

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

Item	Required Test or Procedure	Frequency	Imaging Sciences Int'l 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: Geometry Calibration Pages 11-4 & 11-7 (Appendix B)	Ensure the following is displayed: Landscape Scan 12 Beads detected Portrait Scan 8 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 13-9 to 13-11 (Appendix A)	Reference Dose available only. *To be established by medical physicist
4	Pre-Patient Collimation Accuracy	Initial & Annually	Operator's Manual Chapter 11: Calibration Pages 11-4 & 11-7 (Appendix B)	Landscape Scan: Beads detected = 12 Beads Valid = 12 Portrait Scan Beads detected = 8 Beads Valid = 8
5	Contrast Scale	Initial & Annually	Operator's Manual Chapter 12: Quality Assurance 12-6 - 12-8 (Appendix C)	Lower and Upper Limit Scan Values in Hounsfield Units for Cesium Iodide Detector Air: (-1000 to -960) Acrylic: (19 to 204) LDPE: (-239 to -41) Teflon: (1031 to 1258)
6	CT Number for Water	Initial & Annually	Operator's Manual Chapter 12: QA Water Phantom Pages 12-9 to 12-12 (Appendix C)	Water Expected Value = 0 HU Range= (-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 12-12 & 12-13 (Appendix C)	Subtract each mean value from the mean value of the center of the ROI. If any 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 & Annually	QA test to be performed using appropriate Low Contrast phantom. Low Contrast phantom is not provided by Imaging Sciences International.	*To be established by Medical Physicist
10	High Contrast Resolution	Initial & Annually	Operator's Manual Chapter 12: Line Pair Evaluation Pages 12-4 & 12-5 (Appendix D)	Verify the definition is present within line pairs 12,13,14.
11	Noise	Initial & Annually	Operator's Manual Chapter 12: Noise Level Test Pages 12-9 to 12-12 (Appendix C)	Water Expected Value = 0 HU Range= (-70 to 70) HU Air Expected Value= -1000 HU Range = (-930 to -1000) 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.