analytikjena
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Biometra TRobot II
Automated Thermal Cycler

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SNa

Technical Data
Biometra TRobot II

General

- Automated thermal cycler for remote control by integration into a scheduler software of automation platforms or by Biometra TSuite computer software
- Small footprint by a compact PCR module and separate controller
- Three block formats available, all with gradient function (Linear Gradient Tool)
- "Smart Tune" automatic lid for adjustable ideal, constant contact pressure independent of the used consumable
- Free access to the block for a gripper from three sides for individual platform design
- Patent-pending plate-lifter for trouble-free removal of plates
- Patent-pending lid opening and closing mechanism for almost maintenance-free operation
- Touch-sensitive safety frame for highest safety standard
- Whisper quiet with max. 45 dB

PCR module

Model	Biometra TRobot II 96 G	Biometra TRobot II 96 SG	Biometra TRobot II 384 G
Sample block	Aluminum, special alloy	Silver, gold coating	Aluminum, special alloy
Block capacity	96 x 0.2 mL tubes, 96 well microplate or 8 well strips	96 x 0.2 mL tubes, 96 well microplate or 8 well strips	384 well microplate
Proposed sample volume	5 - 50 µL	5 - 100 µL	5 - 25 µL
Max. heating[a]	4.0 °C/s	5.0 °C/s	2.4 °C/s
Average heating[a]	3.7 °C/s	4.9 °C/s	2.2 °C/s
Max. cooling[a]	3.1 °C/s	4.8 °C/s	1.8 °C/s
Average cooling[a]	2.8 °C/s	4.5 °C/s	1.6 °C/s
Temperature uniformity[b]	95 °C ± 0.60 °C 70 °C ± 0.30 °C 55 °C ± 0.20 °C	95 °C ± 0.50 °C 70 °C ± 0.25 °C 55 °C ± 0.15 °C	95 °C ± 0.60 °C 70 °C ± 0.30 °C 55 °C ± 0.15 °C
Gradient	Linear Gradient Tool	Linear Gradient Tool	Linear Gradient Tool
Max./Min. gradient	24 °C/0.1 °C	30 °C/0.1 °C	18 °C/0.1 °C
Adjustable gradient range	12 rows 20 °C to 99 °C	12 rows 10 °C to 99 °C	24 rows 20 °C to 99 °C

[a] measured at cavity wall of the block
[b] after 15 s

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Block exchange	No
Tempering method	Peltier elements
Standby temperature	Yes, down to 4 °C
Temperature control mode	Block control
Adjustable temperature range	3 °C to 99 °C
Temperature control accuracy	± 0.1 °C
Plate lifter	Motor-driven, direct compatible with full-skirted PCR plates. With optional Biometra TRobot II adapter frame also compatible with semi-skirted PCR plates with the following plate dimensions: 12 - 14 mm with 96 well aluminum block 11 - 13 mm with 96 well silver block
Consumable compatibility	Low-profile and high-profile plastics with or without skirt, as well for semi-skirt

Lid

Lid type	Motorized lid with heating module, which is connected spring-loaded to the lid
Lid temperature	30 °C to 110 °C
Contact pressure	Constant contact pressure independent from the used consumables adjustable via software in the range of 4 kg to 12 kg. Typical standard settings: 8 kg to 10 kg
Compatible sealing systems	Sealing foils, mats and lids

Operation

Application software	Biometra TSuite computer software
Integration software	Biometra Library (dll file) for integration into an automation system´s scheduler software
Operating system	Microsoft Windows minimum Windows 7, preferably Windows 10
Language	English, German
Data transfer	Via Ethernet, USB2.0 or serial RS232 interface (encrypted transmission of data packets for run log files and service files)
Autorestart function	Yes
Quick start function	Via dashboard in Biometra TSuite software
Time increment	1 to 240 s/cycle

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Temperature increment/decrement	±0.1 to 20 °C/cycle
Memory capacity	Controller: 394 programs of 6 steps in up to 90 user folders. On computer or network: unlimited, depending on storage space
Further features	▪ Graphical and table programming ▪ Protocol templates ▪ Linear gradient function ▪ Monitoring of programs in graphical and table view ▪ Incubation mode ▪ User management ▪ Log file, detailed run log file ▪ Extended self-test

Technical data and dimensions of the PCR module

Width	208 mm
Depth	260 mm (maximum depth with open lid: 332 mm)
Height	209 mm (maximum height with open lid in middle opening position: 291 mm)
Required clearance zone	20 cm to the rear of the device. When operating several units side by side, an additional 10 cm between the units.
Weight netto	9.5 kg
Interfaces to the controller	For DSub 24W7 signal cable and for DSub 12 supply cable.

Technical data and dimensions of the Controller

Power supply	100 V, 115 V or 230 V ±10%, 50 – 60 Hz
Fuse	2x 8AT 250 V (specific fuse type needed). Contact the Analytik Jena Service.
Power consumption	Max. 550 W
Interfaces to the computer	Serial RS232, USB2.0 via RS232-to-USB adapter and Ethernet. A 3 m long RS232 cable is included in delivery. The network cable must be at least performance class Cat 5e and the cable configuration has to be STP. Cable lengths ≤ 30 m are permitted.
Interfaces to the PCR module	DSub 24W7 signal cable, DSub 12 power cable. Cable lengths: 3 m. The cables are permanently connected to the Controller.
Weight netto	8.4 kg
Dimension (W x D x H)	240 mm x 397 (444 incl. cable ports) mm x 139 mm
Required clearance zone	10 cm to the rear of the device.

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Further technical data

Noise emission	Max. 45 dB(A) (measured for standard applications)
Operating conditions	15 °C to 30 °C, max. 70% humidity, max. 2000 m above sea level, overvoltage category II, pollution degree 2, IP20
Warranty	2 years

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