THERMOTECHNIKA CROWN COOL

# TECHNICAL DATA SHEET

## TC HeatPro SPLIT 15 kW
## Air to Water Heat Pump

| Model | TC HeatPro SPLIT 15 kW | |
|---|---|---|
| Power Supply / Refrigerant | V/Hz/Ph | 380-420/50/3 – R32 |
| Max. Heating Capacity (1) | kW | 15,5 |
| C.O.P. (1) | W/W | 4,6 |
| Heating Capacity Min./Max. (1) | kW | 7,3 ~ 15,5 |
| Heating Power Input Min./Max. (1) | W | 1600~ 3300 |
| C.O.P. Min/Max (1) | W/W | 4,5~ 5,0 |
| Max. Heating Capacity (2) | kW | 14,4 |
| C.O.P. (2) | W/W | 3,5 |
| Heating Capacity Min./Max. (2) | kW | 6,6 ~ 14,4 |
| Heating power input Min./Max. (2) | W | 1900~ 4100 |
| C.O.P. Min./Max. (2) | W/W | 3,5 ~ 3,7 |
| Max. Cooling Capacity (3) | kW | 18,5 |
| E.E.R (3) | W/W | 3,7 |
| Cooling Capacity Min./Max. (3) | kW | 7,2 ~ 18,5 |
| Cooling Power Input Min./Max. (3) | W | 1400~ 5000 |
| E.E.R. Min/Max. (3) | W/W | 3,7 ~ 5,1 |
| Max. Cooling Capacity (4) | kW | 13 |
| E.E.R (4) | W/W | 3,0 |
| Cooling Capacity Min./Max. (4) | kW | 10,3 ~ 13 |
| Cooling Power Input Min./Max. (4) | W | 3200~4300 |
| E.E.R. Min/Max. (4) | W/W | 3,0 ~ 3,2 |
| Circuit Breaker | A | 25 |

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| **Model** | | **TC HeatPro SPLIT 15 kW** | |
|---|---|---|---|
| Workable Ambient Temperature Range | | °C | -25 ~ 43 |
| Min. System Water Temperature (Heating / Cooling) | | °C | 20/7 |
| Min. Floor Area for installation, operation and storage | | $m^2$ | 6,2 |
| Min. Area of Pipe-work | | $m^2$ | 6,2 |
| Max. Operation High Pressure | | MPa | 4,2 |
| Max. Operation Low Pressure | | MPa | 1,2 |
| Compressor | Type - Quantity | | Twin Rotary - 1 |
| Refrigerant | Type / Amount | - / kg | R32/2,6 kg |
| Fan | Quantity | db | 2 |
| | Airflow | $m^3/h$ | 6200 |
| | Rated power | W | 90 |
| Noise Level | Indoor/Outdoor | dB(A) | 40/57 |
| Water Side Heat Exchanger | Type | | Plate Heat Exchanger |
| | Water Pressure Drop | kPa | 26 |
| | Piping Connection | Inch | G5/4” |
| Allowable Water Flow | Min./Rated./Max. | L/S | 0,5/0,72/0,93 |
| Net Dimension(L×D×H) | Indoor Unit | mm | 750x500x300 |
| | Outdoor Unit | mm | 1085x400x1450 |
| Net Weight | Indoor Unit | Kg | 42 |
| | Outdoor Unit | Kg | 120 |

Note:

(1) Heating condition: water inlet/outlet temperature: 30°C/35°C, Ambient temperature: DB 7°C/WB 6°C;

(2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7°C/WB 6°C;

(3) Cooling condition: water inlet/outlet temperature: 23°C/18°C, Ambient temperature: DB 35°C/WB 24°C;

(4) Cooling condition: water inlet/outlet temperature: 12°C/7°C, Ambient temperature: DB 35°C/WB 24°C;

(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

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## Test report of TC HeatPro SPLIT 15 kW (Heating/Cooling) at different ambient temperatures

