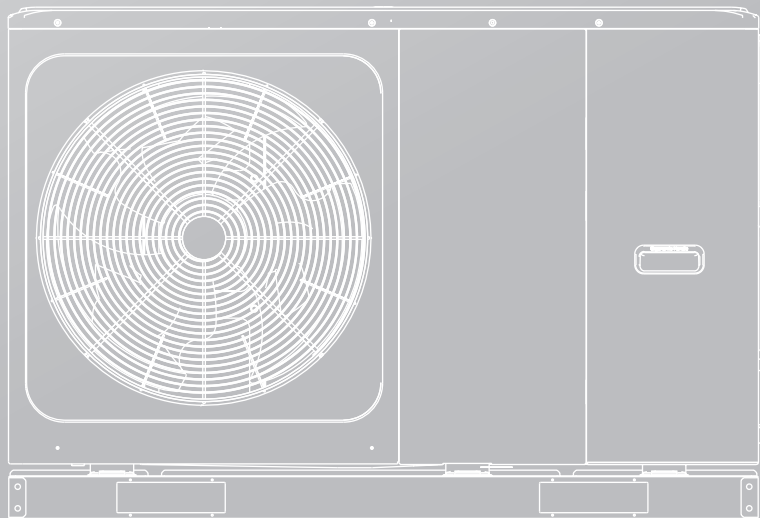


# TECHNICAL DATA MANUAL

M-thermal Mono  
ATW Heat Pump



**IMPORTANT NOTE:**

Thank you very much for purchasing our product,  
Before using your unit , please read this manual carefully and keep it for future reference.



Model	For medium - temperature application													
	Energy efficiency class	Unit sound power	average climate				colder climate				warmer climate			
			Rated heat output kW	Seasonal space heating energy efficiency %	For space heating, annual energy consumption kWh	Rated heat output kW	Seasonal space heating energy efficiency %	For space heating, annual energy consumption kWh	Rated heat output kW	Seasonal space heating energy efficiency %	For space heating, annual energy consumption kWh	Rated heat output kW	Seasonal space heating energy efficiency %	For space heating, annual energy consumption kWh
ECOSPAR-M4kW-1N	A++	55	4.4	129.5	2744	3.4	102.1	3159	5.0	162.4	1621			
ECOSPAR-M4kW-1NE30	A++	55	4.4	129.5	2744	3.4	102.1	3159	5.0	162.4	1621			
ECOSPAR-M6kW-1N	A++	58	5.7	137.9	3345	4.3	111.1	3681	5.1	164.7	1640			
ECOSPAR-M6kW-1NE30	A++	58	5.7	137.9	3345	4.3	111.1	3681	5.1	164.7	1640			
ECOSPAR-M8kW-1N	A++	59	6.6	131.5	4056	5.8	112.0	4950	8.37	176.9	2485			
ECOSPAR-M8kW-1NE30	A++	59	6.6	131.5	4056	5.8	112.0	4950	8.37	176.9	2485			
ECOSPAR-M8kW-1NER90	A++	59	6.6	131.5	4056	5.8	112.0	4950	8.37	176.9	2485			
ECOSPAR-M10kW-1N	A++	60	7.7	136.6	4539	6.7	116.4	5540	8.6	180.3	2516			
ECOSPAR-M10kW-1NE30	A++	60	7.7	136.6	4539	6.7	116.4	5540	8.6	180.3	2516			
ECOSPAR-M10kW-1NER90	A++	60	7.7	136.6	4539	6.7	116.4	5540	8.6	180.3	2516			
ECOSPAR-M12kW-1N	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.0	3776			
ECOSPAR-M12kW-1NE30	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.0	3776			
ECOSPAR-M12kW-1NER90	A++	65	11.6	135.1	6927	10.3	117.8	8419	12.5	174.0	3776			
ECOSPAR-M14kW-1N	A++	65	12.1	135.6	7202	11.0	118.9	8866	14.17	174.9	4258			
ECOSPAR-M14kW-1NE30	A++	65	12.1	135.6	7202	11.0	118.9	8866	14.17	174.9	4258			
ECOSPAR-M14kW-1NER90	A++	65	12.1	135.6	7202	11.0	118.9	8866	14.17	174.9	4258			
ECOSPAR-M16kW-1N	A++	68	13.0	133.3	7895	11.8	121.8	9309	14.17	176.0	4231			
ECOSPAR-M16kW-1NE30	A++	68	13.0	133.3	7895	11.8	121.8	9309	14.17	176.0	4231			
ECOSPAR-M16kW-1NER90	A++	68	13.0	133.3	7895	11.8	121.8	9309	14.17	176.0	4231			
ECOSPAR-M12kW-3N	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780			
ECOSPAR-M12kW-3NE30	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780			
ECOSPAR-M12kW-3NER90	A++	65	11.6	135.1	6928	10.3	117.7	8420	12.5	173.8	3780			
ECOSPAR-M14kW-3N	A++	65	12.1	135.6	7203	11.0	118.9	8867	14.17	174.7	4262			
ECOSPAR-M14kW-3NE30	A++	65	12.1	135.6	7203	11.0	118.9	8867	14.17	174.7	4262			
ECOSPAR-M14kW-3NER90	A++	65	12.1	135.6	7203	11.0	118.9	8867	14.17	174.7	4262			
ECOSPAR-M16kW-3N	A++	68	13.0	133.2	7896	11.8	121.8	9310	14.17	175.8	4236			
ECOSPAR-M16kW-3NE30	A++	68	13.0	133.2	7896	11.8	121.8	9310	14.17	175.8	4236			
ECOSPAR-M16kW-3NER90	A++	68	13.0	133.2	7896	11.8	121.8	9310	14.17	175.8	4236			

Unit type explanation:

1. MHC-V\*\*W/D2N8-B, without back-up heater,
2. MHC-V\*\*W/D2RN8-BE30, with 3kW back-up heater and 1-Phase Source
3. MHC-V\*\*W/D2RN8-BER90, with 9kW back-up heater and 3-Phase Source

