

Subtype DC Inverter Air to Water Heat Pump Thermal Plus 15

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|---------------------|--|
| Certificate Holder | REFSYSTEM Sp. z o.o. |
| Address | Street Metalowców 5, |
| ZIP | 86-300 |
| City | Grudziądz |
| Country | PL |
| Certification Body | BRE Global Limited |
| Subtype title | DC Inverter Air to Water Heat Pump Thermal Plus 15 |
| Registration number | 041-K053-09 |
| Heat Pump Type | Outdoor Air/Water |
| Refrigerant | R32 |
| Mass of Refrigerant | 2.55 kg |
| Certification Date | 12.05.2023 |
| Testing basis | Heat Pump Keymark Scheme Rules Rev 11 |

Model Thermal(b) Plus 15 / Thermal(b) Plus 15

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|-------------------------------------|---|
| Model name | Thermal(b) Plus 15 / Thermal(b) Plus 15 |
| Application | Heating (medium temp) |
| Units | Indoor, Outdoor |
| Climate zone (for heating) | n/a |
| 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 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor | 40 dB(A) | 35 dB(A) |
| Sound power level outdoor | 57 dB(A) | 61 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| η_s | 185 % | 127 % |
| Prated | 11.60 kW | 11.04 kW |
| SCOP | 4.70 | 3.24 |
| Tbiv | -7 °C | -7 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 10.26 kW | 9.76 kW |
| COP Tj = -7°C | 3.38 | 1.89 |
| Cdh Tj = -7 °C | 0.900 | 0.900 |
| Pdh Tj = +2°C | 6.30 kW | 6.11 kW |
| COP Tj = +2°C | 4.69 | 3.22 |
| Cdh Tj = +2 °C | 0.900 | 0.900 |
| Pdh Tj = +7°C | 6.13 kW | 5.93 kW |
| COP Tj = +7°C | 6.29 | 4.76 |
| Cdh Tj = +7 °C | 0.900 | 0.900 |
| Pdh Tj = 12°C | 5.97 kW | 6.92 kW |
| COP Tj = 12°C | 6.02 | 5.80 |
| Cdh Tj = +12 °C | 0.900 | 0.900 |
| Pdh Tj = Tbiv | 10.26 kW | 9.76 kW |

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|---|-------------|-------------|
| COP $T_j = T_{biv}$ | 3.38 | 1.89 |
| $P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 11.23 kW | 9.13 kW |
| COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$ | 3.02 | 1.70 |
| $C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 0.900 | 0.900 |
| WTOL | 56 °C | 56 °C |
| P _{off} | 13 W | 13 W |
| PTO | 39 W | 39 W |
| PSB | 13 W | 13 W |
| PCK | 41 W | 41 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.37 kW | 1.91 kW |
| Annual energy consumption Q _{he} | 5096 kWh | 7039 kWh |