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Summary of	HPS.Z 12-16kW/400 V	Reg. No.	011-1W0439
Certificate Holder			
Name	Kospel SP. z o.o.		
Address	ul. Olchowa 1	Zip	75-136
City	Koszalin	Country	Poland
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	HPS.Z 12-16kW/400 V		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R410A		
Mass of Refrigerant	2.5 kg		
Certification Date	15.12.2021		
Testing basis	HP KEYMARK certification scheme rules rev. 9		

Model: HPSO-12/400 + HPSI-9

Configure model	
Model name	HPSO-12/400 + HPSI-9
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	n/a
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	11.50 kW	9.72 kW
El input	2.58 kW	3.65 kW
COP	4.45	2.66

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

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EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825

		Low temperature	Medium temperature
P _{designh}	8.80 kW		
η_s	156 %	110 %	
Prated	9.00 kW	8.79 kW	
SCOP	3.98	2.83	
T _{biv}	-7 °C	-7 °C	
TOL	-20 °C	-20 °C	
P _{dh} T _j = -7°C	7.98 kW	7.70 kW	
COP T _j = -7°C	2.87	1.93	
C _{dh} T _j = -7 °C	0.99	0.99	
P _{dh} T _j = +2°C	5.63 kW	5.17 kW	
COP T _j = +2°C	3.90	3.50	
C _{dh} T _j = +2 °C	0.99	0.99	
P _{dh} T _j = +7°C	5.78 kW	8.52 kW	
COP T _j = +7°C	4.86	3.66	

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Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	14.35 kW	6.41 kW
COP Tj = 12°C	6.08	4.84
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	7.98 kW	7.70 kW
COP Tj = Tbiv	2.87	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.54 kW	6.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	0 W	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.48 kW	1.85 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	4696 kWh	6362 kWh

Model: HPSO-16/400 + HPSI-9

Configure model	
Model name	HPSO-16/400 + HPSI-9
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	n/a
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	15.74 kW	12.67 kW
El input	3.60 kW	4.95 kW
COP	4.37	2.62

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

This information was generated by the HP KEYMARK database on 23 Jun 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825

		Low temperature	Medium temperature
P _{designh}	10.80 kW		
η_s	151 %	111 %	
P _{rated}	12.80 kW	10.83 kW	
SCOP	3.85	2.85	
T _{biv}	-7 °C	-4 °C	
TOL	-20 °C	-20 °C	
P _{dh} T _j = -7°C	11.33 kW	9.20 kW	
COP T _j = -7°C	2.46	1.89	
C _{dh} T _j = -7 °C	0.99	0.99	
P _{dh} T _j = +2°C	7.16 kW	6.61 kW	
COP T _j = +2°C	3.70	2.77	
C _{dh} T _j = +2 °C	0.99	0.99	
P _{dh} T _j = +7°C	5.98 kW	5.08 kW	
COP T _j = +7°C	5.17	3.74	

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Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.17 kW	6.41 kW
COP Tj = 12°C	6.92	4.84
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	11.33 kW	8.33 kW
COP Tj = Tbiv	2.46	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.68 kW	9.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.41	1.88
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	15 W	15 W
PTO	0 W	0 W
PSB	0 W	0 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.12 kW	1.32 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	26449 kWh	22384 kWh