Model	For low - temperature application											
	average climate			colder climate			warmer climate					
	Energy efficiency class	Unit sound power	Rated heat output	Seasonal space heating energy efficiency	For space heating, annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating, annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating, annual energy consumption	
-	dB	kW	%	kWh	kWh	kW	%	kWh	kW	%	kWh	
ECOSPAR-M4kW-1N	A+++	55	5.5	191.0	2351	4.6	159.5	2769	5.5	255.4	1146	
ECOSPAR-M4kW-1NE30	A+++	55	5.5	191.0	2351	4.6	159.5	2769	5.5	255.4	1146	
ECOSPAR-M6kW-1N	A+++	58	6.8	195.0	2845	5.6	165.3	3300	6.1	259.8	1244	
ECOSPAR-M6kW-1NE30	A+++	58	6.8	195.0	2845	5.6	165.3	3300	6.1	259.8	1244	
ECOSPAR-M8kW-1N	A+++	59	8.1	205.6	3218	7.0	170.0	3976	8.1	276.6	1551	
ECOSPAR-M8kW-1NE30	A+++	59	8.1	205.6	3218	7.0	170.0	3976	8.1	276.6	1551	
ECOSPAR-M10kW-1N	A+++	60	9.2	204.8	3644	7.7	169.8	4423	8.6	280.5	1617	
ECOSPAR-M10kW-1NE30	A+++	60	9.2	204.8	3644	7.7	169.8	4423	8.6	280.5	1617	
ECOSPAR-M12kW-1N	A+++	65	12.0	189.4	5152	11.4	160.2	6870	11.1	256.1	2292	
ECOSPAR-M12kW-1NE30	A+++	65	12.0	189.4	5152	11.4	160.2	6870	11.1	256.1	2292	
ECOSPAR-M14kW-1N	A+++	65	13.7	185.7	6012	12.6	159.6	7667	12.1	260.3	2457	
ECOSPAR-M14kW-1NE30	A+++	65	13.7	185.7	6012	12.6	159.6	7667	12.1	260.3	2457	
ECOSPAR-M16kW-1N	A+++	68	15.2	181.7	6804	13.7	157.8	8431	13.1	248.5	2781	
ECOSPAR-M16kW-1NE30	A+++	68	15.2	181.7	6804	13.7	157.8	8431	13.1	248.5	2781	
ECOSPAR-M12kW-3N	A+++	65	12.0	189.3	5153	11.4	160.2	6871	11.1	255.6	2296	
ECOSPAR-M12kW-3NE30	A+++	65	12.0	189.3	5153	11.4	160.2	6871	11.1	255.6	2296	
ECOSPAR-M14kW-3N	A+++	65	13.7	185.6	6013	12.6	159.6	7667	12.1	259.8	2462	
ECOSPAR-M14kW-3NE30	A+++	65	13.7	185.6	6013	12.6	159.6	7667	12.1	259.8	2462	
ECOSPAR-M16kW-3N	A+++	68	15.2	181.6	6805	13.7	157.8	8431	13.1	248.1	2786	
ECOSPAR-M16kW-3NE30	A+++	68	15.2	181.6	6805	13.7	157.8	8431	13.1	248.1	2786	

Unit type explanation:

1. MHC-V\*\*W/D2N8-B, without back-up heater,
2. MHC-V\*\*W/D2RN8-BE30, with 3kW back-up heater and 1-Phase Source
3. MHC-V\*\*W/D2RN8-BER90, with 9kW back-up heater and 3-Phase Source

# Product fiche 1

<b>Heat pump space heating</b>		Model	ECOSPAR-M4KW-1N***	ECOSPAR-M6KW-1N***	ECOSPAR-M8KW-1N***	ECOSPAR-M10KW-1N***	ECOSPAR-M12KW-1N***
Unit sound power (*)	Average climate low temperature application	[dB]	55.0	58.0	59.0	60.0	65.0
	Average climate medium temperature application	[dB]	55.0	58.0	59.0	60.0	65.0
Capacity of the back-up heater integrated in the unit	Ps up back-up heater (optional)	[kW]	0/3	0/3	0/3/9	0/3/9	0/3/9
	Energy efficiency class 35°C (Low temp. app.)	-	A+++	A+++	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++	A++	A++	A++	A++
<b>Average climate (Design temperature = -10°C)</b>							
Space heating 35°C	Prated (declared heating capacity) @ -10°C	[kW]	5.5	6.8	8.1	9.2	12.0
	Seasonal space heating efficiency (ηs)	[%]	191.0	195.0	205.6	204.8	189.4
	Annual energy consumption	[kWh]	2,351	2,845	3,218	3,644	5,152
Space heating 55°C	Prated (declared heating capacity) @ -10°C	[kW]	4.4	5.7	6.6	7.7	11.6
	Seasonal space heating efficiency (ηs)	[%]	129.5	137.9	131.5	136.6	135.1
	Annual energy consumption	[kWh]	2,744	3,345	4,056	4,539	6,927
<b>Part load conditions space heating average climate low temperature application</b>							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	4.88	6.03	7.18	8.10	10.61
	COPd (declared COP)	-	3.19	3.09	3.35	3.23	2.88
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	3.05	3.88	4.65	5.18	6.69
	COPd (declared COP)	-	4.78	4.85	5.09	5.01	4.65
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	1.93	2.39	2.90	3.32	4.44
	COPd (declared COP)	-	6.13	6.63	6.82	7.08	6.62
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	1.48	1.39	1.63	1.65	3.74
	COPd (declared COP)	-	8.05	7.93	8.35	8.58	8.47
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

# Product fiche 1

<b>Heat pump space heating</b>						
	Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
Unit sound power (*)	[dB]	65.0	68.0	65.0	65.0	68.0
Average climate low temperature application						
Average climate medium temperature application	[dB]	65.0	68.0	65.0	65.0	68.0
Capacity of the back-up heater integrated in the unit	[kW]	0/3/9	0/3/9	0/3/9	0/3/9	0/3/9
Space heating	-	A+++	A+++	A+++	A+++	A+++
Space heating	-	A++	A++	A++	A++	A++
<b>Average climate (Design temperature = -10°C)</b>						
Space heating 35°C	[kW]	13.7	15.2	12.0	13.7	15.2
Seasonal space heating efficiency (η <sub>s</sub> )	[%]	185.7	181.7	189.3	185.6	181.6
Annual energy consumption	[kWh]	6,012	6,804	5,153	6,013	6,805
Space heating 55°C	[kW]	12.1	13.0	11.6	12.1	13.0
Seasonal space heating efficiency (η <sub>s</sub> )	[%]	135.6	133.3	135.1	135.6	133.2
Annual energy consumption	[kWh]	7,202	7,895	6,928	7,203	7,896
<b>Part load conditions space heating average climate low temperature application</b>						
(A) condition (-7°C)	[kW]	12.14	13.45	10.61	12.14	13.45
COP <sub>d</sub> (declared COP)	-	2.79	2.72	2.88	2.79	2.72
Cdh(declared coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	[kW]	7.94	8.56	6.69	7.94	8.56
COP <sub>d</sub> (declared COP)	-	4.52	4.41	4.65	4.52	4.41
Cdh(declared coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	[kW]	5.20	5.70	4.44	5.20	5.70
COP <sub>d</sub> (declared COP)	-	6.68	6.56	6.62	6.68	6.56
Cdh(declared coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	[kW]	3.75	3.78	3.74	3.75	3.78
COP <sub>d</sub> (declared COP)	-	8.52	8.51	8.47	8.52	8.51
Cdh(declared coefficient)	-	0.90	0.90	0.90	0.90	0.90

