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BUILT TO MEET YOUR NEEDS

qPCR systems and consumables for the clinical workflow

ThermoFisher SCIENTIFIC

Real-time PCR (qPCR) for clinical needs

In diagnostics laboratories, molecular tests are integrated into standard practice for identifying and managing disease, predicting the risk of developing disease or recurrence, and informing decisions that help guide lifestyle choices and behaviors. These tests have become indispensable tools, both in the practice of medicine and in the quest to positively impact patient outcomes. The use of molecular-based assays will only continue to grow in number and importance.

Our solutions are designed to address the evolving needs of the clinical laboratory and support you, so you can focus on your samples and test results while delivering quality results to those who rely on you most. Our broad portfolio of instruments, reagents, plastics, and reverse transcriptases can support your qPCR workflow with products from the leader in qPCR innovation since 1996.

Instruments—choose from innovative systems with a small footprint, simple workflows and software, and a variety of high-quality service and support plans.

Consumables—use Applied Biosystems™ master mixes and PCR plastics that are built and verified to enable optimal PCR performance.

And if you're already using an Applied Biosystems™ instrument, consider upgrading to gain benchtop space, lower cost of ownership, and improve usability with updated technology and software capabilities—all designed to save you time and money.

Find out more about our tried-and-true products, and see how there is an Applied Biosystems™ real-time PCR system and consumable that's just right for your needs.

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Which instrument fits your needs?

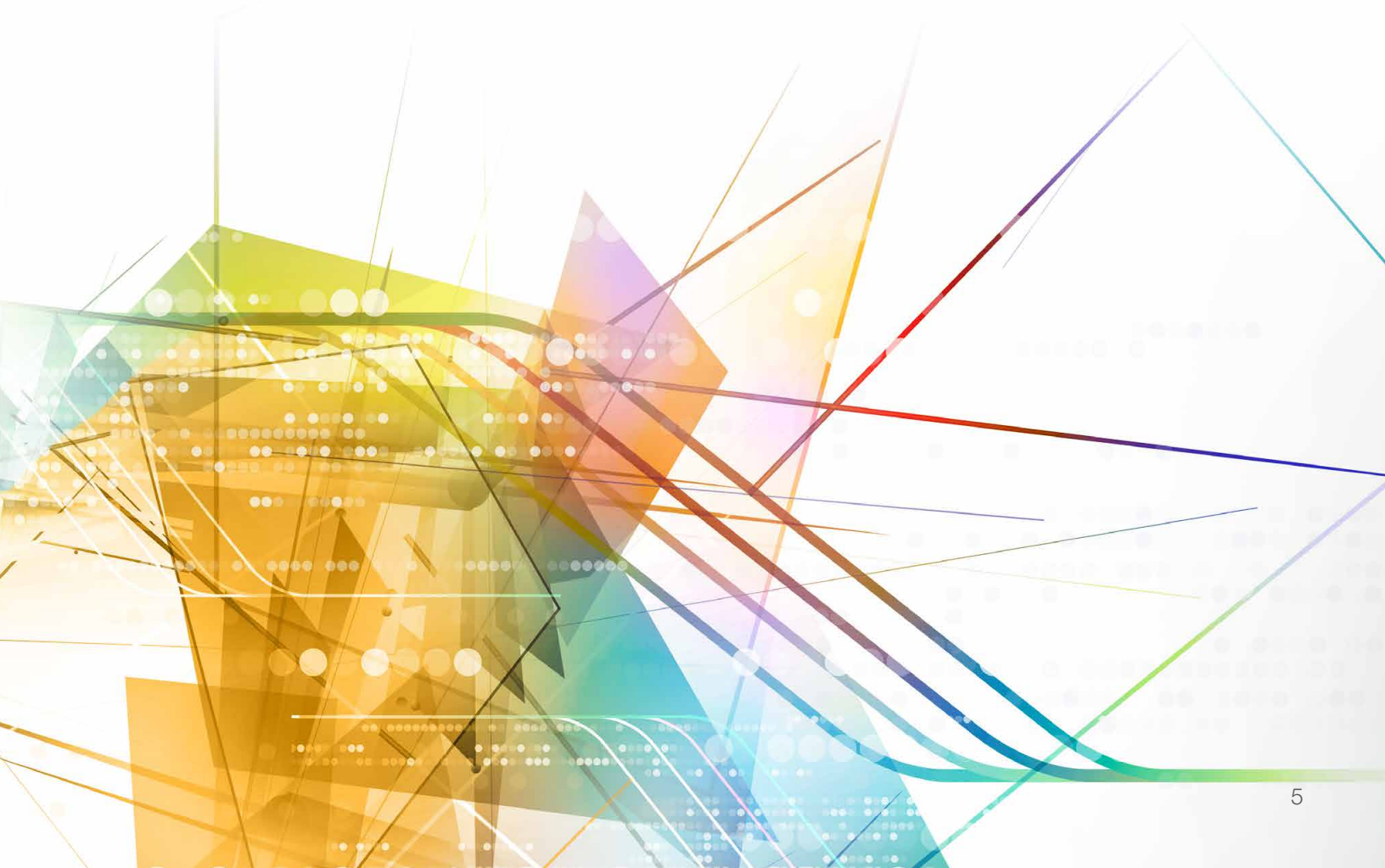
Applied Biosystems™ IVD real-time PCR systems