### Test report: Heating

| Ambient temp. (℃) | Water Outlet temp. (℃) | Compressor Speed（Hz） | Heating Capacity (W) | Input Power (W) | COP (W/W) |
|---|---|---|---|---|---|
| DB12/WB10 | 55,0 | 66HZ | 12549,66 | 4129 | 3,04 |
| | | 55HZ | 10519 | 3446 | 3,05 |
| | | 49HZ | 9555 | 3062 | 3,12 |
| | | 36HZ | 6380 | 2245 | 2,84 |
| | 45,0 | 66HZ | 13916 | 3410 | 4,08 |
| | | 55HZ | 11886 | 2800 | 4,25 |
| | | 49HZ | 10729 | 2461 | 4,36 |
| | | 36HZ | 7602 | 1790 | 4,25 |
| | 35,0 | 66HZ | 15327 | 2706 | 5,66 |
| | | 55HZ | 12706 | 2196 | 5,79 |
| | | 49HZ | 11328 | 1928 | 5,88 |
| | | 36HZ | 8456 | 1380 | 6,13 |
| DB7/WB6 | 55,0 | 76HZ | 12916 | 4804 | 2,69 |
| | | 66HZ | 11063 | 4100 | 2,70 |
| | | 55HZ | 9396 | 3429 | 2,74 |
| | | 49HZ | 8388 | 3066 | 2,74 |
| | | 36HZ | 5317 | 2249 | 2,36 |
| | 45,0 | 76HZ | 14477 | 4004 | 3,62 |
| | | 66HZ | 12539 | 3426 | 3,66 |
| | | 55HZ | 10414 | 2829 | 3,68 |
| | | 49HZ | 9472 | 2476 | 3,83 |
| | | 36HZ | 6630 | 1804 | 3,67 |
| | 35,0 | 76HZ | 15516 | 3297 | 4,71 |
| | | 66HZ | 13661 | 2801 | 4,88 |
| | | 55HZ | 11548 | 2251 | 5,13 |
| | | 49HZ | 10224 | 1975 | 5,18 |
| | | 36HZ | 7345 | 1538 | 4,78 |
| DB2/WB1 | 55,0 | 76HZ | 11552 | 4819 | 2,40 |
| | | 66HZ | 9600 | 4133 | 2,32 |
| | | 55HZ | 8202 | 3373 | 2,43 |
| | | 49HZ | 6987 | 3047 | 2,29 |
| | | 36HZ | 4450 | 2193 | 2,03 |
| | 45,0 | 76HZ | 12905 | 3999 | 3,23 |
| | | 66HZ | 11035 | 3387 | 3,26 |
| | | 55HZ | 8983 | 2789 | 3,22 |
| | | 49HZ | 8222 | 2468 | 3,33 |
| | | 36HZ | 5385 | 1771 | 3,04 |
| | 35,0 | 76HZ | 13829 | 3271 | 4,23 |
| | | 66HZ | 11914 | 2778 | 4,29 |
| | | 55HZ | 10155 | 2280 | 4,45 |
| | | 49HZ | 8942 | 2001 | 4,47 |
| | | 36HZ | 6276 | 1436 | 4,37 |
| DB-7℃/WB-8℃ | 55,0 | 76HZ | 8367 | 4537 | 1,84 |
| | | 66HZ | 6985 | 3868 | 1,81 |
| | | 55HZ | 5587 | 3247 | 1,72 |

