appliedbiosystems

Applied Biosystems PCR thermal cyclers and plastics

Engineer Approved for precise, consistent PCR results

ThermoFisher SCIENTIFIC

Amplify with confidence

We offer a broad range of thermal cyclers, plastics, and comprehensive service plans to help meet your specific PCR needs so you can amplify with confidence.

Our engineers have been designing and manufacturing high-quality thermal cyclers since 1987. In that time, Applied Biosystems™ thermal cyclers have built a reputation for reliability, accuracy, and user-friendly interfaces.

Applied Biosystems™ PCR plastics have been designed and validated to work with our thermal cyclers for more than 25 years. That's why they are Engineer Approved to enable optimal PCR performance.

Contents

applied biosystems
by Thermo Fisher Scientific

Engineer **Approved**

Which instrument fits your needs?

Applied Biosystems thermal cyclers enable precise, consistent results for every challenge, application, and budget.

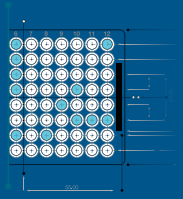
	Ultimate flexibility and throughput	Elegantly simple and precise	Proven reliability, precise PCR optimization	Designed for easy robotic integration
	ProFlex PCR System	SimpliAmp Thermal Cycler	Veriti Thermal Cycler*	Automated Thermal Cycler
				
Max. sample throughput	480,000 reactions	96 reactions	384 reactions	384 reactions
Max. block ramp rate	6.0°C/sec	4.0°C/sec	5.0°C/sec	3.5°C/sec
Block formats (temperature optimization)	• 3 x 32-well 0.2 mL (2-zone VeriFlex block) • 96-well 0.2 mL (6-zone VeriFlex block) • 2 x 96-well 0.2 mL • 2 x flat block • 2 x 384-well 0.02 mL	• 96-well 0.2 mL (3-zone VeriFlex block)	• 96-well 0.2 mL (6-zone VeriFlex block) • Fast 96-well 0.1 mL • 384-well 0.02 mL • 60-well 0.5 mL	• 96-well 0.2 mL compatible with full- or semi-skirted plates • 384-well 0.02 mL

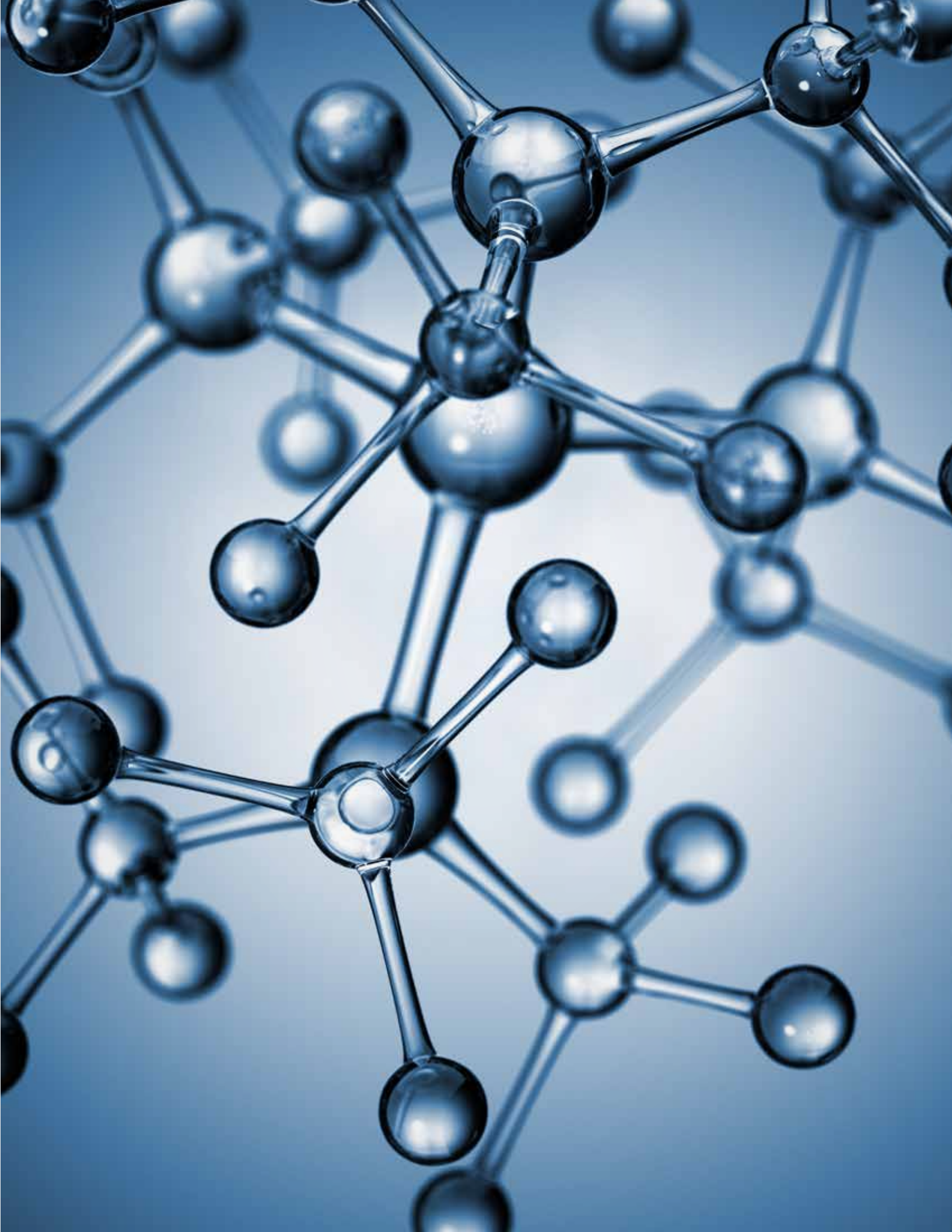
* Also available as an FDA Class 1/CE-IVD labeled device.

= cloud-enabled instrument

Don't forget reagents—choose from the PCR enzymes you know and trust, such as Applied Biosystems™ AmpliTaq™ Gold and Invitrogen™ Platinum™ SuperFi™ reagents. Find your reagents at **thermofisher.com/pcrreagents**

Interested in private label thermal cyclers or PCR plastics? To find out more, go to **thermofisher.com/oem-partner**





Ultimate flexibility and throughput

ProFlex PCR System

The Applied Biosystems™ ProFlex™ PCR System combines flexible configuration and control features to fit how you work today and tomorrow with the reliability you've come to expect from Applied Biosystems™ products. Interchangeable block formats allow you to maximize your throughput or run independent experiments concurrently.

The ProFlex PCR System is cloud-enabled, giving you the freedom to design and securely upload your methods, monitor runs, and check instrument availability from any mobile device or desktop computer with Thermo Fisher Connect.

- **Multi-user accessible**—run three experiments at once
- **Flexible block configuration**—accepts five different block formats for optimization and throughput
- **Cloud-enabled**—conveniently access your instrument anytime and from anywhere with Thermo Fisher Connect

= cloud-enabled instrument

Five interchangeable block options

The ProFlex PCR System has 5 different blocks that can be changed with the flip of a switch, including a 3 x 32-well block. This allows up to three experiments to be run simultaneously, completely independently of each other.

Dual 96-well and dual 384-well blocks are available for high-throughput needs. A dual flat block is also available to support Applied Biosystems™ OpenArray™ plate technology for genotyping analysis on the QuantStudio™ 12K Flex Real-Time PCR System as well as our sealed chip technology on the QuantStudio™ 3D Digital PCR System.

3 x 32-well

96-well

Dual 96-well

Dual 384-well

Dual flat

Find out more at **thermofisher.com/proflex**

Specifications

Block format	3 x 32-well, 0.2 mL 2-zone VeriFlex block independent control	96-well, 0.2 mL 6-zone VeriFlex block	2 x 96-well, 0.2 mL	2 x flat block for chips and arrays	2 x 384-well, 0.02 mL
Features	Run three experiments at once or at different times	Perform complete optimization work with full 96-well VeriFlex block	High throughput in 96-well format	Highest throughput capability: 8 x 3,072 OpenArray Plate* or 24 x 20K Chip**	High throughput in 384-well format
Max. block ramp rate	6.0°C/sec	6.0°C/sec	3.0°C/sec	1.6°C/sec	3.0°C/sec
Max. sample ramp rate	4.4°C/sec	4.4°C/sec	1.6°C/sec	N/A	1.6°C/sec
Temperature accuracy	±0.25°C (35°–99.9°C)				
Temperature range	0°–100.0°C				
Temperature uniformity	<0.5°C (20 sec after reaching 95°C)				
Dimensions (H x W x D)	27.2 x 33.0 x 56.5 cm (10.6 x 13 x 22 in.)				
Weight	18.8 kg (41 lb)		20.4 kg (45 lb)		
PCR volume range	10–80 µL	10–80 µL	10–100 µL	33 nL	5–20 µL
Instrument memory	USB, onboard				
Display interface	8.4-inch color TFT LCD				
Power	100–240 V, 50–60 Hz, max: 950 VA				
VeriFlex blocks	2 temperature zones per block (5°C zone-to-zone)	6 temperature zones 25°C range (5°C zone-to-zone)	N/A		
Data connectivity†	Cloud or mobile via Ethernet or WiFi				

* OpenArray plate is compatible with the QuantStudio 12K Flex Real-Time PCR System.
** 20K Chip is compatible with the Applied Biosystems™ QuantStudio™ 3D Digital PCR System.
† The Instrument Connection app, available at Apple™ and Google™ app stores, can be used to monitor your instrument.

