

Subtype HA 3-8.2 OS 230V, HA 5-8.2 OS 230V with Tower

Certificate Holder	Saunier Duval Brand Group
Address	SDECCI SAS - 17 rue de la Petite Baratte
ZIP	44300
City	Nantes
Country	FR
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	HA 3-8.2 OS 230V, HA 5-8.2 OS 230V with Tower
Registration number	011-1W0951
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.3 kg
Certification Date	11.12.2024
Testing basis	HP KEYMARK certification scheme rules rev. 14

Model HA 3-8.2 OS 230V + HA 5-8.2 STB

Model name	HA 3-8.2 OS 230V + HA 5-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.71 kW	1.73 kW
COP	5.01	2.89

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	188 %	129 %
Prated	3.44 kW	3.65 kW
SCOP	4.79	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.25	2.15
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.71	3.21
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	6.10	4.32
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	8.20	6.20
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.25	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	1.81

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1487 kWh	2277 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	109 %
Prated	3.41 kW	2.98 kW
SCOP	4.04	2.80
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.54	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.82	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	6.31	4.77
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	8.02	6.43
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.64	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.27	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2080 kWh	2629 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43
COP T _j = -15°C (if TOL	2.64	1.75
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	245 %	165 %
Prated	3.22 kW	4.02 kW
SCOP	6.20	4.20
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	3.22 kW	4.02 kW
COP T _j = +2°C	4.15	2.50
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	2.35 kW	2.66 kW
COP T _j = +7°C	5.66	3.58
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.82 kW	2.58 kW
COP T _j = 12°C	7.90	5.50
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	4.15	2.50
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	4.15	2.50
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	694 kWh	1278 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc} T _j = 25 °C	0.969	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc} T _j = 20 °C	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 3-8.2 OS 230V + HA 5-8.2 STB B5

Model name	HA 3-8.2 OS 230V + HA 5-8.2 STB B5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.71 kW	1.73 kW
COP	5.01	2.89

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	188 %	129 %
Prated	3.44 kW	3.65 kW
SCOP	4.79	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.25	2.15
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.71	3.21
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	6.10	4.32
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	8.20	6.20
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.25	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	1.81

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1487 kWh	2277 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	109 %
Prated	3.41 kW	2.98 kW
SCOP	4.04	2.80
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.54	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.82	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	6.31	4.77
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	8.02	6.43
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.64	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.27	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2080 kWh	2629 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43
COP T _j = -15°C (if TOL	2.64	1.75
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	245 %	165 %
Prated	3.22 kW	4.02 kW
SCOP	6.20	4.20
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	3.22 kW	4.02 kW
COP T _j = +2°C	4.15	2.50
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	2.35 kW	2.66 kW
COP T _j = +7°C	5.66	3.58
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.82 kW	2.58 kW
COP T _j = 12°C	7.90	5.50
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	4.15	2.50
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	4.15	2.50
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	694 kWh	1278 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc} T _j = 25 °C	0.969	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc} T _j = 20 °C	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 3-8.2 OS 230V + HA 5-8.2 STB C2

Model name	HA 3-8.2 OS 230V + HA 5-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.75 kW	1.78 kW
COP	4.71	2.81

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.77 kW	1.30 kW
Cooling capacity	5.22	5.31
EER	2.95	4.08

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	171 %	121 %
Prated	3.44 kW	3.65 kW
SCOP	4.36	3.10
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.10	2.09
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.27	3.00
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	5.48	3.96
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	7.24	5.62
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.10	2.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.75

