

PTC Tempo Thermal Cycler



MODERN AND INTUITIVE SYSTEMS

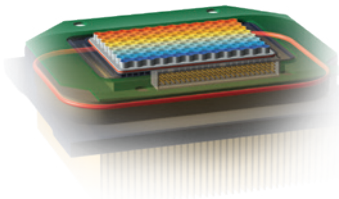
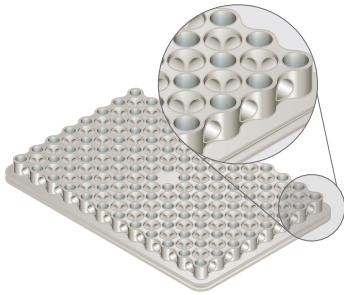


The PTC Tempo Thermal Cycler represents the next generation of conventional PCR thermal cyclers from Bio-Rad™ Laboratories, Inc. Engineered to maintain thermal performance that delivers accurate results, the PTC Tempo Thermal Cycler offers the flexibility to scale with your laboratory. The new design features a refreshed, intuitive user interface and flexible connectivity options for streamlining protocol management. A motorized lid enables automation, taking your PCR to the next level with modern instrument control.

Search your mobile app store for **Bio-Rad AR** or visit bio-rad.com/PTCTempo to launch a virtual demo and see how the instrument fits in your lab. Contact your local sales representative for an in-person demonstration.



UNIFORM THERMAL CYCLING



Superior Uniformity and Fast Ramping

It is critical that all wells maintain the proper temperature throughout each PCR step. The PTC Tempo Thermal Cycler has six independently controlled thermal electric modules (the heating and cooling elements of the thermal cycler) to maintain tight temperature uniformity at all points during a run — even during ramping. The patented reduced-mass sample block* heats and cools more quickly than standard blocks, improving thermal uniformity and minimizing edge effects.

* U.S. patents 7,955,573, 8,367,014, 8,557,196, and 7,632,464.

Efficient Optimization

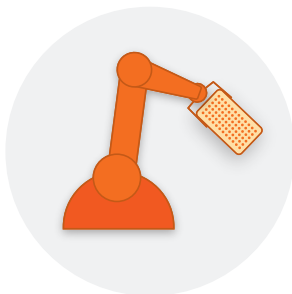
Determining the optimal temperature for primer annealing is crucial for efficient and specific target amplification. The thermal gradient feature of the PTC Tempo Thermal Cycler allows optimization of an assay in a single experiment, minimizing the use of precious samples and reagents and saving valuable research time. At any step in a protocol, users can program a temperature gradient of 30–100°C with a 24°C span across the reaction block,** providing exceptional temperature uniformity and reproducibility within each gradient zone.

** U.S. patent 7,051,536.

Rapid Arrival at Target Temperature

The tight temperature control of the PTC Tempo Thermal Cycler produces high average ramp rates and tight uniformity during ramping to quickly reach the target temperature and shorten protocol run times.

STREAMLINED PRODUCTIVITY



Enhanced User Management

- Quickly learn the refreshed graphical user interface on an 8-inch, high-resolution touch screen
- Create new PCR protocols or modify existing ones
- Start runs faster with preprogrammed standard protocols

Organized Workflow

- Share protocols and completed runs via a network folder
- Efficiently arrange protocols and experiments with personalized folders
- Add unique user names and protect your files with optional passwords

Automation-Integration Ready

- Utilize the motorized lid of the PTC Tempo 96 and PTC Tempo Deepwell Thermal Cyclers

CONTEMPORARY CONNECTIVITY

More Connectivity Options

Bio-Rad understands that the modern world relies on seamless data connections. In addition to Ethernet connectivity, the PTC Tempo Thermal Cycler has WiFi capability for wireless operation and data retrieval. Protocol sharing is also possible via USB memory device or a local network connection, simplifying collaboration.

Set Up Your Experiment Where and When You Want

The BR.io cloud platform is a Bio-Rad solution for cloud data management. The BR.io platform can be accessed from a web browser, so no software installation is required. Simply type BR.io in the web address bar, log in or create a new account, and set up your dashboard. Link the BR.io cloud platform to your PTC Tempo Thermal Cyclers. Get the most out of your instrument by setting up experiments and retrieving protocols anywhere with internet access, minimizing time needed at the instrument. You can even receive email notifications when runs are completed. All your data are stored securely on the cloud.



