

Subtype HA 12-6 O 230V, HA 12-6 O

| | |
|---------------------|--|
| 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 12-6 O 230V, HA 12-6 O |
| Registration number | 011-1W0767 |
| Heat Pump Type | Outdoor Air/Water |
| Refrigerant | R290 |
| Mass of Refrigerant | 1.3 kg |
| Certification Date | 01.08.2022 |
| Testing basis | DIN EN 14511-1:2019-07; EN 14511-1:2018, DIN EN 14511-2:2019-07; EN 14511-2:2018, DIN EN 14511-3:2019-07; EN 14511-3:2018, DIN EN 14511-4:2019-07; EN 14511-4:2018, DIN EN 14825:2019-07; EN 14825:2018, DIN EN 12102-1:2018-02; EN 12102-1:2017 |

Model HA 12-6 O 230V

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|-------------------------------------|--|
| Model name | HA 12-6 O 230V |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Colder, Warmer, Warmer Climate, Colder 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 | 8.54 kW | 9.13 kW |
| El input | 1.58 kW | 2.92 kW |
| COP | 5.38 | 3.11 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 195 % | 147 % |
| Prated | 12.73 kW | 11.81 kW |
| SCOP | 4.96 | 3.75 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.27 kW | 10.45 kW |
| COP Tj = -7°C | 2.58 | 2.10 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.99 kW | 6.43 kW |
| COP Tj = +2°C | 5.17 | 3.73 |
| Cdh Tj = +2 °C | 0.970 | 0.970 |
| Pdh Tj = +7°C | 5.81 kW | 5.65 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.87 | 5.27 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.77 kW | 6.58 kW |
| COP Tj = 12°C | 8.66 | 6.64 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 11.27 kW | 10.45 kW |
| COP Tj = Tbiv | 2.58 | 2.10 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.85 kW | 9.83 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.29 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.89 kW | 1.98 kW |
| Annual energy consumption Qhe | 5305 kWh | 6501 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 170 % | 128 % |
| Prated | 12.16 kW | 11.09 kW |
| SCOP | 4.32 | 3.28 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.93 kW | 7.06 kW |
| COP Tj = -7°C | 3.72 | 2.65 |
| Cdh Tj = -7 °C | 0.980 | 0.960 |
| Pdh Tj = +2°C | 5.11 kW | 4.83 kW |
| COP Tj = +2°C | 5.51 | 4.20 |
| Cdh Tj = +2 °C | 0.960 | 0.960 |
| Pdh Tj = +7°C | 5.82 kW | 5.62 kW |
| COP Tj = +7°C | 7.14 | 5.61 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.69 kW | 6.55 kW |
| COP Tj = 12°C | 8.51 | 6.95 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 9.92 kW | 9.04 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.26 | 1.81 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.71 kW | 7.73 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.03 | 1.50 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.16 kW | 11.09 kW |
| Annual energy consumption Qhe | 6936 kWh | 8321 kWh |
| Pdh Tj = -15°C (if TOL | 9.92 | 9.04 |
| COP Tj = -15°C (if TOL | 2.26 | 1.81 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 254 % | 174 % |
| Prated | 11.35 kW | 11.06 kW |
| SCOP | 6.41 | 4.42 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.35 kW | 11.06 kW |
| COP Tj = +2°C | 3.23 | 2.21 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.41 kW | 7.19 kW |
| COP Tj = +7°C | 5.97 | 3.82 |
| Cdh Tj = +7 °C | 0.97 | 0.98 |
| Pdh Tj = 12°C | 6.63 kW | 6.33 kW |
| COP Tj = 12°C | 8.20 | 5.97 |
| Cdh Tj = +12 °C | 0.95 | 0.96 |
| Pdh Tj = Tbiv | 11.35 kW | 11.06 kW |
| COP Tj = Tbiv | 3.23 | 2.21 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.35 kW | 11.06 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.23 | 2.21 |
| WTOL | 70 °C | 70 °C |

| | | |
|--|-------------|-------------|
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 2363 kWh | 3342 kWh |

Model HA 12-6 O 230V B2

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 12-6 O 230V B2 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder Climate |
| 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 | 8.54 kW | 9.13 kW |
| El input | 1.58 kW | 2.92 kW |
| COP | 5.38 | 3.11 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 194 % | 146 % |
| Prated | 12.73 kW | 11.81 kW |
| SCOP | 4.93 | 3.74 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.27 kW | 10.45 kW |
| COP Tj = -7°C | 2.58 | 2.10 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.99 kW | 6.43 kW |
| COP Tj = +2°C | 5.17 | 3.73 |
| Cdh Tj = +2 °C | 0.970 | 0.970 |
| Pdh Tj = +7°C | 5.81 kW | 5.65 kW |
| COP Tj = +7°C | 6.87 | 5.27 |

