

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore Maryland 21230
(410) 537-3193 • 1-800-633-6101 • <http://www.mde.state.md.us>

MDE RX14**COMPUTERIZED
TOMOGRAPHY**MDE Machine Number / System/Tube S.N. _____Facility Registration Number - Facility Name _____Begin Inspection / /
mm dd yy Inspector License No. _____

Manufacturer _____ Model _____

Maximum kVp, MA, Scan Time (sec) _____ / _____ Gantry Manufactured after 9/3/85 Y N

Date Manufactured _____

 Single Tomogram per Scan Multiple Tomogram: _____ per scan. Overlap _____ mm.

Regulation Number	Requirement for CT Imaging Procedures and Equipment	Pass (P), Fail Or Not Applicable (NA)
F.11(b)(1)	(i) Means provided to terminate the x-ray exposure in event of data collection failure (ii) A visible signal indicates when the x-ray exposure is terminated (iii) Operator can terminate the x-ray exposure at any time	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(2)(i)	Visual determination of the tomographic or reference plane?	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(2)(ii)	Visual indication at the control and gantry when x-rays are produced?	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(3)(i)	Emergency termination switch available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(b)(3)(ii)	Emergency termination switch clearly labeled?	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(4)	Condition of operation to be used during a scan or scan sequence is indicated	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(6)	Angular position shall be identified	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(b)(7)	(i) Total error of indicated vs. measured at scan plane: _____ (must be \leq 5mm) (iii) Return to indicated start position? (must be \pm 1 mm): _____	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(c)(1)	Two-way aural communication provided	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(c)(2)(i)	Continuous operator observation of the patient during exposures provided	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(c)(2)(ii)	If primary viewing system electronic, alternate system for observation of the patient during exposures provided	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A



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Regulation Number	Requirement for CT Imaging Procedures and Equipment	Pass (P), Fail Or Not Applicable (NA)
F.11(d)(1)	Survey performed as required Date of last Survey: <input type="text"/> / <input type="text"/> / <input type="text"/> Name of person or service company performing survey: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(2)(iii)	Instrumentation dosimetry calibration within two (2) years?	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(2)(v)	CTDI or Multiple Scan Average Dose (MSAD) measurement/calibration available for each type of scan performed? Dose Phantom used: (Head) Mfr./Model _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(2)(vii)	Calibration procedures available in writing?	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(3)(i)	Dose measurement, spot-check procedures written, and performed by qualified expert? Name of person or service company performing dose measurement: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(2)(vi)(c)	Spot-check performed at required interval Date of spot-check: <input type="text"/> / <input type="text"/> / <input type="text"/> Person performing Spot-check: <input type="checkbox"/> Licensed Inspector, Lic. No. _____ <input type="checkbox"/> Registered Service Company: Name _____ Reg. No. _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(3)(ii)	Spot-check incorporates use of facility use factors and approved phantom If not, specify equivalent (Mfr. & Model etc.) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
F.11(d)(3)(iv)	Images from spot-check retained in two forms, photographic and digital	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(d)(4)(ii)	Information available at the control panel for operation and calibration: (a) Dates of the latest calibration/spot checks posted at control panel (b) Instructions available on the use of the CT dosimetry phantom(s) (c) Distance available between tomographic plane and reference plane in millimeters (d) Current technique chart available to specify routine exams, techniques, scans/exam	<input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> P <input type="checkbox"/> F <input type="checkbox"/> N/A
F.11(d)(4)(iii)	If spot-check tolerance has been exceeded, have limitations been specified? If Yes, briefly describe written limitations: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Author of recommended limits: _____ Reg. No/Lic. No. _____		



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CALCULATION OF MSAD using the mathematical expression: $MSAD = (E \times F \times K \times L)/T$ where:

E = average exposure in (C/kg) coulombs per kilogram or in milliroentgens (mR)

f = factor to convert exposure in air to absorbed dose in tissue or attenuating matter in grays per C/kg, or in RAD per mR

K = calibration factor to account for the radiation measuring device response and volume

L = effective length of the radiation measuring device in millimeters

T= thickness in millimeters of the tomographic section selected

Typical HEAD Technique Factors, (C) Contrast, (NC) Without Contrast, (B) Both with & without contrast: _____

_____ kVp _____ mA _____ Scan Time (sec.) _____ Scan Thickness (mm) No. Scans/Exam _____

MSAD measured (HEAD) = _____ RAD/mSv

Comments:

Manufactured rated MSAD or CTDI available: Yes No = _____ RAD/mSv
 CTDI MSAD (check one)

If Yes, state techniques used: _____ kVp _____ mA _____ Scan Time (sec.) _____ Scan Width (mm)

