

## Subtype HHP R290

Certificate Holder	Frigicoll
Address	Blasco de Garay, 4 6
ZIP	08960
City	Sant Just Desvern
Country	ES
Certification Body	ICIM S.p.A.
Subtype title	HHP R290
Registration number	ICIM-PDC-000263
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.25 kg
Certification Date	18.06.2024
Testing basis	V12

## Model KHP-MO 12 DVP

Model name	KHP-MO 12 DVP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water EN 14511-4 | Heating

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

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.0 kW	12.0 kW
El input	2.50 kW	3.87 kW
COP	4.80	3.10

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	183 %	141 %
Prated	12.1 kW	12.0 kW
SCOP	4.67	3.62
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	10.75 kW	10.58 kW
COP Tj = -7°C	2.78	2.23
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	6.73 kW	6.59 kW
COP Tj = +2°C	4.55	3.52
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.23 kW	4.78 kW
COP Tj = +7°C	6.89	4.99

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.34 kW	5.59 kW
COP Tj = 12°C	7.41	6.41
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	10.75 kW	10.58 kW
COP Tj = Tbiv	2.78	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.77 kW	10.15 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.05
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.33 kW	1.95 kW
Annual energy consumption Qhe	5352 kWh	6843 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	162 %	127 %
Prated	11.5 kW	10.8 kW
SCOP	4.13	3.26
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	7.11 kW	6.76 kW
COP Tj = -7°C	3.47	2.72
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.33 kW	4.14 kW
COP Tj = +2°C	5.18	4.05
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.08 kW	5.00 kW
COP Tj = +7°C	6.46	5.15
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.15 kW	5.01 kW
COP Tj = 12°C	6.84	5.66
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.39 kW	8.84 kW
COP Tj = Tbiv	2.49	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	6.84 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.04	1.52
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.80 kW	3.96 kW
Annual energy consumption Qhe	6869.00 kWh	8197.00 kWh
Pdh Tj = -15°C (if TOL	9.39	8.84
COP Tj = -15°C (if TOL	2.49	1.98
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	232 %	174 %
Prated	11.70 kW	12.40 kW
SCOP	5.90	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.58 kW	11.41 kW
COP Tj = +2°C	3.30	2.55
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.57 kW	7.85 kW
COP Tj = +7°C	5.78	3.99
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	5.17 kW	5.47 kW
COP Tj = 12°C	6.98	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.57 kW	7.85 kW
COP Tj = Tbiv	5.78	3.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.58 kW	11.41 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.30	2.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	75 °C	75 °C
Poff	9 W	9 W
PTO	14 W	14 W
PSB	9 W	9 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.12 kW	0.99 kW
Annual energy consumption Q <sub>he</sub>	2651 kWh	3724 kWh

## Model KHP-MO 14 DVP

Model name	KHP-MO 14 DVP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	14.0 kW	14.0 kW
El input	3.11 kW	4.67 kW
COP	4.50	3.00

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	182 %	141 %
Prated	13.7 kW	13.0 kW
SCOP	4.63	3.61
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	12.08 kW	11.47 kW
COP Tj = -7°C	2.66	2.15
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.55 kW	7.29 kW
COP Tj = +2°C	4.45	3.50
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.25 kW	4.85 kW
COP Tj = +7°C	7.06	5.10

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.23 kW	5.60 kW
COP Tj = 12°C	7.46	6.46
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.08 kW	11.47 kW
COP Tj = Tbiv	2.66	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.62 kW	10.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.53	2.02
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.08 kW	2.03 kW
Annual energy consumption Qhe	6110 kWh	7438 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	162 %	126 %
Prated	12.6 kW	12.0 kW
SCOP	4.13	3.23
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	7.83 kW	7.39 kW
COP Tj = -7°C	3.35	2.67
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.77 kW	4.56 kW
COP Tj = +2°C	5.37	4.00
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.08 kW	4.99 kW
COP Tj = +7°C	6.50	5.20
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.15 kW	5.06 kW
COP Tj = 12°C	6.85	5.81
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	9.77 kW
COP Tj = Tbiv	2.39	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.57 kW	7.63 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.01	1.53
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.03 kW	4.37 kW
Annual energy consumption Qhe	7513.00 kWh	9168.00 kWh
Pdh Tj = -15°C (if TOL	10.31	9.77
COP Tj = -15°C (if TOL	2.39	1.95
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	231.00 %	174.00 %
Prated	12.7 kW	14.1 kW
SCOP	5.85	4.43
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	12.41 kW	12.05 kW
COP Tj = +2°C	3.21	2.48
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	8.19 kW	9.11 kW
COP Tj = +7°C	5.67	3.98
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.17 kW	5.49 kW
COP Tj = 12°C	7.02	6.01
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.19 kW	9.11 kW
COP Tj = Tbiv	5.67	3.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.41 kW	12.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.48
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9 W	9 W
PCK	0.00 W	0.00 W



Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.29 kW	2.21 kW
Annual energy consumption Q <sub>he</sub>	2897.00 kWh	4256.00 kWh