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| | | | | | |
|---|---|---|---|---|---|
| | | 49HZ | 4799 | 2833 | 1,69 |
| | | 36HZ | 3238 | 2097 | 1,54 |
| | 45,0 | 76HZ | 9619 | 3854 | 2,50 |
| | | 66HZ | 7731 | 3244 | 2,38 |
| | | 55HZ | 6584 | 2703 | 2,44 |
| | | 49HZ | 5873 | 2369 | 2,48 |
| | | 36HZ | 3855 | 1755 | 2,20 |
| | 35,0 | 76HZ | 10570 | 3150 | 3,36 |
| | | 66HZ | 8981 | 2730 | 3,29 |
| | | 55HZ | 7375 | 2288 | 3,22 |
| | | 49HZ | 6479 | 2047 | 3,16 |
| | | 36HZ | 4477 | 1498 | 2,99 |
| DB-15℃/WB-16℃ | 55,0 | 76HZ | 6233 | 4253 | 1,47 |
| | | 66HZ | 5360 | 3690 | 1,45 |
| | | 55HZ | 4009 | 3022 | 1,33 |
| | | 49HZ | 3396 | 2687 | 1,26 |
| | | 36HZ | 2065 | 2062 | 1,00 |
| | 45,0 | 76HZ | 7379 | 3566 | 2,07 |
| | | 66HZ | 5929 | 3095 | 1,92 |
| | | 55HZ | 4670 | 2486 | 1,88 |
| | | 49HZ | 4295 | 2248 | 1,91 |
| | | 36HZ | 2611 | 1691 | 1,54 |
| | 35,0 | 76HZ | 8026 | 3022 | 2,66 |
| | | 66HZ | 6752 | 2602 | 2,60 |
| | | 55HZ | 5448 | 2147 | 2,54 |
| | | 49HZ | 4791 | 1910 | 2,51 |
| | | 36HZ | 3385 | 1493 | 2,27 |
| DB-25℃/WB-26℃ | 55,0 | 76HZ | 4606 | 4071 | 1,13 |
| | | 66HZ | 3540 | 3369 | 1,05 |
| | | 55HZ | 2705 | 2808 | 0,96 |
| | | 49HZ | 2255 | 2432 | 0,93 |
| | | 36HZ | 1026 | 1833 | 0,56 |

**Test report: Cooling**

| **Ambient temp. (℃)** | **Water Outlet temp. (℃)** | **Compressor Speed（Hz）** | **Heating Capacity (W)** | **Input Power (W)** | **COP (W/W)** |
|---|---|---|---|---|---|
| DB35/WB24 | 7,0 | 76HZ | 13086.22 | 4230.98 | 3.09 |
| | | 72HZ | 12418.43 | 3910.26 | 3 |
| | | 66HZ | 11164.84 | 3456.70 | 3.23 |
| | | 61HZ | 10307.20 | 3120.76 | 3.30 |
| DB35/WB24 | 18,0 | 76HZ | 18567.54 | 4916.91 | 3.78 |
| | | 52HZ | 12769.26 | 2764.22 | 4.62 |
| | | 30HZ | 7228.73 | 1334.37 | 5.42 |