	QuantStudio 5 Dx system	QuantStudio Dx system	7500 Fast Dx system
Formats	96-well, 0.2 mL	96-well, 0.1 mL	96-well, 0.1 mL
Colors	Up to 6 colors (21 filter combinations)	Up to 6 colors (21 filter combinations)	5 colors
Touchscreen	21.5 cm	26.4 cm	None
VeriFlex Blocks temperature control	Yes, 6 zones	None	None
Security, auditing, electronic signature	Yes	Yes	Yes
Dimensions (H x W x D)	40 x 27 x 50 cm	73.8 x 50.1 x 66.1 cm	49 x 34 x 45 cm
Weight	26 kg	70 kg	34 kg

Real-time PCR software

Software

Real-time PCR software for *in vitro* diagnostic (IVD) systems enables you to maintain secure access to instruments, specify user access to various software functions, record all actions completed by users, and sign data electronically. A security, auditing, and e-signature (SAE) module also offers the ability to run preoptimized protocols for users operating in a secure environment. Security features such as user login, user permission settings, system auditing, and e-signature approvals are customizable to fit a range of security needs.



An effortless, reliable, IVD qPCR system to meet your unique needs

QuantStudio 5 Dx Real-Time PCR System

Designed to simplify workflows and minimize training needs, the Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR System can help you get to your clinical answers quickly by fitting seamlessly into your established workflow. This compact, flexible system provides confidence in performance and supports both development and IVD modes.

An instrument with premium performance at an affordable price

Results you can trust—detect differences in target quantity as small as 1.5-fold in singleplex reactions, and obtain 10 logarithmic units of linear dynamic range

Simple, powerful software—allows users to set up a run, lay out assays, control the instrument, and conduct plate analysis within a single, easy-to-use software interface

Proven performance—over 25 years of real-time PCR instrument manufacturing and over 10 years of clinical instrument manufacturing

Designed with the clinic in mind—interactive diagnostic instrument with short run times and minimal maintenance that uses existing plastic consumables

Security—SAE functionalities plus the ability to support multiple clients, plus maintain centralized SAE settings that can be applied to multiple instruments on the same network, allowing better control for your IT department

Peace of mind—IVD test menu allows only authorized IVD tests to be run through IVD mode, helping to reduce the risk of unauthorized use and accidental or intentional misuse

Flexibility you need—diagnose or develop, the choice is yours with software options that guide you through every step of test development* and IVD modes

Maximize benchtop space—compact instrument footprint and plate loading drawer at the front

Superior support—services and support is available globally by highly skilled, customer-focused staff

QuantStudio system performance—the reliability, sensitivity, and accuracy you expect, coupled with an intuitive and simple-to-use interface that allows users of any experience to easily operate the system

* Test development mode is for Research Use Only.

Find out more at **thermofisher.com/quantstudio5dx**

Specifications

	QuantStudio 5 Dx system
Sample capacity	96 wells
Reaction volume	96-well, 0.2 mL block: 10–100 µL
Excitation source	Bright white LED
Filter or color combinations	6 decoupled filters, CMOS camera
Excitation/detection range	450–680 nm/500–730 nm
Multiplexing	5-plex with 1 passive reference; 6-plex with no passive reference
Maximum block ramp rate	6.5°C/sec
Average sample ramp rate	3.66°C/sec
Temperature uniformity	0.4°C
Temperature range	4–99.9°C
Heating and cooling method	Peltier
Independent temperature zones	6 Applied Biosystems™ VeriFlex™ Blocks zones (5°C zone to zone)
Chemistries	Fast and standard
Run time	<30 min
Compatible dyes	FAM™, SYBR™ Green, VIC™, ABY™, NED™, TAMRA™, JUN™, ROX™, Mustang Purple™, Cy5® dyes
SAE features	Included
Automation compatible	No
Footprint (H x W x D)	40 x 27 x 50 cm
Weight	27 kg

Features to help maintain quality and security:

Maintenance and calibration reports

Records are updated automatically with maintenance and calibration events and can be printed on demand, documenting that the system has been maintained and calibrated to vendor specifications.