| | | |
|---|-------------|-------------|
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.77 kW | 6.58 kW |
| COP Tj = 12°C | 8.66 | 6.64 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 11.27 kW | 10.45 kW |
| COP Tj = Tbiv | 2.58 | 2.10 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.85 kW | 9.83 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.29 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.89 kW | 1.98 kW |
| Annual energy consumption Qhe | 5335 kWh | 6532 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 169 % | 128 % |
| Prated | 12.16 kW | 11.09 kW |
| SCOP | 4.31 | 3.28 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.93 kW | 7.06 kW |
| COP Tj = -7°C | 3.72 | 2.65 |
| Cdh Tj = -7 °C | 0.980 | 0.960 |
| Pdh Tj = +2°C | 5.11 kW | 4.83 kW |
| COP Tj = +2°C | 5.51 | 4.20 |
| Cdh Tj = +2 °C | 0.960 | 0.960 |
| Pdh Tj = +7°C | 5.82 kW | 5.62 kW |
| COP Tj = +7°C | 7.14 | 5.61 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.69 kW | 6.55 kW |
| COP Tj = 12°C | 8.51 | 6.95 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 9.92 kW | 9.04 kW |
| COP Tj = Tbiv | 2.26 | 1.81 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.71 kW | 7.73 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.03 | 1.50 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.16 kW | 11.09 kW |
| Annual energy consumption Qhe | 6954 kWh | 8339 kWh |
| Pdh Tj = -15°C (if TOL | 9.92 | 9.04 |
| COP Tj = -15°C (if TOL | 2.26 | 1.81 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 250 % | 172 % |
| Prated | 11.35 kW | 11.06 kW |
| SCOP | 6.32 | 4.38 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.35 kW | 11.06 kW |
| COP Tj = +2°C | 3.23 | 2.21 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.41 kW | 7.19 kW |
| COP Tj = +7°C | 5.97 | 3.82 |
| Cdh Tj = +7 °C | 0.97 | 0.98 |
| Pdh Tj = 12°C | 6.63 kW | 6.33 kW |
| COP Tj = 12°C | 8.20 | 5.97 |
| Cdh Tj = +12 °C | 0.95 | 0.96 |
| Pdh Tj = Tbiv | 11.35 kW | 11.06 kW |
| COP Tj = Tbiv | 3.23 | 2.21 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.35 kW | 11.06 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.23 | 2.21 |
| WTOL | 70 °C | 70 °C |
| Poff | 8 W | 8 W |

| | | |
|--|-------------|-------------|
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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} | 2399 kWh | 3378 kWh |

Model HA 12-6 O

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 12-6 O |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 8.54 kW | 9.13 kW |
| El input | 1.58 kW | 2.92 kW |
| COP | 5.38 | 3.11 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 195 % | 147 % |
| Prated | 12.73 kW | 11.81 kW |
| SCOP | 4.96 | 3.75 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.27 kW | 10.45 kW |
| COP Tj = -7°C | 2.58 | 2.10 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.99 kW | 6.43 kW |
| COP Tj = +2°C | 5.17 | 3.73 |
| Cdh Tj = +2 °C | 0.960 | 0.970 |
| Pdh Tj = +7°C | 5.81 kW | 5.65 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.87 | 5.27 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.77 kW | 6.58 kW |
| COP Tj = 12°C | 8.66 | 6.64 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 11.27 kW | 10.45 kW |
| COP Tj = Tbiv | 2.58 | 2.10 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.85 kW | 9.83 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.29 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.89 kW | 1.98 kW |
| Annual energy consumption Qhe | 5313 kWh | 6511 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 170 % | 128 % |
| Prated | 12.16 kW | 11.09 kW |
| SCOP | 4.32 | 3.28 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.93 kW | 7.06 kW |
| COP Tj = -7°C | 3.72 | 2.65 |
| Cdh Tj = -7 °C | 0.970 | 0.980 |
| Pdh Tj = +2°C | 5.11 kW | 4.83 kW |
| COP Tj = +2°C | 5.51 | 4.20 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.82 kW | 5.62 kW |
| COP Tj = +7°C | 7.14 | 5.61 |
| Cdh Tj = +7 °C | 0.940 | 0.950 |
| Pdh Tj = 12°C | 6.69 kW | 6.55 kW |
| COP Tj = 12°C | 8.51 | 6.95 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 9.92 kW | 9.04 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.26 | 1.81 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.71 kW | 7.73 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.03 | 1.50 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.16 kW | 11.09 kW |
| Annual energy consumption Qhe | 6936 kWh | 8334 kWh |
| Pdh Tj = -15°C (if TOL | 9.92 | 9.04 |
| COP Tj = -15°C (if TOL | 2.26 | 1.81 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| ηs | 254 % | 173 % |
| Prated | 11.35 kW | 11.06 kW |
| SCOP | 6.41 | 4.42 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.35 kW | 11.06 kW |
| COP Tj = +2°C | 3.23 | 2.21 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.41 kW | 7.19 kW |
| COP Tj = +7°C | 5.97 | 3.82 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.63 kW | 6.33 kW |
| COP Tj = 12°C | 8.20 | 5.97 |
| Cdh Tj = +12 °C | 0.94 | 0.95 |
| Pdh Tj = Tbiv | 11.35 kW | 11.06 kW |
| COP Tj = Tbiv | 3.23 | 2.21 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.35 kW | 11.06 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.23 | 2.21 |
| WTOL | 70 °C | 70 °C |

| | | |
|--|-------------|-------------|
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 2363 kWh | 3354 kWh |

