Manufacturer's Recommendations for Alternate Dental CBCT QA Program

KaVo: Model Orthopantomograph OP 3D

Table 6 Requirements for Dental CBCT

Item	Required Test or Procedure	Frequency	Substitute Test or Procedure	Standard
1	Scan Increment Accuracy	Initial & Annually	None – Not Applicable	None – Not Applicable
2	Scan Localization Light Accuracy	Initial & Annually	OP 3D User Manual, Section 9 Installation, 9.9.8 Patient positioning light adjustment Pages 91-93 (Appendix B)	Exact alignment ensured by checking that lights hit and are parallel to 3D Geometry Calibration Phantom.
3	Patient Dose (Multiple Scan Average Dose) MSAD or Computed Tomography Dose Index-CTDI	Initial & Annually	User and Installation Manual, Section 10 Technical data 10.2 Imaging program specifications; Pages 102-103 (Appendix B)	Medical Physicist should reference tables in 3D imaging programs & technical factors. .
4	Pre-Patient Collimation Accuracy	Initial & Annually	User and Installation Manual, Section 9 Installation, 9.8.7 Collimator Calibration Page 77 (Appendix B)	Must pass computerized Collimator Calibration.
5	Contrast Scale	Initial & Annually	3D Constancy Check Procedure Automatic 3D QC Program Pages 1-2 (Appendix A) Appendix A. 3D QC measurement values and results in the 3D QC CSV Table Page 9 (Appendix A)	If 3D QC test result is "Passed" then measurements are within manufactures specified limits. Minimum PMMA ROI value: > -10 Minimum PTFE ROI value: > 1000 Maximum AIR ROI value: < 40
6	CT Number for Water	Initial & Annually	3D Constancy Check Procedure Automatic 3D QC Program Pages 1-2 (Appendix A) Appendix A. 3D QC measurement values and results in the 3D QC CSV Table Page 9 (Appendix A)	If 3D QC test result is "Passed" then measurements are within manufactures specified limits. Reference value for Minimum PMMA ROI value: >- 10
7	Slice Thickness	Initial & Annually	None- Not Applicable	None- Not Applicable

8	Field Uniformity	Initial & Annually	3D Constancy Check Procedure Automatic 3D QC Program Pages 1-2 (Appendix A) Appendix A. 3D QC measurement values and results in the 3D QC CSV Table Page 9-10 (Appendix A)	If 3D QC test result is "Passed" then measurements are within manufactures specified limits. Uniformity maximum value: < 250 Minimum PMMA ROI value:> -10 Minimum PTFE ROI value >1000 Maximum AIR ROI value: < 5
9	Low Contrast Resolution	Initial & Annually	3D Constancy Check Procedure Automatic 3D QC Program Pages 1-2 (Appendix A) Appendix A. 3D QC measurement values and results in the 3D QC CSV Table Page 9-10 (Appendix A)	If 3D QC test result is "Passed" then measurements are within manufactures specified limits. Minimum PMMA ROI Value: > -10 Minimum PTFE ROI Value: > 1000 Maximum AIR ROI Value: < 40
10	High Contrast Resolution	Initial & Annually	3D Constancy Check Procedure Section 3: High contrast spatial resolution Pages 5-7 (Appendix A)	The visually identifiable space resolution must be at least 1LP/mm.
11	Noise	Initial & Annually	3D Constancy Check Procedure Automatic 3D QC Program Pages 1-2 (Appendix A) Appendix A. 3D QC measurement values and results in the 3D QC CSV Table Page 9-10 (Appendix A)	If 3D QC test result is "Passed" then measurements are within manufactures specified limits. Maximum PMMA STD Dev: < 115 Maximum PTFE STD DEV: <150 Maximum AIR STD Dev: < 5
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)