

Manufacturer's Recommendations for Alternate Dental CBCT QA Program
Imaging Sciences International: Model I-CAT 17-19
Table 6 Medical Physicist's Computed Tomography QC Survey

Item	Required Test or Procedure	Frequency	Substitute Test or Procedure	Standard
1	Scan Increment Accuracy	Initial & Annually	None – Not Applicable	None – Not Applicable
2	Scan Localization Light Accuracy	Initial & Annually	Operator's Manual Chapter 11 Collimators Calibration Pages 11-3 to 11-7. (Appendix A)	Ensure the following is displayed: Landscape Scan 24 Beads detected Portrait Scan 20 Beads detected
3	Patient Dose (Multiple Scan Average Dose) MSAD or Computed Tomography Dose Index-CTDI	Initial & Annually	Operator's Manual Chapter 13 Dose and Imaging Performance Information Pages 13-7 & 13-8 (Appendix B)	Reference dose available only. *To be established by the medical physicist
4	Pre-Patient Collimation Accuracy	Initial & Annually	Operator's Manual Chapter 11: Collimators Calibration Pages 11-3 to 11-7 (Appendix A)	Ensure the following is displayed: Landscape Scan 24 Beads detected Portrait Scan 20 Beads detected
5	Contrast Scale	Initial & Annually	Operator's Manual Chapter 12 Hounsfield Unit (HU) Measurement Pages 12-6 to 12-8 (Appendix C)	Lower and Upper Limit Scan Values in Hounsfield Units Air: (-1000 to -980) Acrylic: (-50 to 200) LDPE: (-250 to -50) Teflon: (580 to 1160)
6	CT Number for Water	Initial & Annually	Operator's Manual Chapter 12 QA Water Phantom Test Pages 12-9 to 12-12 (Appendix C)	Expected Values Water= 0(-70 to 70) HU
7	Slice Thickness	Initial & Annually	None- Not Applicable	None- Not Applicable
8	Field Uniformity	Initial & Annually	Operator's Manual Chapter 12 Uniformity Test Pages 12-13 & 12-14 (Appendix C)	Subtract each mean value from the mean value of the center of the ROI. If the difference is greater than 90, make sure phantom is correctly centered in FOV and re-measure. If the difference is still greater than 90, call technical support.
9	Low Contrast Resolution	Initial &	QA test to be performed	*To be established by

		Annually	using appropriate Low Contrast phantom. Low Contrast phantom is not provided by Imaging Sciences International.	Medical Physicist
10	High Contrast Resolution	Initial & Annually	Operator's Manual Chapter 12 Line Pair Evaluation Pages 12-4 & 12-5 (Appendix C)	Verify the definition is present within line pairs of 10, 11 and 12.
11	Noise	Initial & Annually	Operator's Manual Chapter 12 Noise Level Test Page 12-12 (Appendix C)	Expected Values Water= 0(-70 to 70) HU Air = -1000(-50 to +50) HU
12	Scan Protocol Review	Initial & Annually	Same as NJAC 22.10(a)	Same as NJAC 22.10(a)
13	Review of Facility and Technologists QC Tests	Initial & Annually	Same as NJAC 22.10(a)	Same as NJAC 22.10(a)
14	Physicist Report and Recommendations	Initial & Annually	Same as NJAC 22.10(a)	Same as NJAC 22.10(a)

*Where no performance standard is identified or expressed by the manufacture, the medical physicist shall establish the standard for the facility's CBCT unit with justification.