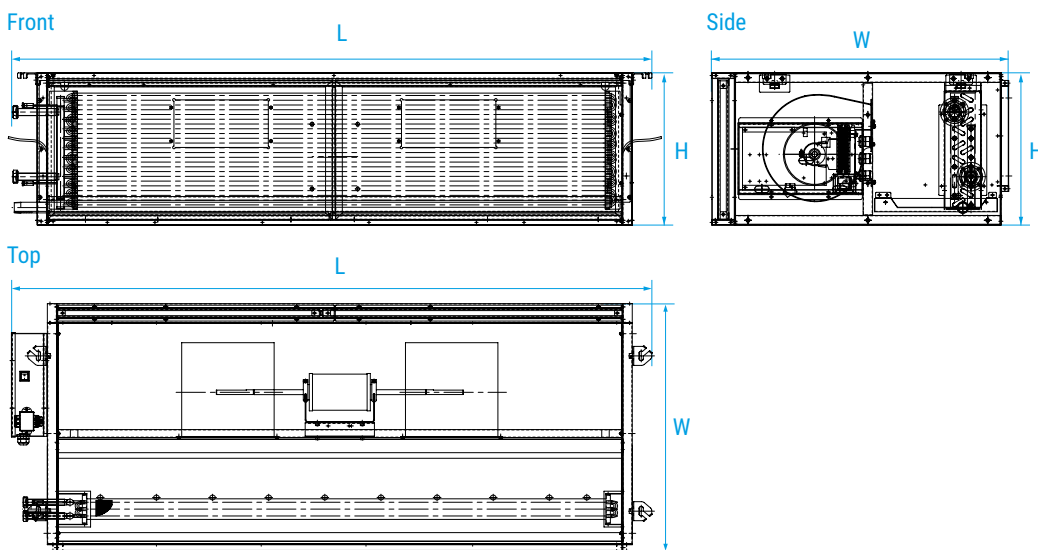
-  **Unique double skin casing** that creates a thermal barrier for efficient cooling and heating.
-  Insulated drain pan, quick duct couplings, and accessible components mean **easy installation**.
-  Ideal for low temperature heat sources like **solar thermal collectors and heat pumps**.
-  **Multiple rows available (2- and 4-pipe):** More rows and coil surface area **improves heat exchange and latent capacity** for better efficiency and humidity control.
-  For high external static pressures up to 200 Pa / 0.8 in.wg. **Recommended: 150 Pa / 0.6 in.wg.**
-  Energy-efficient 0-10 VDC EC motor (**up to 30% energy savings** compared to AC motors).
-  **Copper tubes/headers**, mechanically expanded into corrugated aluminum fins tested up to 35-bar ².
-  **Ready to install package:** Internal painted steel drain pan, thick 25 mm (1") NBR insulation, manual air vent + water purge valve, G2 (MERV 4) filter & 25.4 mm (1") toolless filter rack.

Optional Accessories

- **I-Type Controllers:** Wired Wallpad
- **Valves:** pre-assembled **HYDR+VALVE KIT** ³
- **Drain pan:** stainless steel
- **Electric heater:** up to 6 kW
- **Filter:** G4 (MERV 8) or F8 (MERV 14)
- **Air:** Supply/return plenum, damper, diffuser & manual louver
- **Integrated transformer:** converts from 230V-115V to 24V for valve and thermostat compatibility
- **Disconnect switch:** integrated in control box
- **Customization:** available upon request ¹

Dimensions, Weights & Drawings

PDWD SIZES*			800	1200	1600	2000
Unit Dimensions	L	mm [""]	1252 [49 5/16]	1462 [57 9/16]	1762 [69 3/8]	2128 [83 3/4]
	W		780 [30 11/16]	780 [30 11/16]	780 [30 11/16]	780 [30 11/16]
	H		400 [14 15/16]	400 [14 15/16]	400 [14 15/16]	400 [14 15/16]
Net Weight		kg [lbs]	71 [157]	82 [181]	95 [209]	121 [267]



(1) Minimum order quantities apply. (2) Tested between 25-35 bar with a max operating limit of 16-bar. (3) HYDR+ VALVE KIT includes 2/3-way body valve, on-off/modulating actuator (24V or 110-240V), BSPT or NPT connectors, connection piping kit, 2x shut-off valves, strainer and manual balancing valve. (*) Indicated dimensions approximate within 5 mm or 1/16". Weights approximate within 1 kg (2.2 lbs). Based on 3R configuration. For other row configuration dimensions/weights, please contact us.

