

### Tamson Cool Cube - Bath & Circulator

#### Tamson Low-Temperature Bath & Circulator



- ⊕ **Wheels fitted with brake**
- ⊕ **Low noise**
- ⊕ **Compact**
- ⊕ **Drain to empty bath**
- ⊕ **Auto tune, high precision**

| Item                   | Unit    | TCC - B                          |     |
|------------------------|---------|----------------------------------|-----|
| P/N 230V/50Hz          |         | 00T0310                          |     |
| P/N 230V/60Hz          |         | 00T0311                          |     |
| P/N 115V/60Hz          |         | On request                       |     |
| Materials inside bath  |         | Stainless steel / Teflon / Nylon |     |
| Range                  |         | -88°C / -126°F ...ambient        |     |
| Reading                |         | Standard °C, °F on request       |     |
| Setting ±              | [°]     | 0.1                              |     |
| Stability ±            | [°C]    | Better than 0.05                 |     |
| Heating                | [W]     | 1400 (1 heater)                  |     |
| Bath volume            | [L]     | 11                               |     |
| Opening bath           | [mm]    | 175 x 130 (effective use)        |     |
| Depth bath             | [mm]    | 240                              |     |
| Dimensions (W x D x H) | [mm]    | 380x770x780                      |     |
| Pump pressure          | [Bar]   | 1                                |     |
| Pump flow              | [L/min] | max 16                           |     |
| Heat removal           | [W]     | @-84°C/-119°F                    | 250 |
|                        |         | @-82°C/-116°F                    | 300 |
|                        |         | @-73°C/-99°F                     | 350 |
|                        |         | @-64°C/-83°F                     | 400 |
|                        |         | @-53°C/-72°F                     | 450 |
| Power consumption      | [kw]    | 1,5..2.6 max.                    |     |
| Ambient                | [°C]    | 15 .. 26                         |     |
| Weight                 | [kg]    | 73                               |     |
| CE                     |         | Conforms to CE regulation        |     |

#### General

The TCC-B is a low temperature circulator with a bath volume of 11 Litres. The bath opening measures 155 x 110 mm and has a depth of 240 mm. Also, the TCC-B is equipped with a powerful performance pump (max 1 Bar, 16L per minute) which can circulate the bath fluid to an external application.

#### Construction

The TCC-B is based on a powerful cooling unit called the Tamson Cooling Cube (TCC). The minimum temperature which can be reached is minus 88°C. At this low temperature the heat removal capacity lies around 150 Watt. The bath can be used for general low temperature use and shows excellent heat removal performance. The drain located at the back provides easy removal of the bath fluid. Low fluid level is detected electronically. The refrigerant used is HCFK free. The TCC-B has a status panel which informs the user about the status of the compressors and overpressure safeties. The relative small footprint offers easy installation under a workbench. The low temperature bath is mounted on four wheels. Two are fitted with a brake to lock the system in place.

The casing is constructed from powder coated zinc panels. The top plate, inner bath and frame are constructed from stainless steel.

After the unit is started the TCC-B rapidly cools down to the set point. At this point the consumed power also decreases to less than 1.5 kW. The use of silent fans make the TCC-B quiet when in use.

No maintenance of the system is needed but the air intake in the in- and outlet must be kept clear and free of dust. The dust can be easily removed using a vacuum cleaner.

#### Control mechanism

With the compressor running continuously, the fluid temperature is regulated through a PID controlled heater. Auto-tune can be started manually and PID parameters can be read out afterwards or set manually.

#### Accuracy

The set point can be set in steps of 0.1°C. The overall system accuracy is ± 0.05°C.

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#### Ambient condition

For proper cooling performance within the specifications it is preferred that the ambient temperature is within the range 15°C...26°C.

#### Safety

The bath conforms to CE regulation. It also is equipped with a mechanical resettable safety thermostat and fluid level detection. The bath also

#### Example of cooling down curve

A bath temperature of -80°C can be reached within 70 minutes. A high ambient temperature limits the minimum temperature of the bath. With ambient around 20°C a bath minimum temperature of -88°C can be expected.

A led panel indicates the functions of the cooling circuit:

- 1 On / Off switch
- 2 Pump speed dial
- 3 Function indicators [Green]
- 4 Status indicators [Red]
- 5 Alarm [White]

- Remote control via RS232 P/N 02T3025

Use our **Free Tamson software:**

- Run a temperature curve,
- Preset temperatures,
- Setting PID parameters
- Temperature readout (2 decimals)
- Temperature logging