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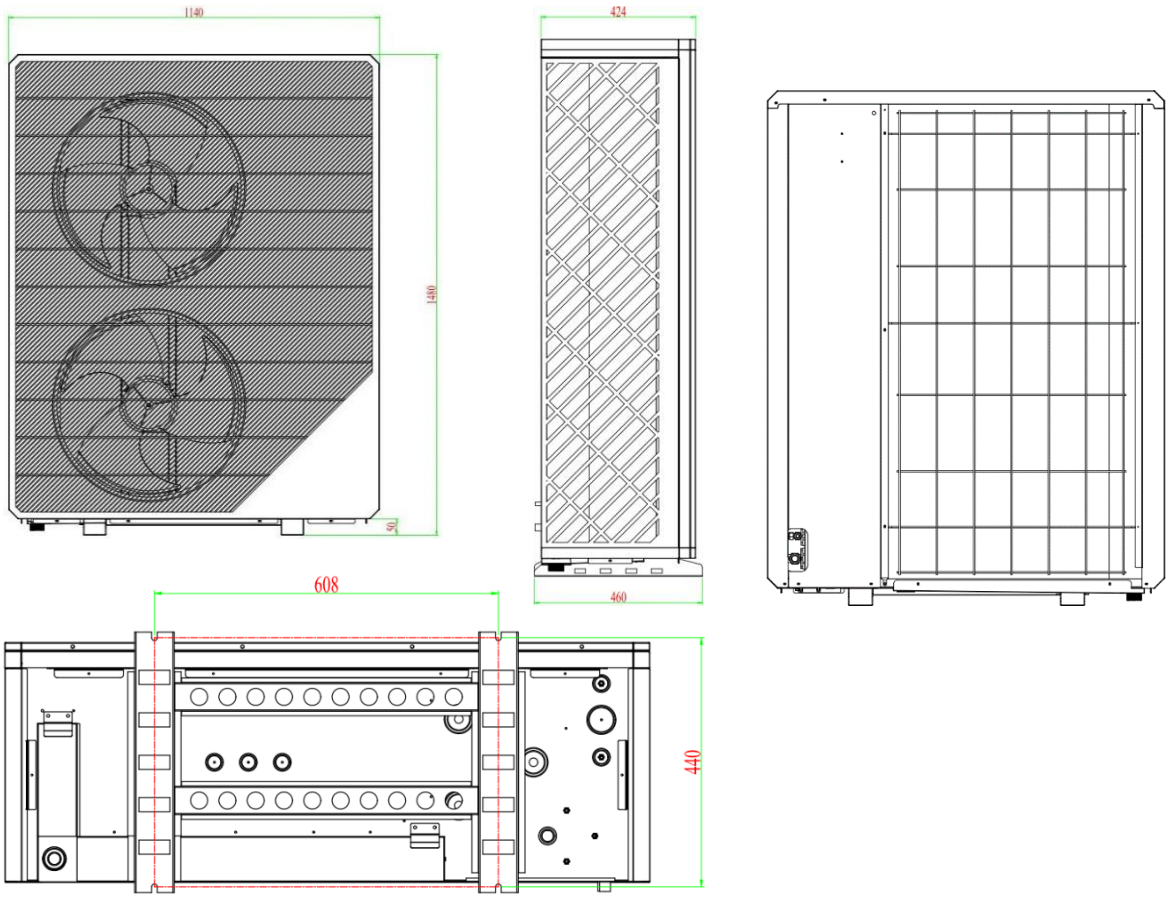
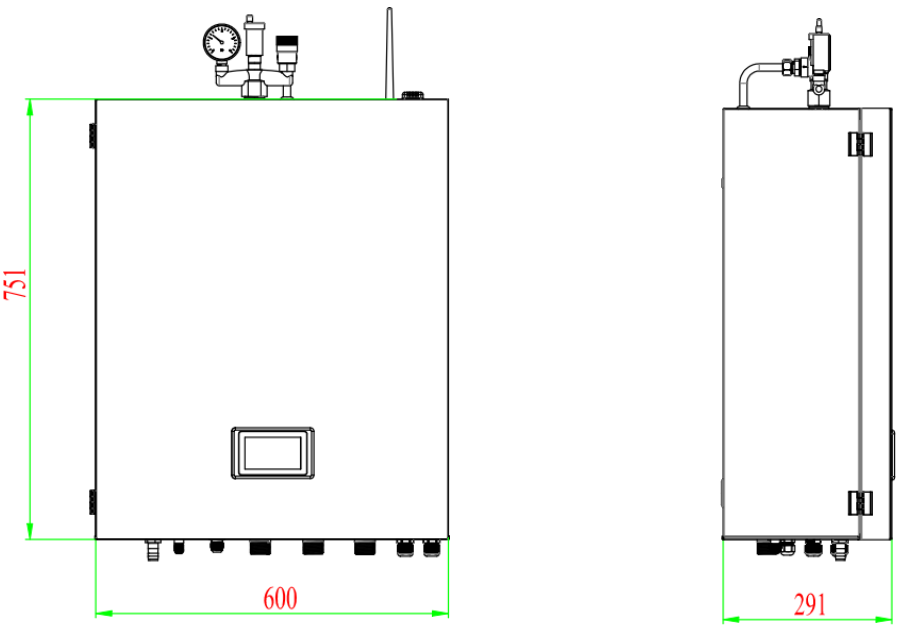
## TC HeatPro SPLIT 15 kW dimensions




**TC HeatPro SPLIT 15 kW Indoor Unit dimensions:**

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**The values refer to use at low temperatures in average climatic conditions (W35).**

