Technical Data

Biometra TAdvanced
PCR Thermal Cycler



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Version: 01/2025
SNa

General

- Stand-alone control by 7“ color touchscreen or remote control by cycler network
- Whisper Quiet with max. 45 dB
- Small footprint and minimal clearance zone
- Different quick exchange sample blocks for various sample volumina, with or without gradient function (Linear Gradient Tool LGR)
- HPSL technology for ideal constant contact pressure independent of the used consumable
- Suitable for low-profile and high-profile plastic with or without skirt, as well for semi-skirt

Thermal block

	96/96 G	96 S/96 SG	60/60 G	384/384 G
Sample block	Aluminum, special alloy	Silver, gold coating	Aluminum, special alloy	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	60 x 0.5 ml tubes	384 well microplate
Proposed sample volume	5 - 50 µl	5 - 100 µl	20 - 150 µl	5 - 25 µl
Max. heating[1]	6.0 °C/s	8.0 °C/s	6.0 °C/s	4.0 °C/s
Average heating[1]	5.5 °C/s	7.0 °C/s	5.5 °C/s	3.8 °C/s
Max. cooling[1]	4.0 °C/s	5.5 °C/s	4.0 °C/s	2.0 °C/s
Average cooling[1]	3.5 °C/s	4.5 °C/s	3.5 °C/s	1.7 °C/s
Block temperature uniformity[2] at target temperature				
95 °C	± 0.60 °C	± 0.50 °C	± 0.60 °C	± 0.50 °C
70 °C	± 0.30 °C	± 0.25 °C	± 0.30 °C	± 0.25 °C
55 °C	± 0.20 °C	± 0.15 °C	± 0.20 °C	± 0.15 °C
Gradient[3]	Linear Gradient Tool	Linear Gradient Tool	Linear Gradient Tool	Linear Gradient Tool
Max./Min. gradient[3]	30 °C/0.1 °C	40 °C/0.1 °C	30 °C/0.1 °C	24 °C/0.1 °C
Adjustable gradient range[3]	12 rows 20 °C to 99 °C	12 rows 4 °C to 99 °C	10 rows 20 °C to 99 °C	24 rows 20 °C to 99 °C

[1] measured at cavity wall of the block
[2] typical value after 15 sec
[3] only for gradient models (G)

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	Twin 48/48 G[5]	Twin 30	Twin combi
Sample block	Aluminum, special alloy	Aluminum, special alloy	Aluminum, special alloy
Block capacity	2 x 48 x 0.2 ml tubes/ 2 x 48-well microplates/ 2 x 6 x 8-well strips, 0.2 ml	2 x 30 x 0.5 ml tubes	2 x 48 x 0.2 ml tubes/ 2 x 48-well microplates/ 2 x 6 x 8-well strips, 0.2 ml/ 2 x 18[4] x 0.5 ml tubes
Max. proposed sample volume	5 - 70 µl	20 - 200 µl	20 - 140 µl (0.5 ml), 5 - 70 µl (0.2 ml)
Max. heating[1]	5.2 °C/s	4.2 °C/s	3.1 °C/s
Average heating[1]	5.1 °C/s	4.1 °C/s	3.0 °C/s
Max. cooling[1]	4.1 °C/s	3.3 °C/s	2.3 °C/s
Average cooling[1]	4.0 °C/s	3.1 °C/s	2.2 °C/s
Block temperature uniformity[2] at target temperature			
95 °C	± 0.60 °C	± 0.60 °C	± 0.60 °C
70 °C	± 0.30 °C	± 0.30 °C	± 0.25 °C
55 °C	± 0.20 °C	± 0.20 °C	± 0.20 °C
Gradient[3]	Linear Gradient Tool[5]	-	-
Max./Min. gradient[3]	20 °C/0.1 °C[5]	-	-
Adjustable gradient range[3]	8 rows 20 °C to 99 °C[5]	-	-

[1] measured at cavity wall of the block
[2] typical value after 15 sec
[3] only for gradient models (G)
[4] The capacity is increased to 35 x 0.5 ml tubes for tubes with small caps
[5] Only 1 block of the twin-block includes the gradient function.

Block exchange	Yes
Number of blocks	12
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

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Heated lid

Heated lid	High-Precision Smart Lid (HPSL)
Lid temperature	30 °C to 110 °C
Contact pressure	Approx. 11 kg (full format block) resp. approx. 6 kg (half format), manual with integrated slip clutch for constant contact pressure independent from the used consumables

Control

Control	Stand-alone or remote control via optional Windows software Biometra TSuite
Control and analysis software	Optional & licensed: Biometra TSuite thermal cycler management software
Minimum requirement of PC	Windows 10
Minimum requirement cycler	Firmware version ME 2.04 – RE 2.04
Language	English, German, Chinese
Display	7“ Color touchscreen
Export function	Yes
Power fail function	Yes
Quick start function	User-specific quick start
Time inc	1 to 240 s/cycle
Temperature inc/dec	±0.1 to 20 °C/cycle
Memory capacity	At least 350 programs with a typical 6 step program, in up to 90 user directories
Features	▪ Extended Self Test ▪ Graphical or spreadsheet programming ▪ Multip-step programming ▪ Incubation mode ▪ Protocol templates ▪ Program preview

Dimensions

Weight netto	Approx. 15 kg
Dimensions (W x D x H)	277 mm x 457 mm x 264 mm
Required clearance zone	10 cm behind rear side of the device. When operating several units side by side, an additional 10 cm between the units.

Additional technical data

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Interface	▪ USB-A (front side): connection of an USB flash drive ▪ Ethernet (back side): connection to a network
Fuses	2x T 10A H 250 V
Power supply	100 V, 115 V oder 230 V ±10 %, 50 – 60 Hz
Power consumption	
Active power	Max. 850 W
Apparent power	Max. 1,100 VA
Noise emission	Max. 45 dBA
Operation conditions	15 °C to 35 °C, 70 % humidity, max. 2000 m NN. Operation > 2000 m above sea level has not been tested according to standards. Practical experience with operation > 2000 m has shown normal operating behavior, as is to be expected due to the design and components used. It is possible that heating and cooling rates are reduced due to the low air density. This is not a device fault. The heating and cooling rates are automatically adjusted to the conditions. Overvoltage category II, pollution degree 2, IP20
Warranty	2 years on the device system

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