

Subtype Monobloc ACHP-H series 12/H14/H16

Certificate Holder	Ningbo AUX Electric Co., Ltd
Address	1166 Mingguang North Road
ZIP	315191
City	Ningbo Zhejiang
Country	CN
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	Monobloc ACHP-H series 12/H14/H16
Registration number	011-1W0587
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.7 kg
Certification Date	17.02.2023
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 11 (as of 2022-09)

**Model ACHP-H12/4R3HA-M**

Model name	ACHP-H12/4R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	12.20 kW	12.00 kW
El input	2.46 kW	3.86 kW
COP	4.96	3.11

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	194 %	139 %
Prated	12.20 kW	12.00 kW
SCOP	4.82	3.48
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.79 kW	10.62 kW
COP Tj = -7°C	3.02	2.11
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.57 kW	6.46 kW
COP Tj = +2°C	4.83	3.43
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.22 kW	4.15 kW

COP Tj = +7°C	6.27	4.59
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.88 kW	1.85 kW
COP Tj = 12°C	9.38	6.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.79 kW	10.62 kW
COP Tj = Tbiv	3.02	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.10 kW	9.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.10 kW	2.84 kW
Annual energy consumption Qhe	5114 kWh	6982 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	254 %	174 %
Prated	11.10 kW	12.50 kW
SCOP	6.20	4.36
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.90 kW	12.30 kW
COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.14 kW	8.04 kW
COP Tj = +7°C	5.82	3.82
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.17 kW	3.57 kW
COP Tj = 12°C	7.94	5.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.82	3.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.90 kW	12.30 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.20 kW	0.20 kW
Annual energy consumption Qhe	2308 kWh	3775 kWh

**Model ACHP-H14/4R3HA-M**

Model name	ACHP-H14/4R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	14.50 kW	14.00 kW
El input	3.08 kW	4.67 kW
COP	4.71	3.00

**EN 12102-1 | Average Climate**

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

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	188 %	137 %
Prated	14.50 kW	14.00 kW
SCOP	4.72	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.83 kW	12.38 kW
COP Tj = -7°C	3.00	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.81 kW	7.54 kW
COP Tj = +2°C	4.74	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.02 kW	4.85 kW

COP Tj = +7°C	5.82	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.23 kW	2.15 kW
COP Tj = 12°C	9.20	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	12.83 kW	12.38 kW
COP Tj = Tbiv	3.00	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.46 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.73	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.04 kW	3.50 kW
Annual energy consumption Qhe	6257 kWh	8251 kWh

**EN 12102-1 | Warmer Climate**

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

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	259 %	178 %
Prated	12.10 kW	13.70 kW
SCOP	6.39	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.00 kW	13.60 kW
COP Tj = +2°C	3.44	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.75 kW	4.08 kW
COP Tj = 12°C	8.25	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.00 kW	13.60 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.10 kW
Annual energy consumption Qhe	2463 kWh	4037 kWh

**Model ACHP-H16/4R3HA-M**

Model name	ACHP-H16/4R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	16.10 kW	14.00 kW
El input	3.57 kW	4.81 kW
COP	4.51	2.91

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	192 %	137 %
Prated	16.10 kW	14.00 kW
SCOP	4.83	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.24 kW	12.38 kW
COP Tj = -7°C	2.98	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	8.67 kW	7.54 kW
COP Tj = +2°C	4.70	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.57 kW	4.85 kW

COP Tj = +7°C	6.62	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.48 kW	2.15 kW
COP Tj = 12°C	8.91	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	14.24 kW	12.38 kW
COP Tj = Tbiv	2.98	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.31 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.67	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.79 kW	3.50 kW
Annual energy consumption Qhe	6810 kWh	8251 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	246 %	176 %
Prated	13.10 kW	13.80 kW
SCOP	6.07	4.35
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.97 kW	13.67 kW
COP Tj = +2°C	3.35	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.41 kW	8.87 kW
COP Tj = +7°C	5.31	3.84
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.87 kW	3.94 kW
COP Tj = 12°C	8.11	5.88
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	8.41 kW	8.87 kW
COP Tj = Tbiv	5.31	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.97 kW	13.67 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.13 kW	0.13 kW
Annual energy consumption Qhe	2812 kWh	4118 kWh

