

**Manufacturer’s Recommendations for Alternate Dental CBCT QA Program**

**Gendex : Model GXDP – 700 (Palodex Group)**

**Table 3A**

**Computed Tomography QC Requirements**

<b>Item</b>	<b>Required Test or Procedure</b>	<b>Frequency</b>	<b>Substitute Test or Procedure</b>	<b>Standard</b>
1	Equipment Function “Indicators, Mechanical & other Safety Checks	Daily	User Manual section 2 Unit description (Appendix A)	Must work properly
2	Film Processing QC Testing	Daily	None, not applicable	None, not applicable
3	CT Number for Water	Daily	User manual section 8.4 3D Calibration and 3D Constancy Check Procedure; PMMA average value corresponds closely to water x-ray absorption. (Appendix B)	Reference value for Minimum PMMA ROI - 120 If 3D QC test result is “Passed” then measurements are within manufactures specified limits.
4	Field Uniformity	Daily	User manual section 8.4 3D Calibration and 3D Constancy Check Procedure; (Appendix B)	Field uniformity measurement calculates max difference in grey values between center and border regions of the PMMA material in the phantom. Uniformity maximum value: 200  If 3D QC test result is “Passed” then measurements are within manufactures specified limits.
5	Laser Film Printer QC	Weekly	None, not applicable	None, not applicable
6	Low Contrast Resolution	Initial & Annually	User manual section 8.4 3D Calibration and 3D Constancy Check Procedure; There must be a difference in grey values in different materials to ensure adequate low contrast resolution. (Appendix B)	Minimum PMMA ROI value -120 Minimum PTFE ROI value 500 Maximum AIR ROI value -500  If 3D QC test result is “Passed” then measurements are within manufactures specified limits.
7	High Contrast Resolution	Initial & Annually	3D Constancy Check Procedure Section 3: High contrast spatial resolution (Appendix B)	Constancy test phantom Visually identifiable spatial resolution must be at >1LP/mm.
8	Noise	Initial & Annually	User manual section 8.4.3: 3D Quality Check program; Noise is defined as the standard deviation of the 3D measurement ROI in the volume and is determined from several materials in the phantom. (Appendix B)	Maximum PMMA Std. Dev. 120 Maximum PTFE Std. Dev. 150 Maximum AIR Std. Dev. 100  If 3D QC test result is “Passed” then measurements are within manufactures specified limits.
9	Scan Localization Light Accuracy	Initial & Annually	Installation Manual, 6.5.6 and 6.5.7 3D Geometry Calibration (Appendix C)	Repeat the 3D lasers alignment until calibration result “passed” is achieved.
10	Medical Physicist’s QC Survey	Initial & Annually	Same as alternate Dental CBCT	NJAC 7:28-22.10
11	Medical Physicist’s Quality Assurance Program Review	Initial & Annually	Same as alternate Dental CBC	NJAC 7:28-22.4(a)7

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.