# Product fiche 2

Heat pump space heating		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	4.41	5.36	6.44	7.40	10.74
	COPd (declared COP)	-	2.86	2.76	3.04	2.96	2.77
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(F) Tivalent temperature	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	4.88	6.03	7.18	8.10	10.61
	COPd (declared COP)	-	3.19	3.09	3.35	3.23	2.88
	Psup (@Tdesignh: -10°C)	[kW]	1.11	1.45	1.68	1.76	1.26
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	3.89	5.04	5.84	6.78	10.24
	COPd (declared COP)	-	2.17	2.17	2.16	2.24	2.01
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	2.38	3.12	3.75	4.28	6.52
(B) condition (2°C)	COPd (declared COP)	-	3.30	3.51	3.30	3.42	3.44
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	2.94	2.08	2.42	2.77	4.36
	COPd (declared COP)	-	4.41	4.54	4.34	4.52	4.59
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.32	1.28	1.39	1.58	3.29
	COPd (declared COP)	-	5.66	5.59	5.33	5.68	6.05
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	Pdh (declared heating capacity)	[kW]	3.42	4.52	4.90	5.38	9.10
	COPd (declared COP)	-	1.91	1.91	1.84	1.83	1.79
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(E) Tol (temperature operating limit)	Tbiv	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	Pdh (declared heating capacity)	[kW]	3.89	5.04	5.84	6.78	10.24
	COPd (declared COP)	-	2.17	2.17	2.16	2.24	2.01
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

# Product fiche 2

Heat pump space heating		Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	11.47	12.52	10.74	11.47	12.52
	COP <sub>d</sub> (declared COP)	-	2.59	2.48	2.77	2.59	2.48
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(F) Tivalent temperature	T <sub>biv</sub>	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	12.14	13.45	10.61	12.14	13.45
	COP <sub>d</sub> (declared COP)	-	2.79	2.72	2.88	2.79	2.72
	P <sub>sup</sub> (@T <sub>design</sub> : -10°C)	[kW]	2.23	2.68	1.26	2.23	2.68
Part load conditions space heating average climate medium temperature application							
(A) condition (-7°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	10.68	11.52	10.24	10.68	11.52
	COP <sub>d</sub> (declared COP)	-	2.01	1.99	2.01	2.01	1.99
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P <sub>dh</sub> (declared heating capacity)	[kW]	6.86	7.18	6.52	6.86	7.18
(B) condition (2°C)	COP <sub>d</sub> (declared COP)	-	3.43	3.34	3.44	3.43	3.34
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P <sub>dh</sub> (declared heating capacity)	[kW]	4.63	4.67	4.36	4.63	4.67
	COP <sub>d</sub> (declared COP)	-	4.66	4.61	4.59	4.66	4.61
(C) condition (12°C)	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	P <sub>dh</sub> (declared heating capacity)	[kW]	3.31	3.31	3.29	3.31	3.31
	COP <sub>d</sub> (declared COP)	-	6.13	6.07	6.05	6.13	6.07
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00	-10.00	-10.00	-10.00	-10.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	9.19	10.33	9.10	9.19	10.33
	COP <sub>d</sub> (declared COP)	-	1.76	1.80	1.79	1.76	1.80
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(F) Tivalent temperature	T <sub>biv</sub>	[°C]	-7.00	-7.00	-7.00	-7.00	-7.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	10.68	11.52	10.24	10.68	11.52
	COP <sub>d</sub> (declared COP)	-	2.01	1.99	2.01	2.01	1.99
	P <sub>sup</sub> (@T <sub>design</sub> : -10°C)	[kW]	2.91	2.67	2.50	2.91	2.67



# Product fiche 3

## Heat pump space heating

Supplementary capacity at P_design		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
Psup (@Tdesignh: -10°C)		[kW]	0.98	1.18	1.69	2.28	2.50
Colder climate (Design temperature = -22°C)							
Prated (declared heating capacity) @ -22°C		[kW]	4.6	5.6	7.0	7.7	11.4
Seasonal space heating efficiency (ηs)		[%]	159.5	165.3	170.0	169.8	160.2
Annual energy consumption		[kWh]	2,769	3,300	3,976	4,423	6,870
Prated (declared heating capacity) @ -22°C		[kW]	3.4	4.3	5.8	6.7	10.3
Seasonal space heating efficiency (ηs)		[%]	102.1	111.1	112.0	116.4	117.8
Annual energy consumption		[kWh]	3,159	3,681	4,950	5,540	8,419
Part load conditions space heating colder climate low temperature application							
(A) condition (-7°C)		[kW]	2.75	3.42	4.46	4.83	7.05
COPd (declared COP)		-	3.49	3.59	3.66	3.60	3.48
Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90
PdH (declared heating capacity)		[kW]	1.77	2.06	2.69	2.94	4.67
COPd (declared COP)		-	4.95	5.21	5.20	5.26	4.96
Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)		[kW]	1.17	1.46	1.65	1.92	3.14
COPd (declared COP)		-	5.53	6.24	6.53	7.08	6.10
Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)		[kW]	1.43	1.44	1.65	1.65	3.57
COPd (declared COP)		-	7.67	7.66	7.96	7.96	7.87
Cdh(degradation coefficient)		-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)		[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
PdH (declared heating capacity)		[kW]	2.80	3.48	4.06	4.62	7.01
COPd (declared COP)		-	1.97	1.96	1.95	1.97	1.98
WTOL (Heating water Operation Limit)		[°C]	65.00	65.00	65.00	65.00	65.00
(F) Tbivalent temperature		[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
PdH (declared heating capacity)		[kW]	3.72	4.59	5.69	6.32	9.28
COPd (declared COP)		-	2.57	2.53	2.83	2.64	2.59
Supplementary capacity at P_design		[kW]	1.76	2.15	2.91	3.08	4.40

