

# POLAR HEAT PUMPS


## ENGINEERING SUBMITTAL SHEET

### POLAR-HP-050ZA/BE

### Cold Climate Air Source Hydronic Heatpump




### SPECIFICATIONS:

Model		POLAR	050ZA/(BE)	Rated Heating Capacity		kW	8.3
Power Supply		V/P/Hz	220~240/1/60	Heating Power Input	Ambient Temp - 20°C Water Outlet 45°C	kW	4.68
Rated Cooling Capacity	Ambient Temp 35°C Water Outlet 7°C	kW	10.5	Heating Current Input		A	21.3
Cooling Power Input		kW	4.16	Co-Efficiency of Performance		COP	1.8
Cooling Current Input		A	18.9	Total Load		A	27.60
Co-Efficiency of Performance		COP	2.5	Breaker Sizing	A	40.0	
Rated Cooling Capacity	Ambient Temp 28°C Water Outlet 12°C	kW	14.7	Nominal Water Flow Volume	GPM	11.00	
Cooling Power Input		kW	4.73	Water Pressure Drop	psi/ft head	6.37/14.7	
Cooling Current Input		A	21.5	Water Inlet/Outlet (External Threaded)	inch	1"	
Co-Efficiency of Performance		COP	3.1	Refrigerant		R410A	
Rated Heating Capacity	Ambient Temp 7°C Water Outlet 45°C	kW	14.0	Refrigerant Amount	OZ	105.8	
Heating Power Input		kW	4.40	Sound Level	dB(A)	54	
Heating Current Input		A	20.0	IP Rating		IPX4	
Co-Efficiency of Performance		COP	3.2	Net Weight	KG/LBS	128/282	
Rated Heating Capacity	Ambient Temp - 7°C Water Outlet 45°C	kW	11.5	Unit Dimensions(L/W/H)	mm	1000/440/1380	
Heating Power Input		kW	3.68	Unit Dimensions(L/W/H)	inches	39.37/17.32/54.33	
Heating Current Input		A	16.7	Certification			
Co-Efficiency of Performance		COP	3.1				


