

MEDICAL PHYSICIST'S MAMMOGRAPHY QC TEST SUMMARY

Full-Field Digital – GE Medical Systems

Site		Report Date	
		Survey Date	
X-Ray Unit Manufacturer	GE Medical Systems	Model	Senographe 2000D
Date of Installation		Room ID	
Medical Physicist		Signature	

Medical Physicist's QC Tests

GE QC manual version(s) at facility (check all that apply):

- | | | |
|--|---|---|
| ☐ 2277390-100 Rev 1, 2000 | ☐ 2277390-100 Rev 3, 2001 | ☐ 2277390-100 Rev 3 + Addendum 2354312-100, 2003 |
| ☐ 2371472-100 Rev 0, 2003 | ☐ Mobile 2371698-100 Rev 0, 2003 | ☐ Seno Advantage 2391082-100 Rev 1, 2003 |

	PASS/FAIL/NA																				
1. Flat Field (as described in radiologic technologist tests)																					
2. Image Quality (Phantom) (as described in radiologic technologist tests)																					
CNR (required)																					
Change in CNR ≤ 0.2 (NA for Equipment Evaluations)																					
<table style="width: 100%;"> <tr> <td style="width: 40%;"></td> <td style="width: 20%; text-align: center;">Fibers</td> <td style="width: 20%; text-align: center;">Specks</td> <td style="width: 20%; text-align: center;">Masses</td> </tr> <tr> <td>Phantom IQ Test on AWS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phantom IQ Test on RWS – Left*</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phantom IQ Test on RWS – Right*</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phantom IQ Test on Printer</td> <td></td> <td></td> <td></td> </tr> </table>		Fibers	Specks	Masses	Phantom IQ Test on AWS				Phantom IQ Test on RWS – Left*				Phantom IQ Test on RWS – Right*				Phantom IQ Test on Printer				(* NA for units with Seno Advantage workstations)
	Fibers	Specks	Masses																		
Phantom IQ Test on AWS																					
Phantom IQ Test on RWS – Left*																					
Phantom IQ Test on RWS – Right*																					
Phantom IQ Test on Printer																					
3. MTF Measurement (as described in radiologic technologist tests)																					
4. AOP Mode and Signal-to-Noise (SNR) (as described in radiologic technologist tests)																					
5. Collimation Assessment																					
Deviation between X-ray field and light field is less than 2% of SID																					
X-ray field does not extend beyond any side of the IR by more than 2% of SID																					
Chest wall edge of compression paddle doesn't extend beyond IR by more than 1% of SID																					
6. Evaluation of Focal Spot Performance																					
Measured performance within acceptable limits for large focal spot																					
Measured performance within acceptable limits for small focal spot																					
7. Breast Entrance Exposure, Average Glandular Dose and Reproducibility																					
Average glandular dose for average breast is below 3 mGy (300 mrad)																					
Average glandular dose to a 4.2-cm-thick breast on your unit is mrad																					
Exposure reproducibility (CV) for R and mAs must be less than 0.05																					
8. Artifact Evaluation and Flat Field Uniformity																					
9. Viewing Condition Check and Setting																					
10. Monitor Calibration																					
11. Image Quality – SMPTE Pattern																					
12. Analysis of Review Work Station (RWS) or Seno Advantage Screen Uniformity																					
(required for Equipment Evaluations and as necessary)																					
13. kVp Accuracy and Reproducibility																					
Measured average kVp within $\pm 5\%$ of indicated kVp																					
kVp coefficient of variation ≤ 0.02																					
14. Beam Quality Assessment (Half-Value Layer Measurement)																					
15. Radiation Output																					
Radiation output is ≥ 800 mR/s mR/s																					
16. Mammographic Unit Assembly Evaluation																					

Important: The FDA's MQSA regulations require that the facility's quality assurance program for digital mammography be "substantially the same as the quality assurance program recommended by the image receptor manufacturer." The medical physicist should follow the QC manual version provided by the manufacturer for the unit surveyed. See the attached FDA Approved Alternative Requirement for GE FFDM units for the allowed correction periods on taking corrective action for test failures. (It is important to note that if these tests are performed as part of an Equipment Evaluation, corrective action must be taken before mammographic images are acquired.)

*** PLEASE HAVE YOUR MEDICAL PHYSICIST COMPLETE THIS SUMMARY FORM ***

MEDICAL PHYSICIST'S MAMMOGRAPHY QC TEST SUMMARY

(GE Medical Systems, continued)

Evaluation of Site's Technologist QC Program

(not required for Equipment Evaluations)

		PASS/FAIL
	Frequency	MQSA Regs
1. Monitor cleaning	Daily	
2. Viewing conditions for Review Work Station (RWS) or Seno Advantage	Daily	
3. Darkroom cleanliness	Daily, if applicable	
4. Processor QC	Daily, if applicable	
5. Mobile unit quality control	After every move, if applicable	
6. Flat field	Weekly	
7. Image quality (phantom)	Weekly	
8. Viewbox and viewing conditions	Weekly	
9. MTF measurement	Monthly	
10. AOP mode and signal-to-noise (SNR)	Monthly	
11. Visual checklist	Monthly	
12. Monitor calibration check	Monthly	
13. Repeat analysis - performed, records maintained, radiologist reviewed	Quarterly	
14. Analysis of fixer retention	Quarterly, if applicable	
15. Compression force (pressure)	Semi-annually	
16. Darkroom fog	Semi-annually, if applicable	
17. Laser film printer QC (according to printer manufacturer recommendations)		

Medical Physicist's Recommendations for Quality Improvement