**Model ACHP-H12/4R3HA-M(NE)**

Model name	ACHP-H12/4R3HA-M(NE)
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	12.20 kW	12.00 kW
El input	2.46 kW	3.86 kW
COP	4.96	3.11

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	194 %	139 %
Prated	12.20 kW	12.00 kW
SCOP	4.82	3.48
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.79 kW	10.62 kW
COP Tj = -7°C	3.02	2.11
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.57 kW	6.46 kW
COP Tj = +2°C	4.83	3.43
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.22 kW	4.15 kW

COP Tj = +7°C	6.27	4.59
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.88 kW	1.85 kW
COP Tj = 12°C	9.38	6.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.79 kW	10.62 kW
COP Tj = Tbiv	3.02	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.10 kW	9.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.10 kW	2.84 kW
Annual energy consumption Qhe	5114 kWh	6982 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	254 %	174 %
Prated	11.10 kW	12.50 kW
SCOP	6.20	4.36
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.90 kW	12.30 kW
COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.14 kW	8.04 kW
COP Tj = +7°C	5.82	3.82
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.17 kW	3.57 kW
COP Tj = 12°C	7.94	5.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.82	3.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.90 kW	12.30 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.20 kW	0.20 kW
Annual energy consumption Qhe	2308 kWh	3775 kWh

**Model ACHP-H14/4R3HA-M(NE)**

Model name	ACHP-H14/4R3HA-M(NE)
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	14.50 kW	14.00 kW
El input	3.08 kW	4.67 kW
COP	4.71	3.00

**EN 12102-1 | Average Climate**

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

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	188 %	137 %
Prated	14.50 kW	14.00 kW
SCOP	4.72	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.83 kW	12.38 kW
COP Tj = -7°C	3.00	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.81 kW	7.54 kW
COP Tj = +2°C	4.74	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.02 kW	4.85 kW

COP Tj = +7°C	5.82	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.23 kW	2.15 kW
COP Tj = 12°C	9.20	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	12.83 kW	12.38 kW
COP Tj = Tbiv	3.00	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.46 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.73	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.04 kW	3.50 kW
Annual energy consumption Qhe	6257 kWh	8251 kWh

**EN 12102-1 | Warmer Climate**

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

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	259 %	178 %
Prated	12.10 kW	13.70 kW
SCOP	6.39	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.00 kW	13.60 kW
COP Tj = +2°C	3.44	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.75 kW	4.08 kW
COP Tj = 12°C	8.25	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.00 kW	13.60 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.10 kW
Annual energy consumption Qhe	2463 kWh	4037 kWh

**Model ACHP-H16/4R3HA-M(NE)**

Model name	ACHP-H16/4R3HA-M(NE)
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	16.10 kW	14.00 kW
El input	3.57 kW	4.81 kW
COP	4.51	2.91

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	192 %	137 %
Prated	16.10 kW	14.00 kW
SCOP	4.83	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.24 kW	12.38 kW
COP Tj = -7°C	2.98	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	8.67 kW	7.54 kW
COP Tj = +2°C	4.70	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.57 kW	4.85 kW

COP Tj = +7°C	6.62	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.48 kW	2.15 kW
COP Tj = 12°C	8.91	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	14.24 kW	12.38 kW
COP Tj = Tbiv	2.98	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.31 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.67	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.79 kW	3.50 kW
Annual energy consumption Qhe	6810 kWh	8251 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	246 %	176 %
Prated	13.10 kW	13.80 kW
SCOP	6.07	4.35
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.97 kW	13.67 kW
COP Tj = +2°C	3.35	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.41 kW	8.87 kW
COP Tj = +7°C	5.31	3.84
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.87 kW	3.94 kW
COP Tj = 12°C	8.11	5.88
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	8.41 kW	8.87 kW
COP Tj = Tbiv	5.31	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.97 kW	13.67 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.13 kW	0.13 kW
Annual energy consumption Qhe	2812 kWh	4118 kWh