Ordering information

Product	Complete system Cat. No.	Block only Cat. No.	Instrument + total of 5-year warranty with Rapid Exchange Cat. No.
ProFlex 96-well PCR System	4484075	4483637	A27934
ProFlex 3 x 32-well PCR System	4484073	4483638	A28986
ProFlex 2 x 96-well PCR System	4484076	4484071	A27937
ProFlex 2 x flat PCR System	4484078	4484074	A27931
ProFlex 2 x 384-well PCR System	4484077	4484072	A30229

Recommended plastics

3 x 32-well block	Cat. No.	96-well block	Cat. No.	384-well block	Cat. No.
MicroAmp 8-Tube Strip with attached domed caps, 0.2 mL	A30589	MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode	4483354	MicroAmp Optical 384-Well Reaction Plate	4343370
MicroAmp 8-Tube Strip, 0.2 mL	N8010580	MicroAmp Optical 96-Well Reaction Plate	N8010560	MicroAmp Optical 384-Well Reaction Plate with Barcode	4309849
MicroAmp 8-Cap Strip, clear	N8010535	MicroAmp 8-Tube Strip with attached domed caps, 0.2 mL	A30589	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483285
MicroAmp Reaction Tube with Cap, 0.2 mL	N8010540	MicroAmp Clear Adhesive Film	4306311	MicroAmp Clear Adhesive Film	4306311

Did you know?

The Veriti, ProFlex, and SimpliAmp Thermal Cyclers feature Applied Biosystems™ VeriFlex™ temperature control technology, which enables more precise and efficient PCR optimization.

Find out more at **thermofisher.com/veriflextechnology**

Learn about thermal cycler ramp rate calculation at **thermofisher.com/ramprate**

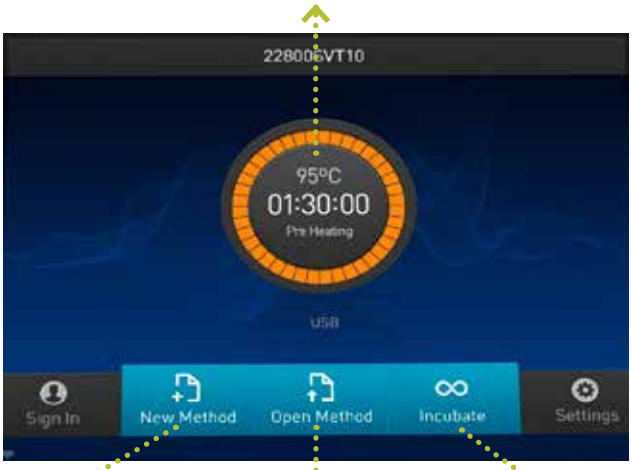
Elegantly simple and precise

SimpliAmp Thermal Cycler

The Applied Biosystems™ SimpliAmp™ Thermal Cycler is an easy-to-use, compact, and accurate thermal cycler designed to fit every lab's essential PCR workflow. Features like a responsive color touch screen and VeriFlex temperature control technology enable simple, accurate optimization. Plus, the SimpliAmp Thermal Cycler is cloud-enabled, giving you the freedom to design and securely upload your methods, monitor runs, and check instrument availability from any mobile device or desktop computer with Thermo Fisher Connect.

- **Intuitive interface**—large, easy-to-use color touch screen for easy programming and quick status checks
- **VeriFlex blocks**—three independent temperature zones for PCR optimization
- **Cloud-enabled**—conveniently access your instrument anytime and from anywhere with Thermo Fisher Connect
- **Compact design**—helps save bench space

The status dial displays the current block temperature and elapsed run time.



Create a new run method using default templates or existing methods.

Select one of your existing run methods to start a run.

Use the instrument as a precise incubator for non-PCR workflows.

Simple, intuitive user interface

The SimpliAmp Thermal Cycler has a large, responsive 8-inch color touch screen, making navigation of the intuitive menu options fast and efficient.

Find out more at **thermofisher.com/simpliamp**

Specifications

Block format	96-well, 0.2 mL 3-zone VeriFlex block
PCR volume range	10–100 µL
Reaction speed	• Enabled to run Fast chemistry • Controllable ramp rate
Program features	• Program overwrite protection • Auto restart (after power outages) • Edit program during experiment • One-touch incubation
VeriFlex blocks range	10°C (5°C zone-to-zone, with 3 VeriFlex zones)
Temperature accuracy	±0.25°C (35°–99.9°C)
Max. block ramp rate*	4°C/sec
Max. sample ramp rate*	3°C/sec
Temperature range	0°–100.0°C
Temperature uniformity	<0.5°C (30 sec after reaching 95°C)
Temperature calibration	Calibrated to standards traceable to the National Institute of Standards and Technology
Dimensions (H x W x D)	21.0 x 24.0 x 46.0 cm (8.3 x 9.5 x 18.1 in.)
Weight	8.3 kg (18.3 lb)
Instrument memory	USB and onboard memory
Display interface	8-inch color TFT LCD
Power	100–240 V, 50–60 Hz, max. 600 W
Data connectivity**	Cloud or mobile via Ethernet or WiFi

* Reaction volume at 1 µL.
** The Instrument Connection app, available at Apple™ and Google™ app stores, can be used to monitor your instrument.

Ordering information

Product	Cat. No.	Instrument + total of 5-year warranty with Rapid Exchange Cat. No.
SimpliAmp Thermal Cycler	A24811	A27603
High-Power USB Wi-Fi Module	A26774	N/A
Recommended plastics		
96-well block		**Cat. No.**
MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode		4483354
MicroAmp Optical 96-Well Reaction Plate		N8010560
MicroAmp 8-Tube Strip with attached domed caps, 0.2 mL		A30589
MicroAmp Clear Adhesive Film		4306311

Did you know?

SimpliAmp, ProFlex, and Veriti Thermal Cyclers have thermal simulation modes that make the transition from other thermal cyclers simple, accurate, and efficient. A library of modes that mimic the ramp rates of other instruments is available on each instrument.

Proven reliability, precise PCR optimization

Veriti Thermal Cycler

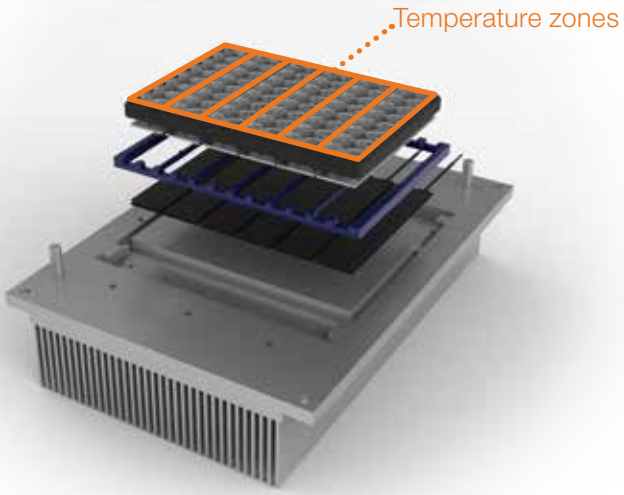
The Applied Biosystems™ Veriti™ Thermal Cycler delivers proven reliability and simple programming. The VeriFlex temperature control technology inside makes it possible to run up to 6 different temperatures in the same protocol step, providing precise control over your PCR optimization.

- **VeriFlex blocks**—six independent temperature zones for PCR optimization
- **Easy-to-operate interface**—fast protocol setup and convenient protocol transfer with a USB memory stick

Precise control with VeriFlex temperature control technology

VeriFlex blocks are constructed of segmented metal blocks with separate heating/cooling elements below each, enabling:

- **More precise control over PCR optimization**—each block can be set with up to six specific temperatures
- **Precise incubation**—use the six temperature zones of the VeriFlex block to do enzyme studies, restriction digests or any other process that requires precise temperature control



Find out more at **thermofisher.com/veriti**

Did you know?

Most Applied Biosystems thermal cyclers come with a 2-year standard warranty and a starter kit that includes Applied Biosystems PCR plate and tube samples and all the tools you need. Packages that include the instrument and an extended warranty are available.

Specifications

	96-well Fast, 0.1 mL 6-zone VeriFlex block	96-well, 0.2 mL 6-zone VeriFlex block	384-well, 0.02 mL	60-well, 0.5 mL
Block format	0.1 mL alloy	0.2 mL alloy	0.02 mL aluminum	0.5 mL aluminum
Max. block ramp rate	5.0°C/sec	3.9°C/sec	3.7°C/sec	3.3°C/sec
Max. sample ramp rate	4.25°C/sec	3.35°C/sec	3.1°C/sec	2.7°C/sec
Enabled to run Fast chemistry	Yes	Yes	No	No
Temperature accuracy	±0.25°C (35–99.9°C)			
Temperature range	0–100.0°C			
Temperature uniformity	<0.5°C (20 sec after reaching 95°C)			
Dimensions (H x W x D)	24.5 x 23.7 x 48.5 cm (9.6 x 9.3 x 19.1 in.)			
Weight	11.4 kg (25 lb)			
PCR volume range	10–30 µL	10–80 µL	5–20 µL	25–100 µL
Instrument memory	USB and onboard			
Display interface	6.5 inch VGA 32k color with touch screen			
T_m calculator	Menu-driven through touch screen			
Power	100–240 V, 50–60 Hz, max. 800 VA			
VeriFlex blocks range	25°C (5°C zone-to-zone)	25°C (5°C zone-to-zone)	N/A	N/A

Ordering information

Product	Cat. No.	Instrument + total of 5-year warranty with Rapid Exchange Cat. No.
Veriti 96-Well Fast Thermal Cycler	4375305	A27924
Veriti 96-Well Thermal Cycler	4375786	A26659
Veriti 384-Well Thermal Cycler	4388444	A27927
Veriti 60-Well Thermal Cycler	4384638	A26656

Recommended plastics

96-well block	Cat. No.	96-well block Fast	Cat. No.	384-well block	Cat. No.
MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode	4483354	MicroAmp EnduraPlate Optical 96-Well Fast Clear Reaction Plates with Barcode	4483485	MicroAmp Optical 384-Well Reaction Plate	4343370
MicroAmp Optical 96-Well Reaction Plate	N8010560	MicroAmp Fast Optical 96-Well Reaction Plate, 0.1 mL	4346907	MicroAmp Optical 384-Well Reaction Plate with Barcode	4309849
MicroAmp 8-Tube Strip with attached domed caps, 0.2 mL	A30589	MicroAmp Fast 8-Tube Strip, 0.1 mL	4358293	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483285
MicroAmp Clear Adhesive Film	4306311	MicroAmp 8-Cap Strip, clear	N8010535	MicroAmp Clear Adhesive Film	4306311
		MicroAmp Clear Adhesive Film	4306311		

Tired of water baths?

