Data Sheet

LR 1000 control Package

The LR 1000 control is a cost efficient, modular laboratory reactor designed for optimizing chemical reaction processes as well as for mixing, dispersing and homogenization applications at the laboratory scale. The system can be adapted quickly and easily for a wide range of applications and specific requirements. The reactor is especially designed for the unique applications requirements that define the cosmetic and pharmaceutical industries. The temperature of the medium can be as high as 120 ºC. The temperature of the heating source, which is located at the bottom of the vessel, is controlled accordingly to reach the set temperature inside the medium. A PT 100.5 temperature sensor and the corresponding receptacle LR 1000.61 for the lid are included with this package. Prominent features of the LR 1000 control system are the integrated pH sensor connection and the display interface. The latter allows for the display of all process-relevant data onto a PC, save data storage and control of the reactor. The software (accessory) allows for further adaptation of the overall system and processes.

- Large easy to read TFT display for better image quality and easy navigation
- Torque trend measurement indicates changes in product viscosity
- Integrated pH sensor connection
- RS 232 and USB interface to operate the unit with the laboratory software labworldsoft
- Expandable for use with the ULTRA-TURRAX® T 25 digital (Accessory)
- Standard joint fittings on the lid: 1x NS 29, 3x NS 14 for flexible adaptation of

Technical Data	
Usable volume min. [ml]	500
Usable volume max. [ml]	1000
Working temperature max. [°C]	120
Attainable vacuum [mbar]	25
Viscosity max. [mPas]	100000
Speed range [rpm]	10 - 150
Support rod diameter (with integrated fastening on stand) [mm]	16
Material in contact with medium	AISI 316L, 1.4571, borosilicate glass 3.3, PTFE, PEEK, FKM
Reactor vessel openings (units/standard)	1/NS 29/32, 3/NS 14/23
Dimensions (W x H x D) [mm]	443 x 360 x 295
Weight [kg]	16
Permissible ambient temperature [°C]	5 - 40
Permissible relative moisture [%]	80
Protection class according to DIN EN 60529	IP 21
RS 232 interface	yes
USB interface	yes
Analog output	no
Voltage [V]	230 / 115
Frequency [Hz]	50/60
Power input [W]	1200
Adjustable safety circuit max. [°C]	210
Adjustable safety circuit min. [°C]	50
Connection for ext. temperature sensor	PT 100
Control accuracy with sensor [±K]	0.2
Cooling medium permissible operating pressure [bar]	1
Cooling medium temperature min. [°C]	3
Display for operation with ext. sensor	yes
Heat control	TFT
Heat control accuracy [±K]	1
Heat output [W]	1000
Heating temperature max. [°C]	180
Nominal torque [Nm]	3
Permissible ON time [%]	100
Safety cutout	yes
Safety temperature display	TFT
Speed control	1 RPM steps
Speed deviation [±rpm]	5
Speed display	TFT
Speed min (adjustable) [rpm]	10
Temperature display	yes
Temperature measurement resolution [K]	0.1
Timer	yes
Timer display	TFT
Torque display	yes
Torque measurement	trend
Type of cooling	flow
[g]	2000
	TFT
	yes
Ident. No.	**0008040200**

further equipment
- Vacuum valve included with delivery
- Anchor stirrer with PTFE-scrapers available (Accessory)
- Connections to attach a cooling source to the back of the unit
- Manual adjustable safety circuit
- Integrated safety shutdown when vessel or lid is removed from the base

Accessories: LR 1000.1 Laboratory reactor vessel, LR 1000.11 Anchor stirrer, LR 1000.10 Anchor stirrer with PTFE scrapers, LR 1000.20 Flow breaker / baffle, T 25 digital ULTRA-TURRAX®, LR 1000.41 Shaft receptacle, S 25 KV - 25 F Dispersing element, S 25 KV - 25 G Dispersing element, S 25 KV - 18 G Dispersing element, PT 100.5, LR 1000.61 Sensor receptacle, LR 1000.64 pH Electrode, LR 1000.65 pH Electrode receptacle, KV 600 cooling water supply, SC 920 Vacuum pump, labworldsoft®, USB Cable - USB A to Micro-B, 2 m, PCI 8.2 Plug-in card, PC 2.3 Cable, PC 1.5 Cable