BR.io Cloud Platform Benefits for Laboratories



Remote setup and data access

- Create new experiments from anywhere and automatically transfer the protocols to the instrument
- Access data instantly upon completion of an experiment, no matter where you are



Automatic data transfer and storage

- Eliminate the hassle of manual data transfer and the risk of data loss
- Mitigate data loss due to local storage malfunction or damage
- Ensure all your data are backed up automatically to the cloud



Cloud-enabled software

- Deploy easily without the need to install and manage software
- Access anytime from any internet-connected computer (Mac or PC) almost anywhere in the world
- Reduce dependence on laboratory computers



Enterprise-grade security and privacy controls

- Protect your account and data using our inherent strong password requirements
- Secure your intellectual property — your data are encrypted both in flight and at rest
- Have confidence in the safety of your data — the BR.io cloud platform is regularly tested for security vulnerabilities
- Utilize our data privacy controls for General Data Protection Regulation (GDPR) compliance

DEPENDABLE SERVICE AND SUPPORT



Bio-Rad provides a comprehensive suite of services to ensure that your instruments are cared for and perform to our standard of quality, run after run. Our professional, knowledgeable, and experienced technical support specialists and service engineers are committed to quality and service. From research to regulated environments, Bio-Rad will help care for your investment and keep your projects in motion. Confirm that your PTC Tempo Thermal Cyclers are performing at its highest accuracy and uniformity with thermal qualification services. Guarantee with documentation the proper installation and operation of your instrument by taking advantage of Installation Qualification (IQ) and Operational Qualification (OQ) Services.



Thermal Qualification Services

To confirm optimal performance of your PTC Tempo Thermal Cyclers, a trained and certified Bio-Rad service engineer will:

- Assess PCR block accuracy, thermal uniformity, and instrument ramp rate
- Complete a rapid temperature cycling protocol mimicking an actual experiment to confirm that thermal block setting times are within specifications
- Provide an accurate qualification in accordance with National Institute of Standards and Technology (NIST) standards

Visit bio-rad.com/ThermalValidation for more information.



Installation Qualification (IQ) and Operational Qualification (OQ) Services

A certified service engineer will document that instruments are installed and functioning properly and ensure that instruments will generate reliable and reproducible data.

- Maximize instrument uptime with planned instrument qualification services that ensure your instruments are performing according to specifications
- Increase your confidence with instrument validation that helps minimize loss of precious samples and valuable time
- Meet regulatory compliance requirements

Visit bio-rad.com/IQOQ for more information.

Expertise

35+ years in **PCR**

Reliability

Thousands of systems installed in **150+** countries

Innovation

Top market leader in PCR

COMPLETE WORKFLOW

Bio-Rad offers a wide selection of reagents, consumables, and nucleic acid gel electrophoresis products to support your PCR workflow.



Reagents

Bio-Rad reagents enable a variety of PCR applications. iTaq DNA polymerase is an antibody-mediated hot-start DNA polymerase suitable for both standard PCR and real-time PCR applications. For high-fidelity applications, iProof PCR Reagents featuring Sso7d* fusion polymerase technology are offered in kit or master-mix formats.

Visit bio-rad.com/PCRreagents and bio-rad.com/PCRReagentSelector to learn more.

* U.S. patent 7,560,260.



Agarose Powders and Precast Gels

Bio-Rad offers a wide selection of Certified Agarose and ReadyAgarose Precast Gels for optimal and convenient nucleic acid electrophoresis. Certified Agaroses are genetic quality tested (GQT) grade to guarantee product quality and ensure confidence in both routine separations and downstream molecular biology applications.

Visit bio-rad.com/Agarose and bio-rad.com/ReadyAgarose to learn more.



Consumables

Ensure amplification success with a variety of Bio-Rad consumables, such as Hard-Shell™ PCR Plates and PCR Plate Seals. Hard-Shell PCR Plates are precisely manufactured for optimal fit and cycling performance. Adhesive foils and optically clear seals are designed with a strong adhesive that minimizes sample evaporation.

Visit bio-rad.com/PCRplastics and bio-rad.com/PCRPlasticSelector to learn more.



Electrophoresis Buffers and Molecular Rulers

Separate fragments by size and evaluate nucleic acid integrity with Bio-Rad molecular rulers. Save preparation time and standardize runs with premixed electrophoresis running buffers that are compatible with both handcast and precast gels.

Visit bio-rad.com/DNAElectro to learn more.



Horizontal Electrophoresis Cells and Power Supplies

Sub-Cell™ GT Cells are versatile and allow for multi-sample throughput in nucleic acid applications. Power your Sub-Cell System with the PowerPac Basic Power Supply. The unit is lightweight and stackable, and the vertical display is clearly visible on shelves and lab benches alike.

