Applied Biosystems 7300 Real-Time PCR System

A *Real* Affordable Approach to Real-Time PCR

- Four-color detection provides the flexibility to perform a variety of applications, including gene expression analysis, pathogen quantitation, SNP genotyping, isothermal, and plus/minus assays that utilize internal positive controls
- Powerful, versatile software includes plate setup wizards that guide you through experimental setup; advanced data-viewing capabilities including data sorting and custom graphing options, simple export to PowerPoint, and automated analysis tools that make data processing simple and straightforward
- Precision optics and a chargecoupled device (CCD) camera, combined with a sophisticated multicomponenting algorithm, provide highly accurate, reproducible, and reliable results
- Latest generation, Peltier-based, thermal cycling system accommodates both standard 96-well plates and 0.2 mL tubes

The Applied Biosystems Advantage

Built on over 10 years of real-time expertise, the Applied Biosystems 7300 Real-Time PCR System is an affordable platform for the detection and quantification of nucleic acid sequences that will not compromise your data quality or dye choice flexibility. The 7300 Real-Time PCR System combines thermal cycling, fluorescence detection, and application-specific software to measure the cycle-by-cycle accumulation of PCR products in a single-tube, homogeneous reaction.

Quantitative results are available immediately upon completion of PCR, with no need to run gels, purify PCR products, or perform any post-PCR manipulations. Real-time PCR runs are completed in under two hours, using 96-well plates and tubes (individual or 8-strip), with a supported volume range of 20 – 100 µL. Compared with manual PCR quantitation techniques such as Northern blotting or RNase protection assays, real-time PCR offers enormous time-savings, greater sensitivity, superior precision, and a larger dynamic range. This high-quality platform from the leader in real-time PCR systems provides data you can trust at a price you can afford.

Real-Time PCR Applications

The 7300 system supports many real-time quantitative PCR applications including gene expression analysis using relative quantitation (RQ) assays, and absolute quantitation using standard curves. In addition, the system allows for qualitative, post-PCR detection of nucleic acids for allelic discrimination (SNP genotyping) assays and plus/minus assays that use internal positive controls.

Fluorescence Detection

All sample wells in the 7300 system are illuminated with a tungsten-halogen lamp. Fluorescence emission is detected through four filters on to a CCD camera. The emission filters are optimized for use with FAM™/SYBR® Green I, VIC®/JOE™, NED™, TAMRA™ and ROX™ fluorescent dyes.

Sequence Detection Software

Instrument software for the Applied Biosystems 7300 Real-Time PCR System runs on the Windows XP operating system and provides instrument control, data collection, and data analysis. Powerful and user-friendly, sequence detection software includes the following features:

- Plate setup wizards for easy experimental design, even with complex multicolor assays
- Real-time monitoring of amplification growth curves enables you to view run progress
- Auto-baseline and auto-threshold for simplified data analysis
- Absolute quantitation of nucleic acid targets with the ability to simultaneously analyze multiple standard curves on a single plate
- Optional relative quantitation (RQ) study software with powerful data viewing capabilities allowing the simultaneous analysis of up to ten 96-well plates containing gene expression data
- Automated SNP genotype calling capability with intuitive graphical output and quality-value assignment
- Simple dissociation curve data collection and viewing
- Tool tips for easy identification of sample wells when viewing amplification curves or SNP genotyping plots
- Lamp-life monitoring and instrument diagnostics provide confidence in your instrument's performance
- Data sorting and filtering for easy viewing and reporting, along with customizable graphs for targets or samples of interest
- Versatile system can be used as a plate reader or a regular thermal cycler if needed
- Simple correction of plate setup mistakes without losing collected data

