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## HRC 2 GREEN basic

/// Data Sheet

The compact HRC 2 GREEN basic cooling and heating circulation thermostat impresses with a working temperature range from -30°C to 100°C and a powerful, continuously variable pressure and suction pump.

The on-demand and speed-controlled compressor reduces noise and operating costs. The use of the natural refrigerant R290 achieves high energy efficiency and meets current environmental requirements for refrigerants.

The high-quality isolation of the 4-liter bath allows particularly fast heating and reduces heat input at low temperatures.

Up to 2.5 liters of thermofluid are available for the external temperature control circuit without refilling.

The integrated hopper and drain valve ensure safe and clean handling of the thermofluid. The easy-to-open front flap allows convenient cleaning of the stainless steel mesh air filter of the refrigeration unit. The bath has a drain valve on the



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front. A hose can be connected to empty the bath, so the user does not get in direct contact with the thermofluid.

HRC 2 GREEN basic is the perfect peripheral device for bioreactors, synthesis reactors and applications in which energy is to be transferred to or from heat exchangers.

#### Features:

- Speed-controlled refrigeration system with 620 W cooling capacity
- Natural refrigerant R290
- Speed-controlled pump made of PEEK: (0.5 bar; 22 l/min)
- 1500 W heating capacity
- Digital level indicator
- Safety classification III (FL) according to DIN 12876
- Adjustable temperature safety circuit

#### Interfaces:

- RS 232
- USB

#### Scope of delivery

- HRC 2 GREEN basic
- Hose olive NW 8 (2 pcs.)
- Hose olive NW 12 (2 pcs.)
- Screwdriver (use for safety circuit)
- USB Cable - USB A to Micro-B, 2 m



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## Technical Data

|   |                          |
|---|--------------------------|
| Appliance type  | Circulation thermostat   |
| Class designation acc. DIN 12876  | III                      |
| Identification according to DIN 12876   | FL                       |
| Cooling agent   | R290                     |
| Cooling agent quantity [g]  | 79                       |
| Cooling agent pressure max. [bar]   | 21                       |
| Heat output [W]   | 1500                     |
| Cooling capacity (@20°C) [W]  | 620                      |
| Cooling capacity (@10°C) [W]  | 600                      |
| Cooling capacity (@0°C) [W]   | 480                      |
| Cooling capacity (@-10°C) [W]   | 350                      |
| Cooling capacity (@-20°C) [W]   | 200                      |
| Cooling capacity (@-30°C) [W]   | 80                       |
| Working temperature [°C]  | -30 - 100                |
| Operating temperature min. [°C]   | -30                      |
| Temperature display   | yes                      |
| Temperature stability DIN 12876 (@+70°C) [K]  | ±0.1                     |
| Temperature stability DIN 12876 (@-10°C) [K]  | ±0.1                     |
| Temperature control   | PID                      |
| Working temperature sensor  | PT 100                   |
| Safety temperature sensor   | PT1000                   |
| Working temperature display   | LED                      |
| Safety temperature display  | LED                      |
| Temperature measurement, absolute accuracy Internal (adjustable by calibration) [K] | ±0.5                     |
| Display resolution [K]  | 0.1                      |
| Set temperature resolution [K]  | 0.1                      |
| Warning function optical  | yes                      |
| Warning function acoustic   | yes                      |
| Warning function excess temperature   | yes                      |
| Adjustable safety circuit [°C]  | 0 - 110                  |
| Sub-level protection  | yes                      |
| Over-level protection   | yes                      |
| Filling volume [l]  | 1.4 - 4.0                |
| Pump type   | Pressure- / suction pump |
| Pump capacity adjustable  | yes                      |
| Pump Speed min. [rpm]   | 2000                     |
| Pump Speed max. [rpm]   | 4000                     |
| Pump pressure max. (0 liters discharge flow) [bar]                                  | 0.5                      |
| Pressure pump (suction side) (0 liter flow) [bar]                                   | 0.25                     |
| Flow rate max. (0 bar back pressure) [l/min]  | 21                       |
| Fluid maximum viscosity [mm²/s]   | 50                       |
| Pump connection   | M16x1                    |
| Calibration option  | yes                      |
| Technical data complies with the standard   | DIN 12876                |
| Permissible ON time [%]   | 100                      |
| Noise level [dB(A)]   | 58                       |
| Dimensions (W x H x D) [mm]   | 220 x 480 x 525          |
| Weight [kg]   | 26                       |



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|  |           |
|--|-----------|
| Permissible ambient temperature [°C]       | 5 - 32    |
| Permissible relative humidity [%]          | 80        |
| Protection class according to DIN EN 60529 | IP 21     |
| RS 232 interface                           | yes       |
| USB interface                              | Micro-USB |
| Voltage [V]                                | 230       |
| Frequency [Hz]                             | 50/60     |
| Power input [W]                            | 1800      |