# Product fiche 3

## Heat pump space heating

Colder climate (Design temperature = -22°C)		Model	ECOSPAR-M14KW-1N***	ECOSPAR-M16KW-1N***	ECOSPAR-M12KW-3N***	ECOSPAR-M14KW-3N***	ECOSPAR-M16KW-3N***
Space heating 35°C	P <sub>rated</sub> (declared heating capacity) @ -22°C	[kW]	12.6	13.7	11.4	12.6	13.7
	Seasonal space heating efficiency (η <sub>s</sub> )	[%]	159.6	157.8	160.2	159.6	157.8
	Annual energy consumption	[kWh]	7,667	8,431	6,871	7,667	8,431
Space heating 55°C	P <sub>rated</sub> (declared heating capacity) @ -22°C	[kW]	11.0	11.8	10.3	11.0	11.8
	Seasonal space heating efficiency (η <sub>s</sub> )	[%]	118.9	121.8	117.7	118.9	121.8
	Annual energy consumption	[kWh]	8,866	9,309	8,420	8,867	9,310
<b>Part load conditions space heating colder climate low temperature application</b>							
(A) condition (-7°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	7.96	8.31	7.05	7.96	8.31
	COP <sub>d</sub> (declared COP)	-	3.44	3.37	3.48	3.44	3.37
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	5.05	5.26	4.67	5.05	5.26
	COP <sub>d</sub> (declared COP)	-	4.92	4.86	4.96	4.92	4.86
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	3.15	3.62	3.14	3.15	3.62
	COP <sub>d</sub> (declared COP)	-	6.11	6.49	6.10	6.11	6.49
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	3.57	3.34	3.57	3.57	3.34
	COP <sub>d</sub> (declared COP)	-	7.82	7.40	7.87	7.82	7.40
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	T <sub>ol</sub> (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	7.57	8.88	7.01	7.57	8.88
	COP <sub>d</sub> (declared COP)	-	1.92	1.97	1.98	1.92	1.97
(F) T <sub>bivalent</sub> temperature	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
	T <sub>biv</sub>	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	10.31	11.22	9.28	10.31	11.22
Supplementary capacity at P <sub>design</sub>	COP <sub>d</sub> (declared COP)	-	2.53	2.43	2.59	2.53	2.43
	P <sub>sup</sub> (@T <sub>designh</sub> : -22°C)	[kW]	5.03	4.82	4.40	5.03	4.82

# Product fiche 4

## Heat pump space heating

Part load conditions space heating colder climate medium temperature application		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	2.13	2.70	3.86	4.27	6.63
	COPd (declared COP)	-	2.32	2.46	2.48	2.54	2.63
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.28	1.60	2.21	2.57	4.06
(B) condition (2°C)	COPd (declared COP)	-	2.99	3.36	3.35	3.51	3.60
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.01	1.02	1.44	1.65	2.78
	COPd (declared COP)	-	3.86	3.94	4.11	4.37	4.54
(C) condition (7°C)	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	1.36	1.37	1.46	1.47	3.33
	COPd (declared COP)	-	6.28	6.35	5.92	5.96	6.25
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	Pdh (declared heating capacity)	[kW]	1.64	2.09	2.80	2.80	4.19
	COPd (declared COP)	-	1.02	1.13	1.22	1.22	1.13
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(E) Tivalent temperature	Tbiv	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	Pdh (declared heating capacity)	[kW]	2.74	3.47	4.71	5.47	8.41
	COPd (declared COP)	-	1.74	1.86	1.90	2.00	1.84
	Psup (@Tdesign: -22°C)	[kW]	1.72	2.17	2.97	3.91	6.12
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	5.5	6.1	8.1	8.6	11.1
	Seasonal space heating efficiency (ηs)	[%]	255.4	259.8	276.6	280.5	256.1
	Annual energy consumption	[kWh]	1,146	1,244	1,551	1,617	2,292
	Prated (declared heating capacity) @ 2°C	[kW]	5.0	5.1	8.37	8.6	12.5
Space heating 55°C	Seasonal space heating efficiency (ηs)	[%]	162.4	164.7	176.9	180.3	174.0
	Annual energy consumption	[kWh]	1,621	1,640	2,485	2,516	3,776

# Product fiche 4

## Heat pump space heating

Part load conditions space heating colder climate medium temperature application		Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
(A) condition (-7°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	6.89	7.64	6.63	6.89	7.64
	COP <sub>d</sub> (declared COP)	-	2.66	2.65	2.63	2.66	2.65
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (2°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	4.32	4.42	4.06	4.32	4.42
	COP <sub>d</sub> (declared COP)	-	3.66	3.79	3.60	3.66	3.79
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (7°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	3.06	2.97	2.78	3.06	2.97
	COP <sub>d</sub> (declared COP)	-	4.72	4.81	4.54	4.72	4.81
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (12°C)	P <sub>dh</sub> (declared heating capacity)	[kW]	3.33	3.43	3.33	3.33	3.43
	COP <sub>d</sub> (declared COP)	-	6.25	6.29	6.25	6.25	6.29
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00	-22.00	-22.00	-22.00	-22.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	4.20	5.21	4.19	4.20	5.21
	COP <sub>d</sub> (declared COP)	-	1.13	1.23	1.13	1.13	1.23
(F) T bivalent temperature	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
	T <sub>biv</sub>	[°C]	-15.00	-15.00	-15.00	-15.00	-15.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	8.94	9.61	8.41	8.94	9.61
Supplementary capacity at P <sub>design</sub>	COP <sub>d</sub> (declared COP)	-	1.79	1.86	1.84	1.79	1.86
	P <sub>sup</sub> (@T <sub>designh</sub> : -22°C)	[kW]	6.80	6.59	6.12	6.80	6.59
Warmer climate (Design temperature = 2°C)							
Space heating 35°C	P <sub>rated</sub> (declared heating capacity) @ 2°C	[kW]	12.1	13.1	11.1	12.1	13.1
	Seasonal space heating efficiency (η <sub>s</sub> )	[%]	260.3	248.5	255.6	259.8	248.1
	Annual energy consumption	[kWh]	2,457	2,781	2,296	2,462	2,786
Space heating 55°C	P <sub>rated</sub> (declared heating capacity) @ 2°C	[kW]	14.17	14.17	12.5	14.17	14.17
	Seasonal space heating efficiency (η <sub>s</sub> )	[%]	174.9	176.0	173.8	174.9	175.8
	Annual energy consumption	[kWh]	4,258	4,231	3,780	4,262	4,236