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated Heat Output (1) | Prated | 11,601 | kW |
| Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj: | | | |
| Tj=-7°C | Pdh | 10,263 | kW |
| Tj=+2°C | Pdh | 6,298 | kW |
| Tj=+7°C | Pdh | 6,129 | kW |
| Tj=+12°C | Pdh | 5,968 | kW |
| Tj=bivalent temperature | Pdh | 11,229 | kW |
| Tj= operation limit temperature | Pdh | 10,263 | kW |
| For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C) | Pdh | - | kW |
| Bivalent Temperature | Tbiv | -7 | °C |
| Cycling interval capacity for heating | Pcych | - | kW |
| Degradation co-efficient (2) | Cdh | 0,9 | - |
| Power Consumption in modes other than active mode: | | | |
| Off Mode | POFF | 0,013 | kW |
| Thermostat off mode | CTU | 0,039 | kW |
| Standby mode | PSB | 0,013 | kW |
| Crankcase heater mode | PCK | 0,041 | kW |
| Other Items | | | |
| Capacity Control | | Variable | |
| Sound power level, indoor/outdoor | LWA | 40/57 | dB |
| Annual energy consumption | QHE | 5096 | kWh |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | $\eta_s$ | 185,1 | % |
| | | | |
| Tj=+2°C | COPd | 4,69 | - |
| Tj=+7°C | COPd | 6,29 | - |
| Tj=+12°C | COPd | 6,02 | - |
| Tj=bivalent temperature | COPd | 2,73 | - |
| Tj= operation limit temperature | COPd | 3,58 | - |
| For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C) | COPd | - | - |
| For air-to-water heat pumps: Operating limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | COPcyc | - | - |
| | WTOL | 55 | °C |
| Supplementary heater | | | |
| Rated heat output | Psup | 0,372 | kW |
| Type of energy input | Electric | | |

**The values refer to use at high temperatures in average climatic conditions (W55).**

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated Heat Output (1) | Prated | 11,038 | kW |
| Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj: | | | |
| Tj=-7°C | Pdh | 9,764 | kW |
| Tj=+2°C | Pdh | 6,107 | kW |
| Tj=+7°C | Pdh | 5,934 | kW |
| Tj=+12°C | Pdh | 6,915 | kW |
| Tj= bivalent temperature | Pdh | 9,133 | kW |
| Tj= operation limit temperature | Pdh | 9,764 | kW |
| For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C) | Pdh | - | kW |
| Bivalent Temperature | Tbiv | -7 | °C |
| Cycling interval capacity for heating | Pcych | - | kW |
| Degradation co-efficient (2) | Cdh | 0,9 | - |
| Power Consumption in modes other than active mode | | | |
| Off Mode | POFF | 0,013 | kW |
| Thermostat off mode | CTU | 0,039 | kW |
| Standby mode | PSB | 0,013 | kW |
| Crankcase heater mode | PCK | 0,041 | kW |
| Other Items | | | |
| Capacity Control | | Variable | |
| Sound power level, indoor/outdoor | LWA | 35/61 | dB |
| Annual energy consumption | QHE | 7039 | kWh |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | $\eta_s$ | 126,6 | % |
| | | | |
| Tj=+2°C | COPd | 3,22 | - |
| Tj=+7°C | COPd | 4,76 | - |
| Tj=+12°C | COPd | 5,8 | - |
| Tj= bivalent temperature | COPd | 1,7 | - |
| Tj= operation limit temperature | COPd | 1,89 | - |
| For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C) | COPd | - | - |
| For air-to-water heat pumps: Operating limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | COPcyc | - | - |
| | WTOL | 55 | °C |
| Supplementary heater | | | |
| Rated heat output | Psup | 1,905 | kW |
| Type of energy input | Electric | | |

(1) For heat pump heaters and combined heat pump heaters, the rated thermal output Prated must equal the design heating load Pdesign, and the rated thermal output Psup of the auxiliary heater must equal the auxiliary heating output sup(Tj).

(2) If the Cdh value is not determined by measurement, the default degradation coefficient is Cdh= 0.9.

(3)

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