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1632 kWh	2431 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	146 %	102 %
Prated	3.41 kW	2.98 kW
SCOP	3.72	2.63
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.31	2.30
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.35	3.25
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	5.63	4.35
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	7.10	5.79
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.53	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.69
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2256 kWh	2796 kWh
P _{dh} T _j = -15 °C (if TOL	2.78	2.43
COP T _j = -15 °C (if TOL	2.53	1.69
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	220 %	153 %
Prated	3.22 kW	4.02 kW
SCOP	5.58	3.91
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	3.22 kW	4.02 kW
COP T _j = +2 °C	3.93	2.43
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7 °C	2.35 kW	2.66 kW
COP T _j = +7 °C	5.11	3.37
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12 °C	2.82 kW	2.58 kW
COP T _j = 12 °C	7.02	5.02
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	3.93	2.43
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.93	2.43
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	771 kWh	1372 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.33	6.33
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER T _j = 35°C	3.13	3.99
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER T _j = 30°C	3.76	5.59
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER T _j = 25°C	4.89	7.44
C _{dc Tj = 25 °C}	0.975	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER T _j = 20°C	6.19	9.29
C _{dc Tj = 20 °C}	0.971	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	537 kWh	492 kWh

Model HA 3-8.2 OS 230V B2 + HA 5-8.2 STB

Model name	HA 3-8.2 OS 230V B2 + HA 5-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.71 kW	1.73 kW
COP	5.01	2.89

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	182 %	127 %
Prated	3.44 kW	3.65 kW
SCOP	4.63	3.24
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.25	2.15
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.71	3.21
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	6.10	4.32
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	8.20	6.20
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.25	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	1.81
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Q _{he}	1538 kWh	2328 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	156 %	108 %
Prated	3.41 kW	2.98 kW
SCOP	3.98	2.76
T _{biv}	-15 °C	-15 °C
TOL	-20 °C	-15 °C
P _{dh} T _j = -7°C	2.26 kW	1.95 kW
COP T _j = -7°C	3.54	2.43
C _{dh} T _j = -7 °C	1.00	1.00
P _{dh} T _j = +2°C	2.04 kW	1.86 kW
COP T _j = +2°C	4.82	3.53
C _{dh} T _j = +2 °C	0.97	0.98
P _{dh} T _j = +7°C	2.34 kW	2.22 kW
COP T _j = +7°C	6.31	4.77
C _{dh} T _j = +7 °C	0.96	0.97
P _{dh} T _j = 12°C	2.78 kW	2.65 kW
COP T _j = 12°C	8.02	6.43
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	2.78 kW	2.43 kW
COP T _j = T _{biv}	2.64	1.75
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.33 kW	2.43 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.27	1.75
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2111 kWh	2660 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43

COP Tj = -15°C (if TOL	2.64	1.75
Cdh Tj = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	225 %	157 %
Prated	3.22 kW	4.02 kW
SCOP	5.69	4.00
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.22 kW	4.02 kW
COP Tj = +2°C	4.15	2.50
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.35 kW	2.66 kW
COP Tj = +7°C	5.66	3.58
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.82 kW	2.58 kW
COP Tj = 12°C	7.90	5.50
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.22 kW	4.02 kW
COP Tj = Tbiv	4.15	2.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.22 kW	4.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.15	2.50
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	756 kWh	1340 kWh

Model HA 3-8.2 OS 230V B2 + HA 5-8.2 STB C2

Model name	HA 3-8.2 OS 230V B2 + HA 5-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, 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 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.75 kW	1.78 kW
COP	4.71	2.81

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	166 %	118 %
Prated	3.44 kW	3.65 kW
SCOP	4.23	3.04
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.10	2.09
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.27	3.00
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	5.48	3.96
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	7.24	5.62
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.10	2.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	62 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Q _{he}	1683 kWh	2483 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	144 %	101 %
Prated	3.41 kW	2.98 kW
SCOP	3.67	2.60
T _{biv}	-15 °C	-15 °C
TOL	-20 °C	-15 °C
P _{dh} T _j = -7°C	2.26 kW	1.95 kW
COP T _j = -7°C	3.31	2.30
C _{dh} T _j = -7 °C	1.00	1.00
P _{dh} T _j = +2°C	2.04 kW	1.86 kW
COP T _j = +2°C	4.35	3.25
C _{dh} T _j = +2 °C	0.97	0.98
P _{dh} T _j = +7°C	2.34 kW	2.22 kW
COP T _j = +7°C	5.63	4.35
C _{dh} T _j = +7 °C	0.96	0.97
P _{dh} T _j = 12°C	2.78 kW	2.65 kW
COP T _j = 12°C	7.10	5.79
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	2.78 kW	2.43 kW
COP T _j = T _{biv}	2.53	1.69
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.33 kW	2.43 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.17	1.69
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	62 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2287 kWh	2827 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43