# Product fiche 5

<b>Heat pump space heating</b>		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
<b>Part load conditions space heating warmer climate low temperature application</b>							
<b>(B) condition (2°C)</b>	Pdh (declared heating capacity)	[kW]	5.34	5.93	7.56	8.44	11.10
	COPd (declared COP)	-	3.94	3.91	3.98	3.84	3.59
<b>(C) condition (7°C)</b>	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)	-	5.92	5.89	6.26	6.18	5.87
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(D) condition (12°C)</b>	Pdh (declared heating capacity)	[kW]	1.63	1.79	2.62	2.62	3.55
	COPd (declared COP)	-	7.91	8.20	9.23	9.04	7.94
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
<b>(E) Trivalent temperature operating limit</b>	Pdh (declared heating capacity)	[kW]	5.34	5.93	7.56	8.44	11.10
	COPd (declared COP)	-	3.94	3.91	3.98	3.84	3.59
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
	Tbiv	[°C]	7.00	7.00	7.00	7.00	7.00
<b>(F) Trivalent temperature</b>	Pdh (declared heating capacity)	[kW]	3.56	3.93	5.22	5.52	7.14
	COPd (declared COP)	-	5.92	5.89	6.26	6.18	5.87
<b>Supplementary capacity at P_design</b>	Psup (@Tdesignh: 2°C)	[kW]	0.18	0.18	0.55	0.14	0.00
<b>Part load conditions space heating warmer climate medium temperature application</b>							
<b>(B) condition (2°C)</b>	Pdh (declared heating capacity)	[kW]	4.83	5.02	7.55	8.06	12.07
	COPd (declared COP)	-	2.51	2.48	2.59	2.59	2.31
<b>(C) condition (7°C)</b>	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
	Pdh (declared heating capacity)	[kW]	3.22	3.31	5.38	5.54	8.04
	COPd (declared COP)	-	3.68	3.67	4.01	4.10	3.86
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(D) condition (12°C)</b>	Pdh (declared heating capacity)	[kW]	1.47	1.60	2.31	2.53	3.75
	COPd (declared COP)	-	5.15	5.29	5.55	5.82	5.70
	Cdh(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

# Product fiche 5

## Heat pump space heating

	Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***	
<b>Part load conditions space heating warmer climate low temperature application</b>							
<b>(B) condition (2°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	12.04	13.10	11.10	12.04	13.10
	COP <sub>d</sub> (declared COP)	-	3.44	3.35	3.59	3.44	3.35
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(C) condition (7°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	7.78	8.41	7.14	7.78	8.41
	COP <sub>d</sub> (declared COP)	-	5.84	5.36	5.87	5.84	5.36
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(D) condition (12°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	3.75	3.87	3.55	3.75	3.87
	COP <sub>d</sub> (declared COP)	-	8.25	8.11	7.94	8.25	8.11
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(E) Tol (temperature operating limit)</b>	T <sub>ol</sub> (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	12.04	13.10	11.10	12.04	13.10
	COP <sub>d</sub> (declared COP)	-	3.44	3.35	3.59	3.44	3.35
<b>(F) T<sub>biv</sub>valent temperature</b>	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
	T <sub>biv</sub>	[°C]	7.00	7.00	7.00	7.00	7.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	7.78	8.41	7.14	7.78	8.41
<b>Supplementary capacity at P<sub>design</sub></b>	COP <sub>d</sub> (declared COP)	-	5.84	5.36	5.87	5.84	5.36
	P <sub>sup</sub> (@T <sub>design</sub> : 2°C)	[kW]	0.06	0.00	0.00	0.06	0.00
<b>Part load conditions space heating warmer climate medium temperature application</b>							
<b>(B) condition (2°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38
	COP <sub>d</sub> (declared COP)	-	2.20	2.29	2.31	2.20	2.29
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(C) condition (7°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	9.11	9.11	8.04	9.11	9.11
	COP <sub>d</sub> (declared COP)	-	3.89	3.89	3.86	3.89	3.89
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
<b>(D) condition (12°C)</b>	P <sub>dh</sub> (declared heating capacity)	[kW]	4.08	4.06	3.75	4.08	4.06
	COP <sub>d</sub> (declared COP)	-	5.90	5.86	5.70	5.90	5.86
	C <sub>dh</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

# Product fiche 6

## Heat pump space heating

	Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
(E) T <sub>ol</sub> (temperature operating limit)	T <sub>ol</sub> (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00
	P <sub>d,h</sub> (declared heating capacity)	[kW]	4.83	5.02	7.55	8.06
	COP <sub>d</sub> (declared COP)	-	2.51	2.48	2.59	2.51
(F) T <sub>biv</sub> (Heating water Operation Limit)	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00
	T <sub>biv</sub>	[°C]	7.00	7.00	7.00	7.00
	P <sub>d,h</sub> (declared heating capacity)	[kW]	3.22	3.31	5.38	5.54
	COP <sub>d</sub> (declared COP)	-	3.68	3.67	4.01	4.10
Supplementary capacity at P <sub>design</sub>	[kW]	0.18	0.12	0.82	0.48	0.43

Product description	Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
Air-to-water heat pump	Y/N	Yes	Yes	Yes	Yes	Yes
Water-to-water heat pump	Y/N	No	No	No	No	No
Brine-to-water heat pump	Y/N	No	No	No	No	No
Low-temperature heat pump	Y/N	No	No	No	No	No
Equipped with a supplementary heater	Y/N	Yes	Yes	Yes	Yes	Yes
Heat pump combination heater	Y/N	No	No	No	No	No
Rated airflow	[m³/h]	2770	2770	4030	4030	4060
Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
P <sub>off</sub> (Power consumption Off mode)	[kW]	0.014	0.014	0.014	0.014	0.014
P <sub>lo</sub> (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.024	0.024	0.024
P <sub>sb</sub> (Power consumption Standby mode)	[kW]	0.014	0.014	0.014	0.014	0.014
P <sub>ck</sub> (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
Q <sub>elec</sub> (Daily electricity consumption)	[kWh]	/	/	/	/	/
Q <sub>fuel</sub> (Daily fuel consumption)	[kW/h]	/	/	/	/	/

Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.