Model HA 12-6 O B2

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 12-6 O B2 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder Climate |
| 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 | 8.44 kW | 8.93 kW |
| El input | 1.60 kW | 2.93 kW |
| COP | 5.24 | 3.04 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 193 % | 146 % |
| Prated | 12.73 kW | 11.81 kW |
| SCOP | 4.90 | 3.72 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.27 kW | 10.45 kW |
| COP Tj = -7°C | 2.58 | 2.10 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.99 kW | 6.43 kW |
| COP Tj = +2°C | 5.17 | 3.73 |
| Cdh Tj = +2 °C | 0.960 | 0.970 |
| Pdh Tj = +7°C | 5.81 kW | 5.65 kW |
| COP Tj = +7°C | 6.87 | 5.27 |

| | | |
|---|-------------|-------------|
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.77 kW | 6.58 kW |
| COP Tj = 12°C | 8.66 | 6.64 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 11.27 kW | 10.45 kW |
| COP Tj = Tbiv | 2.58 | 2.10 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.85 kW | 9.83 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.29 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.89 kW | 1.98 kW |
| Annual energy consumption Qhe | 5366 kWh | 6563 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 169 % | 128 % |
| Prated | 12.16 kW | 11.09 kW |
| SCOP | 4.31 | 3.27 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.93 kW | 7.06 kW |
| COP Tj = -7°C | 3.72 | 2.65 |
| Cdh Tj = -7 °C | 0.970 | 0.980 |
| Pdh Tj = +2°C | 5.11 kW | 4.83 kW |
| COP Tj = +2°C | 5.51 | 4.20 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.82 kW | 5.62 kW |
| COP Tj = +7°C | 7.14 | 5.61 |
| Cdh Tj = +7 °C | 0.940 | 0.950 |
| Pdh Tj = 12°C | 6.69 kW | 6.55 kW |
| COP Tj = 12°C | 8.51 | 6.95 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 9.92 kW | 9.04 kW |
| COP Tj = Tbiv | 2.26 | 1.81 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.71 kW | 7.73 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.03 | 1.50 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 70 °C | 70 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.16 kW | 11.09 kW |
| Annual energy consumption Qhe | 6954 kWh | 8365 kWh |
| Pdh Tj = -15°C (if TOL | 9.92 | 9.04 |
| COP Tj = -15°C (if TOL | 2.26 | 1.81 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 250 % | 170 % |
| Prated | 11.35 kW | 11.06 kW |
| SCOP | 6.32 | 4.33 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.35 kW | 11.06 kW |
| COP Tj = +2°C | 3.23 | 2.21 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.41 kW | 7.19 kW |
| COP Tj = +7°C | 5.97 | 3.82 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.63 kW | 6.33 kW |
| COP Tj = 12°C | 8.20 | 5.97 |
| Cdh Tj = +12 °C | 0.94 | 0.95 |
| Pdh Tj = Tbiv | 11.35 kW | 11.06 kW |
| COP Tj = Tbiv | 3.23 | 2.21 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.35 kW | 11.06 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.23 | 2.21 |
| WTOL | 70 °C | 70 °C |
| Poff | 14 W | 14 W |

| | | |
|--|-------------|-------------|
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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} | 2399 kWh | 3417 kWh |

Model HA 15-6 O 230V B3

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 15-6 O 230V B3 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 14.29 kW | 14.16 kW |
| El input | 3.29 kW | 5.06 kW |
| COP | 4.33 | 2.79 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 187 % | 144 % |
| Prated | 12.69 kW | 12.00 kW |
| SCOP | 4.74 | 3.66 |
| Tbiv | -7 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.23 kW | 10.62 kW |
| COP Tj = -7°C | 2.46 | 2.08 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.98 kW | 6.54 kW |
| COP Tj = +2°C | 4.88 | 3.68 |
| Cdh Tj = +2 °C | 0.970 | 0.980 |
| Pdh Tj = +7°C | 5.79 kW | 5.43 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.54 | 4.91 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.65 kW | 6.31 kW |
| COP Tj = 12°C | 9.06 | 6.32 |
| Cdh Tj = +12 °C | 0.940 | 0.960 |
| Pdh Tj = Tbiv | 11.23 kW | 11.05 kW |
| COP Tj = Tbiv | 2.46 | 1.75 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.82 kW | 11.05 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.23 | 1.75 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.87 kW | 0.00 kW |
| Annual energy consumption Qhe | 5532 kWh | 6767 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 168 % | 125 % |
| Prated | 12.73 kW | 12.17 kW |
| SCOP | 4.28 | 3.20 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 7.04 kW | 7.02 kW |
| COP Tj = -7°C | 3.64 | 2.56 |
| Cdh Tj = -7 °C | 0.980 | 0.980 |
| Pdh Tj = +2°C | 5.16 kW | 4.80 kW |
| COP Tj = +2°C | 5.33 | 4.08 |
| Cdh Tj = +2 °C | 0.960 | 0.960 |
| Pdh Tj = +7°C | 5.81 kW | 5.55 kW |
| COP Tj = +7°C | 7.45 | 5.43 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.66 kW | 6.42 kW |
| COP Tj = 12°C | 9.04 | 6.82 |
| Cdh Tj = +12 °C | 0.940 | 0.960 |
| Pdh Tj = Tbiv | 10.38 kW | 9.93 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.37 | 1.76 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 8.65 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.00 | 1.46 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.73 kW | 12.17 kW |
| Annual energy consumption Qhe | 7330 kWh | 9377 kWh |
| Pdh Tj = -15°C (if TOL | 10.38 | 9.93 |
| COP Tj = -15°C (if TOL | 2.37 | 1.76 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 245 % | 172 % |
| Prated | 12.02 kW | 12.69 kW |
| SCOP | 6.19 | 4.38 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 12.02 kW | 12.69 kW |
| COP Tj = +2°C | 3.19 | 2.05 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.55 kW | 7.46 kW |
| COP Tj = +7°C | 5.70 | 3.87 |
| Cdh Tj = +7 °C | 0.97 | 0.98 |
| Pdh Tj = 12°C | 6.64 kW | 6.19 kW |
| COP Tj = 12°C | 7.90 | 5.77 |
| Cdh Tj = +12 °C | 0.95 | 0.96 |
| Pdh Tj = Tbiv | 12.02 kW | 12.69 kW |
| COP Tj = Tbiv | 3.19 | 2.05 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.02 kW | 12.69 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.19 | 2.05 |
| WTOL | 55 °C | 55 °C |