COP Tj = -15°C (if TOL	2.53	1.69
Cdh Tj = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	204 %	147 %
Prated	3.22 kW	4.02 kW
SCOP	5.16	3.74
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.22 kW	4.02 kW
COP Tj = +2°C	3.93	2.43
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.35 kW	2.66 kW
COP Tj = +7°C	5.11	3.37
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.82 kW	2.58 kW
COP Tj = 12°C	7.02	5.02
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.22 kW	4.02 kW
COP Tj = Tbiv	3.93	2.43
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.22 kW	4.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.93	2.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	62 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	833 kWh	1434 kWh

Model HA 4-8.2 OS 230V B3 + HA 6-8.2 STB

Model name	HA 4-8.2 OS 230V B3 + HA 6-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.71 kW	1.73 kW
COP	5.01	2.89

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	188 %	129 %
Prated	3.44 kW	3.65 kW
SCOP	4.79	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.25	2.15
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.71	3.21
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	6.10	4.32
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	8.20	6.20
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.25	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	1.81

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1487 kWh	2277 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	158 %	109 %
Prated	3.41 kW	2.98 kW
SCOP	4.04	2.80
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.54	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.82	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	6.31	4.77
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	8.02	6.43
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.64	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.27	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2080 kWh	2629 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43
COP T _j = -15°C (if TOL	2.64	1.75
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	245 %	165 %
Prated	3.22 kW	4.02 kW
SCOP	6.20	4.20
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	3.22 kW	4.02 kW
COP T _j = +2°C	4.15	2.50
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	2.35 kW	2.66 kW
COP T _j = +7°C	5.66	3.58
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.82 kW	2.58 kW
COP T _j = 12°C	7.90	5.50
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	4.15	2.50
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	4.15	2.50
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	694 kWh	1278 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc} T _j = 25 °C	0.969	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc} T _j = 20 °C	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 4-8.2 OS 230V B3 + HA 6-8.2 STB B5

Model name	HA 4-8.2 OS 230V B3 + HA 6-8.2 STB B5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.71 kW	1.73 kW
COP	5.01	2.89

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	188 %	129 %
Prated	3.44 kW	3.65 kW
SCOP	4.79	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.25	2.15
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.71	3.21
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	6.10	4.32
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	8.20	6.20
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.25	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	1.81

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1487 kWh	2277 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	109 %
Prated	3.41 kW	2.98 kW
SCOP	4.04	2.80
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.54	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.82	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	6.31	4.77
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	8.02	6.43
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.64	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.27	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2080 kWh	2629 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43
COP T _j = -15°C (if TOL	2.64	1.75
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	245 %	165 %
Prated	3.22 kW	4.02 kW
SCOP	6.20	4.20
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	3.22 kW	4.02 kW
COP T _j = +2°C	4.15	2.50
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	2.35 kW	2.66 kW
COP T _j = +7°C	5.66	3.58
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.82 kW	2.58 kW
COP T _j = 12°C	7.90	5.50
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	4.15	2.50
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	4.15	2.50
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	694 kWh	1278 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc} T _j = 25 °C	0.969	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc} T _j = 20 °C	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 4-8.2 OS 230V B3 + HA 6-8.2 STB C2

Model name	HA 4-8.2 OS 230V B3 + HA 6-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	3.54 kW	5.00 kW
El input	0.75 kW	1.78 kW
COP	4.71	2.81

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.77 kW	1.30 kW
Cooling capacity	5.22	5.31
EER	2.95	4.08

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	171 %	121 %
Prated	3.44 kW	3.65 kW
SCOP	4.36	3.10
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.05 kW	3.23 kW
COP Tj = -7°C	3.10	2.09
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	2.09 kW
COP Tj = +2°C	4.27	3.00
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.41 kW	2.14 kW
COP Tj = +7°C	5.48	3.96
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.76 kW	2.71 kW
COP Tj = 12°C	7.24	5.62
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	3.05 kW	3.23 kW
COP Tj = Tbiv	3.10	2.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.03 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.75