Visit bio-rad.com/SubCells and bio-rad.com/PowerSupplies to learn more.



Imaging Systems

Market-leading and easy-to-use, Bio-Rad gel documentation systems such as the GelDoc Go Gel Imaging System are reliable for all your DNA and protein gel documentation needs.

Visit bio-rad.com/Imaging to learn more.

SYSTEM SPECIFICATIONS

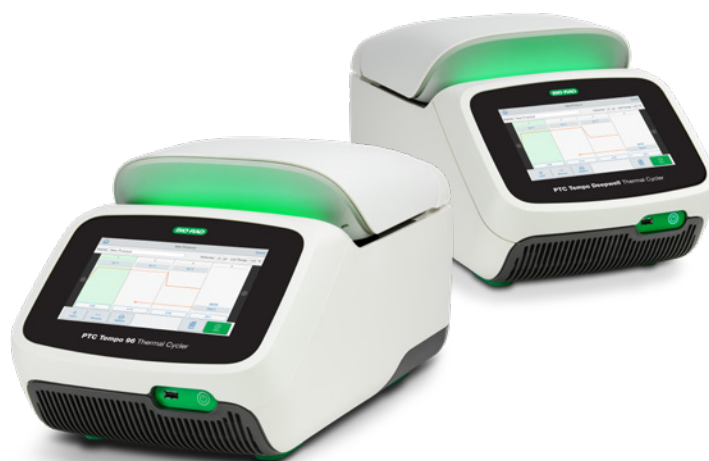
PTC Tempo Thermal Cyclers are available in 96-well and deepwell formats to meet the throughput and sample requirements of your laboratory. All systems feature modern connectivity and automation-readiness, and are backed by trusted qualification support.

General Specifications

Sample block type	Fixed
Weight	15 kg (33 lb)
Dimensions (W x D x H)	28 x 50 x 26 cm (11 x 20 x 10 in.)
Power	100–240 V, 50/60 Hz, 850 W max
Electrical approvals	IEC, CE
Memory	4.6 GB
Noise level	<90 dB
Lid type	Automated
Touchscreen display	8 in. LCD
Programming options	Step-based graphical and automatic
Security features for regulated environments	Password protection and secure mode
Reporting	Exportable run logs and system logs
Temperature control modes	Calculated and block
Onboard operating system	Linux
Communications	WiFi, BR.io, USB A 2.0, Ethernet
Heating and cooling method	Peltier
Lid heating	30–110°C
Temperature range	4–100°C
Thermal accuracy	±0.2°C of programmed target at 90°C
Thermal uniformity	±0.4°C well-to-well within 10 sec of arrival at 90°C
Gradient	
Operational range	30–100°C
Programmable span	8 rows, 1–24°C

System-Specific Specifications

	96-Well	Deepwell
Sample capacity	96 x 0.2 ml tubes or 1 x 96-well plate	96 x 0.2 ml tubes, 48 x 0.5 ml tubes, or 1 x 96-well plate
Sample volume	1–50 µl (10–50 µl recommended)	1–125 µl (10–125 µl recommended)
Maximum ramp rate	5°C/sec	2.5°C/sec
Average ramp rate	3.3°C/sec	2°C/sec