| | | |
|--|-------------|-------------|
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 2595 kWh | 3867 kWh |

Model HA 15-6 O B3

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 15-6 O B3 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 14.29 kW | 14.16 kW |
| El input | 3.29 kW | 5.06 kW |
| COP | 4.33 | 2.79 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 186 % | 143 % |
| Prated | 12.69 kW | 12.00 kW |
| SCOP | 4.73 | 3.66 |
| Tbiv | -7 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 11.23 kW | 10.62 kW |
| COP Tj = -7°C | 2.46 | 2.08 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 6.98 kW | 6.54 kW |
| COP Tj = +2°C | 4.88 | 3.68 |
| Cdh Tj = +2 °C | 0.970 | 0.970 |
| Pdh Tj = +7°C | 5.79 kW | 5.43 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.54 | 4.91 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.65 kW | 6.31 kW |
| COP Tj = 12°C | 9.06 | 6.32 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 11.23 kW | 11.05 kW |
| COP Tj = Tbiv | 2.46 | 1.75 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.82 kW | 11.05 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.23 | 1.75 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.87 kW | 0.00 kW |
| Annual energy consumption Qhe | 5542 kWh | 6776 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 168 % | 125 % |
| Prated | 12.73 kW | 12.17 kW |
| SCOP | 4.27 | 3.20 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 7.04 kW | 7.02 kW |
| COP Tj = -7°C | 3.64 | 2.56 |
| Cdh Tj = -7 °C | 0.970 | 0.980 |
| Pdh Tj = +2°C | 5.16 kW | 4.80 kW |
| COP Tj = +2°C | 5.33 | 4.08 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.81 kW | 5.55 kW |
| COP Tj = +7°C | 7.45 | 5.43 |
| Cdh Tj = +7 °C | 0.940 | 0.950 |
| Pdh Tj = 12°C | 6.66 kW | 6.42 kW |
| COP Tj = 12°C | 9.04 | 6.82 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 10.38 kW | 9.93 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.37 | 1.76 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 8.65 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.00 | 1.46 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 12.73 kW | 12.17 kW |
| Annual energy consumption Qhe | 7341 kWh | 9386 kWh |
| Pdh Tj = -15°C (if TOL | 10.38 | 9.93 |
| COP Tj = -15°C (if TOL | 2.37 | 1.76 |
| Cdh Tj = -15 °C | 0.990 | 0.990 |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 61 dB(A) | 61 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 244 % | 172 % |
| Prated | 12.02 kW | 12.69 kW |
| SCOP | 6.16 | 4.37 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 12.02 kW | 12.69 kW |
| COP Tj = +2°C | 3.19 | 2.05 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 7.55 kW | 7.46 kW |
| COP Tj = +7°C | 5.70 | 3.87 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.64 kW | 6.19 kW |
| COP Tj = 12°C | 7.90 | 5.77 |
| Cdh Tj = +12 °C | 0.94 | 0.96 |
| Pdh Tj = Tbiv | 12.02 kW | 12.69 kW |
| COP Tj = Tbiv | 3.19 | 2.05 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.02 kW | 12.69 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.19 | 2.05 |
| WTOL | 55 °C | 55 °C |

| | | |
|--|-------------|-------------|
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 2606 kWh | 3878 kWh |