# 050ZA/BE

## COEFFICIENT OF PERFORMAMCE TABLES

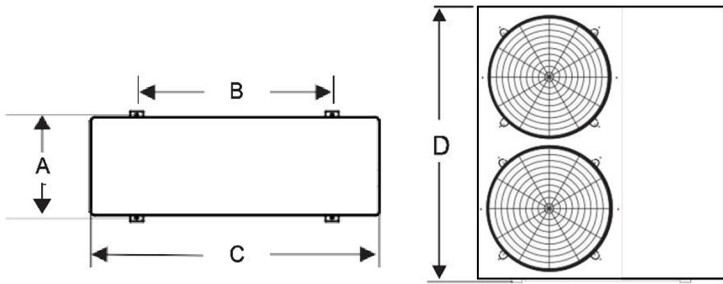
### Celcius

EVI DC inverter heat pump			Ambient temperature (°C)											
POLAR 050ZA/(BE)			-30	-25	-20	-15	-12	-7	2	7	15	21	30	38
 outlet water temperature (°C)	20	heating capacity (W)	6788	7325	9889	10102	10349	11800	13850	15625	17388	19783	23556	24453
		power input (W)	3114	3241	3544	3238	2797	2810	2856	2862	2760	2520	2370	1985
		COP (W/W)	2.18	2.26	2.79	3.12	3.70	4.20	4.85	5.46	6.30	7.85	9.94	12.32
	30	heating capacity (W)	6526	7288	9842	10046	10324	11750	13774	15376	17305	19712	23123	24256
		power input (W)	3417	3644	3969	3575	3119	3176	3203	3237	3187	2844	2676	2353
		COP (W/W)	1.91	2.00	2.48	2.81	3.31	3.70	4.30	4.75	5.43	6.93	8.64	10.31
	35	heating capacity (W)	6325	7200	9700	9950	10288	11650	13628	15290	17259	19688	22856	23995
		power input (W)	3765	4045	4450	3827	3511	3641	3754	3702	3626	3326	2968	2721
		COP (W/W)	1.68	1.78	2.18	2.60	2.93	3.20	3.63	4.13	4.76	5.92	7.70	8.82
	41	heating capacity (W)	6223	7121	9601	9785	10178	11623	13548	15202	17216	19602	22246	23586
		power input (W)	3989	4316	4730	4200	3870	3994	4130	4307	4148	3558	3305	3039
		COP (W/W)	1.56	1.65	2.03	2.33	2.63	2.91	3.28	3.53	4.15	5.51	6.73	7.76
45	heating capacity (W)	6180	7002	8291	9627	10102	11467	13495	14139	17182	19589	22103	22789	
	power input (W)	4262	4404	4684	4336	4073	4024	4410	4446	4383	3841	3672	3401	
	COP (W/W)	1.45	1.59	1.77	2.22	2.48	2.85	3.06	3.18	3.92	5.10	6.02	6.70	
50	heating capacity (W)	6036	6922	9324	9451	10002	11495	13388	15011	17095	19518	21036	22068	
	power input (W)	4471	4709	5939	4679	4526	4562	4617	4890	4645	4109	4030	3885	
	COP (W/W)	1.35	1.47	1.57	2.02	2.21	2.52	2.90	3.07	3.68	4.75	5.22	5.68	
55	heating capacity (W)		6744	9178	9227	9945	11376	13185	14875	17001	19466	20002	21312	
	power input (W)		5483	6556	4934	4781	4862	4901	5025	4857	4580	4455	4332	
	COP (W/W)		1.23	1.40	1.87	2.08	2.34	2.69	2.96	3.50	4.25	4.49	4.92	
60	heating capacity (W)				9008	9723	11124	12920	14537	16950	19402	19588	20156	
	power input (W)				5237	5012	5056	5087	5173	5060	4851	4697	4509	
	COP (W/W)				1.72	1.94	2.20	2.54	2.81	3.35	4.00	4.17	4.47	

### Fahrenheit

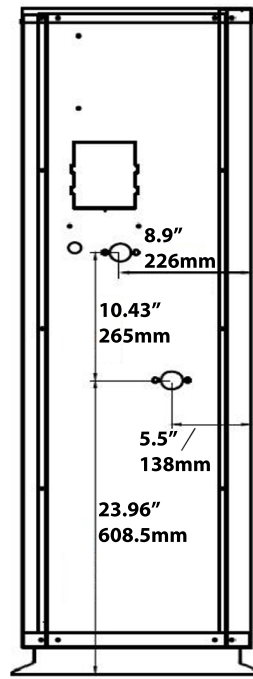
EVI DC inverter heat pump			Ambient temperature (°F)											
POLAR 050ZA/(BE)			-22	-13	-4	5	10.4	19.4	35.6	44.6	59	69.8	86	100.4
 outlet water temperature (°F)	68	heating capacity (W)	6788	7325	9889	10102	10349	11800	13850	15625	17388	19783	23556	24453
		power input (W)	3114	3241	3544	3238	2797	2810	2856	2862	2760	2520	2370	1985
		COP (W/W)	2.18	2.26	2.79	3.12	3.70	4.20	4.85	5.46	6.30	7.85	9.94	12.32
	86	heating capacity (W)	6526	7288	9842	10046	10324	11750	13774	15376	17305	19712	23123	24256
		power input (W)	3417	3644	3969	3575	3119	3176	3203	3237	3187	2844	2676	2353
		COP (W/W)	1.91	2.00	2.48	2.81	3.31	3.70	4.30	4.75	5.43	6.93	8.64	10.31
	95	heating capacity (W)	6325	7200	9700	9950	10288	11650	13628	15290	17259	19688	22856	23995
		power input (W)	3765	4045	4450	3827	3511	3641	3754	3702	3626	3326	2968	2721
		COP (W/W)	1.68	1.78	2.18	2.60	2.93	3.20	3.63	4.13	4.76	5.92	7.70	8.82
	106	heating capacity (W)	6223	7121	9601	9785	10178	11623	13548	15202	17216	19602	22246	23586
		power input (W)	3989	4316	4730	4200	3870	3994	4130	4307	4148	3558	3305	3039
		COP (W/W)	1.56	1.65	2.03	2.33	2.63	2.91	3.28	3.53	4.15	5.51	6.73	7.76
113	heating capacity (W)	6180	7002	8291	9627	10102	11467	13495	14139	17182	19589	22103	22789	
	power input (W)	4262	4404	4684	4336	4073	4024	4410	4446	4383	3841	3672	3401	
	COP (W/W)	1.45	1.59	1.77	2.22	2.48	2.85	3.06	3.18	3.92	5.10	6.02	6.70	
122	heating capacity (W)	6036	6922	9324	9451	10002	11495	13388	15011	17095	19518	21036	22068	
	power input (W)	4471	4709	5939	4679	4526	4562	4617	4890	4645	4109	4030	3885	
	COP (W/W)	1.35	1.47	1.57	2.02	2.21	2.52	2.90	3.07	3.68	4.75	5.22	5.68	
131	heating capacity (W)		6744	9178	9227	9945	11376	13185	14875	17001	19466	20002	21312	
	power input (W)		5483	6556	4934	4781	4862	4901	5025	4857	4580	4455	4332	
	COP (W/W)		1.23	1.40	1.87	2.08	2.34	2.69	2.96	3.50	4.25	4.49	4.92	
140	heating capacity (W)				9008	9723	11124	12920	14537	16950	19402	19588	20156	
	power input (W)				5237	5012	5056	5087	5173	5060	4851	4697	4509	
	COP (W/W)				1.72	1.94	2.20	2.54	2.81	3.35	4.00	4.17	4.47	