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.42 kW	0.90 kW
Annual energy consumption Qhe	1632 kWh	2431 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	146 %	102 %
Prated	3.41 kW	2.98 kW
SCOP	3.72	2.63
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.26 kW	1.95 kW
COP Tj = -7°C	3.31	2.30
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.04 kW	1.86 kW
COP Tj = +2°C	4.35	3.25
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.34 kW	2.22 kW
COP Tj = +7°C	5.63	4.35
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.78 kW	2.65 kW
COP Tj = 12°C	7.10	5.79
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	2.78 kW	2.43 kW
COP Tj = Tbiv	2.53	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW	2.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.69
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.41 kW	2.98 kW
Annual energy consumption Q _{he}	2256 kWh	2796 kWh
P _{dh} T _j = -15°C (if TOL	2.78	2.43
COP T _j = -15°C (if TOL	2.53	1.69
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	220 %	153 %
Prated	3.22 kW	4.02 kW
SCOP	5.58	3.91
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	3.22 kW	4.02 kW
COP T _j = +2°C	3.93	2.43
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	2.35 kW	2.66 kW
COP T _j = +7°C	5.11	3.37
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.82 kW	2.58 kW
COP T _j = 12°C	7.02	5.02
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	3.22 kW	4.02 kW
COP T _j = T _{biv}	3.93	2.43
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	3.22 kW	4.02 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.93	2.43
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	771 kWh	1372 kWh
---	---------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.33	6.33
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER T _j = 35°C	3.13	3.99
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER T _j = 30°C	3.76	5.59
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER T _j = 25°C	4.89	7.44
C _{dc Tj = 25 °C}	0.975	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER T _j = 20°C	6.19	9.29
C _{dc Tj = 20 °C}	0.971	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	537 kWh	492 kWh

Model HA 5-8.2 OS 230V + HA 5-8.2 STB

Model name	HA 5-8.2 OS 230V + HA 5-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.92 kW	1.89 kW
COP	4.89	2.83

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	192 %	129 %
Prated	4.72 kW	4.35 kW
SCOP	4.87	3.30
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.13	2.10
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.84	3.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	6.24	4.39
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	8.04	6.03
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.13	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.66

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2003 kWh	2727 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	162 %	111 %
Prated	5.44 kW	3.97 kW
SCOP	4.13	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.54	2.51
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	5.02	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	6.67	4.84
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.95	6.34
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.57	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3244 kWh	3423 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.57	1.84
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	252 %	170 %
Prated	5.01 kW	4.68 kW
SCOP	6.37	4.32
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.54	2.26
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.84	3.59
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.91	5.92
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.54	2.26
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.54	2.26
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1050 kWh	1447 kWh
---	----------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc Tj = 25 °C}	0.969	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc Tj = 20 °C}	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 5-8.2 OS 230V + HA 5-8.2 STB B5

Model name	HA 5-8.2 OS 230V + HA 5-8.2 STB B5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.92 kW	1.89 kW
COP	4.89	2.83

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	192 %	129 %
Prated	4.72 kW	4.35 kW
SCOP	4.87	3.30
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.13	2.10
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.84	3.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	6.24	4.39
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	8.04	6.03
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.13	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.66

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2003 kWh	2727 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	162 %	111 %
Prated	5.44 kW	3.97 kW
SCOP	4.13	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.54	2.51
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	5.02	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	6.67	4.84
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.95	6.34
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.57	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3244 kWh	3423 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.57	1.84
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	252 %	170 %
Prated	5.01 kW	4.68 kW
SCOP	6.37	4.32
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.54	2.26
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.84	3.59
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.91	5.92
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.54	2.26
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.54	2.26
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1050 kWh	1447 kWh
---	----------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.25	4.13
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	4.01	5.98
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	5.41	8.34
C _{dc} T _j = 25 °C	0.969	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.97	10.65
C _{dc} T _j = 20 °C	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 5-8.2 OS 230V + HA 5-8.2 STB C2

Model name	HA 5-8.2 OS 230V + HA 5-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.97 kW	1.94 kW
COP	4.66	2.76