Model HA 10-6 O 230V

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 10-6 O 230V |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 8.13 kW | 9.08 kW |
| El input | 1.54 kW | 2.95 kW |
| COP | 5.27 | 3.08 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 199 % | 143 % |
| Prated | 8.86 kW | 9.09 kW |
| SCOP | 5.05 | 3.66 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 7.84 kW | 8.04 kW |
| COP Tj = -7°C | 3.21 | 2.20 |
| Cdh Tj = -7 °C | 0.980 | 0.990 |
| Pdh Tj = +2°C | 4.92 kW | 4.77 kW |
| COP Tj = +2°C | 5.06 | 3.63 |
| Cdh Tj = +2 °C | 0.960 | 0.970 |
| Pdh Tj = +7°C | 5.65 kW | 5.37 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.65 | 4.92 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.62 kW | 6.30 kW |
| COP Tj = 12°C | 8.41 | 6.34 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 8.93 kW | 9.03 kW |
| COP Tj = Tbiv | 2.58 | 1.87 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 9.03 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 0.990 | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 3623 kWh | 5135 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 172 % | 125 % |
| Prated | 7.61 kW | 7.38 kW |
| SCOP | 4.37 | 3.21 |
| Tbiv | -20 °C | -20 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 4.50 kW | 4.50 kW |
| COP Tj = -7°C | 3.79 | 2.65 |
| Cdh Tj = -7 °C | 0.970 | 0.970 |
| Pdh Tj = +2°C | 5.00 kW | 4.62 kW |
| COP Tj = +2°C | 5.34 | 3.96 |
| Cdh Tj = +2 °C | 0.960 | 0.960 |
| Pdh Tj = +7°C | 5.67 kW | 5.47 kW |
| COP Tj = +7°C | 6.89 | 5.34 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.60 kW | 6.38 kW |
| COP Tj = 12°C | 8.30 | 6.70 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 7.21 kW | 6.99 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.14 | 1.53 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.21 kW | 6.99 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.14 | 1.53 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 7.61 kW | 7.38 kW |
| Annual energy consumption Qhe | 4296 kWh | 5673 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 254 % | 175 % |
| Prated | 10.42 kW | 10.36 kW |
| SCOP | 6.42 | 4.46 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 10.42 kW | 10.36 kW |
| COP Tj = +2°C | 3.42 | 2.32 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 6.71 kW | 6.37 kW |
| COP Tj = +7°C | 6.07 | 3.95 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.58 kW | 6.20 kW |
| COP Tj = 12°C | 8.09 | 5.85 |
| Cdh Tj = +12 °C | 0.95 | 0.96 |
| Pdh Tj = Tbiv | 10.42 kW | 10.36 kW |
| COP Tj = Tbiv | 3.42 | 2.32 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.42 kW | 10.36 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.42 | 2.32 |
| WTOL | 55 °C | 55 °C |

| | | |
|--|-------------|-------------|
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 2167 kWh | 3104 kWh |

Model HA 10-6 O 230V B2

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 10-6 O 230V B2 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder Climate |
| 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 | 8.13 kW | 9.08 kW |
| El input | 1.54 kW | 2.95 kW |
| COP | 5.27 | 3.08 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 197 % | 142 % |
| Prated | 8.86 kW | 9.09 kW |
| SCOP | 5.01 | 3.64 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 7.84 kW | 8.04 kW |
| COP Tj = -7°C | 3.21 | 2.20 |
| Cdh Tj = -7 °C | 0.980 | 0.990 |
| Pdh Tj = +2°C | 4.92 kW | 4.77 kW |
| COP Tj = +2°C | 5.06 | 3.63 |
| Cdh Tj = +2 °C | 0.960 | 0.970 |
| Pdh Tj = +7°C | 5.65 kW | 5.37 kW |
| COP Tj = +7°C | 6.65 | 4.92 |

| | | |
|---|-------------|-------------|
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.62 kW | 6.30 kW |
| COP Tj = 12°C | 8.41 | 6.34 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 8.93 kW | 9.03 kW |
| COP Tj = Tbiv | 2.58 | 1.87 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 9.03 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 3653 kWh | 5165 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 171 % | 125 % |
| Prated | 7.61 kW | 7.38 kW |
| SCOP | 4.35 | 3.20 |
| Tbiv | -20 °C | -20 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 4.50 kW | 4.50 kW |
| COP Tj = -7°C | 3.79 | 2.65 |
| Cdh Tj = -7 °C | 0.970 | 0.970 |
| Pdh Tj = +2°C | 5.00 kW | 4.62 kW |
| COP Tj = +2°C | 5.34 | 3.96 |
| Cdh Tj = +2 °C | 0.960 | 0.960 |
| Pdh Tj = +7°C | 5.67 kW | 5.47 kW |
| COP Tj = +7°C | 6.89 | 5.34 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.60 kW | 6.38 kW |
| COP Tj = 12°C | 8.30 | 6.70 |
| Cdh Tj = +12 °C | 0.950 | 0.960 |
| Pdh Tj = Tbiv | 7.21 kW | 6.99 kW |
| COP Tj = Tbiv | 2.14 | 1.53 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.21 kW | 6.99 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.14 | 1.53 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 7.61 kW | 7.38 kW |
| Annual energy consumption Qhe | 4314 kWh | 5691 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 250 % | 173 % |
| Prated | 10.42 kW | 10.36 kW |
| SCOP | 6.32 | 4.41 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 10.42 kW | 10.36 kW |
| COP Tj = +2°C | 3.42 | 2.32 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 6.71 kW | 6.37 kW |
| COP Tj = +7°C | 6.07 | 3.95 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.58 kW | 6.20 kW |
| COP Tj = 12°C | 8.09 | 5.85 |
| Cdh Tj = +12 °C | 0.95 | 0.96 |
| Pdh Tj = Tbiv | 10.42 kW | 10.36 kW |
| COP Tj = Tbiv | 3.42 | 2.32 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.42 kW | 10.36 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.42 | 2.32 |
| WTOL | 55 °C | 55 °C |
| Poff | 8 W | 8 W |

| | | |
|--|-------------|-------------|
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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} | 2204 kWh | 3141 kWh |

Model HA 10-6 O

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 10-6 O |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 8.13 kW | 9.08 kW |
| El input | 1.54 kW | 2.95 kW |
| COP | 5.27 | 3.08 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 198 % | 143 % |
| Prated | 8.86 kW | 9.09 kW |
| SCOP | 5.04 | 3.65 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 7.84 kW | 8.04 kW |
| COP Tj = -7°C | 3.21 | 2.20 |
| Cdh Tj = -7 °C | 0.980 | 0.990 |
| Pdh Tj = +2°C | 4.92 kW | 4.77 kW |
| COP Tj = +2°C | 5.06 | 3.63 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.65 kW | 5.37 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.65 | 4.92 |
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.62 kW | 6.30 kW |
| COP Tj = 12°C | 8.41 | 6.34 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 8.93 kW | 9.03 kW |
| COP Tj = Tbiv | 2.58 | 1.87 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 9.03 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 3634 kWh | 5146 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 171 % | 125 % |
| Prated | 7.61 kW | 7.38 kW |
| SCOP | 4.35 | 3.20 |
| Tbiv | -20 °C | -20 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 4.50 kW | 4.50 kW |
| COP Tj = -7°C | 3.79 | 2.65 |
| Cdh Tj = -7 °C | 0.960 | 0.970 |
| Pdh Tj = +2°C | 5.00 kW | 4.62 kW |
| COP Tj = +2°C | 5.34 | 3.96 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.67 kW | 5.47 kW |
| COP Tj = +7°C | 6.89 | 5.34 |
| Cdh Tj = +7 °C | 0.940 | 0.950 |
| Pdh Tj = 12°C | 6.60 kW | 6.38 kW |
| COP Tj = 12°C | 8.30 | 6.70 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 7.21 kW | 6.99 kW |

| | | |
|---|-------------|-------------|
| COP Tj = Tbiv | 2.14 | 1.53 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.21 kW | 6.99 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.14 | 1.53 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 7.61 kW | 7.38 kW |
| Annual energy consumption Qhe | 4314 kWh | 5692 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 252 % | 175 % |
| Prated | 10.42 kW | 10.36 kW |
| SCOP | 6.39 | 4.44 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 10.42 kW | 10.36 kW |
| COP Tj = +2°C | 3.42 | 2.32 |
| Cdh Tj = +2 °C | 0.98 | 0.99 |
| Pdh Tj = +7°C | 6.71 kW | 6.37 kW |
| COP Tj = +7°C | 6.07 | 3.95 |
| Cdh Tj = +7 °C | 0.96 | 0.97 |
| Pdh Tj = 12°C | 6.58 kW | 6.20 kW |
| COP Tj = 12°C | 8.09 | 5.85 |
| Cdh Tj = +12 °C | 0.94 | 0.96 |
| Pdh Tj = Tbiv | 10.42 kW | 10.36 kW |
| COP Tj = Tbiv | 3.42 | 2.32 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.42 kW | 10.36 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.42 | 2.32 |
| WTOL | 55 °C | 55 °C |

| | | |
|--|-------------|-------------|
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 2180 kWh | 3117 kWh |

Model HA 10-6 O B2

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 10-6 O B2 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder Climate |
| 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 | 8.13 kW | 9.08 kW |
| El input | 1.54 kW | 2.95 kW |
| COP | 5.27 | 3.08 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 196 % | 141 % |
| Prated | 8.86 kW | 9.09 kW |
| SCOP | 4.97 | 3.61 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 7.84 kW | 8.04 kW |
| COP Tj = -7°C | 3.21 | 2.20 |
| Cdh Tj = -7 °C | 0.980 | 0.990 |
| Pdh Tj = +2°C | 4.92 kW | 4.77 kW |
| COP Tj = +2°C | 5.06 | 3.63 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.65 kW | 5.37 kW |
| COP Tj = +7°C | 6.65 | 4.92 |

| | | |
|---|-------------|-------------|
| Cdh Tj = +7 °C | 0.950 | 0.960 |
| Pdh Tj = 12°C | 6.62 kW | 6.30 kW |
| COP Tj = 12°C | 8.41 | 6.34 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 8.93 kW | 9.03 kW |
| COP Tj = Tbiv | 2.58 | 1.87 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.93 kW | 9.03 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.87 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 3686 kWh | 5199 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 170 % | 124 % |
| Prated | 7.61 kW | 7.38 kW |
| SCOP | 4.32 | 3.18 |
| Tbiv | -20 °C | -20 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 4.50 kW | 4.50 kW |
| COP Tj = -7°C | 3.79 | 2.65 |
| Cdh Tj = -7 °C | 0.960 | 0.970 |
| Pdh Tj = +2°C | 5.00 kW | 4.62 kW |
| COP Tj = +2°C | 5.34 | 3.96 |
| Cdh Tj = +2 °C | 0.950 | 0.960 |
| Pdh Tj = +7°C | 5.67 kW | 5.47 kW |
| COP Tj = +7°C | 6.89 | 5.34 |
| Cdh Tj = +7 °C | 0.940 | 0.950 |
| Pdh Tj = 12°C | 6.60 kW | 6.38 kW |
| COP Tj = 12°C | 8.30 | 6.70 |
| Cdh Tj = +12 °C | 0.940 | 0.950 |
| Pdh Tj = Tbiv | 7.21 kW | 6.99 kW |
| COP Tj = Tbiv | 2.14 | 1.53 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.21 kW | 6.99 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.14 | 1.53 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 7.61 kW | 7.38 kW |
| Annual energy consumption Qhe | 4345 kWh | 5723 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 59 dB(A) | 59 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 245 % | 171 % |
| Prated | 10.42 kW | 10.41 kW |
| SCOP | 6.21 | 4.35 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 10.42 kW | 10.36 kW |
| COP Tj = +2°C | 3.42 | 2.32 |
| Cdh Tj = +2 °C | 0.980 | 0.990 |
| Pdh Tj = +7°C | 6.71 kW | 6.37 kW |
| COP Tj = +7°C | 6.07 | 3.95 |
| Cdh Tj = +7 °C | 0.960 | 0.970 |
| Pdh Tj = 12°C | 6.58 kW | 6.20 kW |
| COP Tj = 12°C | 8.09 | 5.85 |
| Cdh Tj = +12 °C | 0.940 | 0.960 |
| Pdh Tj = Tbiv | 10.42 kW | 10.36 kW |
| COP Tj = Tbiv | 3.42 | 2.32 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.42 kW | 10.36 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.42 | 2.32 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |

| | | |
|--|-------------|-------------|
| WTOL | 55 °C | 55 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 2243 kWh | 3195 kWh |

Model HA 12-6 O 230V B3

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 12-6 O 230V B3 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 11.60 kW | 13.15 kW |
| El input | 2.46 kW | 4.55 kW |
| COP | 4.71 | 2.89 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 200 % | 144 % |
| Prated | 9.35 kW | 9.66 kW |
| SCOP | 5.07 | 3.67 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 8.09 kW | 8.64 kW |
| COP Tj = -7°C | 3.11 | 2.12 |
| Cdh Tj = -7 °C | 0.99 | 0.99 |
| Pdh Tj = +2°C | 4.90 kW | 5.30 kW |
| COP Tj = +2°C | 4.98 | 3.62 |
| Cdh Tj = +2 °C | 0.98 | 0.99 |
| Pdh Tj = +7°C | 5.75 kW | 5.47 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.73 | 4.94 |
| Cdh Tj = +7 °C | 0.98 | 0.98 |
| Pdh Tj = 12°C | 6.67 kW | 6.35 kW |
| COP Tj = 12°C | 8.74 | 6.50 |
| Cdh Tj = +12 °C | 0.97 | 0.98 |
| Pdh Tj = Tbiv | 9.35 kW | 9.66 kW |
| COP Tj = Tbiv | 2.58 | 1.92 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.35 kW | 9.66 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.92 |
| WTOL | 75 °C | 75 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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 | 3812 kWh | 5437 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 168 % | 126 % |
| Prated | 10.24 kW | 10.65 kW |
| SCOP | 4.27 | 3.24 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.34 kW | 6.45 kW |
| COP Tj = -7°C | 3.58 | 2.58 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 5.00 kW | 4.70 kW |
| COP Tj = +2°C | 5.39 | 4.06 |
| Cdh Tj = +2 °C | 0.980 | 0.980 |
| Pdh Tj = +7°C | 5.79 kW | 5.60 kW |
| COP Tj = +7°C | 7.02 | 5.45 |
| Cdh Tj = +7 °C | 0.970 | 0.980 |
| Pdh Tj = 12°C | 6.67 kW | 6.47 kW |
| COP Tj = 12°C | 8.74 | 7.14 |
| Cdh Tj = +12 °C | 0.970 | 0.980 |
| Pdh Tj = Tbiv | 8.35 kW | 8.68 kW |
| COP Tj = Tbiv | 2.41 | 1.90 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.20 kW | 7.10 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.06 | 1.48 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 75 °C | 75 °C |
| Poff | 8 W | 8 W |
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 10.24 kW | 10.65 kW |
| Annual energy consumption Qhe | 5906 kWh | 8111 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| ηs | 256 % | 176 % |
| Prated | 11.16 kW | 11.02 kW |
| SCOP | 6.48 | 4.47 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.16 kW | 11.02 kW |
| COP Tj = +2°C | 3.26 | 2.23 |
| Cdh Tj = +2 °C | 0.99 | 1.00 |
| Pdh Tj = +7°C | 7.36 kW | 7.20 kW |
| COP Tj = +7°C | 5.90 | 3.84 |
| Cdh Tj = +7 °C | 0.98 | 0.99 |
| Pdh Tj = 12°C | 6.53 kW | 6.25 kW |
| COP Tj = 12°C | 8.26 | 5.95 |
| Cdh Tj = +12 °C | 0.97 | 0.98 |
| Pdh Tj = Tbiv | 11.16 kW | 11.02 kW |
| COP Tj = Tbiv | 3.26 | 2.23 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.16 kW | 11.02 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.26 | 2.23 |
| WTOL | 75 °C | 75 °C |
| Poff | 8 W | 8 W |

| | | |
|--|-------------|-------------|
| PTO | 45 W | 45 W |
| PSB | 45 W | 45 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} | 2303 kWh | 3295 kWh |

