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

**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%.

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<tr>
<th>Instrument Specifications</th>
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<td><strong>Thermal cycling system</strong></td>
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<td><strong>Sample Ramp Rate</strong></td>
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<td><strong>Peak Block Ramp Rate</strong></td>
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<tr>
<td><strong>Temperature Range</strong></td>
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<td><strong>Temperature Accuracy</strong></td>
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<td><strong>Temperature Uniformity</strong></td>
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<td><strong>Optical system</strong></td>
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<td><strong>Calibrated Dyes at Installation</strong></td>
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<td><strong>Passive Reference Dyes</strong></td>
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<td><strong>Data Collection</strong></td>
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<td><strong>Quantitative PCR run time</strong></td>
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<td><strong>Supported Volumes</strong></td>
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</table>
| **Supported Consumables**  | • Standard optical 96-well plates  
                            | • 8-strip 0.2mL tubes  
                            | • 0.2mL tubes  
                            | • Optical adhesive covers  
                            | • Optical flat caps |

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**Fluorescence Detection**:

- All sample wells in the 7300 system are illuminated with a tungsten-halogen lamp.
- Fluorescence emission is detected through four filters on 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.
- Powerful and user-friendly, the software provides:
  - Plate setup wizards for easy experimental design.
  - Real-time monitoring of amplification growth curves.
  - Auto-baseline and auto-threshold for simplified data analysis.
  - Absolute quantitation of nucleic acid targets.
  - Optional relative quantitation (RQ) study software.
  - Automated SNP genotype calling.
  - Simple dissociation curve data collection.
  - Tool tips for easy identification of sample wells.
  - Lamp-life monitoring.
  - Data sorting and filtering.

**Computer Specifications**:

- Applied Biosystems supplies a Dell™ Business Line computer (notebook or tower).

**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.

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**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](http://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](http://www.allsnps.com).

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**Instrument and Computer Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>7300 System</th>
<th>Notebook</th>
<th>Tower</th>
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</thead>
<tbody>
<tr>
<td>Width</td>
<td>34 cm (13.39 in.)</td>
<td>32 cm (12.4 in.)</td>
<td>18 cm (7.1 in.)</td>
</tr>
<tr>
<td>Depth</td>
<td>45 cm (17.72 in.)</td>
<td>26 cm (10.1 in.)</td>
<td>45 cm (17.6 in.)</td>
</tr>
<tr>
<td>Height</td>
<td>49 cm (19.29 in.)</td>
<td>3 cm (1.2 in. closed)</td>
<td>42 cm (16.7 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>29 kg (64 lb)</td>
<td>2.1 kg (4.7 lb)</td>
<td>32 kg (70 lb)</td>
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### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Description</th>
<th>P/N</th>
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<tr>
<td>7300 Real-Time PCR System with Dell™ Notebook</td>
<td>4351101</td>
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<tr>
<td>7300 Real-Time PCR System with Dell™ Tower</td>
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<tr>
<td>7300 System SDS RQ Study Software</td>
<td>4350814</td>
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