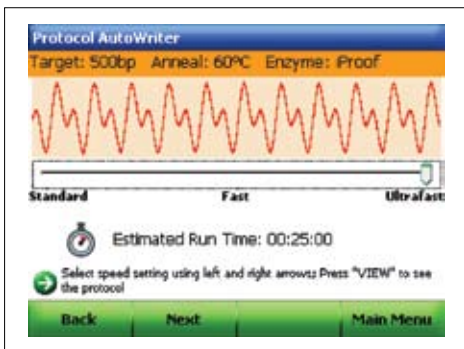# specifications

C1000™ Thermal Cycler

The C1000 thermal cycler provides superb thermal performance for fast, reliable results. This fully modular platform supports interchangeable reaction modules — including two optical modules for real-time PCR — that swap in seconds, without requiring tools. Equipped with a state-of-the-art interface, the C1000 cycler offers multiple programming methods, including graphical, text based, and automatic (using the protocol autowriter).

- Interchangeable reaction modules, including five-color CFX96™ optical, four-color CFX384™ optical, gradient-enabled dual 48/48 fast, gradient-enabled 96-well fast, and gradient-enabled 384-well reaction modules

- USB ports that support peripherals, such as storage device and mouse

- Optional PC control and networking capability for up to 32 systems enable the ultimate in high throughput

Specifications

Thermal Cycler		(cont.)	
Input power	400 W, maximum	Programming options	Step-based graphical, text based, automatic
Frequency	50–60 Hz, single phase	Security features	Password-protected folders,
Display	12 x 9 cm, high resolution, color		optional log-in, and secured mode
Ports	5 USB A, 1 USB B		for highly regulated environments
Fuses	Two 6.3 A, 250 V, 5 x 20 mm	Reporting	Exportable run logs, system error logs
Memory	>1,000 typical programs onboard	Onboard software	Windows CE 6.0
	Unlimited with USB flash drive	PC compatibility	Windows XP or higher
Dimensions (W x D x H)	13 x 18 x 8"	USB peripheral compatibility	Mouse, USB flash drive, bar code reader
Weight	23 lb	Real-time upgrade	6-channel, 5-color CFX96 or 5-channel,
			4-color CFX384 optical reaction modules
Temperature control modes	Calculated and block	Instant incubation	Yes
PCR license	Yes		

Reaction Modules	96-Well Fast	Dual 48/48 Fast	384-Well
Sample capacity	96 x 0.2 ml tubes or 1 x 96-well PCR plate	2 x 48 x 0.2 ml tubes	1 x 384-well PCR plate
Maximum ramp rate	5°C/sec	4°C/sec	2.5°C/sec
Average ramp rate	3.3°C/sec	3°C/sec	2°C/sec
Temperature range	0–100°C	0–100°C	0–100°C
Temperature accuracy	±0.2°C of programmed target at 90°C	±0.2°C of programmed target at 90°C	±0.2°C of programmed target at 90°C
Temperature uniformity	±0.4°C well-to-well within 10 sec of arrival at 90°C	±0.4°C well-to-well within 10 sec of arrival at 90°C	±0.4°C well-to-well within 10 sec of arrival at 90°C
Gradient capability	Yes	Yes	Yes

Gradient	
Gradient accuracy	±0.2°C of programmed temperature at end rows
Row uniformity	±0.4°C well-to-well (within row) within 10 sec of arrival at target temperature
Gradient range	30–100°C
Temperature differential range	1–24°C