## Product Dimensions:

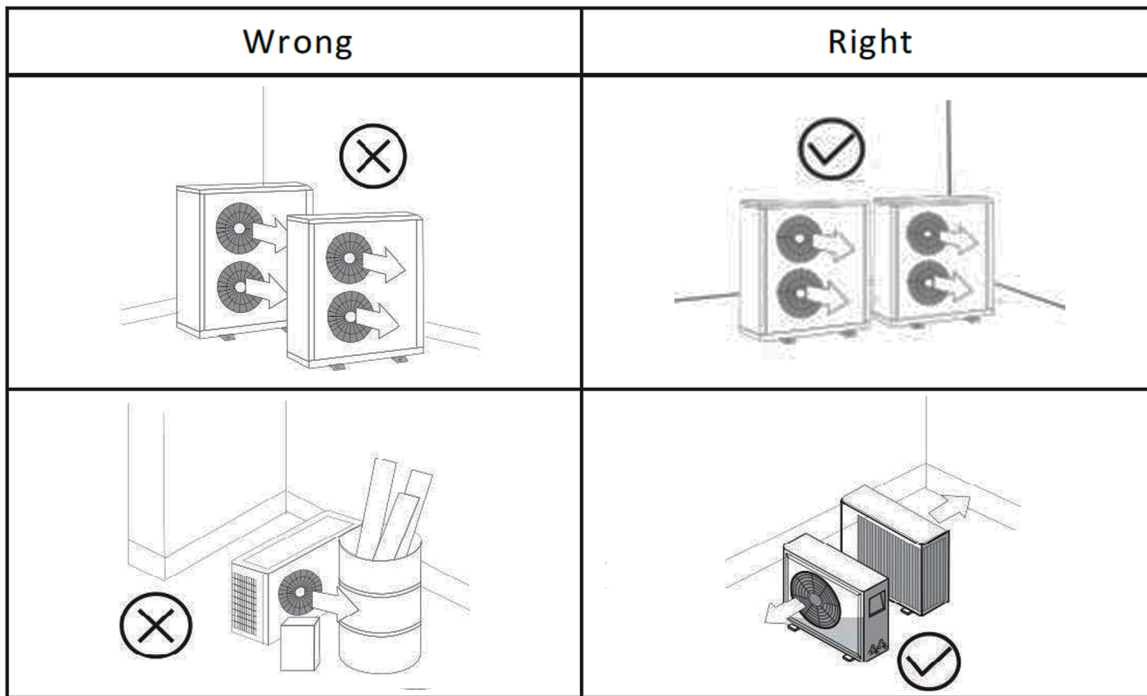


Size	050ZA/(BE) & 060ZA/(BE)
A	420mm/16.5"
B	700mm/27.6"
C	1000mm/39.4"
D	1380mm/54.3"

## Water Port Locations:



## Installation Location:



## Installation Clearances:

