

Subtype Beretta HYDRO UNIT M 8 10 kW

| | |
|---------------------|---------------------------------------|
| Certificate Holder | Riello S.p.A. |
| Address | Via Ing. Pilade Riello 7 |
| ZIP | 37045 |
| City | Legnago (VR) |
| Country | IT |
| Certification Body | BRE Global Limited |
| Subtype title | Beretta HYDRO UNIT M 8 10 kW |
| Registration number | 041-K019-06 |
| Heat Pump Type | Outdoor Air/Water |
| Refrigerant | R32 |
| Mass of Refrigerant | 1.65 kg |
| Certification Date | 05.11.2021 |
| Testing basis | Heat Pump Keymark Scheme Rules Rev 08 |

Model HYDRO UNIT M 008

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|-------------------------------------|--------------------------------|
| Model name | HYDRO UNIT M 008 |
| 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

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

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 | 205 % | 132 % |
| Prated | 8.12 kW | 6.60 kW |
| SCOP | 5.21 | 3.36 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 7.19 kW | 5.84 kW |
| COP Tj = -7°C | 3.35 | 2.16 |
| Cdh Tj = -7 °C | 0.90 | 0.90 |
| Pdh Tj = +2°C | 4.65 kW | 3.76 kW |
| COP Tj = +2°C | 5.09 | 3.30 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 2.90 kW | 2.43 kW |
| COP Tj = +7°C | 6.82 | 4.34 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 1.63 kW | 1.40 kW |
| COP Tj = 12°C | 8.35 | 5.33 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 7.19 kW | 5.84 kW |
| COP Tj = Tbiv | 3.35 | 2.16 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 6.45 kW | 4.91 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.04 | 1.84 |
| WTOL | 65 °C | 65 °C |
| Poff | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 1.68 kW | 1.69 kW |
| Annual energy consumption Qhe | 3223 kWh | 4056 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 |
|---|-----------------|--------------------|
| η_s | 170 % | 112 % |
| Prated | 6.98 kW | 5.78 kW |
| SCOP | 4.32 | 2.88 |
| Tbiv | -15 °C | -15 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 4.46 kW | 3.86 kW |
| COP Tj = -7°C | 3.66 | 2.48 |
| Cdh Tj = -7 °C | 0.90 | 0.90 |
| Pdh Tj = +2°C | 2.70 kW | 2.21 kW |
| COP Tj = +2°C | 5.20 | 3.35 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 1.66 kW | 1.44 kW |
| COP Tj = +7°C | 6.53 | 4.11 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 1.66 kW | 1.47 kW |
| COP Tj = 12°C | 7.96 | 5.92 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 5.69 kW | 4.71 kW |
| COP Tj = Tbiv | 2.83 | 1.90 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 4.06 kW | 2.80 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.95 | 1.22 |
| WTOL | 65 °C | 65 °C |
| Poff | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |

| | | |
|--|-------------|-------------|
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.91 kW | 2.99 kW |
| Annual energy consumption Q _{he} | 3978 kWh | 4950 kWh |
| P _{dh} T _j = -15°C (if TOL | 5.69 | 4.71 |
| COP T _j = -15°C (if TOL | 2.83 | 1.90 |
| C _{dh} T _j = -15 °C | 0.90 | 0.90 |

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 | 273 % | 177 % |
| Prated | 8.12 kW | 8.37 kW |
| SCOP | 6.99 | 4.50 |
| T _{biv} | 7 °C | 7 °C |
| TOL | 2 °C | 2 °C |
| P _{dh} T _j = +2°C | 7.57 kW | 7.55 kW |
| COP T _j = +2°C | 3.98 | 2.59 |
| C _{dh} T _j = +2 °C | 0.900 | 0.900 |
| P _{dh} T _j = +7°C | 5.22 kW | 5.38 kW |
| COP T _j = +7°C | 6.26 | 4.01 |
| C _{dh} T _j = +7 °C | 0.900 | 0.900 |
| P _{dh} T _j = 12°C | 2.45 kW | 2.32 kW |
| COP T _j = 12°C | 9.02 | 5.55 |
| C _{dh} T _j = +12 °C | 0.900 | 0.900 |
| P _{dh} T _j = T _{biv} | 5.22 kW | 5.38 kW |
| COP T _j = T _{biv} | 6.26 | 4.01 |
| P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh} | 7.57 kW | 7.55 kW |
| COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh} | 3.98 | 2.59 |
| C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh} | | |
| WTOL | 65 °C | 65 °C |
| P _{off} | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.55 kW | 0.82 kW |
| Annual energy consumption Q _{he} | 1569 kWh | 2485 kWh |

Model HYDRO UNIT M 010

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|-------------------------------------|--------------------------------|
| Model name | HYDRO UNIT M 010 |
| 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 12102-1 | Average Climate

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

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| η_s | 205 % | 137 % |
| Prated | 9.17 kW | 7.67 kW |
| SCOP | 5.19 | 3.49 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 8.11 kW | 6.78 kW |
| COP Tj = -7°C | 3.23 | 2.24 |
| Cdh Tj = -7 °C | 0.90 | 0.90 |
| Pdh Tj = +2°C | 5.18 kW | 4.29 kW |
| COP Tj = +2°C | 5.01 | 3.42 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 3.32 kW | 2.77 kW |
| COP Tj = +7°C | 7.08 | 4.52 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 1.65 kW | 1.58 kW |
| COP Tj = 12°C | 8.58 | 5.68 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 8.11 kW | 6.78 kW |
| COP Tj = Tbiv | 3.23 | 2.24 |

| | | |
|---|-------------|-------------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.40 kW | 5.39 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.96 | 1.83 |
| WTOL | 65 °C | 65 °C |
| Poff | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 1.76 kW | 2.28 kW |
| Annual energy consumption Qhe | 3647 kWh | 4539 kWh |

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 170 % | 116 % |
| Prated | 7.75 kW | 6.71 kW |
| SCOP | 4.32 | 2.99 |
| Tbiv | -15 °C | -15 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 4.83 kW | 4.27 kW |
| COP Tj = -7°C | 3.60 | 2.54 |
| Cdh Tj = -7 °C | 0.90 | 0.90 |
| Pdh Tj = +2°C | 2.94 kW | 2.57 kW |
| COP Tj = +2°C | 5.26 | 3.51 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 1.92 kW | 1.66 kW |
| COP Tj = +7°C | 7.08 | 4.37 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 1.66 kW | 1.48 kW |
| COP Tj = 12°C | 7.96 | 5.96 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 6.32 kW | 5.48 kW |
| COP Tj = Tbiv | 2.64 | 2.00 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 4.63 kW | 2.80 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.97 | 1.22 |
| WTOL | 65 °C | 65 °C |
| Poff | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |

| | | |
|--|-------------|-------------|
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 3.13 kW | 3.91 kW |
| Annual energy consumption Q _{he} | 4424 kWh | 5540 kWh |
| P _{dh} T _j = -15°C (if TOL | 6.32 | 5.48 |
| COP T _j = -15°C (if TOL | 2.64 | 2.00 |
| C _{dh} T _j = -15 °C | 0.90 | 0.90 |

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

| | | |
|---|-----------------|--------------------|
| | Low temperature | Medium temperature |
| η _s | 279 % | 180 % |
| Prated | 8.58 kW | 8.63 kW |
| SCOP | 7.12 | 4.58 |
| T _{biv} | 7 °C | 7 °C |
| TOL | 2 °C | 2 °C |
| P _{dh} T _j = +2°C | 8.44 kW | 8.06 kW |
| COP T _j = +2°C | 3.84 | 2.59 |
| C _{dh} T _j = +2 °C | 0.90 | 0.90 |
| P _{dh} T _j = +7°C | 5.52 kW | 5.55 kW |
| COP T _j = +7°C | 6.18 | 4.10 |
| C _{dh} T _j = +7 °C | 0.90 | 0.90 |
| P _{dh} T _j = 12°C | 2.62 kW | 2.53 kW |
| COP T _j = 12°C | 9.04 | 5.82 |
| C _{dh} T _j = +12 °C | 0.90 | 0.90 |
| P _{dh} T _j = T _{biv} | 5.52 kW | 5.55 kW |
| COP T _j = T _{biv} | 6.18 | 4.10 |
| P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh} | 8.44 kW | 8.16 kW |
| COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh} | 3.84 | 2.61 |
| WTOL | 65 °C | 65 °C |
| P _{off} | 14 W | 14 W |
| PTO | 24 W | 24 W |
| PSB | 14 W | 14 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.14 kW | 0.48 kW |
| Annual energy consumption Q _{he} | 1628 kWh | 2516 kWh |