Incubate samples at up to six different temperatures simultaneously for enzyme activation studies, restriction digests, or sequencing library preps with the Veriti Thermal Cycler.

Designed for easy robotic integration

Automated Thermal Cycler

The Applied Biosystems™ Automated Thermal Cycler offers the flexibility, reliability, and performance needed in a complete PCR automation system. The small, easy-to-integrate format of the Automated Thermal Cycler enables hands-free PCR results.

- **Flexible modular design and small footprint**—helps save space on deck
- **Automated lid**—easy, hands-free operation with a liquid handler or plate stacker
- **Free desktop software**—for PCR optimization prior to robotic integration
- **Plug-and-play drivers and SiLA-compatibility**—for easy integration on your liquid handler of choice

Designed for any stage of your workflow automation journey

Stand-alone

Optimize assays before robotic integration with our direct software.

Plug-and-play drivers

Ask about available drivers for leading robotic platforms.

SiLA-compatible

Maximum robotic platform integration flexibility with SiLA rapid integration coding.

Find out more at **thermofisher.com/atc**

Specifications

	96-well, 0.2 mL*	384-well, 0.02 mL
PCR volume range	10–100 µL for full-skirted plates; 20–100 µL for semi-skirted plates	5–20 µL for full-skirted plates
Hardware integration features	• Predrilled mounting and/or alignment points at each corner of the chassis • 3-side and top-plate access • Available in 3-connector configurations	
Software features	• Application programming interfaces (APIs) available for integration with robotics systems • SiLA Rapid Integration software–standardized programming access** • Free software available for instrument demonstration and stand-alone operation	
Block module dimensions (H x W x D)	13.3 x 17.9 x 31.7 cm (5.2 x 7.0 x 12.5 in.)	
Control module dimensions (H x W x D)	7.0 x 25.7 x 33.1 cm (2.8 x 10.1 x 13.0 in.)	
Temperature accuracy	±0.25°C (35.0–99.9°C)	
Max. block ramp rate†	3.5°C/sec	2.8°C/sec
Max. sample ramp rate†	1.8°C/sec	1.6°C/sec
Temperature range	4–105°C (no condensation risk with sub-ambient temperatures)	
Temperature uniformity	≤0.50°C (20 sec after reaching 95°C)	
Temperature calibration	Calibrated to standards traceable to the National Institute of Standards and Technology (NIST)	
Service options	• 2-year standard warranty includes Rapid Exchange Service plan • NIST-traceable temperature probe equipment available	
Weight	9.4 kg/20.7 lb total (block module 6.0 kg/13.2 lb, control module 3.4 kg/7.5 lb)	
Power	100–240 V, 50–60 Hz, max. 600 W	
Flexible ramp rates	Program your own ramp rates, or use preprogrammed simulation modes	
Data connectivity	LAN	

* Compatible with full- or semi-skirted plates. ATC semi-skirted adaptor required for use with semi-skirted 96-well plates. ATC ships with the full-skirted adaptor installed, which is required for use with full-skirted 96-well plates.

** sila-standard.org

† Reaction volume at 1 µL.

Ordering information

Product	96-well Cat. No.	384-well Cat. No.	Instrument + total of 5-year warranty with Rapid Exchange Cat. No.
Automated Thermal Cycler System, laptop, 1 m cable	A31486	A33977	ZGEXSCATC3Y
Automated Thermal Cycler System, laptop, 3 m cable	A31487	A33978	ZGEXSCATC3Y
Automated Thermal Cycler System, laptop, 10 cm cable	A31488	A33979	ZGEXSCATC3Y
Automated Thermal Cycler System, 1 m cable	A31489	A33980	ZGEXSCATC3Y
Automated Thermal Cycler System, 3 m cable	A31490	A33981	ZGEXSCATC3Y
Automated Thermal Cycler System, 10 cm cable	A31491	A33982	ZGEXSCATC3Y
Automated Thermal Cycler Semi-skirted Adaptor	A33044	N/A	N/A
Automated Thermal Cycler Full-skirted Adaptor	A33045	N/A	N/A

Recommended plastics

96-well block	Cat. No.	384-well block	Cat. No.
MicroAmp EnduraPlate Optical 96-Well Semi-Skirted Plates with Barcode, Clear	A31728	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483273
MicroAmp EnduraPlate Optical Semi-Skirted Plates with Barcode*	4483356	MicroAmp EnduraPlate Optical 384-Well Multicolor Reaction Plates with Barcode	4483317
MicroAmp Clear Adhesive Film	4306311	MicroAmp Clear Adhesive Film	4306311

* Requires semi-skirted plate adaptor (Cat. No. A33044).

The Applied Biosystems™ MicroAmp™ EnduraPlate™ was specifically designed for the Automated Thermal Cycler and has 3-way barcoding.

Peace of mind, for the life of your thermal cycler

Flexible service plans protect your instruments and your investment

Our service and support teams can help increase laboratory productivity and give you peace of mind. Protect your thermal cycler investment with these service plans.

Rapid Exchange Service

The Rapid Exchange Service plan is available for thermal cyclers, benchtop devices, and selected other instruments. When you call our Remote Service Center, you will get the assistance you need to resolve many types of technical problems. If the instrument needs service, the service center will coordinate shipment of a factory-certified, refurbished replacement instrument on the same day of the call. All you need to do is repackage the problem instrument and return it to us. Thermo Fisher pays for shipping.

Rapid Exchange process:

1. Call the Remote Service Center
2. Receive refurbished instrument
3. Ship back the instrument being replaced

AB Repair Center (RC) Support

This provides a cost-efficient way to service your compact instruments, including thermal cyclers, benchtop devices, and customer-installable real-time PCR systems. This mail-in option employs factory-trained engineers skilled in maintaining and repairing your instrument. You also receive priority phone support from our experienced staff for technical, software, and hardware inquiries. AB RC Support is ideal for those customers in regulated environments that must maintain asset tag consistency to comply with regulated protocols.

Service	Rapid Exchange	AB Repair Center Support
Repair time	Replacement shipped out in 1 business day	Your instrument repaired and returned in ~3 weeks
Off-site repair service including shipping, parts, and labor	✔	✔
High-priority telephone and email access to our Remote Service Center	✔	✔

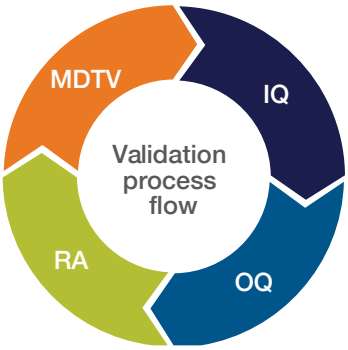
Planned maintenance, temperature verification, and loaner instrument service can be added to any off-site service plans.

Service and support solutions

Compliance and verification services

We've designed our compliance services to help you balance business and regulatory requirements. From risk assessment and hardware/software qualification to full system validation, we can partner with you.

All services come with audit-ready documentation.



- **Installation qualification (IQ)**–verifies and documents that your instruments are installed per our specifications.
- **Operation qualification (OQ)**–verifies that your instruments, at the time of testing, are performing according to the manufacturer's specifications. Our OQ service verifies and records performance after installation, repetitive use, and major service events.
- **Risk assessment (RA)**–identifies opportunities for improving your procedures, training, and verification processes—to help ensure your laboratory is running at top productivity levels.
- **Multiplex Dynamic Temperature Verification (MDTV) and Multiplex Dynamic Temperature Measurement (MDTM) Services**–designed to deliver fast, accurate readings of temperature on your PCR unit, these valuable services are available for Applied Biosystems instruments as well as most thermal cyclers from other manufacturers.*

* MDTV service not currently offered on the 60-well Applied Biosystems™ GeneAmp™ PCR System 9700.

Planned maintenance

For our plan customers, we automatically schedule routine maintenance visits, where field service engineers (FSEs) verify, inspect, calibrate, and clean your instruments to help ensure they're performing according to specifications.

Remote monitoring and instrument diagnostics

We offer a real-time remote instrument monitoring service that helps you maximize system uptime and improve productivity. Our engineers and the Remote Service Center support team are notified when a situation is developing or exists that could lead to instrument problems or failure. This proactive monitoring allows us to take action before you experience unscheduled instrument downtime.

Application and instrument training

Our application and instrument training programs are led by scientists who aim to enhance your workday through experimental design best practices, workflow training, and instrument troubleshooting. Hands-on classes are available at our training centers or in your lab.

Technical support

Access the free award-winning online Instrument Management tool that enables faster responses to requests for service or service quotes, plus instant connection to key instrument and service information.

Find out more at **thermofisher.com/instrumentservices**

High-performance PCR plastics for optimal PCR results

Engineer Approved MicroAmp PCR plastics

Applied Biosystems MicroAmp PCR plastics are:

- Validated on Applied Biosystems thermal cyclers for optimal fit and performance
- Designed for optimal heat transfer with thin-walled polypropylene wells
- Designed to reduce cross-contamination with raised well rims for effective sealing

Unique, high-performance features of the MicroAmp EnduraPlate plastic consumables

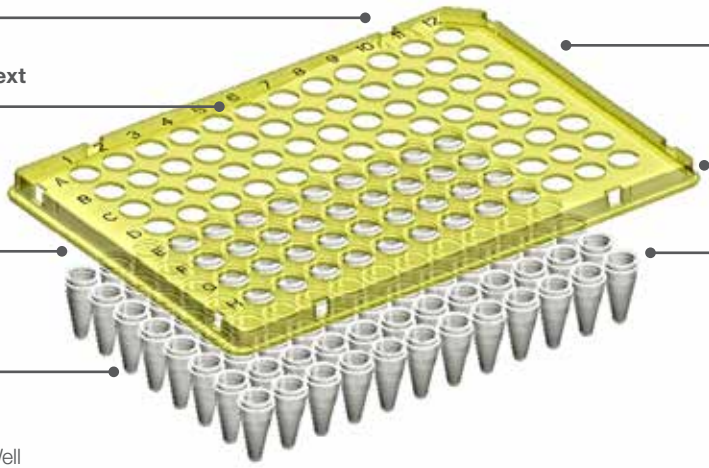
Easy assays visual organization
5 colors of choice

Easy-to-read well identification text
Black text for excellent contrast

Non-warp, even after thermal cycling
Polycarbonate (hard shell) for mechanical stability and flatness

Snug fit to thermal blocks
Thin-wall polypropylene for excellent mechanical fit and heat transfer

Available in common formats
96-Well Standard, 96-Well Fast, 384-Well
5 piece sample packs, 20 & 500 packs



Constructed to ANSI/SBS standard
Well suited for SBS standard robotic handling

Certified DNA, RNAse, and PCR inhibitor-free

Compatible and optimized for performance with Applied Biosystems instruments

Options for every format and throughput need

Choose from tubes, tube strips, plates, sealing and accessories for any throughput need. MicroAmp EnduraPlate plastics offer a solution for experiments that require special handling, such as automated or high-throughput workflows, and an even greater degree of durability for use with multi-instrument experiments.

