

This information was generated by the HP KEYMARK database on 25 Feb 2023

	Volan 12	Reg. No.	011-1W0532
Certificate Holder			
	THERMAGEN sp. z o.o.		
	Ul. Warszawska 50		82-100
	Nowy Dwór Gdański		Poland
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	Volan 12		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R290		
Mass of Refrigerant	0.85 kg		
Certification Date	01.06.2022		
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 9 (as of 2021-03)		

Model: Volan 12 400V

Configure model	
Model name	Volan 12 400V
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.30 kW	4.60 kW
El input	1.11 kW	1.60 kW
COP	4.80	2.90

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

Warmer Climate

This information was generated by the HP KEYMARK database on 25 Feb 2023

EN 12102-1

	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	150 %
Prated	6.30 kW	6.10 kW
SCOP	4.45	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.32 kW	6.13 kW
COP Tj = +2°C	2.62	1.90
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.37 kW	4.03 kW
COP Tj = +7°C	5.34	3.80
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	2.57 kW	2.61 kW
COP Tj = 12°C	4.41	4.51
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	6.32 kW	6.13 kW

This information was generated by the HP KEYMARK database on 25 Feb 2023

COP $T_j = T_{biv}$	2.62	1.90
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	6.32 kW	6.13 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.62	1.90
WTOL	70 °C	70 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q_{he}	1890 kWh	2133 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	136 %	113 %
Prated	6.60 kW	6.60 kW

This information was generated by the HP KEYMARK database on 25 Feb 2023

SCOP	3.47	2.89
Tbiv	-12 °C	-12 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	4.06 kW	4.05 kW
COP Tj = -7°C	3.52	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.47 kW	2.41 kW
COP Tj = +2°C	4.48	3.70
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	2.32 kW	2.32 kW
COP Tj = +7°C	4.50	4.46
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.54 kW	2.57 kW
COP Tj = 12°C	4.28	4.48
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	4.86 kW	4.86 kW
COP Tj = Tbiv	2.74	2.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.04 kW	4.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64	2.04
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	70 °C	70 °C

This information was generated by the HP KEYMARK database on 25 Feb 2023

Poff	0 W	0 W
PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	6.60 kW
Annual energy consumption Qhe	4692 kWh	5628 kWh
Pdh Tj = -15°C (if TOL<-20°C)	5.04	4.98
COP Tj = -15°C (if TOL<-20°C)	2.64	2.04
Cdh Tj = -15 °C	1.000	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	154 %	125 %
Prated	6.50 kW	6.50 kW
SCOP	3.93	3.21

This information was generated by the HP KEYMARK database on 25 Feb 2023

Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.76 kW	5.76 kW
COP Tj = -7°C	2.72	2.02
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.55 kW	3.56 kW
COP Tj = +2°C	4.25	3.20
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.31 kW	2.31 kW
COP Tj = +7°C	4.53	4.24
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.52 kW	2.56 kW
COP Tj = 12°C	4.26	4.50
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.76 kW	5.76 kW
COP Tj = Tbiv	2.72	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.68 kW	5.65 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.90
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	70 °C	70 °C
Poff	0 W	0 W

This information was generated by the HP KEYMARK database on 25 Feb 2023

PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.82 kW	0.85 kW
Annual energy consumption Q _{he}	3418 kWh	4190 kWh

Model: Volan 12

Configure model	
Model name	Volan 12
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.30 kW	4.60 kW
El input	1.11 kW	1.60 kW
COP	4.80	2.90

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

Warmer Climate

This information was generated by the HP KEYMARK database on 25 Feb 2023

EN 12102-1

	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	150 %
Prated	6.30 kW	6.10 kW
SCOP	4.45	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.32 kW	6.13 kW
COP Tj = +2°C	2.62	1.90
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.37 kW	4.03 kW
COP Tj = +7°C	5.34	3.80
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	2.57 kW	2.61 kW
COP Tj = 12°C	4.41	4.51
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	6.32 kW	6.13 kW

This information was generated by the HP KEYMARK database on 25 Feb 2023

COP $T_j = T_{biv}$	2.62	1.90
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	6.32 kW	6.13 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.62	1.90
WTOL	70 °C	70 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q_{he}	1890 kWh	2133 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	136 %	113 %
Prated	6.60 kW	6.60 kW

This information was generated by the HP KEYMARK database on 25 Feb 2023

SCOP	3.47	2.89
Tbiv	-12 °C	-12 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	4.06 kW	4.05 kW
COP Tj = -7°C	3.52	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.47 kW	2.41 kW
COP Tj = +2°C	4.48	3.70
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	2.32 kW	2.32 kW
COP Tj = +7°C	4.50	4.46
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.54 kW	2.57 kW
COP Tj = 12°C	4.28	4.48
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	4.86 kW	4.86 kW
COP Tj = Tbiv	2.74	2.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.04 kW	4.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64	2.04
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	70 °C	70 °C

This information was generated by the HP KEYMARK database on 25 Feb 2023

Poff	0 W	0 W
PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	6.60 kW
Annual energy consumption Qhe	4692 kWh	5628 kWh
Pdh Tj = -15°C (if TOL<-20°C)	5.04	4.98
COP Tj = -15°C (if TOL<-20°C)	2.64	2.04
Cdh Tj = -15 °C	1.000	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	154 %	125 %
Prated	6.50 kW	6.50 kW
SCOP	3.93	3.21

This information was generated by the HP KEYMARK database on 25 Feb 2023

Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.76 kW	5.76 kW
COP Tj = -7°C	2.72	2.02
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.55 kW	3.56 kW
COP Tj = +2°C	4.25	3.20
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.31 kW	2.31 kW
COP Tj = +7°C	4.53	4.24
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.52 kW	2.31 kW
COP Tj = 12°C	4.26	4.24
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.76 kW	5.76 kW
COP Tj = Tbiv	2.72	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.68 kW	5.65 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.90
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	70 °C	70 °C
Poff	0 W	0 W

This information was generated by the HP KEYMARK database on 25 Feb 2023

PTO	10 W	10 W
PSB	8 W	8 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.82 kW	0.85 kW
Annual energy consumption Q _{he}	3418 kWh	4190 kWh