# Product fiche 6

Heat pump space heating		Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00	2.00	2.00	2.00	2.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	13.04	13.38	12.07	13.04	13.38
	COP <sub>d</sub> (declared COP)	-	2.20	2.29	2.31	2.20	2.29
	WTOL (Heating water Operation Limit)	[°C]	65.00	65.00	65.00	65.00	65.00
(F) Tivalent temperature	T <sub>biv</sub>	[°C]	7.00	7.00	7.00	7.00	7.00
	P <sub>dh</sub> (declared heating capacity)	[kW]	9.11	9.11	8.04	9.11	9.11
	COP <sub>d</sub> (declared COP)	-	3.89	3.89	3.86	3.89	3.89
	P <sub>sup</sub> (@T <sub>designh</sub> : 2°C)	[kW]	1.13	0.79	0.43	1.13	0.79
Supplementary capacity at P <sub>design</sub>							
Product description	Air-to-water heat pump	Y/N	Yes	Yes	Yes	Yes	Yes
	Water-to-water heat pump	Y/N	No	No	No	No	No
	Brine-to-water heat pump	Y/N	No	No	No	No	No
	Low-temperature heat pump	Y/N	No	No	No	No	No
	Equipped with a supplementary heater	Y/N	Yes	Yes	Yes	Yes	Yes
	Heat pump combination heater	Y/N	No	No	No	No	No
	Rated airflow	[m³/h]	4060	4650	4060	4060	4650
	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	P <sub>off</sub> (Power consumption Off mode)	[kW]	0.014	0.014	0.02	0.02	0.02
Other	P <sub>to</sub> (Power consumption Thermostat off mode)	[kW]	0.024	0.024	0.030	0.030	0.030
	P <sub>sb</sub> (Power consumption Standby mode)	[kW]	0.014	0.014	0.02	0.02	0.02
	P <sub>ck</sub> (Power crankcase heater model)	[kW]	0.000	0.000	0.000	0.000	0.000
	Q <sub>elec</sub> (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Q <sub>fuel</sub> (Daily fuel consumption)	[kWh]	/	/	/	/	/

Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.



## Product fiche 7

<b>Heat pump space cooling</b>		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
Unit sound power (*)	Average climate low temperature application	dB	56	60	60	60	65
	Average climate medium temperature application	dB	56	58	60	60	64
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	4.70	7.00	7.45	8.20	11.50
	Seasonal space cooling efficiency (ηs)	[%]	196.2	209.5	229.9	234.9	194.1
	Annual energy consumption	[kWh]	566	791	768	827	1,400
	Prated (declared cooling capacity) @ 35°C	[kW]	4.50	6.50	8.30	9.90	12.00
Space cooling 18°C	Seasonal space cooling efficiency (ηs)	[%]	307.4	325.9	354.7	346.3	282.0
	Annual energy consumption	[kWh]	348	474	557	680	1,011
Part load conditions space cooling : low temperature application@7°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	4.70	7.00	7.45	8.20	11.50
	EERd (declared EER)	-	3.45	3.00	3.35	3.25	2.75
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	3.66	5.13	5.72	6.68	8.76
	EERd (declared EER)	-	4.76	4.00	4.71	4.47	3.93
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	2.21	3.48	3.62	4.26	5.81
	EERd (declared EER)	-	5.72	6.45	6.65	7.02	5.73
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	0.94	1.53	1.64	1.94	2.63
	EERd (declared EER)	-	5.72	7.73	8.55	9.54	6.75
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

(\*)Sound power measured according to the EN12102 under conditions of the EN14825.

## Product fiche 7

<b>Heat pump space cooling</b>		Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
Unit sound power (*)	Average climate low temperature application	dB	65	69	65	65	69
	Average climate medium temperature application	dB	64	69	64	64	69
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	12.40	14.00	11.50	12.40	14.00
	Seasonal space cooling efficiency (ηs)	[%]	191.9	184.6	193.0	190.8	183.7
	Annual energy consumption	[kWh]	1,527	1,791	1,408	1,535	1,799
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kW]	13.50	14.20	12.00	13.50	14.20
	Seasonal space cooling efficiency (ηs)	[%]	274.4	266.8	279.7	272.5	265.0
	Annual energy consumption	[kWh]	1,168	1,263	1,019	1,176	1,271
<b>Part load conditions space cooling: low temperature application@7°C</b>							
(A) condition (35°C)	P <sub>dc</sub> (declared cooling capacity)	[kW]	12.40	14.00	11.50	12.40	14.00
	EER <sub>d</sub> (declared EER)	-	2.50	2.50	2.75	2.50	2.50
	C <sub>dc</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	P <sub>dc</sub> (declared cooling capacity)	[kW]	9.41	10.68	8.76	9.41	10.68
	EER <sub>d</sub> (declared EER)	-	3.85	3.63	3.93	3.85	3.63
	C <sub>dc</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	P <sub>dc</sub> (declared cooling capacity)	[kW]	6.16	6.76	5.81	6.16	6.76
	EER <sub>d</sub> (declared EER)	-	5.80	5.27	5.73	5.80	5.27
	C <sub>dc</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	P <sub>dc</sub> (declared cooling capacity)	[kW]	2.63	3.41	2.63	2.63	3.41
	EER <sub>d</sub> (declared EER)	-	6.74	7.29	6.75	6.74	7.29
	C <sub>dc</sub> (degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90

(\*) Sound power measured according to the EN12102 under conditions of the EN14825.

## Product fiche 8

Heat pump space cooling		Model	ECOSPAR-M4kW-1N***	ECOSPAR-M6kW-1N***	ECOSPAR-M8kW-1N***	ECOSPAR-M10kW-1N***	ECOSPAR-M12kW-1N***
Partload conditions space cooling: medium temperature application@18°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	4.50	6.50	8.30	9.90	12.00
	EERd (declared EER)	-	5.50	4.80	5.05	4.55	3.95
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	3.44	4.84	6.47	7.71	9.21
	EERd (declared EER)	-	7.23	7.16	7.02	6.45	5.50
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	2.19	3.26	4.31	5.03	5.74
	EERd (declared EER)	-	8.94	9.64	10.67	10.36	8.66
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	1.13	1.41	1.80	2.32	3.33
	EERd (declared EER)	-	10.48	11.48	13.61	14.98	10.07
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	Rated airflow (outdoor)	[m <sup>3</sup> /h]	2770	2770	4030	4030	4060
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.014	0.014	0.014
	Pto (Power consumption Thermostat off mode)	[kW]	0.010	0.010	0.010	0.010	0.010
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.014	0.014	0.014
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