Reagent tracking

Stores and archives information about reagents used with each test, including lot number and expiration date, with each run. Archived files can be retrieved when required to track samples that were tested with a given set of reagents.

Sample tracking

Tracks sample name and type. Captures critical sample data, with parameters customizable to fit the laboratory's needs. Enables laboratories to more easily track samples associated with a particular plate, set of reagents, run date and time, and data files.

E-signature history

Security, auditing, and e-signature software records test events, actions taken, dates, user names, user roles, and activity performed, for documentation and archiving purposes.

Experimental results

Report output records details for documentation, archiving, and review-at-a-glance needs, including experiment name, barcode, file name, time stamps (creation, run start, run finish, duration, and modifications), instrument name, serial number, experiment type, results summary, plate layout image, standard curves, results table, QC summary plate, set of reagents, run date and time, and data files.

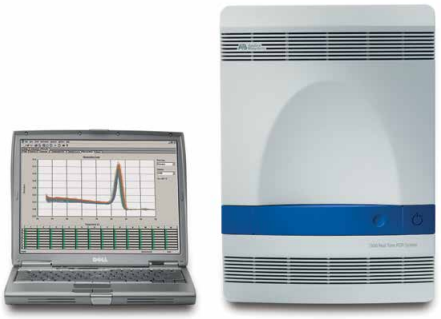
Get more details at **thermofisher.com/quantstudio5dx**

Trusted and proven diagnostic performance

QuantStudio Dx and 7500 Fast Dx Real-Time PCR Systems

The Applied Biosystems™ QuantStudio™ Dx Real-Time PCR System is a streamlined instrument with intuitive software designed to simplify molecular testing and enhance efficiency from sample processing to reporting. The simplified workflow requires no instrument programming. IVD tests are conducted using a test definition document (provided by individual test manufacturers) with predefined run and analysis parameters to minimize run setup time and effort. In addition, the QuantStudio Dx instrument delivers results to a laboratory information system, helping reduce the workload for busy technologists.

- The flexibility you need
- A diagnostic platform that can grow with you



The Applied Biosystems™ 7500 Fast Dx Real-Time PCR Instrument is designed to deliver the performance required for high-quality results in a 96-well form, while minimizing the effort required to perform sample setup. The system comes with SDS software allowing for full control over thermal cycling protocols to further assist in developing or running custom assays.

- Accommodates 96-well plates and tube strips, which can be capped immediately after pipetting each sample
- Fast mode completes runs in less than 40 minutes
- Optional standard mode facilitates the use of standard-length real-time PCR assays without changing thermal cycling parameters
- 5-color variable excitation enables multiplex assays
- Proven performance

Both systems are available with either a laptop or desktop computer.

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

Specifications

	QuantStudio Dx system	7500 Fast Dx system
Sample capacity	96 wells	96 wells
Reaction volume	96-well, 0.1 mL block: 10–30 µL	96-well, 0.1 mL block: 10–30 µL
Excitation source	Bright white LED	Halogen lamp
Filter or color combinations	6 (21 filter combinations)	Up to 5
Excitation/detection range	450–670 nm/500–720 nm	455–650 nm/505–696 nm
Multiplexing	5 or 6 targets	4 to 5 targets
Maximum block ramp rate	96-well, 0.1 mL block: 9.0°C/sec	5.5°C/sec
Average sample ramp rate	3.66°C/sec	3.5°C/sec (fast mode) 1.6°C/sec (standard)
Temperature uniformity	±0.5°C	±1°C
Temperature range	4–99.9°C	4–99.9°C
Sensitivity	1.5-fold in singleplex reactions	2-fold in singleplex reactions
Run time	Less than 35 min	Less than 40 min
Compatible dyes	FAM, SYBR Green, VIC, JOE™, TET™, ABY, NED, TAMRA, Cy3®, JUN, ROX, Texas Red™, Mustang Purple, Cy5, LIZ™, Cy5.5® dyes	FAM, SYBR Green, VIC, JOE, NED, TAMRA, Cy3, ROX, Texas Red, Cy5 dyes
Auditing	The audit function is always enabled in IVD mode and on the desktop software when in test development mode. In test development mode, audit mode can be set to optional or required depending on traceability needs.	Audit trails can be enabled/disabled depending on traceability needs.