PDWD Double Skin Ducted

Technical Specifications

Hydronic Double Skin High ESP Ducted, 3R, 2-pipe with EC Motor

For other row configuration technical data, please contact us at hello@polaraircs.com.

UNIT GENERAL SPECS	PDWD-3R-[SIZE]-V-EC			800	1200	1600	2000
	Configuration			2-pipe			
	Number of Fan Blowers			2			4
	Power Supply (V/Ph/Hz)			208-240/1/50-60			
	Water Connections	Type		BSPT (Threaded Female)			
		In/Out	mm ["]	19.05 [3/4]			25.4 [1]
	Condensate Drainage			mm ["]	19.05 [3/4]		
AIR	Total Air Flow	H	m3/h	2050	2799	3062	5275
		M		1792	2487	2717	4876
		L		881	1249	1650	2880
	External Static Pressure	H	Pa	50			
		M					
		L					
COOLING	Total Cooling Capacity	H	kW	9.5	12.7	14.3	22.9
		M		8.5	11.6	13.0	21.5
		L		5.0	6.8	8.8	14.4
	Sensible Cooling Capacity	H	kW	6.9	9.2	10.3	16.7
		M		6.2	8.4	9.3	15.7
		L		3.5	4.7	6.2	10.3
HEATING	Total Heating Capacity	H	kW	9.8	13.1	14.9	23.7
		M		8.8	12.0	13.6	22.3
		L		5.1	7.0	9.2	15.0
	Recommended Electric Heater Capacity		kW	3.0	6.0	9.0	9.0
SOUND *	Pressure Level (Outlet)		dBA	58/56/47	56/52/45	60/58/50	65/63/60
	Pressure Level (Inlet + Radiated)			61/59/50	59/55/48	63/61/53	65/63/60
	Power Level (Outlet)			67/65/56	65/61/54	69/67/59	74/72/69
	Power Level (Inlet + Radiated)			70/68/59	68/64/57	72/70/62	74/72/69
ELECTRICAL	Power Input ¹	H	W	281	310	477	672
		M		208	151	304	546
		L		65	70	108	280
	Running Current ² (H)		A	2.4	2.7	4.1	5.8
HYDRONIC	Cooling Water Flow Rate	H	L/h	1621	2170	2458	3918
		M		1463	1986	2235	3679
		L		850	1162	1514	2476
	Cooling Pressure Drop	H	kPa	48.9	56.6	38.4	57.7
		M		40.6	48.3	32.4	51.5
		L		15.3	18.4	16.1	25.2
	Heating Water Flow Rate	H	L/h	1665	2238	2556	4071
		M		1502	2048	2325	3823
		L		873	1198	1575	2573
	Heating Pressure Drop	H	kPa	39.2	45.9	31.6	47.3
		M		32.5	39.1	26.6	42.3
		L		12.3	14.9	13.2	20.7
	Water Content		L	1.8	2.4	3.2	3.7

Eurovent Certita Testing Conditions:

Cooling mode: Return Air Temperature 27°C DB/19°C WB Inlet/Outlet water temperature: 7°C/12°C

Heating mode (2-pipe): Return Air Temperature 20°C Inlet/Outlet water temperature: 45°C/40°C

For non-standard conditions (i.e. high ΔT) please refer to PASELECT Software. (E) Specifications follow Eurovent test data (according to EN 1397:2021) for the year of publication. Please visit www.eurovent-certification.com for further information.