MicroAmp 8-tube strip with attached optical, flat caps are also available for qPCR.

The Applied Biosystems™ MicroAmp™ 8-Tube Strip with attached optical or domed caps offers a combination of features to help prevent cross-contamination, pipetting errors, and sample identification errors in your PCR and real-time PCR applications.

- Attached caps that open and close independently of each other
- Etched A–H letter labeling for individual tubes and caps
- Dual side tabs for strip labeling
- Graduated 20 µL measuring markers on every tube
- Available exclusively for Applied Biosystems™ thermal cyclers to enable optimal PCR results

Find out more at **thermofisher.com/plastics**

Did you know?

Proper plate sealing helps reduce evaporation and well-to-well contamination.

1. Remove the backing of the Applied Biosystems™ adhesive film.
2. Align the adhesive film so as to cover all wells while placing on the plate.
3. Rub the flat edge of the applicator along the long edge (length) of the plate, then along the short edge (width). Finally, rub the applicator between all the wells and around the outside edges of the plate using small back-and-forth motions to form a complete seal.

Which PCR plastic fits your needs?

Find the PCR plastic format with the throughput and features for your application

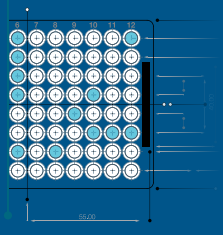
	Small-scale experiments with a few samples	Routine experiments	Ideal for automation	For laboratory use
	Single tubes, strips, caps, adhesive film & accessories	**MicroAmp optical microplates**	**MicroAmp EnduraPlate optical microplates**	**MicroAmp EnduraPlate optical microplates GPLE**
Formats	• Single tubes • Single tubes with caps • 8-strip tubes with caps • 12-strip caps	• 48-well Fast • 96-well • 96-well Fast • 384-well	• 96-well • 96-well Fast • 384-well	• 96-well • 96-well Fast • 384-well
DNA/RNase/PCR inhibitor-free	Yes	Yes	Yes	Yes
ANSI:SBS standard dimension color	Clear, or mixed packs containing red, orange, blue, green	Clear	Single-color packs (red, blue, green, yellow, or clear) & 5-plate sampler (1 of each color)	Clear
Instrument compatibility	Use our plastics selection tool	Use our plastics selection tool	Use our plastics selection tool	Use our plastics selection tool
Barcode	No	Yes (1 or 2 sides)	Yes (3 sides)	Yes (3 sides)
Multiple application	No	No	Yes	Yes
Optical compatibility	Yes (applicable for optical version)	Yes	Yes	Yes
Use	Research use only	Research use only	Research use only	For laboratory use*

* Lot-based contamination test with Certificate of Analysis.

Did you know?

Need high-quality PCR plastics for non-Applied Biosystems instruments? Visit **thermofisher.com/thermoscientificplastics** for a wide range of Thermo Scientific™ PCR plastics.

Custom and OEM plastics for PCR and qPCR are available. Learn more at **thermofisher.com/oem-partner**



Find the plastics and accessories you need for your instrument quickly

Product	Cat. No.	3 x 32-well	96-well		96-well Fast	384-well		Genetic analyzers	
		ProFlex	Veriti, ProFlex, SimpliAmp	9700	Veriti	ProFlex, Veriti	9700	310	3130, 3130xl, 3500, 3500xL, 3730, 3730xl
96-well 0.2 mL reaction plates									
Optical 96-Well Plate	N8010560, 4316813		•	•					•
Optical 96-Well Plate with Barcode	4306737, 4326659		•	•					•
96-Well Plate with Barcode & Optical Caps	403012		•	•					
Optical 96-Well Plate with Barcode & Optical Adhesive Films	4314320		•	•					
EnduraPlate Optical 96-Well Clear Plate with Barcode*	4483354, 4483352		•	•					•
96-well 0.1 mL reaction plates									
Fast Optical 96-Well Plate, 0.1 mL	4346907				•			•	•
Fast Optical 96-Well Plate with Barcode, 0.1 mL	4346906, 4366932				•			•	•
EnduraPlate Optical 96-Well Fast Clear Plate with Barcode*	4483485, 4483494				•			•	•
384-well reaction plates									
Optical 384-Well Plate	4343370					•	•		•
Optical 384-Well Plate with Barcode	4309849, 4326270, 4343814					•	•		•
EnduraPlate Optical 384-Well Clear Plate with Barcode*	4483285, 4483273					•	•		•
Strip tubes and caps									
Fast 8-Tube Strip, 0.1 mL	4358293				•				
Optical 8-Tube Strip with Attached Optical Caps, 0.2 mL	A30588	•	•	•					
8-Tube Strip with Attached Domed Caps, 0.2 mL	A30589	•	•	•					
8-Tube Strip, 0.2 mL*	N8010580	•	•	•				•	
Optical 8-Tube Strip, 0.2 mL	4316567	•	•	•					
8-Cap Strip*	N8010535, N8011535	•	•	•	•				
Optical 8-Cap Strip	4323032	•	•	•	•				
12-Cap Strip*	N8010534, N8011534		•	•	•				
Single tubes									
Fast Reaction Tube with Cap, 0.1 mL	4358297, 4358293				•				
Reaction Tube with Cap, 0.2 mL*	N8010540, N8010612, N8010840	•	•	•					
Reaction Tube without Cap, 0.2 mL*	N8010533	•	•	•					
Optical Tube without Cap, 0.2 mL	N8010933	•	•	•					
Seals and covers									
Clear Adhesive Film	4306311		•	•	•	•	•		
Optical Adhesive Film	4360954, 4311971		•	•	•	•	•		
96-Well Full Plate Cover	N8010550			•					
Accessories									
Splash Free 96-Well Base	4312063		•	•	•				
96-Well Support Base	4379590		•	•	•				•
96-Well Base	N8010531		•	•					
96-Well Reaction Tube/Tray/Retainer Set, 0.2 mL	403083, 403086			•					

* To see available colors, visit thermofisher.com/plastics

Visit our online plastics selection guide at **thermofisher.com/pcrplasticsselection**

Notes

Notes

applied
biosystems

Turn the brochure over to learn about our real-time PCR solutions.

Find out more at **thermofisher.com/thermalcyclers**

ThermoFisher
SCIENTIFIC

applied biosystems

QuantStudio real-time PCR and digital PCR systems and plastics

qPCR for who you are

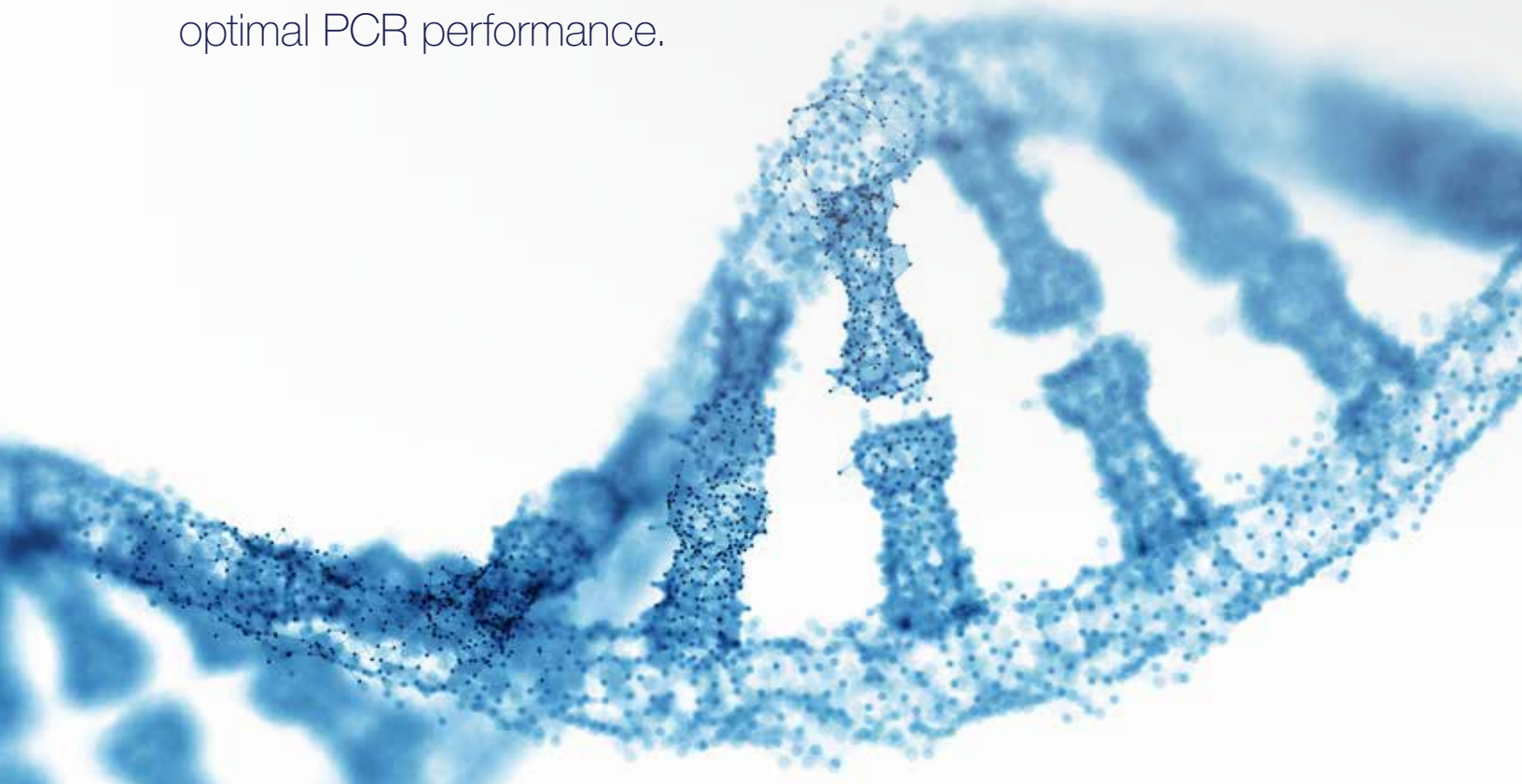
ThermoFisher SCIENTIFIC

qPCR for who you are

Every lab is unique. That's why you deserve a qPCR platform that fits your needs.

