

Manufacturer's Recommendations for Alternate Dental CBCT QA Program

Villa Radiology Systems: Rotograph EVO 3D

Table 3A Computed Tomography QC Requirements

Item	Required Test or Procedure	Frequency	Substitute Test or Procedure	Standard
1	Equipment Function "Indicators, Mechanical & other Safety Checks	Daily	Villa User Manual Section 2: Usability Section 3: Safety Information Pages 5-14 (Appendix A)	Must work properly
2	Film Processing QC Testing	Daily	None, not applicable	None, not applicable
3	CT Number for Water	Daily	Villa User Manual Sections 6.11.5 Page 49 Section 6.12.7: CT number of water (PMMA) Page 55 Section 6.12.8: QC Log Book (CT Number for Water) Page56 (Appendix B)	0±100 Hounsfield Units (HU)
4	Field Uniformity	Daily	Villa User Manual Section 6.12.4: Uniformity check (Homogeneity) Page 53 Section 6.12.8: QC Log Book (Image Uniformity) Pages 56 (Appendix B)	Homogeneity > 5
5	Laser Film Printer QC	Weekly	None, not applicable	None, not applicable
6	Low Contrast Resolution	Initial & Annually	Villa User Manual Section 6.12.3: Noise and Contrast Scale Pages 53 Section 6.12.8: QC Log Book (L Contrast resolution) Pages 56 (Appendix B)	Contrast >250
7	High Contrast Resolution	Initial & Annually	Villa User Manual Section 6.11.2: Modulation Transfer Function (MTF) Page 48 Section 6.12.5: Spatial resolution Page 53 Section 6.12.8: QC Log Book (H Contrast resolution) Pages 56 (Appendix B)	Maximum accepted deviation is: MTF 10% > 1
8	Noise	Initial & Annually	Villa User Manual Section 6.11.1: Noise Page 48 Section 6.12.3: Noise and Contrast Page 53 Section 6.12.8: QC Log Book Scale. (Image noise) Page 56 (Appendix B)	The typical noise (expressed as Contrast Noise Ratio) is: 5 Max accepted deviation is CNR >2.5
9	Scan Localization Light Accuracy	Initial & Annually	Owandy Service Manual Section 6.8.3: Verification of laser reference lines Pages 66 (Appendix D)	The mid sagittal laser line is within ± 1mm of the central line of the tool. The Frankfurt laser line is parallel to the corresponding reference on the tool.

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