

Manufacturer's Recommendations for Alternate Dental CBCT QA Program

GENDEX : Model GXCB -500HD

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, Page 13-15 to 13-17 (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 (Appendix C)	Hounsfield Numbers 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 12-9 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