Perhaps you're looking for simplicity on a budget, or reliable results from limited samples. Maybe your research requires high throughput for maximum productivity, or absolute answers to take your work to the next level. Whatever you need, there's an Applied Biosystems™ QuantStudio™ qPCR system that's just right for your research.

There's an Applied Biosystems™ PCR plastic that's just right for your QuantStudio qPCR System too. Our instruments and plastics are Engineer Approved: built and validated to enable optimal PCR performance.



Contents

applied biosystems
by Thermo Fisher Scientific

Engineer **Approved**

Which instrument fits your needs?

QuantStudio real-time PCR and digital PCR systems

	Real-time PCR					Digital PCR
						
	QuantStudio 3 System	QuantStudio 5 System	QuantStudio 6 Flex System	QuantStudio 7 Flex System	QuantStudio 12K Flex System	QuantStudio 3D System
Colors	4 colors	5 or 6 colors (21 filter combinations)	5 colors	6 colors (21 filter combinations)	6 colors (21 filter combinations)	2 colors (endpoint detection)
Available formats	96-well (0.2 mL block) 96-well Fast (0.1 mL block)	96-well (0.2 mL block) 96-well Fast (0.1 mL block) 384-well	96-well 96-well Fast 384-well	96-well 96-well Fast 384-well TaqMan Array card (384-well microfluidic card)	96-well 96-well Fast 384-well TaqMan Array card (384-well microfluidic card) OpenArray plates (3,072 through-holes)	20,000 partitions/chip
Block change	Fixed	Fixed	Block change from front in less than 1 minute, no tools required			N/A
VeriFlex temperature control	3 zones	6 zones (96-well blocks only)	N/A			
Automation-compatible	No	No	No	Yes	Yes	No
Throughput	Medium	Medium	Medium	High	Very high	Low
21 CFR Part 11–enablement	Security	Security, auditing, e-signature package	Optional security, auditing, e-signature packages available			No
Touch screen	Yes, interactive	Yes, interactive	Yes	Yes	Yes	Yes
Key applications	• Gene expression • miRNA profiling • SNP genotyping • Copy number variation • Protein thermal shift • High resolution melt • Pathogen detection	• Gene expression • miRNA profiling • SNP genotyping • Copy number variation • Protein thermal shift • High resolution melt • Pathogen detection	• Gene expression • miRNA profiling • SNP genotyping • Copy number variation • Protein thermal shift • High resolution melt • Pathogen detection	• Gene expression • miRNA profiling • SNP genotyping • Copy number variation • Protein thermal shift • High resolution melt • Pathogen detection • Pharmacogenomics	• Gene expression • miRNA profiling • SNP genotyping • Copy number variation • Protein thermal shift • High resolution melt • Pathogen detection • Pharmacogenomics • Growing menu of qualified solutions	• Quantification of molecular standards • Absolute quantification • Pathogen detection • Load determination • Copy number variation • Digital PCR

= cloud-enabled instrument

Real-time PCR application areas

Real-time PCR is used for sensitive, specific detection and quantification of nucleic acid targets. We have developed powerful assay design algorithms, optimized master mixes, intuitive data analysis software, and flexible instrumentation to help harness the power of qPCR across a rich and diverse set of applications. Discover solutions for your qPCR-based research.

Infectious disease research

See our growing catalog of sensitive, specific real-time PCR probe and primer sets for human viruses and other areas of infectious disease research.

Food pathogen detection

Detect multiple bacteria in the same run, including *Salmonella, Campylobacter, E. coli* O157:H7, and *Listeria monocytogenes*.

Waterborne pathogen detection

Designed to detect and monitor waterborne pathogens in recreational and drinking water supplies.

Pharmaceutical analytics

Designed to detect mycoplasmas, viruses, and residual host cell contamination for pharmaceutical, cosmetics, and personal care product manufacturing.

Qualified solutions

A growing menu of new and valuable content for you to use on your high-throughput real-time PCR systems, including pharmacogenomics, vaginal microbiota, and *CFTR* mutation analysis.

Stem cell research

Solutions for analyzing stem cells, determining stemness, and studying gene regulation and translation in stem cells.

Pharmacogenomics

Predesigned Applied Biosystems™ TaqMan® Assays for more than 175 ADME and CYP targets, including >95% of ADME core markers and a warfarin metabolism panel.

Oncology and genetic disease research

Enabling robust, reliable detection and quantitation of markers for cancer and genetic diseases.

Plant sciences and agricultural biotechnology

Instruments, reagents, and kits designed for plant researchers that enable remarkable agricultural discoveries—from improved crops that feed more people to sustainable biofuels.

Intuitive and easy to use for all levels of experience

QuantStudio 3 and 5 Real-Time PCR Systems

The Applied Biosystems™ QuantStudio™ 3 and QuantStudio™ 5 Real-Time PCR Systems provide our latest advancements in touch-screen usability, allowing you to stay connected to your data easily. They're designed for both new and experienced users who need simple and affordable instruments without compromising performance or quality.

Get a premium instrument at an affordable price

Access, analyze, and share data anytime, anywhere with Thermo Fisher Connect—remotely monitor your runs in real time, analyze sophisticated datasets in minutes, securely store data, and share results online with colleagues across institutions and around the world.

Obtain results you can trust—detect differences in target quantity as small as 1.5-fold in singleplex reactions, and obtain 10 logs of linear dynamic range.

Multiplex with ease—up to six excitation and six emission filters offer 21 different color combinations, allowing a broad range of detection chemistries and maximum multiplexing.

Helps save valuable time—3 or 6 independent temperature zones for flexibility to run multiple experiments simultaneously. Fast thermal cycling enables results in less than 30 minutes.

Get started quickly—instrument is factory-calibrated for accuracy, quick installation, and immediate use. Preoptimized protocol templates help minimize training for new users, and the included SmartStart orientation provides basic qPCR training and setup on the Thermo Fisher Cloud and instrument management.

Maximize benchtop space—compact instrument can be configured as a stand-alone or with a computer.

= cloud-enabled instrument

Find out more at **thermofisher.com/quantstudio3-5**

Specifications

	QuantStudio 3	QuantStudio 5
Sample capacity (wells)	96	96 or 384
Reaction volume	0.1 mL block: 10–30 µL 0.2 mL block: 10–100 µL	96-well 0.1 mL block: 10–30 µL 96-well 0.2 mL block: 10–100 µL 384-well: 5–20 µL
Footprint (W x D x H)	27 cm x 50 cm x 40 cm	27 cm x 50 cm x 40 cm
Excitation source	Bright white LED	Bright white LED
Optical detection	4 coupled filters	96-well: 6 decoupled filters 384-well: 5 coupled filters
Excitation/detection range	450–600 nm/500–640 nm	96-well: 450–680 nm/500–730 nm 384-well: 450–650 nm/500–700 nm
Multiplexing	Up to 4 targets	96-well: up to 6 targets 384-well: up to 5 targets
2D barcode reading	Optional	Optional
Heating/cooling method	Peltier	Peltier
Temperature zone function	3 VeriFlex zones	96-well: 6 VeriFlex zones 384-well: N/A
Max block ramp rate	0.2 mL block: 6.5°C/sec 0.1 mL block: 9.0°C/sec	0.2 mL block: 6.5°C/sec 0.1 mL block: 9.0°C/sec 384-well block: 6.0°C/sec
Average sample ramp rate	3.66°C/sec	3.66°C/sec
Temperature uniformity	0.4°C	0.4°C
Temperature accuracy	0.25°C	0.25°C
Run time	<30-minute runs	96-well block: <30-minute runs 384-well block: <35-minute runs
Dye compatibility (name)	FAM/SYBR Green, VIC/JOE/HEX/TET, ABY/NED/TAMRA/ Cy®3, JUN, ROX/Texas Red	FAM/SYBR Green, VIC/JOE/HEX/TET, ABY/ NED/ TAMRA/Cy3, JUN, ROX/Texas Red, Mustang Purple™, Cy®5/LIZ™, Cy®5.5
Chemistry capabilities	Fast/standard	Fast/standard
Features to assist with 21 CFR Part 11 compliance	No	Yes, with no additional fees
Detection sensitivity	1 copy	1 copy
Sensitivity	Detect differences as small as 1.5-fold in target quantities in singleplex reactions	Detect differences as small as 1.5-fold in target quantities in singleplex reactions

Ordering information

Product	Cat. No.	Instrument + 2-year warranty with AB Assurance Cat. No.*
QuantStudio 3 Real-Time PCR System (96-well, 0.1 mL block)**	A28136	A33777
QuantStudio 3 Real-Time PCR System (96-well, 0.2 mL block)**	A28137	A33779
QuantStudio 5 Real-Time PCR System (96-well, 0.1 mL block)**	A28138	A33619
QuantStudio 5 Real-Time PCR System (96-well, 0.2 mL block)**	A28139	A33624
QuantStudio 5 Real-Time PCR System (384-well block)**	A28140	A33628

Recommended plastics

96-well block	Cat. No.	96-well block Fast	Cat. No.	384-well block	Cat. No.
MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode	4483354	MicroAmp EnduraPlate Optical 96-Well Fast Clear Reaction Plates with Barcode	4483485	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483285
MicroAmp Optical 96-Well Reaction Plate with Barcode	4306737	MicroAmp Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL	4346906	MicroAmp Optical 384-Well Reaction Plate with Barcode	4309849
MicroAmp Optical 8-Tube Strip with Attached Optical Caps, 0.2 mL	A30588	MicroAmp Fast 8-Tube Strip	4358293	MicroAmp Optical 384-Well Reaction Plate	4343370
MicroAmp Optical Adhesive Film	4360954	MicroAmp Optical 8-Cap Strips	4323032	MicroAmp Optical Adhesive Film	4360954
		MicroAmp Optical Adhesive Film	4360954		

* Includes SmartStart orientation and a planned maintenance executed by a field service engineer during second year.