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.77 kW	1.30 kW
Cooling capacity	5.22	5.31
EER	2.95	4.08

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	177 %	121 %
Prated	4.72 kW	4.35 kW
SCOP	4.50	3.09
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.03	2.05
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.48	2.98
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	5.60	4.03
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	7.13	5.48
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.03	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.62

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2169 kWh	2905 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	151 %	105 %
Prated	5.44 kW	3.97 kW
SCOP	3.84	2.69
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.38	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	4.51	3.25
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	5.94	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.06	5.74
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.51	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.79
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3488 kWh	3629 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.51	1.79
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	228 %	158 %
Prated	5.01 kW	4.68 kW
SCOP	5.78	4.03
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.43	2.21
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.37	3.40
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.02	5.39
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.43	2.21
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.43	2.21
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1156 kWh	1551 kWh
EN 14825 Cooling		
	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.33	6.33
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER Tj = 35°C	3.13	3.99
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER Tj = 30°C	3.76	5.59
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER Tj = 25°C	4.89	7.44
C _{dc Tj = 25 °C}	0.975	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER Tj = 20°C	6.19	9.29
C _{dc Tj = 20 °C}	0.971	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	537 kWh	492 kWh

Model HA 5-8.2 OS 230V B2 + HA 5-8.2 STB C2

Model name	HA 5-8.2 OS 230V B2 + HA 5-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, 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 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.97 kW	1.94 kW
COP	4.66	2.76

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	173 %	119 %
Prated	4.72 kW	4.35 kW
SCOP	4.39	3.04
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.03	2.05
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.48	2.98
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	5.60	4.03
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	7.13	5.48
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.03	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.62
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00

WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2220 kWh	2956 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	149 %	104 %
Prated	5.44 kW	3.97 kW
SCOP	3.81	2.67
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.38	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	4.51	3.25
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	5.94	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.06	5.74
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.51	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.79
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3519 kWh	3660 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.51	1.79
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	217 %	152 %
Prated	5.01 kW	4.68 kW
SCOP	5.49	3.88
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.43	2.21
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.37	3.40
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.02	5.39
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.43	2.21
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.43	2.21
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	1218 kWh	1613 kWh

Model HA 6-8.2 OS 230V B3 + HA 6-8.2 STB

Model name	HA 6-8.2 OS 230V B3 + HA 6-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.92 kW	1.89 kW
COP	4.89	2.83

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	192 %	129 %
Prated	4.72 kW	4.35 kW
SCOP	4.87	3.30
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.13	2.10
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.84	3.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	6.24	4.39
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	8.04	6.03
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.13	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.66

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2003 kWh	2727 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	162 %	111 %
Prated	5.44 kW	3.97 kW
SCOP	4.13	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.54	2.51
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	5.02	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	6.67	4.84
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.95	6.34
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.57	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3244 kWh	3423 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.57	1.84
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	252 %	170 %
Prated	5.01 kW	4.68 kW
SCOP	6.37	4.32
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.54	2.26
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.84	3.59
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.91	5.92
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.54	2.26
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.54	2.26
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1050 kWh	1447 kWh
---	----------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER Tj = 35°C	3.25	4.13
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER Tj = 30°C	4.01	5.98
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER Tj = 25°C	5.41	8.34
C _{dc Tj = 25 °C}	0.969	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER Tj = 20°C	6.97	10.65
C _{dc Tj = 20 °C}	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 6-8.2 OS 230V B3 + HA 6-8.2 STB B5

Model name	HA 6-8.2 OS 230V B3 + HA 6-8.2 STB B5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.92 kW	1.89 kW
COP	4.89	2.83

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.73 kW	1.26 kW
Cooling capacity	5.22	5.31
EER	3.03	4.22

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	192 %	129 %
Prated	4.72 kW	4.35 kW
SCOP	4.87	3.30
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.13	2.10
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.84	3.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	6.24	4.39
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	8.04	6.03
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.13	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.66

