

Subtype WWC 220 H/X

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|---------------------|----------------------|
| Certificate Holder | ait-deutschland GmbH |
| Address | Industriestr. 3 |
| ZIP | 95359 |
| City | Kasendorf |
| Country | DE |
| Certification Body | BRE Global Limited |
| Subtype title | WWC 220 H/X |
| Registration number | 041-K001-35 |
| Heat Pump Type | Water/Water |
| Refrigerant | R407c |
| Mass of Refrigerant | 4.5 kg |
| Certification Date | 06.09.2019 |

Model WWC 220H/X

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|-------------------------------------|--------------------------------|
| Model name | WWC 220H/X |
| Application | Heating (medium temp) |
| Units | Indoor |
| 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 |

Water/Water

EN 14511-4 | Heating

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

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 56 dB(A) | 56 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 241 % | 170 % |
| Prated | 21.80 kW | 20.37 kW |
| SCOP | 6.23 | 4.45 |
| Tbiv | -10 °C | -10 °C |
| TOL | -10 °C | -10 °C |
| Pdh Tj = -7°C | 21.83 kW | 20.54 kW |
| COP Tj = -7°C | 5.78 | 3.64 |
| Cdh Tj = -7 °C | 1.00 | 1.00 |
| Pdh Tj = +2°C | 21.99 kW | 21.12 kW |
| COP Tj = +2°C | 6.19 | 4.39 |
| Cdh Tj = +2 °C | 1.00 | 1.00 |
| Pdh Tj = +7°C | 22.13 kW | 21.48 kW |
| COP Tj = +7°C | 6.59 | 4.98 |
| Cdh Tj = +7 °C | 1.00 | 1.00 |
| Pdh Tj = 12°C | 22.28 kW | 21.83 kW |
| COP Tj = 12°C | 6.99 | 5.69 |
| Cdh Tj = +12 °C | 1.00 | 1.00 |
| Pdh Tj = Tbiv | 21.80 kW | 20.37 kW |
| COP Tj = Tbiv | 5.71 | 3.46 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 21.80 kW | 20.37 kW |

| | | |
|---|-------------|-------------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.71 | 3.46 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 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 | 7231 kWh | 9447 kWh |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 249 % | 175 % |
| Prated | 21.80 kW | 20.37 kW |
| SCOP | 6.42 | 4.58 |
| Tbiv | -22 °C | -22 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 22.01 kW | 21.41 kW |
| COP Tj = -7°C | 6.26 | 4.22 |
| Cdh Tj = -7 °C | 1.00 | 1.00 |
| Pdh Tj = +2°C | 22.14 kW | 21.72 kW |
| COP Tj = +2°C | 6.62 | 4.87 |
| Cdh Tj = +2 °C | 1.00 | 1.00 |
| Pdh Tj = +7°C | 22.24 kW | 21.72 kW |
| COP Tj = +7°C | 6.90 | 5.47 |
| Cdh Tj = +7 °C | 1.00 | 1.00 |
| Pdh Tj = 12°C | 22.26 kW | 21.95 kW |
| COP Tj = 12°C | 6.86 | 5.95 |
| Cdh Tj = +12 °C | 1.00 | 1.00 |
| Pdh Tj = Tbiv | 21.80 kW | 20.37 kW |
| COP Tj = Tbiv | 5.71 | 3.46 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 21.80 kW | 20.37 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.71 | 3.46 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 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 | 8375 kWh | 10954 kWh |
| Pdh Tj = -15°C (if TOL | 0.01 | 0.01 |

| | | |
|------------------------|------|------|
| COP Tj = -15°C (if TOL | 0.01 | 0.01 |
| Cdh Tj = -15 °C | 1.00 | 1.00 |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 244 % | 171 % |
| Prated | 21.80 kW | 20.37 kW |
| SCOP | 6.29 | 4.49 |
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 21.80 kW | 20.37 kW |
| COP Tj = +2°C | 5.71 | 3.46 |
| Cdh Tj = +2 °C | 1.00 | 1.00 |
| Pdh Tj = +7°C | 21.96 kW | 20.88 kW |
| COP Tj = +7°C | 6.10 | 4.04 |
| Cdh Tj = +7 °C | 1.00 | 1.00 |
| Pdh Tj = 12°C | 22.18 kW | 21.59 kW |
| COP Tj = 12°C | 6.74 | 5.21 |
| Cdh Tj = +12 °C | 1.00 | 1.00 |
| Pdh Tj = Tbiv | 21.80 kW | 20.37 kW |
| COP Tj = Tbiv | 5.71 | 3.46 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 21.80 kW | 20.37 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.71 | 3.46 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 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 | 4629 kWh | 6068 kWh |