

This information was generated by the HP KEYMARK database on 18 Mar 2022

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| | | | |
|---------------------|---|----------|------------|
| Summary of | TTL 20 AC | Reg. No. | 011-1W0489 |
| Certificate Holder | | | |
| Name | tecalor GmbH | | |
| Address | Fürstenbergerstr. 77 | Zip | 37603 |
| City | Holzminden | Country | Germany |
| Certification Body | DIN CERTCO Gesellschaft für Konformitätsbewertung mbH | | |
| Subtype title | TTL 20 AC | | |
| Heat Pump Type | Outdoor Air/Water | | |
| Refrigerant | R410A | | |
| Mass of Refrigerant | 5.5 kg | | |
| Certification Date | 10.04.2017 | | |

Model: TTL 20 AC

| Configure model | |
|-------------------------------------|---------------------------------|
| Model name | TTL 20 AC |
| Application | Heating (medium temp) |
| Units | Outdoor |
| Climate Zone | Colder Climate + Warmer Climate |
| Reversibility | Yes |
| Cooling mode application (optional) | n/a |

| General Data | |
|--------------|-------------|
| Power supply | 3x400V 50Hz |

Heating

| EN 14511-2 | | |
|-------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| Heat output | 7.84 kW | 7.36 kW |
| El input | 1.54 kW | 2.33 kW |
| COP | 5.09 | 3.16 |

| EN 14511-4 | |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure | passed |
| Starting and operating test | passed |

Average Climate

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EN 12102-1

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 54 dB(A) | 54 dB(A) |

EN 14825

| | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η_s | 192 % | 147 % |
| Prated | 11.00 kW | 12.00 kW |
| SCOP | 4.87 | 3.74 |
| Tbiv | -5 °C | -5 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 9.50 kW | 10.60 kW |
| COP Tj = -7°C | 3.30 | 2.69 |
| Cdh Tj = -7 °C | 0.90 | 0.90 |
| Pdh Tj = +2°C | 8.30 kW | 8.40 kW |
| COP Tj = +2°C | 4.72 | 3.51 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 8.00 kW | 7.80 kW |
| COP Tj = +7°C | 6.16 | 4.61 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 9.10 kW | 9.00 kW |

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| | | |
|---|-------------|-------------|
| COP Tj = 12°C | 8.11 | 6.66 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 8.80 kW | 9.90 kW |
| COP Tj = Tbiv | 3.46 | 2.81 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 9.53 kW | 9.48 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.15 | 2.29 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 38 W | 38 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.48 kW | 0.69 kW |
| Annual energy consumption Qhe | 4663 kWh | 6625 kWh |

Warmer Climate

| EN 14825 | | |
|-----------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 245 % | 177 % |
| Prated | 7.00 kW | 8.00 kW |
| SCOP | 6.20 | 4.51 |

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| | | |
|---|-------------|-------------|
| Tbiv | 2 °C | 2 °C |
| TOL | 2 °C | 2 °C |
| Pdh Tj = +2°C | 8.30 kW | 8.40 kW |
| COP Tj = +2°C | 4.14 | 2.74 |
| Cdh Tj = +2 °C | 0.90 | 0.90 |
| Pdh Tj = +7°C | 7.90 kW | 7.50 kW |
| COP Tj = +7°C | 5.47 | 3.64 |
| Cdh Tj = +7 °C | 0.90 | 0.90 |
| Pdh Tj = 12°C | 9.10 kW | 9.00 kW |
| COP Tj = 12°C | 7.72 | 6.11 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 8.30 kW | 8.40 kW |
| COP Tj = Tbiv | 4.14 | 2.74 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.90 kW | 12.90 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.98 | 2.45 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 38 W | 38 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |

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| | | |
|---|----------|----------|
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Q _{he} | 1508 kWh | 2369 kWh |

Colder Climate

| EN 14825 | | |
|--|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 167 % | 133 % |
| Prated | 15.00 kW | 17.00 kW |
| SCOP | 4.25 | 3.41 |
| T _{biv} | -7 °C | -7 °C |
| TOL | -20 °C | -20 °C |
| P _{dh} T _j = -7°C | 9.20 kW | 10.10 kW |
| COP T _j = -7°C | 3.50 | 2.91 |
| C _{dh} T _j = -7 °C | 0.90 | 0.90 |
| P _{dh} T _j = +2°C | 8.30 kW | 8.30 kW |
| COP T _j = +2°C | 5.15 | 3.92 |
| C _{dh} T _j = +2 °C | 0.90 | 0.90 |
| P _{dh} T _j = +7°C | 8.00 kW | 7.90 kW |
| COP T _j = +7°C | 6.57 | 5.12 |
| C _{dh} T _j = +7 °C | 0.90 | 0.90 |
| P _{dh} T _j = 12°C | 9.10 kW | 9.00 kW |

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| | | |
|---|-------------|-------------|
| COP Tj = 12°C | 8.11 | 6.95 |
| Cdh Tj = +12 °C | 0.90 | 0.90 |
| Pdh Tj = Tbiv | 9.20 kW | 10.10 kW |
| COP Tj = Tbiv | 3.50 | 2.41 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.80 kW | 12.60 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.06 | 2.56 |
| WTOL | 65 °C | 65 °C |
| Poff | 10 W | 10 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 38 W | 38 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 15.27 kW | 16.65 kW |
| Annual energy consumption Qhe | 8698 kWh | 12299 kWh |
| Pdh Tj = -15°C (if TOL<-20°C) | 11.80 | 12.60 |
| COP Tj = -15°C (if TOL<-20°C) | 3.06 | 2.56 |
| Cdh Tj = -15 °C | 0.90 | 0.90 |