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2003 kWh	2727 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	162 %	111 %
Prated	5.44 kW	3.97 kW
SCOP	4.13	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.54	2.51
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	5.02	3.53
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	6.67	4.84
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.95	6.34
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.57	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3244 kWh	3423 kWh
P _{dh} T _j = -15 °C (if TOL	4.43	3.23
COP T _j = -15 °C (if TOL	2.57	1.84
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	252 %	170 %
Prated	5.01 kW	4.68 kW
SCOP	6.37	4.32
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	5.01 kW	4.68 kW
COP T _j = +2 °C	3.54	2.26
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7 °C	3.00 kW	2.95 kW
COP T _j = +7 °C	5.84	3.59
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12 °C	2.81 kW	2.67 kW
COP T _j = 12 °C	7.91	5.92
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.54	2.26
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.54	2.26
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1050 kWh	1447 kWh
---	----------	----------

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.69	6.94
P _{dc Tj = 35°C}	3.88 kW	5.19 kW
EER Tj = 35°C	3.25	4.13
C _{dc Tj = 35 °C}	1.000	1.000
P _{dc Tj = 30°C}	2.64 kW	3.81 kW
EER Tj = 30°C	4.01	5.98
C _{dc Tj = 30 °C}	1.000	1.000
P _{dc Tj = 25°C}	2.28 kW	3.11 kW
EER Tj = 25°C	5.41	8.34
C _{dc Tj = 25 °C}	0.969	0.965
P _{dc Tj = 20°C}	2.50 kW	3.27 kW
EER Tj = 20°C	6.97	10.65
C _{dc Tj = 20 °C}	0.963	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	496 kWh	449 kWh

Model HA 6-8.2 OS 230V B3 + HA 6-8.2 STB C2

Model name	HA 6-8.2 OS 230V B3 + HA 6-8.2 STB C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data

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

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.97 kW	1.94 kW
COP	4.66	2.76

EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	1.77 kW	1.30 kW
Cooling capacity	5.22	5.31
EER	2.95	4.08

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	177 %	121 %
Prated	4.72 kW	4.35 kW
SCOP	4.50	3.09
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.03	2.05
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.48	2.98
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	5.60	4.03
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	7.13	5.48
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.03	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.62

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Qhe	2169 kWh	2905 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	151 %	105 %
Prated	5.44 kW	3.97 kW
SCOP	3.84	2.69
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.46 kW	2.27 kW
COP Tj = -7°C	3.38	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.02 kW	1.86 kW
COP Tj = +2°C	4.51	3.25
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.42 kW	2.28 kW
COP Tj = +7°C	5.94	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	2.83 kW	2.73 kW
COP Tj = 12°C	7.06	5.74
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.43 kW	3.23 kW
COP Tj = Tbiv	2.51	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.99 kW	3.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.79
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W

PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3488 kWh	3629 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23
COP T _j = -15°C (if TOL	2.51	1.79
C _{dh} T _j = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	228 %	158 %
Prated	5.01 kW	4.68 kW
SCOP	5.78	4.03
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.01 kW	4.68 kW
COP T _j = +2°C	3.43	2.21
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	3.00 kW	2.95 kW
COP T _j = +7°C	5.37	3.40
C _{dh} T _j = +7 °C	0.97	0.98
P _{dh} T _j = 12°C	2.81 kW	2.67 kW
COP T _j = 12°C	7.02	5.39
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	5.01 kW	4.68 kW
COP T _j = T _{biv}	3.43	2.21
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.01 kW	4.68 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.43	2.21
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Q _{he}	1156 kWh	1551 kWh
EN 14825 Cooling		
	+7°C/+12°C	+18°C/+23°C
P _{designc}	3.88 kW	5.19 kW
SEER	4.33	6.33
P _{dc} T _j = 35°C	3.88 kW	5.19 kW
EER T _j = 35°C	3.13	3.99
C _{dc} T _j = 35 °C	1.000	1.000
P _{dc} T _j = 30°C	2.64 kW	3.81 kW
EER T _j = 30°C	3.76	5.59
C _{dc} T _j = 30 °C	1.000	1.000
P _{dc} T _j = 25°C	2.28 kW	3.11 kW
EER T _j = 25°C	4.89	7.44
C _{dc} T _j = 25 °C	0.975	0.965
P _{dc} T _j = 20°C	2.50 kW	3.27 kW
EER T _j = 20°C	6.19	9.29
C _{dc} T _j = 20 °C	0.971	0.957
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Annual energy consumption Q _{ce}	537 kWh	492 kWh