** Does not include computer. Additional Cat. Nos. are available that include laptop or desktop computer.

Flexibility when you need it

QuantStudio 6 Flex and QuantStudio 7 Flex Real-Time PCR Systems

The Applied Biosystems™ QuantStudio™ 6 Flex Real-Time PCR System is ideal for laboratories with multiple applications or end users on a limited budget. Easily interchangeable thermal cycling block formats let you select the format that best suits your project without having to move attached peripherals or computers. Choose from standard or 96-well Fast and 384-well formats.

With an upgrade path to the Applied Biosystems™ QuantStudio™ 7 Flex Real-Time System, the QuantStudio 6 System is a great choice if you anticipate your needs will change in the future. The QuantStudio 7 System allows you to run hundreds of real-time PCR reactions using Applied Biosystems™ TaqMan® Array Microfluidic Cards for maximum throughput in an automated environment.

- **Flexibility that minimizes large upfront capital investment**—interchange between 96-well, 96-well Fast, or 384-well formats
- **Skip the learning curve**—the intuitive software, easy touch-screen set up, and easy block change help you get started right away
- **Performance you can trust**—detect as small as 1.5-fold changes in singleplex reactions and 10x dynamic range
- **Upgrade capabilities when you need it**—easily upgrade to a QuantStudio 7 Flex System for additional automation, throughput, and multiplexing capabilities

Find out more at **thermofisher.com/quantstudioqpcrfamily**

Specifications

	QuantStudio 6	QuantStudio 7
Block configuration	96-well, 96-well Fast, 384-well	96-well, 96-well Fast, 384-well, TaqMan Array Cards (TAC)
Block change design	Block change from front in less than 1 minute, no tools required	Block change from front in less than 1 minute, no tools required
Run time	30 min (96-well Fast) 35 min (384-well)	30 min (96-well Fast) 35 min (384-well)
Upramp rates	3.9°C/sec (96-well) 6.5°C/sec (96-well Fast) 3.5°C/sec (384-well)	3.9°C/sec (96-well) 6.5°C/sec (96-well Fast) 3.5°C/sec (384-well) 4.3°C/sec (TAC)
Downramp rates	3.6°C/sec (96-well) 6.0°C/sec (96-well Fast) 3.0°C/sec (384-well)	3.6°C/sec (96-well) 6.0°C/sec (96-well Fast) 3.0°C/sec (384-well) 3.7°C/sec (TAC)
Well-to-well variability	±0.25°C	±0.25°C
Excitation source	OptiFlex System lamp	OptiFlex System lamp
Detection channels	Excitation 455–672 nm Emission 505–723 nm	Excitation 455–672 nm Emission 505–723 nm

Ordering information

Product	Cat. No.	Instrument + 2-year warranty with AB Assurance Cat. No.*
QuantStudio 6 Flex 96-well Real-Time PCR System, laptop configuration	4485689	A27163
QuantStudio 6 Flex 96-well Fast Real-Time PCR System, laptop configuration	4485699	A27161
QuantStudio 6 Flex 384-well Real-Time PCR System, laptop configuration	4485691	A27960
QuantStudio 6 Flex 96-well Real-Time PCR System, desktop configuration	4485692	A27146
QuantStudio 6 Flex 96-well Fast Real-Time PCR System, desktop configuration	4485697	A27162
QuantStudio 6 Flex 384-well Real-Time PCR System, desktop configuration	4485694	A27958
QuantStudio 7 Flex 96-well Real-Time PCR System, laptop configuration	4485688	A27154
QuantStudio 7 Flex 96-well Fast Real-Time PCR System, laptop configuration	4485698	A27155
QuantStudio 7 Flex 384-well Real-Time PCR System, laptop configuration	4485695	A27152
QuantStudio 7 Flex TaqMan Array Card Real-Time PCR System, laptop configuration	4485700	A27150
QuantStudio 7 Flex 96-well Real-Time PCR System, desktop configuration	4485690	A27157
QuantStudio 7 Flex 96-well Fast Real-Time PCR System, desktop configuration	4485693	A27156
QuantStudio 7 Flex 384-well Real-Time PCR System, desktop configuration	4485701	A27153
QuantStudio 7 Flex TaqMan Array Card Real-Time PCR System, desktop configuration	4485696	A27151
QuantStudio 6/7 Flex 96-well block upgrade kit	4453543	N/A
QuantStudio 6/7 Flex 96-well Fast block upgrade kit	4453544	N/A
QuantStudio 6/7 Flex 384-well block upgrade kit	4453545	N/A
QuantStudio 7 Flex TaqMan Array Card block upgrade kit	4453546	N/A

Recommended plastics

96-well block	Cat. No.	96-well block Fast	Cat. No.	384-well block	Cat. No.
MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode	4483354	MicroAmp EnduraPlate Optical 96-Well Fast Clear Reaction Plates with Barcode	4483485	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483285
MicroAmp Optical 96-Well Reaction Plate with Barcode	4306737	MicroAmp Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL	4346906	MicroAmp Optical 384-Well Reaction Plate with Barcode	4309849
MicroAmp Optical 8-Tube Strip with Attached Optical Caps, 0.2 mL	A30588	MicroAmp Fast 8-Tube Strip	4358293	MicroAmp Optical 384-Well Reaction Plate	4343370
MicroAmp Optical Adhesive Film	4360954	MicroAmp Optical 8-Cap Strips	4323032	MicroAmp Optical Adhesive Film	4360954
		MicroAmp Optical Adhesive Film	4360954		

* Includes a planned maintenance executed by a field service engineer during second year.

Maximum productivity with minimum effort

QuantStudio 12K Flex Real-Time PCR System

This one instrument enables multiple users to conduct a wide range of experiments, from low- to high-throughput sample processing and virtually any PCR application, such as:

- Drug discovery
- Pharmacogenomics research
- MicroRNA profiling
- Agriculture molecular testing
- *CFTR* mutation analysis
- Vaginal microbiota research

Miniaturization at a lower cost
Applied Biosystems™ OpenArray™ technology is a broadly applicable nanoliter fluidics platform for low-volume, solution-phase reactions, and enables lower reagent and assay costs, and rapid parallel processing.

Unparalleled throughput
The Applied Biosystems™ QuantStudio™ 12K Flex System can simultaneously run up to four 3,072-reaction OpenArray plates in about 4 hours. You can produce up to 110,000 data points in an 8-hour day with the addition of a single Applied Biosystems™ ProFlex™ PCR System.

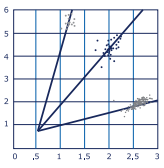
Outstanding flexibility
Easily switch between five available thermal cycling blocks: OpenArray plate, TaqMan Array card, 384-well, and standard or Fast 96-well blocks. Load the thermal-cycling block in less than 1 minute—no tools required.

Increased data integrity and quality control—with results you can trust
The integrated sample tracking and security, auditing, and electronic signature (SAE) module assist you in supporting 21 CFR Part 11 compliance.

Application spotlight

Pharmacogenomics research
Pharmacogenomics is the study of drug efficacy based on a subject's unique genomic composition. The QuantStudio 12K Flex System and OpenArray technology provide a simple, cost-effective, and fast workflow for the analysis of mutations and copy number variants associated with drug metabolism enzyme (DME) genes.

OpenArray workflow

1. Load samples onto OpenArray plate.	2. Cycle & image OpenArray plates.	3. Analyze results.
Minimal hands-on time 	Up to 1,100 samples per 8 hr day 	AppliedBiosystems™ AlleleTyper™ Software for star allele reports 

Find out more at **thermofisher.com/quantstudio12k**

Specifications

Block configuration	• 96-well (10–100 µL reactions) • Fast 96-well (15–30 µL reactions) • 384-well (5–20 µL reactions) • TaqMan Array Cards (~1 µL reactions) • OpenArray Plates (33 nL reactions)	
Block change design	Block change from front in less than 1 min; no tools or service call required	
Excitation source	Enhanced OptiFlex system, white LED	
Instrument control	Instrument touch screen, networked computer, or attached computer	
Detection channels	• Decoupled: 6 emission, 6 excitation (96-well/Fast, 384-well, TaqMan blocks) • Coupled: 4 emission, 4 excitation (OpenArray blocks)	
21 CFR p11–enablement	Optional software module	
Dimensions (W x D x H)	50.5 cm x 67.2 cm x 73.8 cm	
Weight	69 kg (152 lb)	
Remote monitoring	Available to monitor up to 15 networked instruments simultaneously	
	96-well, 96-well Fast, 384-well, TaqMan Array Card blocks	**OpenArray block**
Detection channels	Decoupled: 6 emission, 6 excitation	Coupled: 4 emission, 4 excitation
Well-to-well variability	± 0.25°C	± 0.75°C
Max block ramp rate	3.0°C/sec (384-well)	3.0°C/sec
Run time	• 30 min expected (Fast 96-well block) • 35 min (384-well block, using Fast master mix)	• 2 hr (gene expression) • 4 hr (genotyping)
Demonstrated sensitivity	To 1 copy	To 1 copy
Dynamic range	To 9 logarithmic units	To 7 logarithmic units
Resolution	As low as 1.5-fold change for singleplex reaction	As low as 2-fold change for singleplex reaction