Keep your real-time PCR systems up and running with superior services and support

Maximize uptime, reduce repair costs and turnaround time, extend the life of your instrument, and help keep it running at peak performance with one of our comprehensive service plans. Choose from a variety of service options that balance your budget, productivity, uptime, and compliance needs.

Our service plans include digital service innovations and pioneering on-demand tools such as remote support using augmented-reality (AR) technology, instrument-driven support, and on-demand instrument training.

Explore our services and support solutions at **thermofisher.com/instrumentservices**

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, as well as engineer time and travel, are covered.

Complimentary instrument service history, field service reports, service contracts, and warranty status are available at **thermofisher.com/manage**

Flexible service plans help reduce downtime

Choose from a variety of service options that balance your budget, productivity, and uptime. 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.

Explore service plans for your instrument at **thermofisher.com/instrumentplans**

Smart Remote Support maximizes uptime

Smart Remote Support leverages AR technology to include a real-time video/audio collaboration tool and an advanced remote desktop support tool. The tool enables more robust remote support, which can increase instrument uptime by eliminating the need for an on-site service visit or increasing the chances of a first-time fix.

See more of our digital service innovations at **thermofisher.com/innovations**

Get your instrument up and running 2x faster with our on-site service plans

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

Find your local support or technical support team at **thermofisher.com/contactus**

See product FAQs, protocols, training courses, and webinars at **thermofisher.com/technicalresources**

Contact a computer system validation (CSV) specialist at **thermofisher.com/csv**

Service plans at a glance

	On-site service plans	
	AB Assurance Dx	AB Maintenance Dx
On-site response time	Guaranteed 2 business days*	Target 2 business days**
Scheduled on-site planned maintenance (PM)	•	•
Remote diagnostics	•	•
Parts, labor, and travel for repair included	•	
Computer repair and replacement included	•	
Priority access to tech support (Mon–Fri, 8 a.m.–5 p.m. local time)	•	
Priority access to remote service engineer	•	
Requalification post-PM and critical repairs	•	Post-maintenance only
Field application scientist consultation		

* Response times vary by region.

** After receipt of purchase order.

Qualification services

Instrument hardware qualifications for QuantStudio Real-Time PCR Systems for the clinical market include installation qualification (IQ) and operational qualification (OQ) to document and verify that instruments are installed and operating according to manufacturer's specifications. An IQ/OQ is performed at installation and when moving the instrument. Our qualification specialists will partner with you to deliver timely, cost-effective, and trusted qualification services that include reliable, audit-style documentation that will help ensure your instruments meet regulatory requirements.

Contact an instrument qualifications specialist at **thermofisher.com/iqoqpq**

Education services

It can be difficult to prepare yourself for what's next while you're focused on the work you have now. Our professional, interactive training courses make it easier.

We offer a combination of virtual and in-person classroom instruction, and hands-on learning in your lab to match your schedule, budget, and learning preferences. Whichever course style you choose, you'll learn from one of our 300 highly skilled application scientists who are available to lead sessions online, at your location, or at one of our 12 training centers located worldwide.

Explore courses at **thermofisher.com/educationservices**

Explore our services and support solutions at **thermofisher.com/instrumentservices**

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

MicroAmp qPCR plastics

Applied Biosystems™ PCR plastics have been designed and tested to work with our instruments and enable optimal performance.

Applied Biosystems™ MicroAmp™ qPCR plastics are:

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

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by Thermo Fisher Scientific

Which qPCR plastic fits your needs?

