

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

<b>Item</b>	<b>Required Test or Procedure</b>	<b>Frequency</b>	<b>Substitute Test or Procedure</b>	<b>Standard</b>
1	Scan Increment Accuracy	Initial & Annually	None – Not Applicable	None – Not Applicable
2	Scan Localization Light Accuracy	Initial & Annually	Installation Manual, Chapter 4: Mechanical alignment & calibration Pages 36 - 43 (Appendix D)	Laser light is positioned on the center of the hash marks on the sensor frame.
3	Patient Dose (Multiple Scan Average Dose) MSAD or Computed Tomography Dose Index-CTDI	Initial & Annually	Operator's Manual Chapter 6: Procedure 1.60 Page 6-9 (Appendix A)	CTDI Reference Dose at center position = 322 mR. Dose error = $\pm 15\%$ , 120 kVp, 5mA, 40 seconds, Beam width = 6 cm, Dose range = (273.7 mR to 370.3 mR)
4	Pre-Patient Collimation Accuracy	Initial & Annually	Installation & Service Manual Chapter 4: Beam Alignment Pages 45 & 46 (Appendix B)	No black borders present on any side.
5	Contrast Scale	Initial & Annually	Operators Manual Chapter 5 Pages 5-2 to 5-4 (Appendix C)	Measured HU for Each Material within range Air = -1000 (-1020 to -980) LDPE = -145 (-170 to -120) Acrylic = 80 (50 to 110) Teflon = 900 (700 to 1100)
6	CT Number for Water	Initial & Annually	Operators Manual Chapter 5 Pages 5-4 to 5-6 (Appendix C)	Difference of Avg HU and each HU = < 70 HU for all 5 quadrants CT #'s
7	Slice Thickness	Initial & Annually	None- Not Applicable	None- Not Applicable
8	Field Uniformity	Initial & Annually	Operators Manual Chapter 5 Page 5-6 (Appendix C)	Difference of Avg HU and each HU = < 70 HU for all 5 quadrants CT #'s

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	Operators Manual Chapter 5 Pages 5-2 to 5-3 (Appendix C)	Must be able to distinguish resolution for 10, 11, & 12 lp/cm minimum
11	Noise	Initial & Annually	Operators Manual Chapter 5 Pages 5-4 & 5-5 (Appendix C)	Noise < 50 HU (Avg of Standard Deviation of Mean CT Number Measurements)
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.