

QuantStudio 3 and 5 Real-Time PCR Systems

The Applied Biosystems™ QuantStudio™ 3 Real-Time PCR System is an affordable, high-performance real-time PCR solution designed for users of all experience levels. With an interactive touch screen interface, intuitive instrument software, and preoptimized protocol templates, the system offers excellent performance and quality.

The Applied Biosystems™ QuantStudio™ 5 Real-Time PCR System features more options to customize your reactions and is available with either a 96- or 384-well thermal block. Additional filter channels and six temperature block zones* allow ultimate control over cycling conditions. Desktop

software with security, auditing, and e-signature features assists with 21 CFR Part 11 compliance and increased security to help ensure your run and data are protected.

Both systems feature web browser-based or desktop analysis options and leverage the power of Connect, our cloud-based platform, to help you stay connected to your data anywhere and anytime you are online.



| System performance specifications | | | |
|-----------------------------------|--|---|--|
| Dye compatibility | QuantStudio 3 and 5 systems: FAM™/SYBR™ Green, VIC™/JOE™/HEX™/TET™, ABY™/NED™/TAMRA™/Cy®3, JUN™, ROX™/Texas Red™ QuantStudio 5 system only: Mustang Purple™, Cy®5/LIZ™, Cy®5.5 | | |
| Chemistry capabilities | Fast or standard | | |
| Multiplexing | QuantStudio 3 system: up to 4 targets QuantStudio 5 system: up to 6 targets with 21 filter combinations for 96-well system; up to 5 targets for 384-well system | | |
| Dynamic range | 10 logarithmic units | | |
| Sensitivity (resolution) | Detect differences as small as 1.5-fold in target quantities in a singleplex reaction | | |
| Sensitivity (number of copies) | 1 copy | | |
| Research areas | Infectious diseases Pathogen detection Translocation analysis Viral load analysis | Drug metabolism Plant sciences Agricultural biotechnology Oncology | Inherited diseases Epigenetics Synthetic biology Stem cells |
| Key applications | Gene expression analysis Copy number variation analysis High-resolution melt | SNP genotyping Mutation scanning Mutation detection | Protein thermal shift MicroRNA profiling Methylation analysis |
| System specifications | | | |
| Dimensions and weight | 27 x 50 x 40 cm (W x D x H), <26 kg | | |
| Sample capacity (wells) | QuantStudio 3 system: 96 (0.1 mL and 0.2 mL blocks available) QuantStudio 5 system: 96 (0.1 mL and 0.2 mL blocks available) or 384 | | |
| Reaction volume | QuantStudio 3 system: 10–30 µL for 96-well 0.1 mL block; 10–100 µL for 96-well 0.2 mL block QuantStudio 5 system: 10–30 µL for 96-well 0.1 mL block; 10–100 µL for 96-well 0.2 mL block; 5–20 µL for 384-well block | | |
| Maximum ramp rate | QuantStudio 3 system: 9.0°C/sec for 0.1 mL block; 6.5°C/sec for 0.2 mL block QuantStudio 5 system: 9.0°C/sec for 0.1 mL block; 6.5°C/sec for 0.2 mL block; 6.0°C/sec for 384-well block | | |
| Average sample ramp rate | QuantStudio 3 system: 4.81°C/sec for 0.1 mL block; 3.66°C/sec for 0.2 mL block QuantStudio 5 system: 4.81°C/sec for 0.1 mL block; 3.66°C/sec for 0.2 mL block; 2.92°C/sec for 384-well block | | |
| Temperature uniformity | 0.4°C | | |
| VeriFlex™ Blocks | QuantStudio 3 system: 3 independent temperature zones QuantStudio 5 system: 6 independent temperature zones for 96-well block; not applicable for 384-well block | | |

* Available on 96-well format only.

System specifications (continued)

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| Heating and cooling method | Peltier |
| Run time | Less than 30 min |
| Calibration | Factory-calibrated |
| Onboard memory | 10 GB, which translates to approximately 2,000–5,000 run files |
| Electrical approvals | IEC, CE |
| Excitation (light source) | Bright white LED |
| Filters or colors | QuantStudio 3 system: 4 coupled filters QuantStudio 5 system: 6 decoupled filters with up to 21 combinations for 96-well system; 5 coupled filters for 384-well system |
| Excitation and detection range | QuantStudio 3 system: 450–680 nm and 500–640 nm QuantStudio 5 system: 450–680 nm and 500–730 nm for 96-well system; 450–650 nm and 500–700 nm for 384-well system |
| Data acquisition | Whole-plate imaging |
| Touch screen | Interactive touch screen with real-time application viewing |
| Online ecosystem | Cloud-based Connect |
| Communication interface | Cloud-based Connect, USB, or Wi-Fi |
| External devices | 2D barcode reader via USB connection |
| System configuration | Stand-alone, PC-connected, or direct connection to cloud-based Connect via LAN or Wi-Fi |
| International standards | ISO 13485 |

Software specifications

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|---|---|
| Cloud design and analysis software | Desktop option using Microsoft™ Windows™ 7 or Windows 10 operating systems Web browser-based software option; run on PC or Mac™ computer |
| Run programming options | Preoptimized protocol templates or ability to customize Programmable and manual pause Locked workflows |
| Chinese language software | Available |
| MIQE compliance | Real-time PCR data markup language (RDML) export format |
| Features to assist with 21 CFR Part 11 compliance | QuantStudio 5 system: security, auditing, and e-signature; no additional fees or licenses required |
| Single-plate analysis | Absolute and relative gene expression analysis, SNP genotyping, presence or absence, and high-resolution melt |
| Multiplate analysis | Gene expression analysis, SNP genotyping |

Ordering information

| Product | Cat. No. |
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| QuantStudio 3 Real-Time PCR System, 96-well, 0.1 mL block* | A28136 |
| QuantStudio 3 Real-Time PCR System, 96-well, 0.2 mL block* | A28137 |
| QuantStudio 5 Real-Time PCR System, 96-well, 0.1 mL block* | A28138 |
| QuantStudio 5 Real-Time PCR System, 96-well, 0.2 mL block* | A28139 |
| QuantStudio 5 Real-Time PCR System, 384-well* | A28140 |

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

Find out more at thermofisher.com/quantstudio3-5

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