**Model ACHP-H12/5R3HA-M**

Model name	ACHP-H12/5R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	12.20 kW	12.00 kW
El input	2.46 kW	3.86 kW
COP	4.96	3.11

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	194 %	139 %
Prated	12.20 kW	12.00 kW
SCOP	4.82	3.48
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.79 kW	10.62 kW
COP Tj = -7°C	3.02	2.11
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.57 kW	6.46 kW
COP Tj = +2°C	4.83	3.43
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.22 kW	4.15 kW

COP Tj = +7°C	6.27	4.59
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.88 kW	1.85 kW
COP Tj = 12°C	9.38	6.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.79 kW	10.62 kW
COP Tj = Tbiv	3.02	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.10 kW	9.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	2.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.10 kW	2.84 kW
Annual energy consumption Qhe	5114 kWh	6982 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	254 %	174 %
Prated	11.10 kW	12.50 kW
SCOP	6.20	4.36
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.90 kW	12.30 kW
COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.14 kW	8.04 kW
COP Tj = +7°C	5.82	3.82
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.17 kW	3.57 kW
COP Tj = 12°C	7.94	5.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.82	3.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.90 kW	12.30 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.20 kW	0.20 kW
Annual energy consumption Qhe	2308 kWh	3775 kWh

**Model ACHP-H14/5R3HA-M**

Model name	ACHP-H14/5R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	14.50 kW	14.00 kW
El input	3.08 kW	4.67 kW
COP	4.71	3.00

**EN 12102-1 | Average Climate**

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

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	188 %	137 %
Prated	14.50 kW	14.00 kW
SCOP	4.72	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.83 kW	12.38 kW
COP Tj = -7°C	3.00	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.81 kW	7.54 kW
COP Tj = +2°C	4.74	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.02 kW	4.85 kW

COP Tj = +7°C	5.82	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.23 kW	2.15 kW
COP Tj = 12°C	9.20	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	12.83 kW	12.38 kW
COP Tj = Tbiv	3.00	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.46 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.73	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.04 kW	3.50 kW
Annual energy consumption Qhe	6257 kWh	8251 kWh

**EN 12102-1 | Warmer Climate**

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

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	259 %	178 %
Prated	12.10 kW	13.70 kW
SCOP	6.39	4.45
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.00 kW	13.60 kW
COP Tj = +2°C	3.44	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.75 kW	4.08 kW
COP Tj = 12°C	8.25	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.00 kW	13.60 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.10 kW
Annual energy consumption Qhe	2463 kWh	4037 kWh

**Model ACHP-H16/5R3HA-M**

Model name	ACHP-H16/5R3HA-M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
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	16.10 kW	14.00 kW
El input	3.57 kW	4.81 kW
COP	4.51	2.91

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	192 %	137 %
Prated	16.10 kW	14.00 kW
SCOP	4.83	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.24 kW	12.38 kW
COP Tj = -7°C	3.04	2.06
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	8.67 kW	7.54 kW
COP Tj = +2°C	4.70	3.50
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.57 kW	4.85 kW

COP Tj = +7°C	6.62	4.33
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	2.48 kW	2.15 kW
COP Tj = 12°C	8.91	6.97
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	14.24 kW	12.38 kW
COP Tj = Tbiv	3.04	2.06
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.31 kW	10.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.67	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.79 kW	3.50 kW
Annual energy consumption Qhe	6786 kWh	8253 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	246 %	176 %
Prated	13.10 kW	13.80 kW
SCOP	6.07	4.35
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.97 kW	13.67 kW
COP Tj = +2°C	3.35	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.41 kW	8.87 kW
COP Tj = +7°C	5.31	3.84
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.87 kW	3.94 kW
COP Tj = 12°C	8.11	5.88
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	8.41 kW	8.87 kW
COP Tj = Tbiv	5.31	3.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.97 kW	13.67 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.13 kW	0.13 kW
Annual energy consumption Qhe	2812 kWh	4118 kWh