## Product fiche 8

### Heat pump space cooling

		Model	ECOSPAR-M14kW-1N***	ECOSPAR-M16kW-1N***	ECOSPAR-M12kW-3N***	ECOSPAR-M14kW-3N***	ECOSPAR-M16kW-3N***
Part load conditions space cooling: medium temperature application@18°C							
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	13.50	14.20	12.00	13.50	14.20
	EERd (declared EER)	-	3.61	3.61	3.95	3.61	3.61
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	10.20	11.42	9.21	10.20	11.42
	EERd (declared EER)	-	5.26	5.14	5.50	5.26	5.14
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	6.57	7.27	5.74	6.57	7.27
	EERd (declared EER)	-	8.45	7.83	8.66	8.45	7.83
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.33	3.40	3.33	3.33	3.40
	EERd (declared EER)	-	10.07	10.35	10.07	10.07	10.35
	Cdc(degradation coefficient)	-	0.90	0.90	0.90	0.90	0.90
Air to water unit	Rated airflow (outdoor)	[m <sup>3</sup> /h]	4060	4650	4060	4060	4650
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/	/	/	/	/
Other	Capacity control	-	Inverter	Inverter	Inverter	Inverter	Inverter
	Poff (Power consumption Off mode)	[kW]	0.014	0.014	0.020	0.020	0.020
	Pto (Power consumption Thermostat off mode)	[kW]	0.010	0.010	0.010	0.010	0.010
	Psb (Power consumption Standby mode)	[kW]	0.014	0.014	0.020	0.020	0.020
	Pck (Power crankcase heater mode)	[kW]	0.000	0.000	0.000	0.000	0.000
	Qelec (Daily electricity consumption)	[kWh]	/	/	/	/	/
	Qfuel (Daily fuel consumption)	[kWh]	/	/	/	/	/

Condition(°C )	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 35/24 Water temperature: 12/7	ECOSPAR-M4kW-1N	4.70	1.36	3.45
	ECOSPAR-M6kW-1N	7.00	2.33	3.00
	ECOSPAR-M8kW-1N	7.45	2.22	3.35
	ECOSPAR-M10kW-1N	8.20	2.52	3.25
	ECOSPAR-M12kW-1N	11.5	4.18	2.75
	ECOSPAR-M14kW-1N	12.4	4.96	2.50
	ECOSPAR-M16kW-1N	14.0	5.60	2.50
	ECOSPAR-M12kW-3N	11.5	4.18	2.75
	ECOSPAR-M14kW-3N	12.4	4.96	2.50
	ECOSPAR-M16kW-3N	14.0	5.60	2.50
Ambient Temperature: 35/24 Water temperature: 23/18	ECOSPAR-M4kW-1N	4.50	0.82	5.50
	ECOSPAR-M6kW-1N	6.50	1.35	4.80
	ECOSPAR-M8kW-1N	8.30	1.64	5.05
	ECOSPAR-M10kW-1N	9.90	2.18	4.55
	ECOSPAR-M12kW-1N	12.00	3.04	3.95
	ECOSPAR-M14kW-1N	13.50	3.74	3.61
	ECOSPAR-M16kW-1N	14.20	3.94	3.61
	ECOSPAR-M12kW-3N	12.00	3.04	3.95
	ECOSPAR-M14kW-3N	13.50	3.74	3.61
	ECOSPAR-M16kW-3N	14.20	3.94	3.61
Ambient Temperature: 7/6 Water temperature: 30/35	ECOSPAR-M4kW-1N	4.20	0.82	5.10
	ECOSPAR-M6kW-1N	6.35	1.28	4.95
	ECOSPAR-M8kW-1N	8.40	1.63	5.15
	ECOSPAR-M10kW-1N	10.0	2.02	4.95
	ECOSPAR-M12kW-1N	12.1	2.44	4.95
	ECOSPAR-M14kW-1N	14.5	3.15	4.60
	ECOSPAR-M16kW-1N	15.9	3.53	4.50
	ECOSPAR-M12kW-3N	12.1	2.44	4.95
	ECOSPAR-M14kW-3N	14.5	3.15	4.60
	ECOSPAR-M16kW-3N	15.9	3.53	4.50
Ambient Temperature: 2/1 Water temperature: 30/35	ECOSPAR-M4kW-1N	4.40	1.10	4.00
	ECOSPAR-M6kW-1N	5.50	1.41	3.90
	ECOSPAR-M8kW-1N	7.10	1.73	4.10
	ECOSPAR-M10kW-1N	8.20	2.05	4.00
	ECOSPAR-M12kW-1N	9.2	2.36	3.90
	ECOSPAR-M14kW-1N	11.0	3.06	3.60
	ECOSPAR-M16kW-1N	13.0	3.77	3.45
	ECOSPAR-M12kW-3N	9.2	2.36	3.90
	ECOSPAR-M14kW-3N	11.0	3.06	3.60
	ECOSPAR-M16kW-3N	13.0	3.77	3.45

Condition(°C )	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: -7/-8 Water temperature: 30/35	ECOSPAR-M4kW-1N	4.70	1.52	3.10
	ECOSPAR-M6kW-1N	6.00	2.00	3.00
	ECOSPAR-M8kW-1N	7.00	2.19	3.20
	ECOSPAR-M10kW-1N	8.00	2.62	3.05
	ECOSPAR-M12kW-1N	10.00	3.33	3.00
	ECOSPAR-M14kW-1N	12.00	4.21	2.85
	ECOSPAR-M16kW-1N	13.10	4.85	2.70
	ECOSPAR-M12kW-3N	10.00	3.33	3.00
	ECOSPAR-M14kW-3N	12.00	4.21	2.85
	ECOSPAR-M16kW-3N	13.10	4.85	2.70
Ambient Temperature: 7/6 Water temperature: 40/45	ECOSPAR-M4kW-1N	4.30	1.13	3.80
	ECOSPAR-M6kW-1N	6.30	1.70	3.70
	ECOSPAR-M8kW-1N	8.10	2.10	3.85
	ECOSPAR-M10kW-1N	10.0	2.67	3.75
	ECOSPAR-M12kW-1N	12.3	3.32	3.70
	ECOSPAR-M14kW-1N	14.1	3.92	3.60
	ECOSPAR-M16kW-1N	16.0	4.57	3.50
	ECOSPAR-M12kW-3N	12.3	3.32	3.70
	ECOSPAR-M14kW-3N	14.1	3.92	3.60
	ECOSPAR-M16kW-3N	16.0	4.57	3.50
Ambient Temperature: 2/1 Water temperature: 40/45	ECOSPAR-M4kW-1N	5.10	1.70	3.00
	ECOSPAR-M6kW-1N	5.80	1.93	3.00
	ECOSPAR-M8kW-1N	7.40	2.28	3.25
	ECOSPAR-M10kW-1N	7.85	2.45	3.20
	ECOSPAR-M12kW-1N	10.60	3.53	3.00
	ECOSPAR-M14kW-1N	11.50	4.04	2.85
	ECOSPAR-M16kW-1N	12.70	4.46	2.85
	ECOSPAR-M12kW-3N	10.60	3.53	3.00
	ECOSPAR-M14kW-3N	11.50	4.04	2.85
	ECOSPAR-M16kW-3N	12.70	4.46	2.85
Ambient Temperature: -7/-8 Water temperature: 40/45	ECOSPAR-M4kW-1N	4.30	1.83	2.35
	ECOSPAR-M6kW-1N	5.40	2.25	2.40
	ECOSPAR-M8kW-1N	6.60	2.59	2.55
	ECOSPAR-M10kW-1N	7.35	2.88	2.55
	ECOSPAR-M12kW-1N	10.20	4.25	2.40
	ECOSPAR-M14kW-1N	11.70	4.98	2.35
	ECOSPAR-M16kW-1N	12.80	5.69	2.25
	ECOSPAR-M12kW-3N	10.20	4.25	2.40
	ECOSPAR-M14kW-3N	11.70	4.98	2.35
	ECOSPAR-M16kW-3N	12.80	5.69	2.25

