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

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

#### Table 3A

Computed Tomography QC Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Required Test or Procedure</th>
<th>Frequency</th>
<th>Substitute Test or Procedure</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Equipment Function “Indicators, Mechanical &amp; other Safety Checks”</td>
<td>Daily</td>
<td>User Manual section 2 Unit description (Appendix A)</td>
<td>Must work properly</td>
</tr>
<tr>
<td>2</td>
<td>Film Processing QC Testing</td>
<td>Daily</td>
<td>None, not applicable</td>
<td>None, not applicable</td>
</tr>
</tbody>
</table>
| 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.