

	BIO-PM 4.4 Maintenance of the Applied Biosystems 7500 Real-Time PCR System	
	Document #: 1947	Page 1 of 2
	Revision #: 1	Issued Date: 11/14/2017
	Document Manager: Kristin Schelling	Approved By: Jeffrey Nye

4.4 Maintenance of the Applied Biosystems 7500 Real-Time PCR System

4.4.1

The Background and Optical Calibrations shall be conducted monthly per the procedure outlined in Chapter 5 of the Installation and Maintenance Guide.

4.4.2

The Calibration protocol shall be conducted twice per calendar year approximately six months apart. The Calibration protocol consists of four calibrations: Regions of Interest (ROI) Calibration, Background Calibration, Optical Calibration, and Pure Dye Calibration.

4.4.2.1

The ROI Calibration according to Chapter 4 of the Installation and Maintenance Guide using Plexor® Calibration Kit, Set A (Promega, catalog #DC1500).

4.4.2.2

As part of the semi-annual Calibration protocol, the Background Calibration described in 4.4.1 shall also be conducted after the ROI Calibration.

4.4.2.3

An Optical Calibration shall be conducted as per the procedure outlined in Chapter 5 of the Installation and Maintenance Guide.

4.4.2.4

The Pure Dyes Calibration shall be conducted per Chapter 6 of the Installation and Maintenance Guide.

4.4.3

The Halogen Bulb shall be replaced as needed or when it passes 2000 hours of use, per the procedure outlined in Appendix A of the Installation and Maintenance Guide. The hours the lamp has operated is tracked by the 7500 software. It is located under the "Instrument" pull-down menu, labeled "Lamp Status/Replacement."

NOTE: The Calibration protocol in 4.4.1 and 4.4.2 will need to be performed after the bulb is replaced.

4.4.4

Following planned maintenance or repair, the ABI 7500 Real-Time PCR System shall undergo a performance verification. The performance verification shall include two sets of standard curve samples, a reagent blank and a positive DNA sample. The quantitation shall be documented on the FS-78 DNA Quantitation Worksheet Plexor HY Chemistry form. The results of the performance verification

	BIO-PM 4.4 Maintenance of the Applied Biosystems 7500 Real-Time PCR System	
	Document #: 1947	Page 2 of 2
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shall be evaluated. The standard curve should be within the previously established criteria for y-intercept and slope. The reagent blank should give a value of N/A or similar value. The positive DNA sample should give a quantitation value near the expected concentration. The FS-78 form, standard curve and forensic report shall be reviewed with approval and date documented. Retain the documentation for future reference.