(1) Rated power input includes fan motor and PCB. (2) Data on apparent electrical current. (*) Sound pressure level measured at 1m distance in a reverberation test room with a minimum volume at 200m³. Sound power level performed and tested according to EN 16583:2022. Range: H=High, M=Medium, L=Low.

Technical Specifications

Hydronic Double Skin High ESP Ducted, 3R+1, 4-pipe with EC Motor

For other row configuration technical data, please contact us at hello@polaraircs.com.

UNIT GENERAL SPECS	PDWD-3R+1-[SIZE]-P-EC			800	1200	1600	2000
	Configuration			4-pipe			
	Number of Fan Blowers			2			4
	Power Supply (V/Ph/Hz)			208-240/1/50-60			
	Water Connections	Type		BSPT (Threaded Female)			Cooling: 25.4 [1] Heating: 19.05 [3/4]
		In/Out	mm ["]	19.05 [3/4]			
	Condensate Drainage		mm ["]	19.05 [3/4]			
AIR	Total Air Flow	H	m3/h	1982	2727	3005	5159
		M		1736	2383	2616	4743
		L		786	1078	1506	2672
	External Static Pressure	H	Pa	50			
		M					
		L					
COOLING	Total Cooling Capacity	H	kW	9.2	12.5	14.1	22.5
		M		8.3	11.2	12.7	21.1
		L		4.5	6.1	8.2	13.5
	Sensible Cooling Capacity	H	kW	6.6	9.0	10.2	16.4
		M		6.0	8.1	9.1	15.4
		L		3.1	4.2	5.7	9.6
HEATING	Total Heating Capacity	H	kW	7.7	10.3	11.7	18.7
		M		6.9	9.2	10.5	17.6
		L		3.8	5.0	6.8	11.3
SOUND *	Pressure Level (Outlet)		dBA	58/56/47	56/52/45	60/58/50	65/63/60
	Pressure Level (Inlet + Radiated)			61/59/50	59/55/48	63/61/53	65/63/60
	Power Level (Outlet)			67/65/56	65/61/54	69/67/59	74/72/69
	Power Level (Inlet + Radiated)			70/68/59	68/64/57	72/70/62	74/72/69
ELECTRICAL	Power Input ¹	H	W	281	310	477	672
		M		208	151	304	546
		L		65	70	108	280
	Running Current ² (H)		A	2.4	2.7	4.1	5.8
HYDRONIC	Cooling Water Flow Rate	H	L/h	1576	2133	2421	3852
		M		1425	1917	2177	3617
		L		773	1049	1406	2322
	Cooling Pressure Drop	H	kPa	46.5	54.9	37.4	55.9
		M		38.8	45.3	30.9	50.0
		L		12.9	15.3	14.1	22.5
	Heating Water Flow Rate	H	L/h	658	879	1002	1604
		M		595	790	901	1507
		L		323	432	582	967
	Heating Pressure Drop	H	kPa	31.2	61.7	30.2	85.3
		M		26.0	50.9	25.0	76.2
		L		8.6	17.2	11.4	34.3
	Water Content (Cooling)		L	1.8	2.4	3.2	3.7
	Water Content (Heating)			0.6	0.8	1.1	1.2

Eurovent Certita Testing Conditions:

Cooling mode: Return Air Temperature 27°C DB/19°C WB Inlet/Outlet water temperature: 7°C/12°C

Heating mode (4-pipe): Return Air Temperature 20°C Inlet/Outlet water temperature: 65°C/55°C

For non-standard conditions (i.e. high ΔT) please refer to PASELECT Software. (E) Specifications follow Eurovent test data (according to EN 1397:2021) for the year of publication. Please visit www.eurovent-certification.com for further information.

(1) Rated power input includes fan motor and PCB. (2) Data on apparent electrical current. (*) Sound pressure level measured at 1m distance in a reverberation test room with a minimum volume at 200m³. Sound power level performed and tested according to EN 16583:2022. Range: H=High, M=Medium, L=Low.