

Redacted. Full documents available upon deposit.

DIAGNOSTIC X-RAY SURVEY

INSTITUTION:

LOCATION:

ROOM:

MA RCP #

Contact:

DATE: 21 December 2017

Exposures: 29 med. , 2 dental

SYSTEM (Make & Model): GE Definium 8000

RADIOGRAPHIC max kV: 150 **mA:** 1000

EQUIPMENT CHECKS: RADIOGRAPHY

Features	Status	Comments
GENERATOR:		
kV Indicator	OK	
mA Indicator	OK	
Exposure Time Function	OK	
Beam-on Indicator	OK	
Audible Beam-on Tone	OK	

X-RAY SOURCE DESCRIPTION

1. Overhead Radiographic

MAJOR ACCESSORIES

1. GE bucky table
2. GE chest detector

SIGNATURE REQUIRED ON PAGE 4

NATURE OF SURVEY

Initial _____	Routine Repeat <u> x </u>
Date of Last Survey: _____	15 Dec 2016
After Repair ?	
Describe Repair:	

INSTITUTION:
ROOM:

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DATE: 21 Dec 2017

GENERAL CONDITIONS OF ROOM

Room Layout	Status	Comments
Arrangement of controls		
Interlock on booth door: Necessary ?	NA	
Present ?	NA	
18"/24" barrier beside window ?	Yes	56"
Viewing area \geq 1 square foot ?	Yes	30" x 36"
All room entries visible from controls ?	Yes	
Controls fixed \geq 40" from any open edge ?	Yes	66"
Adequacy of Setup	OK	

Room Entrances	Main Door	ER Door			
Warning Light					
Present ?	Yes	Yes			
Functioning ?	Yes	Yes			
Wired to rotor ?	Yes	Yes			
Type	Backlit	Backlit			
Adequate labeling ?	Yes	Yes			
Necessary ?	Yes	Yes			
Door Interlock					
Present ?	No	No			
Functioning ?	NA	NA			
Required ?	No	No			
Adequacy of entrances	OK				

COMMENTS

None

RECOMMENDATIONS

None

INSTITUTION:
 ROOM: ER

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 DATE: 21 Dec 2017

X-RAY EQUIPMENT: GE Definium 8000
 X-RAY SOURCE: Overhead

USE: General

INSERT	Manufacturer:	GE 3/17	Serial #	<input type="text"/>
HOUSING	Manufacturer:	GE 3/17	Serial #	<input type="text"/>
COLLIMATOR	Manufacturer:	Siemens 12/11	Serial #	<input type="text"/>

RADIOGRAPHIC CHECK-OUT

COMPONENT CHECKS

Component	Status	Comments
Filters		
Inherent ?	<input type="text" value="Yes"/>	Housing: 1.1 mm Al eq @ 75 kVp Collimator: 2.0 mm Al eq @70 kVp
Under operator control ?	<input type="text" value="Yes"/>	
Well secured ?	<input type="text" value="Yes"/>	
Filtration labeled ?	<input type="text" value="Yes"/>	
Additional filtration needed ?	<input type="text" value="No"/>	
Distance Indicator Accuracy		
Table Top	<input type="text" value="OK"/>	
Bucky	<input type="text" value="OK"/>	

COLLIMATION ASSESSMENT

Field Size Indicator Accuracy (Deviation between indicators and field sizes)
 Measurement test distance (typically 40"): inches (= 101.6 cm)

	Crosswise		Lengthwise	
	inch	cm	inch	cm
Collimator setting:	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text" value="10.00"/>	<input type="text"/>
Measured light field size:	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text" value="10.00"/>	<input type="text"/>
Deviation in setting	0.00		0.00	
Deviation as % SID	+0.00%		+0.00%	
Pass/Fail (criteria: + 2%)	Pass		Pass	

Action Limit: If vertical or horizontal deviation exceeds 2% of SID, seek service adjustment.

X-Ray / Light Field Alignment (Deviation between x-ray field and light field)
 Measurement test distance (typically 40"): inches (= 101.6 cm)

	Crosswise		Lengthwise	
	cm		cm	
Top edge deviation:	<input type="text" value="0.30"/>		Left edge deviation:	<input type="text" value="0.20"/>
Bottom edge deviation:	<input type="text" value="0.00"/>		Right edge deviation:	<input type="text" value="0.10"/>
Sum of top and bottom deviations:	0.30		Sum of left and right deviations:	0.30
Deviation as % SID	0.30%			0.30%
Pass/Fail (criteria: + 2%)	Pass			Pass

Action Limit: If the sum of top plus bottom edge deviations or left plus right edge deviations exceeds 2% of SID, seek service adjustment

INSTITUTION:
ROOM: ER

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DATE: 21 Dec 2017

Positive Beam Limitation (Deviation between field size and cassette size)

Table Bucky (40" SID)	8x10 (20x25)	10x12 (24x30)	11x14 (30x35)	14x17 (35x43)
Cassette size: inches or cm				
Field size within cassette size ?				
Status				
Chest Bucky (72" SID)			11x14 (30x35)	14x17 (35x43)
Cassette size: inches or cm				
Field size within cassette size ?				
Status				

Comment, if any: **Seven collimation choices on tube head - OK**

Action Limit: If horizontal or vertical deviation exceeds 3% of SID, or the sum of deviations exceeds 4% of SID, seek service adjustment.