Ordering information

Product	Cat. No.	Instrument + 2-year warranty with AB Assurance Cat. No.*
QuantStudio 12K Flex Real-Time PCR System, OpenArray block with AccuFill System, desktop configuration	4471090	4480621
QuantStudio 12K Flex Real-Time PCR System with OpenArray Block without AccuFill system, desktop configuration	4472380	N/A
QuantStudio 12K Flex Real-Time PCR System with Taqman Array Card instrument, desktop configuration	4471089	4480622
QuantStudio 12K Flex Real-Time PCR System 384-well instrument, desktop configuration	4471134	4480623
QuantStudio 12K Flex Real-Time PCR System 96-well Fast, desktop configuration	4471088	4480625
QuantStudio 12K Flex Real-Time PCR System 96-Well, desktop configuration	4471087	4480631
96-Well Block Upgrade Kit	4453543	N/A
96-Well Fast Block Upgrade Kit	4453544	N/A
384-Well Block Upgrade Kit	4453545	N/A
TaqMan Array Card Block Upgrade Kit	4453546	N/A
OpenArray Block with AccuFill System	4471067	N/A
QuantStudio 12K Flex AccuFill Upgrade Kit (for existing AccuFill system users)	4471022	N/A

Recommended plastics

96-well block	Cat. No.	96-well block Fast	Cat. No.	384-well block	Cat. No.
MicroAmp EnduraPlate Optical 96-Well Clear Reaction Plates with Barcode	4483354	MicroAmp EnduraPlate Optical 96-Well Fast Clear Reaction Plates with Barcode	4483485	MicroAmp EnduraPlate Optical 384-Well Clear Reaction Plates with Barcode	4483285
MicroAmp Optical 96-Well Reaction Plate with Barcode	4306737	MicroAmp Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL	4346906	MicroAmp Optical 384-Well Reaction Plate with Barcode	4309849
MicroAmp Optical 8-Tube Strip with Attached Optical Caps, 0.2 mL	A30588	MicroAmp Fast 8-Tube Strip	4358293	MicroAmp Optical 384-Well Reaction Plate	4343370
MicroAmp Optical Adhesive Film	4360954	MicroAmp Optical 8-Cap Strips	4323032	MicroAmp Optical Adhesive Film	4360954
		MicroAmp Optical Adhesive Film	4360954		

Multiple colors are available for most Cat. Nos.

* Includes a planned maintenance executed by a field service engineer during second year.

Absolutely attainable chip-based digital PCR

QuantStudio 3D Digital PCR System

The Applied Biosystems™ QuantStudio™ 3D Digital PCR System leverages high-density nanofluidic chip technology for detecting rare events, analyzing small differences between two targets, or counting the exact number of targets in a sample. The higher precision, sensitivity, and absolute nature of digital PCR is ideal for research in:

- Qualification of molecular standards used in traditional real-time PCR experiments
- Pathogen detection and load determination
- Rare-target detection such as somatic mutation detection in oncology research
- GMO detection and contamination assessment
- Generation of references and standards
- Copy number variation

Simple workflow
A streamlined workflow with minimal sample handling enables turnkey processing. Just load and go.

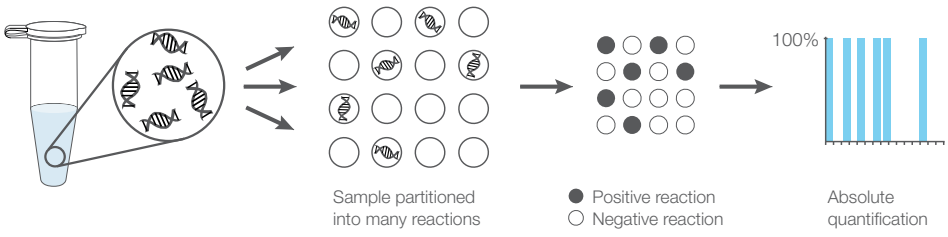
Affordable
Less than half the price of competing platforms, making digital PCR technology within reach for most labs.

Absolute quantification
20,000 reaction wells yield data in copies/µL, enabling high precision and sensitivity without the need for a standard curve.

Sealed system
Helps limit contaminants with a sealed chip and no exposed sample transfer steps.

Easily fits in populated spaces
Small footprint (7 x 5 x 9 in.) will fit most benchtops and can be moved when needed.

Compatible
Use your existing Applied Biosystems™ TaqMan® Real-Time PCR Assays for a digital result.



Application spotlight
Determining low copy number in equivocal tissue
Many cancers are regulated by mutations in a specific gene or group of genes, or copy number changes. These aberrations may be associated with aggressiveness of the disease or prognosis. Research using digital PCR provides a fast and easy workflow to precisely identify low copy numbers that have small differences. Compared to immunohistochemistry by fluorescence *in situ* hybridization, digital PCR is less impacted by tissue heterogeneity and provides clearer research results.

Find out more at **thermofisher.com/quantstudio3d**

Specifications

QuantStudio 3D Digital PCR Instrument	
Time to read 1 sample	~30 seconds
PCR detection method	Endpoint
Sample illumination	LED
Sample detection	CMOS
Detection channels	FAM/SYBR Green, VIC, ROX
Reader size (H x W x D)	8.3 x 5.3 x 9.15 in. (21 x 13.5 x 23.25 cm)
Weight	5.3 lb (2.4 kg)
QuantStudio 3D Digital PCR 20K Chip	
Partitions	Chip reaction wells
Samples per chip	1
Targets per chip	2
Chip capacity in thermal cycler	24
Reaction wells per sample	20,000
Loading volume	14.5 µL
Sealed workflow	Yes
Performance	
Dynamic range	5 logarithmic units
Precision at 95% confidence interval	±10%
Compatible chemistries	TaqMan and SYBR Green chemistries

Ordering information

Product	Cat. No.
QuantStudio 3D Digital PCR System Package with Master Mix, Chip Kit v2, and customer site training with 2-year extended warranty	A29738
QuantStudio 3D Digital PCR System Package with Master Mix, Chip Kit v2, and customer site training	A29154
QuantStudio 3D Digital PCR Instrument	4481097
QuantStudio 3D Digital PCR Chip Loader	4482592
QuantStudio 3D Digital PCR Chip Adapter Kit for Flat Block Thermal Cycler	4485513
QuantStudio 3D Digital PCR 20K Chip Pack (includes consumables)	4485507
ProFlex Dual Flat PCR System	4484078
QuantStudio 3D Digital PCR Master Mix (1.5 mL)	4482710

TaqMan chemistry and SYBR Green chemistry for real-time PCR

We offer two types of chemistries to detect PCR products using real-time PCR instruments:

- Applied Biosystems™ TaqMan® Assay chemistry (also known as fluorogenic 5' nuclease chemistry)
- Applied Biosystems™ SYBR™ Green I dye chemistry

	TaqMan Assay—based detection	SYBR Green—based detection
Chemistry overview	Uses a fluorogenic probe to enable detection of a specific PCR product as it accumulates during PCR cycles	Uses SYBR Green I, or similar dye that binds to double-stranded DNA to detect PCR product as it accumulates during PCR

	TaqMan Assay reagents	SYBR Green reagents
Specificity	High	Low
Sensitivity—low copy number	High	Variable*
Reproducibility	High	Variable*
Multiplexing	Yes	No
Predesigned assays	Yes	No
Custom assays	Yes	No
User design and optimization	No	Yes
Cost	High	Low*
Gene expression quantitation	High	Low
DNA quantitation	Yes	Yes (pathogen detection)
ChIP	Yes	Yes
SNP genotyping	Yes	No
microRNA	Yes	No
Copy number	Yes	No
Somatic mutation detection	Yes	No
Pathway analysis	Yes	No
Digital PCR	Yes	No

* Depends on template quality, and primer design and optimization.

With over 10 million assays, inlcuding gene expression assays for more than 25 species, 5 assay formats, and >40,000 publications, Applied Biosystems™ TaqMan®

Assays represent the most trusted and comprehensive collection of qPCR assays available.

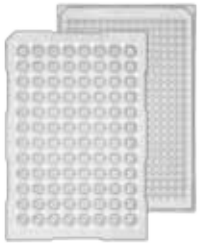
Find your assay at **thermofisher.com/taqman** or **thermofisher.com/sybr**

TaqMan Assays

Choice of formats

TaqMan Assays are available in single-tube format for maximum flexibility or can be plated in three different formats to minimize your effort and cost: TaqMan Array Plates for quick setup help to minimize human error; TaqMan Array Cards for ease of use in automation; and TaqMan OpenArray Plates for high throughput and lower cost per sample. Choose between predefined panels, flexible-content panels, or custom options to design your panel.

Single-tube assays



TaqMan Array Plates (96- and 384-well)

TaqMan Array Cards

OpenArray Plates

Real-time PCR and digital PCR	Key online resources
qPCR promotions	thermofisher.com/qpcrpromotions
Webinars	thermofisher.com/gawebinars
Ask TaqMan videos	thermofisher.com/ask
qPCR handbook	thermofisher.com/qpcrhandbook
Behind the bench blog	thermofisher.com/blog/behindthebench/
Assay search	thermofisher.com/taqman
Master mix sample request	thermofisher.com/mmsample
General qPCR support	thermofisher.com/qpcrsupport
Training offered	thermofisher.com/us/en/home/products-and-services/services/training-services.html

With TaqMan Assays, gold standard performance is always guaranteed

We guarantee the performance of all our predesigned TaqMan Assays for real-time PCR and digital PCR experiments. Our gene expression, noncoding RNA, SNP genotyping, copy number, drug metabolism enzyme, mutation detection, and protein assays enable you to obtain the highest quality and performance available. These assays are designed and validated using up-to-date annotations and gold standard TaqMan Assay chemistry.

If you are not satisfied with the performance of a TaqMan Assay, we'll replace it at no cost, or credit your account.*

* Subject to terms and conditions.

Learn more at **thermofisher.com/taqmanguarantee**

Support at every step

Online instrument management
Sign in to your thermofisher.com account to access the award-winning* free online Instrument Management** tool that enables faster responses to requests for service or service quotes, plus instant connection to key instrument and service information.

