

ABI PRISM® 7900HT Sequence Detection System



The ABI PRISM® 7900HT Sequence Detection System is a high-throughput real-time PCR system that detects and quantitates nucleic acid sequences. The Automation Accessory combined with 384-well plate and 7900HT Micro Fluidic Card capability make the 7900HT system ideally suited to meet the high-throughput requirements of today's drug discovery process. Key applications include gene expression quantitation and the detection of single nucleotide polymorphisms (SNPs) using the fluorogenic 5' nuclease assay.

Key Features and Benefits

- Interchangeable blocks provide improved throughput and flexibility
- Custom Automation Accessory provides 24-hour unattended operation
- Hand-held and integrated bar code readers simplify sample tracking
- Continuous wavelength detection from 500-600 nm allows the use of multiple fluorophores in a single reaction
- Proven assay development guidelines save time and money

Assay Chemistry

Rapid assay development guidelines are provided to ensure success when using the fluorogenic 5' nuclease assay and

SYBR® Green 1 double-stranded DNA binding dye assays. The rapid assay development guidelines are available online at info.appliedbiosystems.com/7900HT

Default primer and probe concentrations are valid for multicolor SNP assays using TaqMan® MGB probes, and single color quantitation assays using TaqMan® probes or SYBR Green 1 dye detection. Assay optimization is recommended for multiplex quantitation assays to minimize PCR competition.

Fluorescence Detection

To induce fluorescence, the 7900HT system distributes light from an argon-ion laser excitation source to all sample wells. It then directs the resulting fluorescent emission through a spectrograph to a charge-coupled device (CCD) camera. Emission wavelengths from 500-660 nm are monitored allowing the simultaneous detection of multiple fluorophores.

System Components

7900HT Sequence Detector

- Peltier-based thermal cycling system with interchangeable 384- and 96-well block capability
- Extended-life 488 nm argon-ion laser excitation source

- Excitation light distributed to all wells via a dual-axis synchronous scanning head
- Fluorescence detection via a spectrograph and cooled CCD camera
- Robot compatible plate loading and unloading (Automation Accessory required to load multiple plates without user intervention)

Automation Accessory

A custom Zymark Twister® Robot with five plate-stacking positions provides automatic plate-loading capability.

Each of the four input stacking positions holds up to twenty-one 384-well plates or nine 96-well plates. The fifth position acts as an output stack. Automation Accessory performance ensures plate handling errors occur at a frequency of less than 1% of total plates handled.

Computer

- Pentium III 1.13 MHz processor
- 512 MB RAM
- 40 GB hard drive
- CD-ROM CD-RW drive
- Floppy disk drive
- 17-inch flat panel LCD monitor
- Windows® 2000 Operating System

Sequence Detection Software

Both the Standard Edition and Enterprise Edition Software run on Windows® 2000 Operating System and are used for instrument control, data collection and analysis. The upgrade to the Enterprise Edition Software includes access to two new analysis packages designed for high-throughput SNP Genotyping (SNP Manager) and Gene Expression (RQ Manager) as well as secure, robust and scalable data management in an Oracle® database.

Throughput

Real-Time

Over 5,000 sample wells per day with 384-well block configuration and standard thermal cycling protocol (requires Automation Accessory).

End-Point

Over 10,000 sample wells per hour with 384-well block configuration, Automation Accessory, and off-line thermal cycling.

Installation Specifications

Using the TaqMan® RNase P 384-Well or 96-Well Instrument Verification Plate, the ABI PRISM 7900HT Sequence Detection System can distinguish between 5,000 and 10,000 template copies with a 99.7% confidence level.

Reagents and Disposables

A complete line of reagents and consumables is available for use with the ABI PRISM 7900HT Sequence Detection System.

Assays-on-Demand™ Products and Assays-by-Design™ Service

Based on data from private and public databases, these ready-to-use quality tested 5' nuclease assays are available off-the-shelf or custom-made for your gene expression and SNP genotyping needs.

The 7900HT Micro Fluidic Card contains user-selected Assays-on-Demand™ Gene Expression Products already loaded and dried down in a 384 card micro-well format. The micro fluidic card is used to analyze tens to hundreds of targets with multiple samples and is run using the micro fluidic card block included in the 7900HT Micro Fluidic Card Upgrade Kit.

Dimensions

ABI PRISM 7900HT Sequence Detection System with Automation Accessory

- Width: 125 cm (49 in)
- Depth: 84 cm (33 in)
- Height: 64 cm (25 in)
- Weight: 114 kg (250 lbs)

ABI PRISM 7900HT Sequence Detection System without Automation Accessory

- Width (with drawer in open position): 72 cm (28 in)
- Depth: 84 cm (33 in)
- Height: 64 cm (25 in)
- Weight: 82 kg (180 lbs)

Computer (with monitor)

- Width: 43 cm (17 in)
- Depth: 46 cm (18 in)
- Height: 59 cm (23 in)
- Weight: 32 kg (70 lbs)

Service and Warranty

The purchase price includes installation and training by service representatives, plus a one-year warranty on parts and labor.

Support

Technical specialists and scientists provide worldwide applications support and service.

Ordering Information

Description	P/N
7900HT Sequence Detector with 384-Well Block Module and Automation Accessory (200-240V)	4329002
7900HT Sequence Detector with 384-Well Block Module (200-240V)	4329001
7900HT Sequence Detector with 96-Well Block Module and Automation Accessory (200-240V)	4329004
7900HT Sequence Detector with 96-Well Block Module (200-240V)	4329003
Automation Accessory Upgrade (100V-240V)	4329007
7900HT Micro Fluidic Card Upgrade Kit	4329012
384-Well Block Upgrade Kit	4331406
96-Well Block Upgrade Kit	4331405



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Certain Applied Biosystems PCR reagents are developed and manufactured by Roche Molecular Systems, Inc.

The PCR process and 5' nuclease process are covered by patents owned by Roche Molecular Systems, Inc. and F. Hoffmann-La Roche Ltd.

This instrument is an Authorized Thermal Cycler under the PCR process patents. Its purchase includes no rights under the 5' nuclease process patents.

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