Model HA 5-8.2 OS 230V B2 + HA 5-8.2 STB

Model name	HA 5-8.2 OS 230V B2 + HA 5-8.2 STB
Application	Heating + DHW + low temp
Units	Indoor, 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 16147 | Average Climate

Declared load profile	L
Efficiency η_{DHW}	141 %
COP	3.53
Heating up time	01:19 h:min
Standby power input	46.1 W
Reference hot water temperature	52.4 °C
Mixed water at 40°C	249 l

EN 16147 | Colder Climate

Declared load profile	L
Efficiency η_{DHW}	121.4 %
COP	3.03
Heating up time	01:23 h:min
Standby power input	55.2 W
Reference hot water temperature	52.1 °C
Mixed water at 40°C	243 l

EN 16147 | Warmer Climate

Declared load profile	L
Efficiency η_{DHW}	165.4 %
COP	4.14
Heating up time	02:21 h:min
Standby power input	38.3 W
Reference hot water temperature	52.2 °C
Mixed water at 40°C	247 l

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	4.51 kW	5.36 kW
El input	0.92 kW	1.89 kW
COP	4.89	2.83

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	
Sound power level outdoor	48 dB(A)	

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	187 %	126 %
Prated	4.72 kW	4.35 kW
SCOP	4.75	3.24
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.18 kW	3.85 kW
COP Tj = -7°C	3.13	2.10
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	2.67 kW	2.13 kW
COP Tj = +2°C	4.84	3.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	2.43 kW	2.21 kW
COP Tj = +7°C	6.24	4.39
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.84 kW	2.72 kW
COP Tj = 12°C	8.04	6.03
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	4.18 kW	3.85 kW
COP Tj = Tbiv	3.13	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	3.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	1.66
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.66 kW	1.02 kW
Annual energy consumption Q _{he}	2055 kWh	2778 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	161 %	110 %
Prated	5.44 kW	3.97 kW
SCOP	4.09	2.83
T _{biv}	-15 °C	-15 °C
TOL	-20 °C	-15 °C
P _{dh} T _j = -7°C	3.46 kW	2.27 kW
COP T _j = -7°C	3.54	2.51
C _{dh} T _j = -7 °C	1.00	1.00
P _{dh} T _j = +2°C	2.02 kW	1.86 kW
COP T _j = +2°C	5.02	3.53
C _{dh} T _j = +2 °C	0.97	0.98
P _{dh} T _j = +7°C	2.42 kW	2.28 kW
COP T _j = +7°C	6.67	4.84
C _{dh} T _j = +7 °C	0.96	0.97
P _{dh} T _j = 12°C	2.83 kW	2.73 kW
COP T _j = 12°C	7.95	6.34
C _{dh} T _j = +12 °C	0.96	0.97
P _{dh} T _j = T _{biv}	4.43 kW	3.23 kW
COP T _j = T _{biv}	2.57	1.84
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.99 kW	3.23 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.19	1.84
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.44 kW	3.97 kW
Annual energy consumption Q _{he}	3275 kWh	3454 kWh
P _{dh} T _j = -15°C (if TOL	4.43	3.23

COP Tj = -15°C (if TOL	2.57	1.84
Cdh Tj = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	48 dB(A)	48 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	238 %	163 %
Prated	5.01 kW	4.68 kW
SCOP	6.01	4.15
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.01 kW	4.68 kW
COP Tj = +2°C	3.54	2.26
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	3.00 kW	2.95 kW
COP Tj = +7°C	5.84	3.59
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.81 kW	2.67 kW
COP Tj = 12°C	7.91	5.92
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	5.01 kW	4.68 kW
COP Tj = Tbiv	3.54	2.26
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.01 kW	4.68 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.54	2.26
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	13 W	13 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1112 kWh	1509 kWh