Condition(°C )	Model	Capacity (kW)	Power input (kW)	EER/COP (/)
Ambient Temperature: 7/6 Water temperature: 47/55	ECOSPAR-M4kW-1N	4.40	1.49	2.95
	ECOSPAR-M6kW-1N	6.00	2.03	2.95
	ECOSPAR-M8kW-1N	7.50	2.36	3.18
	ECOSPAR-M10kW-1N	9.50	3.06	3.10
	ECOSPAR-M12kW-1N	11.9	3.90	3.05
	ECOSPAR-M14kW-1N	13.8	4.68	2.95
	ECOSPAR-M16kW-1N	16.0	5.61	2.85
	ECOSPAR-M12kW-3N	11.9	3.90	3.05
	ECOSPAR-M14kW-3N	13.8	4.68	2.95
	ECOSPAR-M16kW-3N	16.0	5.61	2.85
Ambient Temperature: 2/1 Water temperature: 47/55	ECOSPAR-M4kW-1N	5.10	2.08	2.45
	ECOSPAR-M6kW-1N	5.65	2.31	2.45
	ECOSPAR-M8kW-1N	7.10	2.73	2.60
	ECOSPAR-M10kW-1N	8.10	3.16	2.56
	ECOSPAR-M12kW-1N	11.30	4.52	2.50
	ECOSPAR-M14kW-1N	12.40	5.06	2.45
	ECOSPAR-M16kW-1N	13.30	5.54	2.40
	ECOSPAR-M12kW-3N	11.30	4.52	2.50
	ECOSPAR-M14kW-3N	12.40	5.06	2.45
	ECOSPAR-M16kW-3N	13.30	5.54	2.40
Ambient Temperature: -7/-8 Water temperature: 47/55	ECOSPAR-M4kW-1N	4.00	2.05	1.95
	ECOSPAR-M6kW-1N	5.15	2.58	2.00
	ECOSPAR-M8kW-1N	6.15	3.00	2.05
	ECOSPAR-M10kW-1N	6.85	3.43	2.00
	ECOSPAR-M12kW-1N	9.80	4.78	2.05
	ECOSPAR-M14kW-1N	11.00	5.37	2.05
	ECOSPAR-M16kW-1N	12.50	6.25	2.00
	ECOSPAR-M12kW-3N	9.80	4.78	2.05
	ECOSPAR-M14kW-3N	11.00	5.37	2.05
	ECOSPAR-M16kW-3N	12.50	6.25	2.00

# ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	WZDK170-38G-1	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.1%
2	Overall efficiency ( $\eta_e$ ) =	33.1%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$ )	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =43.9
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.190kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.368m <sup>3</sup> /s
10.3	Rated motor pressure(s) at optimum energy efficiency	40Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Measure ment category A, fan is free inlet and outlet conditions
16	Motor manufacturer	NIDEC SHIBAURA (ZHE JIANG) CORP.



# ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	WZDK170-38G-1	Rev.	
Prepare by			

Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.1%
2	Overall efficiency ( $\eta_e$ ) =	33.7%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$ )	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =44.6
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.186kw
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.37m <sup>3</sup> /s
10.3	Rated motor pressure(s) at optimum energy efficiency	40Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency,such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	GUANGDONG WELLING MOTOR MANUFACTURING CO.,LTD.

# ErP Information

Fan Types	Axial fan		
Directive (or Standard) for Regulation	ErP Directive 2009/125/EC COMMISSION REGULATION (EU) No 327/2011		
Model Name	WZDK170-38G-1	Rev.	
Prepare by			

## Specified Information of Fan:

No.	Information Item	Comment
1	$\eta_{\text{target}} =$	29.0%
2	Overall efficiency ( $\eta_e$ ) =	34.6%
3	Pass or not (Criteria: $\eta_e \geq \eta_{\text{target}}$ )	Pass
4	Measurement category (A-D)	A
5	Efficiency category (static or total)	Static
6	Efficiency grade at optimum energy efficiency point	N =45.7
7	VSD is integrated within the fan	YES
8	Year of Manufacture	Ref. to the Unit Nameplate
9	Manufacturer's name and place of manufacture	Ref. to the Unit Nameplate
10.1	Rated motor power input(s) (kW), at optimum energy efficiency	0.180kW
10.2	Rated motor flow rate(s) at optimum energy efficiency	1.378m <sup>3</sup> /s
10.3	Rated motor pressure(s) at optimum energy efficiency	40Pa
11	Rotations per minute (R.P.M)at the optimum energy efficiency point	800r/min
12	Specific ratio	1.001
13	Information relevant for facilitating disassembly, recycling or disposal at end-of-life	all materials can be recycled
14	Information relevant to minimize impact on the environment and ensure optimal life expectancy as regards installation, use and maintenance of the fan	For installation, the clearance of 500 mm shall be kept from inlet
15	Description of additional items used when determining the fan energy efficiency,such as ducts, that are not described in the measurement category and not supplied with the fan.	Measurement category A, fan is free inlet and outlet conditions
16	Motor manufacturer	Panasonic Motor (HangZhou) CO.,LTD.

NOTE

---

A series of horizontal dotted lines for writing notes.

NOTE

---

A series of horizontal dotted lines for writing notes.







16125300A11706 V1.0

**KANION GROUP  
CO.,LIMITED (Shenzhen Kanion  
Technology Co.,Limited)  
No.2017-2020, Hai Wai Lian Yi  
Building,  
Ying Chun Road, Luohu District,  
Shenzhen City, China**



# 此页不做菲林，仅核对使用

## 印刷技术要求

材质	双胶纸80g
规格	210*297(双面)
颜色	黑白
其他	

## 设计更改记录表（仅做说明用，不做菲林）

版本升级	更改人	更改日期	更改主要内容	涉及更改页面 (印刷页码)