X-RAY TUBE CHARACTERISTICS

Instrument used: Victoreen Panoramic or Ludlum Model 9 ion chamber survey meter

Leakage from Diagnostic Source Assembly

Observed dose rates (average):				
kV	mA	Distance from tube target	Reading	Corrected to 1 meter
60	100	0.5 meter	Background	Background
90	100	0.5 meter	22 mR/hr	5.5 mR/hr
Highest Reading:		22 mR/hr @ 0.5 meter	Location: General	
Max Continuous Operating Rating:		90/10		
Max Leakage at Max Rating:		0.55 mR/hr; 0.0484 mGy/hr		

Action Limit: If leakage radiation at 1 meter from the source exceeds 100 mR or 0.88 mGy in 1 hr at maximum continuous operating conditions, seek service adjustment.

Tube Output Consistency

SDD: 40 inches **Instrument used:** Radcal 2025 or 2026

Field size: 6" x 6"; 100 kV, 100 mAs =	1.151	R
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IMAGE QUALITY

High Contrast Resolution

Gammex Test pattern MA436

Small Focal Spot:	2.09	Lp/mm	Technique:	kV	mAs	mR
Large Focal Spot:	1.88	Lp/mm		50	1.6	4.4

Low Contrast Resolution

Gammex C/D phantom 1151

Row with best visibility:	5	Contrast:	6.4%	Technique: 60 kV, 10 mAs
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COMMENTS

System functioning properly.

RECOMMENDATIONS

None

Qualified Medical Physicist:

Date: 1/3/2018

Responsible Individual:
(Radiology Manager or Physician)

Date: _____

Review and sign this report, and arrange for follow up on recommendations within 30 days of report date

Data

Facility: Surveyor:
 Location: Date: December 21, 2017
 Room: ER
 System: GE Definium 8000 X-ray system manufactured after 10 June 2006 ? yes

SDD 28in

Pass/Fail Criteria			
kVp avg	10%	Time	10%

Machine Settings				
kVp	mA	FS	Sec	Al
50	100	S	0.100	
60	100	S	0.100	
70	100	S	0.100	
80	100	S	0.100	
90	100	S	0.100	
100	100	S	0.100	
110	100	S	0.100	
120	100	S	0.100	
80	100	S	0.025	
80	100	S	0.050	
80	100	S	0.100	
80	100	S	0.200	
80	100	S	0.500	
80	100	S	1.000	
80	50	S	0.100	
80	50	S	0.100	
80	100	S	0.100	
80	100	S	0.100	
80	200	S	0.100	
80	200	S	0.100	
80	320	L	0.100	
80	320	L	0.100	
80	400	L	0.100	
80	400	L	0.100	
80	500	L	0.100	
80	500	L	0.100	
80	640	L	0.100	
80	640	L	0.100	
80	100	S	0.100	
80	100	S	0.100	
80	100	S	0.100	
80	100	S	0.100	1.0
80	100	S	0.100	3.3

Measurements							
kVp avg	kV eff	kV peak	Sec	mR	mR/mAs	P/F	
48.95	48.76	49.49	0.100	56.62	5.662	Pass	
58.93	58.80	59.34	0.100	87.92	8.792	Pass	
68.78	68.63	69.17	0.100	123.60	12.360	Pass	
79.01	78.76	79.62	0.100	162.70	16.270	Pass	
90.14	89.84	91.29	0.099	206.10	20.610	Pass	
100.30	100.10	101.50	0.099	253.20	25.320	Pass	
110.20	109.90	111.20	0.100	303.20	30.320	Pass	
119.70	119.50	120.60	0.100	355.30	35.530	Pass	
79.69	79.27	80.20	0.025	38.69	15.476	Pass	
79.84	79.59	80.57	0.050	79.67	15.934	Pass	
79.88	79.70	80.35	0.100	163.20	16.320	Pass	
79.91	79.82	80.42	0.200	327.80	16.390	Pass	
79.85	79.83	80.35	0.498	820.50	16.410	Pass	
79.88	79.83	80.44	0.996	1637.00	16.370	Pass	
79.80	79.51	80.62	0.099	81.31	16.262	Pass	
79.77	79.49	80.66	0.099	81.66	16.332	Pass	
79.87	79.69	80.50	0.100	164.40	16.440	Pass	
79.86	79.71	80.39	0.100	162.50	16.250	Pass	
79.78	79.62	80.29	0.100	325.90	16.295	Pass	
79.78	79.61	80.21	0.100	326.70	16.335	Pass	
79.87	79.76	80.29	0.100	521.70	16.303	Pass	
79.85	79.72	80.29	0.100	519.80	16.244	Pass	
79.83	79.70	80.07	0.100	650.90	16.273	Pass	
79.78	79.71	80.07	0.100	651.90	16.298	Pass	
79.73	79.63	80.00	0.100	812.00	16.240	Pass	
79.72	79.61	80.07	0.100	812.00	16.240	Pass	
79.66	79.58	80.12	0.100	1022.00	15.969	Pass	
79.66	79.58	79.92	0.100	1021.00	15.953	Pass	
79.89	79.74	80.28	0.100	163.50	16.350	Pass	
79.88	79.71	80.51	0.100	163.70	16.370	Pass	
79.88	79.71	80.39	0.100	164.20	16.420	Pass	
80.53	80.34	81.02	0.100	134.00	13.400		
81.81	81.65	82.43	0.100	90.38	9.038		

