Performance Specifications

Once installed, an Applied Biosystems Field Service Engineer will ensure your 7500 Fast or 7500 System is performing to specifications. Using the RNase P Instrument Verification Plate, we will verify that:

- Your 7500 Fast or 7500 System can distinguish between samples containing 5,000–10,000 DNA template copies, with a statistical confidence level of 99.7%
- A 7500 Fast System can complete this analysis in as little as 30 minutes

"I was very impressed with the performance of the Applied Bisosystems® 7500 Fast instrument coupled with Applied Bisosystems® Fast PCR Master Mix. Conversion from our standard real time PCR procedure was very simple and straightforward. We saw an increase in sensitivity, and the run only took about 35 minutes."

Karen, Associate Scientist,
Veterinary Diagnostic Laboratory

Demonstrated Performance

Instrument	7500 Fast System	7500 System
Performance		
Dynamic Range	9 logs of linear dynamic range	
Sensitivity	Detection of 1 copy of template in a 20 µL reaction for a single reporter TaqMan® assay, with 99.7% confidence.	Detection of 1 copy of template in a 50 µL reaction for a single reporter TaqMan® assay, with 99.7% confidence.
Run Time	< 30 minutes	< 2 hours
System Specifications		
Thermal Cycling System	Peltier-based, 96-well block	
Optical System	CCD camera with halogen lamp excitation; five-excitation and five-emission filters	
Calibrated Dyes at Installation	FAM™/SYBR® Green, VIC®/JOE™, NED™/TAMRA™/Cy3®, ROX™/Texas Red®, and Cy5®	
Additional Dye Available	Calibration for new dyes within the wavelength range is possible by following the custom dye calibration procedure in the User's Manual. Purchase of additional filter sets is not necessary.	
Passive Reference Dyes	ROX dye or any calibrated dye. Use of a passive reference dye is optional.	
Reaction Volumes	5–30 µL	20–100 µL
Sample Format	Fast 96-well plates optimized for 10 µL reactions	Standard 96-well plates and 0.2 mL tubes
Peak Block Heating Rate	5.5°C	2.5°C
Temperature Range	4–100°C	4–100°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	
Dimensions (w x d x h)	34 cm (13.99 in) x 45 cm (17.72 in) x 49 cm (19.29 in)	
Weight	34 kg (75 lb)	
Software Specifications		
Applications	Comparative C_T, Standard Curve, Relative Standard Curve, Allelic Discrimination, Plus/Minus	
Dye Discrimination	Multicomponenting algorithm	
Multiplate Data Comparison	Compare an unlimited number plates of gene expression assays	
Multiplex Capability	Multiplex up to five targets per well	