Ordering Information

Catalog #	Description
Instruments	
12015382	PTC Tempo 96 Thermal Cycler , includes power cord, USB cable, and Ethernet cable
12015392	PTC Tempo Deepwell Thermal Cycler , includes power cord, USB cable, and Ethernet cable
1814000	PX1 PCR Plate Sealer
Accessories	
12013205	Ethernet Cable
Reagents	
1725310	iProof HF Master Mix , 100 x 50 µl reactions, 2.5 ml
1725320	iProof GC Master Mix , 100 x 50 µl reactions, 2.5 ml
1708870	iTaq DNA Polymerase , 250 U (5 U/µl), 50 µl
1708872	MgCl₂ Solution for PCR , 50 mM, 1.25 ml
1708874	dNTP Solution Mix , 10 mM, 200 µl
12012802	Reliance Select cDNA Synthesis Kit , 25 x 20 µl reactions
1708840	iScript Reverse Transcription Supermix , 25 x 20 µl reactions, 100 µl
1725034	iScript gDNA Clear cDNA Synthesis Kit , 25 x 20 µl reactions
1725037	iScript Advanced cDNA Synthesis Kit , 25 x 20 µl reactions
1708896	iScript Select cDNA Synthesis Kit , 25 x 20 µl reactions
1708890	iScript cDNA Synthesis Kit , 25 x 20 µl reactions
Plastics	
TLS0801	0.2 ml 8-Tube PCR Strips without Caps , low profile, clear, 120
TFI0201	0.2 ml PCR Tubes with Flat Caps , high profile, clear, 1,000
TWI0201	0.2 ml PCR Tubes with Domed Caps , high profile, clear, 1,000
HSP9601	Hard-Shell 96-Well PCR Plates , low profile, thin wall, skirted, white/clear, 50
MLL9601	Multiplate 96-Well PCR Plates , low profile, unskirted, clear, 25
HSL9601	Hard-Shell 96-Well PCR Plates , low profile, semi-skirted, clear/clear, 25
HSL9605	Hard-Shell 96-Well PCR Plates , low profile, semi-skirted, clear/white, 25
HSL9905	Hard-Shell 96-Well PCR Plates , low profile, semi-skirted, clear/white, barcoded, 25
HSS9601	Hard-Shell 96-Well PCR Plates , high profile, semi-skirted, clear/clear, 25
HSS9901	Hard-Shell 96-Well PCR Plates , high profile, semi-skirted, clear/clear, barcoded, 25
MLP9601	Multiplate 96-Well PCR Plates , high profile, unskirted, clear, 25
12001925	ddPCR™ 96-Well Plates , semi-skirted, clear/clear, 25
MSB1001	Microseal™ 'B' PCR Plate Sealing Film , adhesive, optical, 100
MSC1001	Microseal 'C' PCR Plate Sealing Film , adhesive, optical, 100
MSF1001	Microseal 'F' PCR Plate Seal , foil, pierceable, 100
1814030	PCR Plate Heat Seal , clear, optical, 100
1814040	PCR Plate Heat Seal , foil, pierceable, 100
1814045	PCR Plate Heat Seal , foil, peelable, 100
Agarose	
1613102	Certified Molecular Biology Agarose , 500 g
1613107	Certified Low Range Ultra Agarose , 125 g
1613112	Certified Low Melt Agarose , 125 g, for DNA fragments ≥1,000 bp
1613115	Certified PCR Low Melt Agarose , 500 g, for DNA fragments ≤1,000 bp
1613105	Certified PCR Agarose , 500 g, for DNA fragments ≤1,000 bp

Catalog #	Description
Buffers	
1610770	10x TBE (Tris/Boric Acid/EDTA) Buffer , 5 L
1610733	10x TBE (Tris/Boric Acid/EDTA) Buffer , 1 L
1610773	50x TAE (Tris/Acetic Acid/EDTA) Buffer , 5 L
1610743	50x TAE (Tris/Acetic Acid/EDTA) Buffer , 1 L
1610433	Ethidium Bromide Solution , 10 mg/ml
1610729	EDTA , 500 g, ≥99% pure
1610716	Tris , 500 g, ≥99.8% pure
Horizontal Electrophoresis	
1704486	Mini-Sub™ Cell GT Horizontal Electrophoresis System
1640300	Mini-Sub Cell GT Horizontal Electrophoresis System and PowerPac Basic Power Supply
1704485	Wide Mini-Sub Cell GT Horizontal Electrophoresis System
1640301	Wide Mini-Sub Cell GT Horizontal Electrophoresis System and PowerPac Basic Power Supply
1704482	Sub-Cell GT Horizontal Electrophoresis System
1640302	Sub-Cell GT Horizontal Electrophoresis System and PowerPac Basic Power Supply
Rulers	
1708351	EZ Load 20 bp Molecular Ruler , 20–1,000 bp, 50 bands
1708352	EZ Load 100 bp Molecular Ruler , 100–1,000 bp, 10 bands
1708353	EZ Load 100 bp PCR Molecular Ruler , 100–3,000 bp, 30 bands
1708354	EZ Load 500 bp Molecular Ruler , 500–8,000 bp, 16 bands
1708355	EZ Load 1 kb Molecular Ruler , 1–15 kb, 15 bands
1708200	AmpliSize™ Molecular Ruler , 50–2,000 bp, 10 bands
Imaging	
12009077	GelDoc Go Gel Imaging System with Image Lab Touch Software , includes UV/Stain-Free Imaging Tray
1660531	UView Mini Transilluminator

Visit bio-rad.com/PTCTempo for more information about the PTC Tempo Thermal Cycler.

Visit BR.io for more information about the BR.io cloud platform.

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Bio-Rad PCR reagents and analytical instruments are manufactured under an ISO 13485:2016 certified Quality Management System and are quality control tested to ensure consistent product performance you can trust.

BIO-RAD

**Bio-Rad
Laboratories, Inc.**

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