BIO·RAD

Quick and easy protocol programming. The protocol autowriter in the cycler's onboard software can automatically suggest a fast temperature protocol based on input parameters. Suggested protocol is based on standard PCR guidelines, with hot-start, initial denaturation, annealing, and extension steps. Further reductions of run times are achieved by minimizing the number of steps and cycles, incubation times, and temperature differentials.
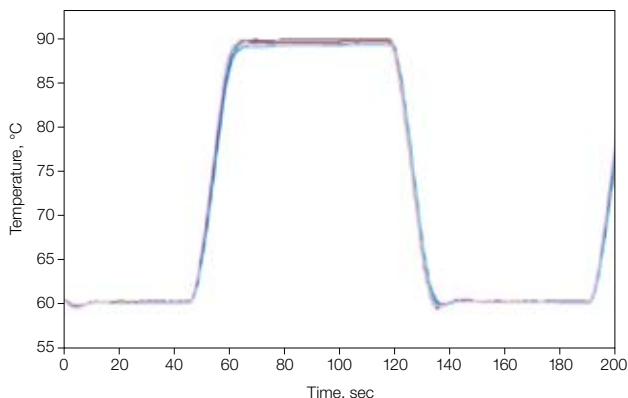
Rapid arrival at target temperature and superior uniformity. Graph shows temperature measured by probes in 15 wells across the sample block of a C1000 thermal cycler. Traces are nearly indistinguishable due to high uniformity. Note the consistent ramp rate throughout heating and cooling. 1000-series thermal cyclers exhibit high average ramp rates, rapid settling time, and tight thermal uniformity throughout the ramp, resulting in rapid arrival at target temperature and enabling faster protocol run times.
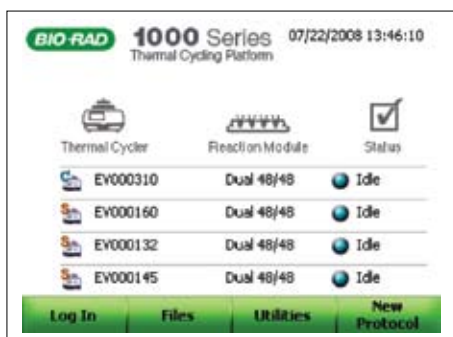
Multi-instrument control. The C1000 cycler can control multiple thermal cyclers using a single interface.

Ordering Information

Catalog #	Description
184-1000	**C1000 Thermal Cycler Chassis**, includes USB flash drive, C1000 Manager™ software CD, power cord, instruction manual; does not include reaction module
185-1048R	**C1000 Thermal Cycler With Dual 48/48 Fast Reaction Module**, includes thermal cycler chassis, dual 48/48 fast reaction module, USB flash drive, C1000 Manager software CD, power cord, reagent and consumable samples, instruction manual
185-1096R	**C1000 Thermal Cycler With 96-Well Fast Reaction Module**, includes thermal cycler chassis, 96-well fast reaction module, USB flash drive, C1000 Manager software CD, power cord, reagent and consumable samples, instruction manual
185-1384R	**C1000 Thermal Cycler With 384-Well Reaction Module**, includes thermal cycler chassis, 384-well reaction module, USB flash drive, C1000 Manager software CD, power cord, reagent and consumable samples, instruction manual
184-0048	**Dual 48/48 Fast Reaction Module**, 2 independent 48-well blocks, fits C1000 and S1000 thermal cyclers
184-0096	**96-Well Fast Reaction Module**, fits C1000 and S1000 thermal cyclers
184-0384	**384-Well Reaction Module**, fits C1000 and S1000 thermal cyclers
184-4000	**C1000 Manager Software**, version 1.0, includes installation CD, instructions
184-5096	**CFX96 Optical Reaction Module**, includes CFX Manager™ software, license for qbase^{PLUS} software, communication cable, reagent and consumable samples, instruction manual
184-5384	**CFX384 Optical Reaction Module**, includes CFX Manager software, license for qbase^{PLUS} software, communication cable, reagent and consumable samples, instruction manual
170-8870	**iTaq™ DNA Polymerase**, 5 U/µl
172-5301	**iProof™ High-Fidelity DNA Polymerase**, 2 U/µl, 100 U

Windows is a trademark of Microsoft Corporation.

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and for use in human in vitro diagnostics and all other applied fields under one or more of U.S. Patents 5,656,493, 5,333,675, 5,475,610 (claims 1, 44, 158, 160–163 and 167 only), and 6,703,236 (claims 1–7 only), or corresponding claims in their non-U.S. counterparts, owned by Applera Corporation. No right is conveyed expressly, by implication or by estoppel under any other patent claim, such as claims to apparatus, reagents, kits, or methods such as 5' nuclease methods. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Bio-Rad's real-time thermal cyclers are licensed real-time thermal cyclers under Applera's United States Patent 6,814,934 B1 for use in research, human in vitro diagnostics, and all other fields except veterinary diagnostics.

This product is covered by one or more of the following U.S. patents or their foreign counterparts owned by Eppendorf AG: U.S. Patent Nos. 6,767,512 and 7,074,367.

Practice of the patented 5' Nuclease Process requires a license from Applied Biosystems. The purchase of these products includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research when used with the separate purchase of Licensed Probe. No other patent rights are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained from the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Bio-Rad Laboratories, Inc.

Life Science Group