Model KHP-MO 16 DVP		
Model name	KHP-MO 16 DVP	
Application	Heating (medium temp)	
Units	Outdoor	
Climate zone (for heating)	Colder, Warmer	
Cooling mode application (optional)	n/a	
Any additional heat sources	n/a	
General data		
Power supply	1x230V 50Hz	
Off-peak product	n/a	
Outdoor Air/Water		
EN 14511-4   Heating		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	
EN 14511-2   Heating		
	Low temperature	Medium temperature
Heat output	15.0 kW	15.0 kW
El input	3.41 kW	5.26 kW
COP	4.40	2.85
EN 12102-1   Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)
EN 14825   Average Climate		
	Low temperature	Medium temperature
ηs	180 %	139 %
Prated	14.7 kW	14.4 kW
SCOP	4.59	3.57
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	13.04 kW	12.78 kW
COP Tj = -7°C	2.54	2.05
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.00 kW	7.96 kW
COP Tj = +2°C	4.40	3.44
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.26 kW	4.78 kW
COP Tj = +7°C	7.12	5.13

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.28 kW	5.72 kW
COP Tj = 12°C	7.56	6.58
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	13.04 kW	12.78 kW
COP Tj = Tbiv	2.54	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.81 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.37	1.94
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.89 kW	1.86 kW
Annual energy consumption Qhe	6617 kWh	8349 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	160 %	128 %
Prated	14.6 kW	13.9 kW
SCOP	4.08	3.29
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	8.89 kW	8.30 kW
COP Tj = -7°C	3.25	2.70
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.87 kW	5.18 kW
COP Tj = +2°C	5.22	4.03
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.24 kW	5.17 kW
COP Tj = +7°C	6.67	5.44
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.32 kW	5.23 kW
COP Tj = 12°C	7.26	6.07
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	11.91 kW	11.32 kW
COP Tj = Tbiv	2.41	1.97
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.06 kW	9.07 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.56
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.54 kW	4.83 kW
Annual energy consumption Qhe	8813.00 kWh	10408.00 kWh
Pdh Tj = -15°C (if TOL	11.91	11.32
COP Tj = -15°C (if TOL	2.41	1.97
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	238.00 %	181.00 %
Prated	14.3 kW	14.9 kW
SCOP	6.05	4.62
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	13.82 kW	13.47 kW
COP Tj = +2°C	3.18	2.48
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	9.17 kW	9.58 kW
COP Tj = +7°C	5.82	4.04
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.34 kW	5.64 kW
COP Tj = 12°C	7.33	6.31
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.17 kW	9.58 kW
COP Tj = Tbiv	5.82	4.04
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.82 kW	13.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.18	2.48
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9 W	9 W
PCK	0.00 W	0.00 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.48 kW	1.43 kW
Annual energy consumption Q <sub>he</sub>	3159.00 kWh	4306.00 kWh

## Model KHP-MO 12 DTP

Model name	KHP-MO 12 DTP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water EN 14511-4 | Heating

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

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.0 kW	12.0 kW
El input	2.50 kW	3.87 kW
COP	4.80	3.10

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	183 %	141 %
Prated	12.1 kW	12.0 kW
SCOP	4.67	3.62
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	10.75 kW	10.58 kW
COP Tj = -7°C	2.78	2.23
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	6.73 kW	6.59 kW
COP Tj = +2°C	4.55	3.52
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.23 kW	4.78 kW
COP Tj = +7°C	6.89	4.99

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.34 kW	5.59 kW
COP Tj = 12°C	7.41	6.41
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	10.75 kW	10.58 kW
COP Tj = Tbiv	2.78	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.77 kW	10.15 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.05
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.33 kW	1.95 kW
Annual energy consumption Qhe	5352 kWh	6843 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	162 %	127 %
Prated	11.5 kW	10.8 kW
SCOP	4.13	3.26
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	7.11 kW	6.76 kW
COP Tj = -7°C	3.47	2.72
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.33 kW	4.14 kW
COP Tj = +2°C	5.18	4.05
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.08 kW	5.00 kW
COP Tj = +7°C	6.46	5.15
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.15 kW	5.01 kW
COP Tj = 12°C	6.84	5.66
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.39 kW	8.84 kW
COP Tj = Tbiv	2.49	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	6.84 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.04	1.52
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.80 kW	3.96 kW
Annual energy consumption Qhe	6869.00 kWh	8197.00 kWh
Pdh Tj = -15°C (if TOL	9.39	8.84
COP Tj = -15°C (if TOL	2.49	1.98
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	232 %	174 %
Prated	11.70 kW	12.40 kW
SCOP	5.90	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.58 kW	11.41 kW
COP Tj = +2°C	3.30	2.55
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.57 kW	7.85 kW
COP Tj = +7°C	5.78	3.99
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	5.17 kW	5.47 kW
COP Tj = 12°C	6.98	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.57 kW	7.85 kW
COP Tj = Tbiv	5.78	3.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.58 kW	11.41 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.30	2.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	75 °C	75 °C
Poff	9 W	9 W
PTO	14 W	14 W
PSB	9 W	9 W



PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.12 kW	0.99 kW
Annual energy consumption Q <sub>he</sub>	2651 kWh	3724 kWh

## Model KHP-MO 14 DTP

Model name	KHP-MO 14 DTP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	14.0 kW	14.0 kW
El input	3.11 kW	4.67 kW
COP	4.50	3.00

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	182 %	141 %
Prated	13.7 kW	13.0 kW
SCOP	4.63	3.61
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	12.08 kW	11.47 kW
COP Tj = -7°C	2.66	2.15
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.55 kW	7.29 kW
COP Tj = +2°C	4.45	3.50
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.25 kW	4.85 kW
COP Tj = +7°C	7.06	5.10

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.23 kW	5.60 kW
COP Tj = 12°C	7.46	6.46
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.08 kW	11.47 kW
COP Tj = Tbiv	2.66	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.62 kW	10.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.53	2.02
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.08 kW	2.03 kW
Annual energy consumption Qhe	6110 kWh	7438 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	162 %	126 %
Prated	12.6 kW	12.0 kW
SCOP	4.13	3.23
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	7.83 kW	7.39 kW
COP Tj = -7°C	3.35	2.67
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.77 kW	4.56 kW
COP Tj = +2°C	5.37	4.00
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.08 kW	4.99 kW
COP Tj = +7°C	6.50	5.20
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.15 kW	5.06 kW
COP Tj = 12°C	6.85	5.81
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	9.77 kW
COP Tj = Tbiv	2.39	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.57 kW	7.63 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.01	1.53
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.03 kW	4.37 kW
Annual energy consumption Qhe	7513.00 kWh	9168.00 kWh
Pdh Tj = -15°C (if TOL	10.31	9.77
COP Tj = -15°C (if TOL	2.39	1.95
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	231.00 %	174.00 %
Prated	12.7 kW	14.1 kW
SCOP	5.85	4.43
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	12.41 kW	12.05 kW
COP Tj = +2°C	3.21	2.48
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	8.19 kW	9.11 kW
COP Tj = +7°C	5.67	3.98
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.17 kW	5.49 kW
COP Tj = 12°C	7.02	6.01
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.19 kW	9.11 kW
COP Tj = Tbiv	5.67	3.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.41 kW	12.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.48
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9 W	9 W
PCK	0.00 W	0.00 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.29 kW	2.21 kW
Annual energy consumption Q <sub>he</sub>	2897.00 kWh	4256.00 kWh

## Model KHP-MO 16 DTP

Model name	KHP-MO 16 DTP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water EN 14511-4 | Heating

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

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	15.0 kW	15.0 kW
El input	3.41 kW	5.26 kW
COP	4.40	2.85

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	180 %	139 %
Prated	14.7 kW	14.4 kW
SCOP	4.59	3.57
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	13.04 kW	12.78 kW
COP Tj = -7°C	2.54	2.05
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.00 kW	7.96 kW
COP Tj = +2°C	4.40	3.44
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.26 kW	4.78 kW
COP Tj = +7°C	7.12	5.13

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.28 kW	5.72 kW
COP Tj = 12°C	7.56	6.58
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	13.04 kW	12.78 kW
COP Tj = Tbiv	2.54	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.81 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.37	1.94
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.89 kW	1.86 kW
Annual energy consumption Qhe	6617 kWh	8349 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	160 %	128 %
Prated	14.6 kW	13.9 kW
SCOP	4.08	3.29
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	8.89 kW	8.30 kW
COP Tj = -7°C	3.25	2.70
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.87 kW	5.18 kW
COP Tj = +2°C	5.22	4.03
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.24 kW	5.17 kW
COP Tj = +7°C	6.67	5.44
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.32 kW	5.23 kW
COP Tj = 12°C	7.26	6.07
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	11.91 kW	11.32 kW
COP Tj = Tbiv	2.41	1.97
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.06 kW	9.07 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.56
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14 W	14 W
PSB	9.00 W	9.00 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.54 kW	4.83 kW
Annual energy consumption Qhe	8813.00 kWh	10408.00 kWh
Pdh Tj = -15°C (if TOL	11.91	11.32
COP Tj = -15°C (if TOL	2.41	1.97
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	238.00 %	181.00 %
Prated	14.3 kW	14.9 kW
SCOP	6.05	4.62
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	13.82 kW	13.47 kW
COP Tj = +2°C	3.18	2.48
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	9.17 kW	9.58 kW
COP Tj = +7°C	5.82	4.04
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.34 kW	5.64 kW
COP Tj = 12°C	7.33	6.31
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.17 kW	9.58 kW
COP Tj = Tbiv	5.82	4.04
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.82 kW	13.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.18	2.48
WTOL	75.00 °C	75.00 °C
Poff	9.00 W	9.00 W
PTO	14.00 W	14.00 W
PSB	9 W	9 W
PCK	0.00 W	0.00 W



Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.48 kW	1.43 kW
Annual energy consumption Q <sub>he</sub>	3159.00 kWh	4306.00 kWh