Instrument Specifications	
Thermal cycling system	Peltier-based, 96-well block
Sample Ramp Rate	+/-1.1°C/sec
Peak Block Ramp Rate	1.6°C/sec
Temperature Range	4°C – 100°C
Temperature Accuracy	±0.25°C of setpoint/display temperature measured at 3 minutes after clock start
Temperature Uniformity	±0.50°C, 30 seconds after clock start
Optical system	Single excitation, four emission filters, and CCD camera
Calibrated Dyes at Installation	SYBR® Green I, FAM™, VIC®, JOE™, NED™, TAMRA™, ROX™
Passive Reference Dyes	ROX™ or any calibrated dye.
Data Collection	Data collected in all 4 filters for all wells regardless of plate setup. Plate setup may be altered after run completes.
Quantitative PCR run time	< 1 hour 50 minutes
Supported Volumes	20 – 100 µL
Supported Consumables	• Standard optical 96-well plates • 8-strip 0.2mL tubes • 0.2mL tubes • Optical adhesive covers • Optical flat caps

Computer Specifications

Applied Biosystems supplies a Dell™ Business Line computer (notebook or tower) for use with the 7300 system. For the latest computer specifications, please visit the Applied Biosystems Web site at **www.appliedbiosystems.com**.

Installation Specifications

Using the TaqMan® RNase P Instrument Verification Plate, the 7300 system can distinguish between samples containing 5,000 and 10,000 template copies with a confidence level of 99.7%.

Demonstrated Performance

The 7300 system has been demonstrated to achieve the following performance targets:

- 9 logs of linear dynamic range
- Detection of 10 starting copies of a DNA template in a 50 µL reaction for a single reporter TaqMan assay with a confidence level of 99.7%

Reagents and Disposables

A complete line of reagents including TaqMan® Universal PCR Master Mixes and SYBR® Green I Master Mixes, and disposables including tubes and 96-well plates are available for use with the 7300 system.

TaqMan Genomic Assays

Applied Biosystems provides preformulated, ready-to-use, quality-tested, 5′ nuclease TaqMan probe-based assays for use with the 7300 system (see TaqMan Assays section).

Service and Warranty

Purchase of the instrument includes a one-year limited warranty on parts and labor, plus an installation package that includes setup and calibration of the instrument from our highly trained Service Support team.

Support

Applied Biosystems technical specialists and scientists provide worldwide applications support and service.

TaqMan® Assays—optimized for use on the 7300 Real-Time PCR System

Applied Biosystems provides the largest selection of gold standard TaqMan Assays for gene expression and genotyping applications in a variety of format options.

Over 800,000 inventoried TaqMan Gene Expression Assays covering ten species; Custom TaqMan Gene Expression Assays for any genome and any species; and TaqMan MicroRNA Assays are available for miRNA quantitation. Learn more about these and other TaqMan Gene Expression Assay products at **www.allgenes.com**.

Over 4.5 million made-to-order TaqMan SNP Genotyping Assays for human and mouse; Custom TaqMan SNP Genotyping Assays for any SNP and any species; and TaqMan Drug Metabolism Genotyping Assays are for high value polymorphisms. Learn more about these and other TaqMan SNP Genotyping Assay products at **www.allsnps.com**.

Instrument and Computer Dimensions

Dimension	7300 System	Notebook	Tower
Width	34 cm (13.39 in.)	32 cm (12.4 in.)	18 cm (7.1 in.)
Depth	45 cm (17.72 in.)	26 cm (10.1 in.)	45 cm (17.6 in.)
Height	49 cm (19.29 in.)	3 cm (1.2 in. closed)	42 cm (16.7 in.)
Weight	29 kg (64 lb)	2.1 kg (4.7 lb)	32 kg (70 lb)

ORDERING INFORMATION

Description	P/N
7300 Real-Time PCR System with Dell™ Notebook	4351101
7300 Real-Time PCR System with Dell™ Tower	4351103
7300 System SDS RQ Study Software	4350814

Printed in the USA, 06/11, Publication 117SP04-07

Applied Biosystems

Headquarters
850 Lincoln Centre Drive | Foster City, CA 94404 USA
Phone 650.638.5800 | Toll Free 800.345.5224
www.appliedbiosystems.com

International Sales
For our office locations please call the division headquarters or refer to our Web site at
www.appliedbiosystems.com/about/offices.cfm