Comprehensive instrument warranty
Our factory-trained and certified field service engineers (FSEs) are focused on delivering the highest-quality workmanship. During the warranty period, all qualifying repairs, including engineer time and travel, are covered.

Flexible service plans
Choose from a variety of service options that balance your budget, productivity, uptime, and regulatory requirements. Plans start with the most basic repair models and scale to premium offerings, including advanced support and compliance services. On-site service plans are optimal for labs that have time-sensitive work and need to get their instrument back online quickly. These plans include guaranteed response times in most regions, scheduled planned maintenance, and automatic software updates. The AB Repair Center plan is the cost-effective choice for customers who can allow their instrument to be sent away for repair—this plan provides a loaner instrument so that customers can maintain productivity while their instrument is being repaired.

Professional services
Our services are designed to help you balance business and regulatory requirements—from risk assessment, hardware/software qualification, full system verification, and LIMS interfacing services to data storage and backup solutions. We partner with you to help mitigate regulatory risks, get your processes up and running, and help ensure data integrity across your lab.

Training courses
Our application and instrument training programs are led by scientists who aim to enhance your workday through experimental design best practices, workflow training, and instrument troubleshooting. Hands-on classes are available at our Thermo Fisher Scientific training centers or in your lab.

Technical support
If you have questions about product selection or use, assay or experimental design, data analysis, or troubleshooting, contact our team of technical support scientists or access our online product and application support tools.

How to reach us
To find your local support or technical support team, go to thermofisher.com/contactus. For product FAQs, protocols, training courses, and webinars, go to **thermofisher.com/technicalresources**

* 2012 Oracle™ Fusion Middleware Innovation Award.
** Instruments and Services Portal not available in all regions.

High-performance real-time PCR plastics for optimal qPCR results

Engineer Approved MicroAmp qPCR plastics

Applied Biosystems™ MicroAmp™ qPCR plastics are:

- Validated on Applied Biosystems thermal cyclers for optimal fit and performance
- Designed to perform on all Applied Biosystems qPCR instruments
- Designed for optimal heat transfer with thin-walled polypropylene wells
- Designed to reduce cross-contamination with raised well rims for effective sealing

Unique, high-performance features of MicroAmp EnduraPlate plastic consumables

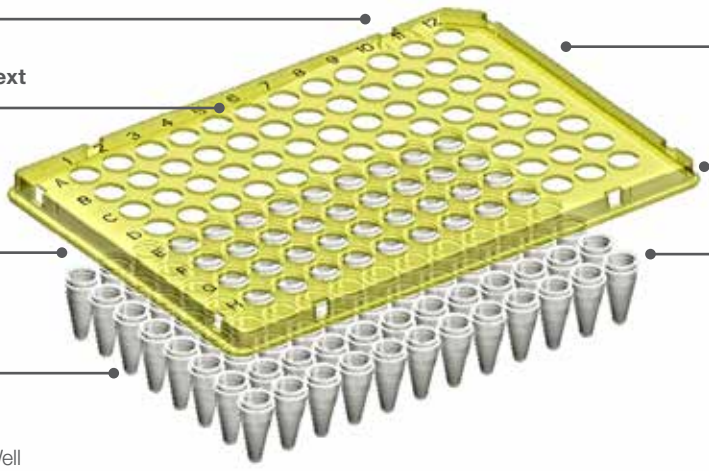
Easy assays visual organization
5 colors of choice

Easy-to-read well identification text
Black text for excellent contrast

Non-warp, even after thermal cycling
Polycarbonate (hard shell) for mechanical stability and flatness

Snug fit to thermal blocks
Thin-wall polypropylene for excellent mechanical fit and heat transfer

Available in common formats
96-Well Standard, 96-Well Fast, 384-Well
5 piece sample packs, 20 and 500 packs



Constructed to ANSI/SBS standard
Well suited for SBS standard robotic handling

Certified DNA, RNAse, and PCR inhibitor-free

Compatible and optimized for performance with Applied Biosystems instruments

Options for every format and all of your throughput needs

Choose from tubes, tube strips, plates, sealing and accessories for any throughput need. Applied Biosystems™ MicroAmp™ EnduraPlate plastics offer a solution for experiments that require special handling, such as automated or high-throughput workflows, and an even greater degree of durability for use with multi-instrument experiments.

Our Applied Biosystems™ MicroAmp™ 8-Tube Strips with Attached Optical, Flat Caps* are optimally designed for precise real-time PCR with lid and tube labeling, dual end tabs and 20 µL graduation marks on each tube to prevent pipetting errors. The 8-tube strips fit on all 0.2 mL Applied Biosystems real-time PCR instruments.

* MicroAmp 8-tube strip with attached domed caps are also available for PCR.

Find out more at **thermofisher.com/plastics**

Did you know?

Proper plate sealing helps reduce evaporation and well-to-well contamination.

1. Remove the backing of the Applied Biosystems adhesive film.
2. Align the adhesive film so as to cover all wells while placing on the plate.
3. Rub the flat edge of the applicator along the long edge (length) of the plate, then along the short edge (width). Finally, rub the applicator between all the wells and around the outside edges of the plate using small back-and-forth motions to form a complete seal.

Which qPCR plastic fits your needs?

Find the plastic format with the throughput and features for your application

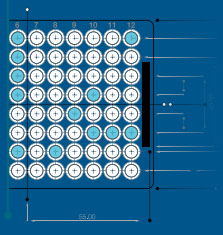
	Small-scale experiments with a few samples	Routine experiments	Ideal for automation	For laboratory use
	Single tubes, strips, caps, adhesive film & accessories	**MicroAmp optical microplates**	**MicroAmp EnduraPlate optical microplates**	**MicroAmp EnduraPlate optical microplates GPLE**
Formats	• Single tubes • Single tubes with caps • 8-strip tubes with caps • 12-strip caps	• 48-well Fast • 96-well • 96-well Fast • 384-well	• 96-well • 96-well Fast • 384-well	• 96-well • 96-well Fast • 384-well
DNA/RNase/PCR inhibitor-free	Yes	Yes	Yes	Yes
SBS standard dimension color	Clear, or mixed packs containing red, orange, blue, green	Clear	Single-color packs (red, blue, green, yellow, or clear) & 5-plate sampler (1 of each color)	Clear
Instrument compatibility	Use our plastics selection tool	Use our plastics selection tool	Use our plastics selection tool	Use our plastics selection tool
Barcode	No	Yes (1 or 2 sides)	Yes (3 sides)	Yes (3 sides)
Multiple application	No	No	Yes	Yes
Optical compatibility	Yes (applicable for optical version)	Yes	Yes	Yes
Use	Research use only	Research use only	Research use only	For laboratory use*

* Lot-based contamination test with Certificate of Analysis.

Did you know?

Need high-quality PCR plastics for non-Applied Biosystems instruments? Visit **thermofisher.com/thermoscientificplastics** for a wide range of Thermo Scientific™ PCR plastics.

Custom and OEM plastics for PCR and qPCR are available. Learn more at **thermofisher.com/oem-partner**



Find the plastics and accessories you need for your instrument quickly

Product	Cat. No.	48-well	96-well			96-well Fast			384-well
		StepOne	7000	7300, 7500	QuantStudio 3/5/6/7/12K, ViiA 7, 7900HT	StepOnePlus	7500	QuantStudio 3/5/6/7/12K, ViiA 7, 7900HT	QuantStudio 3/5/6/7/12K, ViiA 7, 7900HT
96-well 0.2 mL reaction plates									
Optical 96-Well Plate	N8010560, 4316813		●	●	●				
Optical 96-Well Plate with Barcode	4306737, 4326659		●	●	●				
Optical 96-Well Plate with Barcode & Optical Caps	403012		●	●	●				
Optical 96-Well Plate with Barcode & Optical Adhesive Films	4314320		●	●	●				
EnduraPlate Optical 96-Well Clear Plate with Barcode*	4483354, 4483352			●**	●				
96-well 0.1 mL reaction plates									
Fast Optical 96-Well Plate, 0.1 mL	4346907					●	●	●	
Fast Optical 96-Well Plate with Barcode, 0.1 mL	4346906, 4366932					●	●	●	
EnduraPlate Optical 96-Well Fast Clear Plate with Barcode*	4483485, 4483494					●	●	●	
384-well reaction plates									
Optical 384-Well Plate	4343370								●
Optical 384-Well Plate with Barcode	4309849, 4326270, 4343814								●
EnduraPlate Optical 384-Well Clear Plate with Barcode*	4483285, 4483273								●
48-well reaction plates									
Fast Optical 48-Well Plate	4375816	●							
Strip tubes and caps									
Fast 8-Tube Strip, 0.1 mL	4358293	●				●	●	●	
Optical 8-Tube Strip with Attached Optical Caps, 0.2 mL	A30588		●	●	●				
Optical 8-Tube Strip, 0.2 mL	4316567		●	●	●				
Optical 8-Cap Strip	4323032	●	●	●	●	●	●	●	
Single tubes and caps									
Fast Reaction Tube with Cap, 0.1 mL	4358297	●				●			
Optical Tube without Cap, 0.2 mL	N8010933		●	●					
Seals and covers									
Optical Adhesive Film	4360954, 4311971		●	●	●	●	●	●	●
48-Well Optical Adhesive Film	4375323	●							
Reaction trays									
96-Well Tray/Retainer Set	403081		●						
Fast 48-Well Tray	4375282	●							
96-Well Tray for VeriFlex blocks	4379983					●			
Accessories									
Splash-Free 96-Well Base	4312063		●	●	●	●	●	●	
96-Well Support Base	4379590		●	●	●	●	●	●	
96-Well Base	N8010531		●	●	●	●	●	●	

* To see available colors, visit thermofisher.com/plastics

** Requires use of proper adapter (precision plate holder), Cat. No. A24820.

Visit our online plastics selection guide at **thermofisher.com/pcrplasticsselection**

applied
biosystems

Turn the brochure over to learn about our PCR solutions.

Find out more at **thermofisher.com/qPCR**

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