Model HA 12-6 O B3

| | |
|-------------------------------------|--------------------------------|
| Model name | HA 12-6 O B3 |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate zone (for heating) | Warmer Climate, Colder 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 | 11.60 kW | 13.15 kW |
| El input | 2.46 kW | 4.55 kW |
| COP | 4.71 | 2.89 |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 200 % | 144 % |
| Prated | 9.35 kW | 9.66 kW |
| SCOP | 5.06 | 3.67 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 8.09 kW | 8.64 kW |
| COP Tj = -7°C | 3.11 | 2.12 |
| Cdh Tj = -7 °C | 0.99 | 0.99 |
| Pdh Tj = +2°C | 4.90 kW | 5.30 kW |
| COP Tj = +2°C | 4.98 | 3.62 |
| Cdh Tj = +2 °C | 0.98 | 0.99 |
| Pdh Tj = +7°C | 5.75 kW | 5.47 kW |

| | | |
|---|-------------|-------------|
| COP Tj = +7°C | 6.73 | 4.94 |
| Cdh Tj = +7 °C | 0.98 | 0.98 |
| Pdh Tj = 12°C | 6.67 kW | 6.35 kW |
| COP Tj = 12°C | 8.74 | 6.50 |
| Cdh Tj = +12 °C | 0.97 | 0.98 |
| Pdh Tj = Tbiv | 9.35 kW | 9.66 kW |
| COP Tj = Tbiv | 2.58 | 1.92 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.35 kW | 9.66 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.58 | 1.92 |
| WTOL | 75 °C | 75 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 3813 kWh | 5438 kWh |

EN 12102-1 | Colder Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| ηs | 168 % | 126 % |
| Prated | 10.24 kW | 10.65 kW |
| SCOP | 4.27 | 3.24 |
| Tbiv | -15 °C | -15 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 6.34 kW | 6.45 kW |
| COP Tj = -7°C | 3.58 | 2.58 |
| Cdh Tj = -7 °C | 0.990 | 0.990 |
| Pdh Tj = +2°C | 5.00 kW | 4.70 kW |
| COP Tj = +2°C | 5.39 | 4.06 |
| Cdh Tj = +2 °C | 0.980 | 0.980 |
| Pdh Tj = +7°C | 5.79 kW | 5.60 kW |
| COP Tj = +7°C | 7.02 | 5.45 |
| Cdh Tj = +7 °C | 0.970 | 0.980 |
| Pdh Tj = 12°C | 6.67 kW | 6.47 kW |
| COP Tj = 12°C | 8.74 | 7.14 |
| Cdh Tj = +12 °C | 0.970 | 0.980 |
| Pdh Tj = Tbiv | 8.35 kW | 8.68 kW |
| COP Tj = Tbiv | 2.41 | 1.90 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.20 kW | 7.10 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.06 | 1.48 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | | |
| WTOL | 75 °C | 75 °C |
| Poff | 14 W | 14 W |
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 10.24 kW | 10.65 kW |
| Annual energy consumption Qhe | 5907 kWh | 8112 kWh |
| Pdh Tj = -15°C (if TOL | | |
| COP Tj = -15°C (if TOL | | |
| Cdh Tj = -15 °C | | |

EN 12102-1 | Warmer Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 58 dB(A) | 60 dB(A) |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| ηs | 255 % | 175 % |
| Prated | 11.16 kW | 11.02 kW |
| SCOP | 6.46 | 4.46 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 11.16 kW | 11.02 kW |
| COP Tj = +2°C | 3.26 | 2.23 |
| Cdh Tj = +2 °C | 0.99 | 1.00 |
| Pdh Tj = +7°C | 7.36 kW | 7.20 kW |
| COP Tj = +7°C | 5.90 | 3.84 |
| Cdh Tj = +7 °C | 0.98 | 0.99 |
| Pdh Tj = 12°C | 6.53 kW | 6.25 kW |
| COP Tj = 12°C | 8.26 | 5.95 |
| Cdh Tj = +12 °C | 0.97 | 0.98 |
| Pdh Tj = Tbiv | 11.16 kW | 11.02 kW |
| COP Tj = Tbiv | 3.26 | 2.23 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.16 kW | 11.02 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.26 | 2.23 |
| WTOL | 75 °C | 75 °C |
| Poff | 14 W | 14 W |

| | | |
|--|-------------|-------------|
| PTO | 51 W | 51 W |
| PSB | 51 W | 51 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 | 2307 kWh | 3299 kWh |