

Subtype ACHP-H series 12/H14/H16

Certificate Holder	Ningbo AUX Electric Co., Ltd
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City	Ningbo Zhejiang
Country	CN
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	ACHP-H series 12/H14/H16
Registration number	011-1W0546
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.84 kg
Certification Date	15.08.2022
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 11 (as of 2022-09)

Model Indoor unit ACHP-H12/5R3HA-I and outdoor unit ACHP-H12/5R3HA-O

Model name	Indoor unit ACHP-H12/5R3HA-I and outdoor unit ACHP-H12/5R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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 indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	136 %
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	5230 kWh	7131 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	245 %	171 %
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	5.87	3.86
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 $T_j = T_{biv}$	5.87	3.86
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	10.90 kW	12.30 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	3.59	2.31
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.900	0.900
WTOL	60 °C	60 °C
P _{off}	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 Q _{he}	2391 kWh	3831 kWh

Model Indoor unit ACHP-H14/5R3HA-I and outdoor unit ACHP-H14/5R3HA-O

Model name	Indoor unit ACHP-H14/5R3HA-I and outdoor unit ACHP-H14/5R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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 indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186 %	135 %
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	5.92	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	6352 kWh	8380 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	253 %	175 %
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	2529 kWh	4119 kWh

Model Indoor unit ACHP-H16/5R3HA-I and outdoor unit ACHP-H16/5R3HA-O

Model name	Indoor unit ACHP-H16/5R3HA-I and outdoor unit ACHP-H16/5R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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	16.10 kW
El input	3.57 kW	5.53 kW
COP	4.51	2.91

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	135 %
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	6892 kWh	8380 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	240 %	174 %
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	5.36	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	5.36	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	2884 kWh	4184 kWh

Model Indoor unit ACHP-H12/4R3HA-I and outdoor unit ACHP-H12/4R3HA-O

Model name	Indoor unit ACHP-H12/4R3HA-I and outdoor unit ACHP-H12/4R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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	2.44 kW	3.86 kW
COP	4.96	3.11

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	136 %
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	5230 kWh	7131 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	245 %	171 %
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	5.87	3.86
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 $T_j = T_{biv}$	5.87	3.86
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	10.90 kW	12.30 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	3.59	2.31
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.900	0.900
WTOL	60 °C	60 °C
P _{off}	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 Q _{he}	2391 kWh	3831 kWh

Model Indoor unit ACHP-H14/4R3HA-I and outdoor unit ACHP-H14/4R3HA-O

Model name	Indoor unit ACHP-H14/4R3HA-I and outdoor unit ACHP-H14/4R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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 indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186 %	135 %
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	5.92	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	6352 kWh	8380 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	253 %	175 %
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	2529 kWh	4119 kWh

Model Indoor unit ACHP-H16/4R3HA-I and outdoor unit ACHP-H16/4R3HA-O

Model name	Indoor unit ACHP-H16/4R3HA-I and outdoor unit ACHP-H16/4R3HA-O
Application	Heating (medium temp)
Units	Indoor, 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	16.10 kW
El input	3.57 kW	5.53 kW
COP	4.51	2.91

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	135 %
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	6892 kWh	8380 kWh

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	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

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	Low temperature	Medium temperature
ηs	240 %	174 %
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	5.36	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	5.36	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	2884 kWh	4184 kWh