

Manufacturer's Recommendations for Alternate Dental CBCT QA Program

GENDEX: Model GXCB -500

Table 6

Medical Physicist's Computed Tomography QC Survey

Item	Required Test or Procedure	Initial & Annually	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 Calibration, Pages 11-1 to 11-7 (Appendix B)	Laser beams must penetrate through the phantom crosshair slits and appear on the receptor panel. Also, check to ensure that all beads are intact on the BB Phantom.
3	Patient Dose (Multiple Scan Average Dose) MSAD or Computed Tomography Dose Index-CTDI	Initial & Annually	Operator's Manual Chapter 13, Pages 13-9 to 13-12 (Appendix D)	To be determined by Medical Physicist*
4	Pre-Patient Collimation Accuracy	Initial & Annually	Operator's Manual Chapter 11 Calibration, Pages 11-1 to 11-7 (Appendix B)	Pass computerized Collimator Calibration.
5	Contrast Scale	Initial & Annually	Operator's Manual Chapter 12, Pages 12-6 to 12-8; Procedure checks density consistency in various measurements. (Appendix C)	Hounsfield Units Range Cesium Iodide Detector Air: Range= (-1000 to -960) Acrylic: Range = (19 to 204) LDPE: Range = (-239 to -41) Teflon: Range = (1031 to 1258)
6	CT Number for Water	Initial & Annually	Operator's Manual Chapter 12, Pages 12-6 to 12-12 (Appendix C)	Expected Measured Values for Water: -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, Pages 12-12 & 12-13 (Appendix C)	Subtract each Mean Value from the Mean Value of the Center ROI < 90 HU
9	Low Contrast Resolution	Initial & Annually	QA test to be performed using appropriate Low Contrast Phantom. Low Contrast Phantom is not supplied by Gendex	To be established by medical Physicist*
10	High Contrast Resolution	Initial & Annually	Operator's Manual Chapter 12, Pages 12-4 & 12-5 (Appendix C)	Verify definition present within line pairs 12, 13 and 14

11	Noise	Initial & Annually	Operator's Manual Chapter 12 Pages 12-9 to 12-12 (Appendix C)	Expected Measured Values for Water: -70 to 70 HU Expected Measured Values for Air: -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 manufacturer, the medical physicist shall establish the standard for the facility's CBCT unit with justification