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

Applied Biosystems™ MicroAmp™ EnduraPlate™ optical microplates, GPLE	
Formats	• 96-well • 96-well Fast
DNA-, RNase-, and PCR inhibitor–free	Yes
ANSI/SBS standard dimension color	Clear
Instrument compatibility	Use our plastics selection tool
Barcode	Yes (3 sides)
Multiple application	Yes
Optical compatibility	Yes

Find the plastics and accessories you need for your instrument quickly

Product		QuantStudio 5 Dx system	7500 Fast Dx system	QuantStudio Dx system
96-well, 0.2 mL reaction plates	**Cat. No.**			
MicroAmp Optical 96-Well GPLE Reaction Plate (10 plates)	4481191	•		
MicroAmp Optical 96-Well GPLE Reaction Plate with Barcode (10 plates)	4481192	•		
MicroAmp EnduraPlate Optical 96-Well GPLE Clear Reaction Plates with Barcode (20 plates)	4483348	•		
MicroAmp EnduraPlate Optical 96-Well GPLE Clear Reaction Plates with Barcode (500 plates)	4483351	•		
96-well, 0.1 mL reaction plates				
MicroAmp Fast Optical 96-Well GPLE Reaction Plate, 0.1 mL (10 plates)	4481190		•	•
MicroAmp EnduraPlate Optical 96-Well Fast GPLE Clear Reaction Plates with Barcode (20 plates)	4483481		•	•
Seals and covers				
MicroAmp Optical Adhesive Covers GPLE (25 films)	A49767	•	•	•
Accessories				
Splash-Free 96-Well Base	4312063	•	•	•
96-Well Support Base	4379590	•	•	•

TaqPath master mixes for real-time PCR

With superior quality and excellent performance, Applied Biosystems™ TaqPath™ master mixes are designed to deliver confidence and performance for even your most demanding applications. With over 10 years of leadership in clinical real-time PCR, we are committed to providing you with trusted, versatile, and innovative tools.

Applied Biosystems™ TaqPath™ products feature fluorogenic 5′ nuclease chemistry. TaqPath reagents are General Purpose Reagents and are labelled for Laboratory Use. They are manufactured in an ISO 13485 facility.

TaqPath qPCR Master Mix, CG for DNA Detection

Applied Biosystems™ TaqPath™ qPCR Master Mix, CG is a 2X formulation designed for gene expression and miRNA analysis, containing a thermostable fast DNA polymerase and dNTPs in an optimized buffer solution for maximum robustness and reproducibility.

TaqPath 1-Step RT-qPCR master mixes

Applied Biosystems™ TaqPath™ 1-Step RT-qPCR master mixes are 4X formulations designed for one-step processing of RNA and DNA targets. Versions with ROX passive reference dye, and versions designed specifically for multiplexing and formulated with either Mustang Purple passive reference dye or without ROX dye, are available.

TaqPath 1-Step Multiplex Master Mix

Applied Biosystems™ TaqPath™ 1-Step Multiplex Master Mix is compatible with multiplexing reactions, allowing additional exogenous or endogenous controls or targets to be run simultaneously for quality control or increased efficiency. Both the Mustang Purple passive reference dye-containing mix and the “no ROX” mix can be used in conjunction with Applied Biosystems™ TaqMan® probes with FAM, VIC, ABY, and JUN dyes and QSY™ quenchers to provide detection of four targets in a single reaction.

TaqPath ProAmp Master Mix and TaqPath ProAmp Multiplex Master Mix

Applied Biosystems™ TaqPath™ ProAmp™ master mixes are designed to be high-performing, high-throughput master mixes that work even with inhibited samples. They have the ability to detect up to four targets in one reaction, providing high specificity and reproducibility. They have a wide dynamic range compatible with multiplexing applications, and they exhibit tolerance of inhibitors commonly found in clinical samples prepared from human sources (buccal swabs, blood, and card punches). All TaqPath ProAmp master mixes also feature 72-hour pre-PCR benchtop stability for automated workflows.

TaqPath master mix overview

Chemistry	TaqPath reagents
Chemistry overview	Uses a fluorogenic probe to enable detection of a specific PCR product as it accumulates during PCR cycles
Specificity	High
Sensitivity—low copy number	High
Reproducibility	High
Multiplexing	Yes
General purpose reagent	Yes

Get more information at **thermofisher.com/qpcrmm**

Real-time PCR resources

PCR-based applications are essential to many laboratory workflows and techniques including gene expression analysis, cloning, absolute quantification, genotyping, DNA sequencing, pathogen detection and quantification, protein analysis, and pharmacogenomics. Training courses are available for endpoint PCR, real-time PCR (qPCR), and digital PCR (dPCR), and address a range of topics including experimental design and execution, assay and primer design, sample preparation, nucleic acid purification, data analysis, complete workflow applications, and troubleshooting methods.

For more detailed course information and to enroll, go to **thermofisher.com/educationconnect***

* Thermo Fisher account required

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Find out more at **thermofisher.com/quantstudio5dx**

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