Percent Error			
kVp avg	P/F	Sec	P/F
-2.1%	Pass	-0.2%	Pass
-1.8%	Pass	-0.2%	Pass
-1.7%	Pass	-0.2%	Pass
-1.2%	Pass	-0.2%	Pass
0.2%	Pass	-0.6%	Pass
0.3%	Pass	-0.6%	Pass
0.2%	Pass	-0.4%	Pass
-0.2%	Pass	-0.3%	Pass
-0.4%	Pass	-1.1%	Pass
-0.2%	Pass	-0.6%	Pass
-0.2%	Pass	-0.3%	Pass
-0.1%	Pass	-0.2%	Pass
-0.2%	Pass	-0.4%	Pass
-0.2%	Pass	-0.4%	Pass
-0.3%	Pass	-0.6%	Pass
-0.3%	Pass	-0.6%	Pass
-0.2%	Pass	-0.3%	Pass
-0.2%	Pass	-0.3%	Pass
-0.3%	Pass	-0.2%	Pass
-0.3%	Pass	-0.2%	Pass
-0.2%	Pass	0.0%	Pass
-0.2%	Pass	0.0%	Pass
-0.3%	Pass	0.0%	Pass
-0.3%	Pass	0.0%	Pass
-0.4%	Pass	0.0%	Pass
-0.4%	Pass	0.0%	Pass
-0.4%	Pass	0.0%	Pass
-0.4%	Pass	0.0%	Pass
-0.1%	Pass	-0.3%	Pass
-0.2%	Pass	-0.3%	Pass
-0.2%	Pass	-0.3%	Pass
0.7%	Pass	-0.3%	Pass
2.3%	Pass	-0.3%	Pass

kVp Accuracy

Facility:
 Location:
 Room: ER
 System: GE Definium 8000

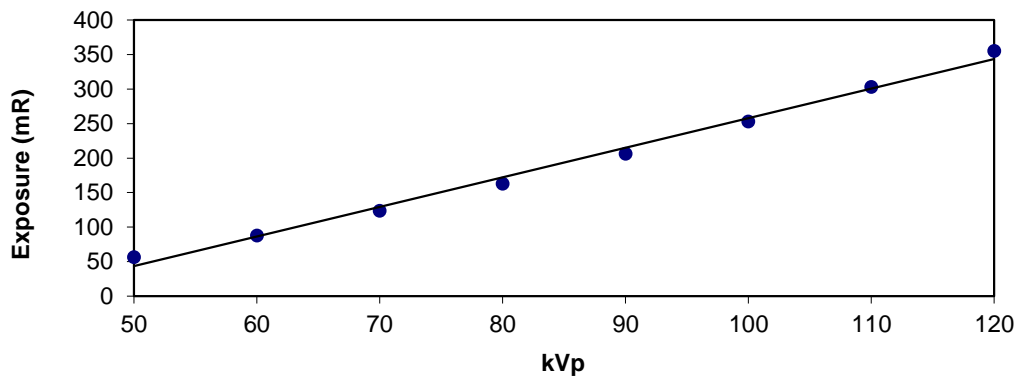
Machine Settings		
mA	FS	SDD
100	S	28in

Pass/Fail Criteria	
kVp avg	10%

kVp	Sec
50	0.100
60	0.100
70	0.100
80	0.100
90	0.100
100	0.100
110	0.100
120	0.100
80	0.025
80	0.050
80	0.100
80	0.200
80	0.500
80	1.000

Measurements								
kVp avg	kV eff	kV peak	Sec	mR	mR/mAs	P/F		
48.95	48.76	49.49	0.100	56.62	5.662	Pass		
58.93	58.80	59.34	0.100	87.92	8.792	Pass		
68.78	68.63	69.17	0.100	123.60	12.360	Pass		
79.01	78.76	79.62	0.100	162.70	16.270	Pass		
90.14	89.84	91.29	0.099	206.10	20.610	Pass		
100.30	100.10	101.50	0.099	253.20	25.320	Pass		
110.20	109.90	111.20	0.100	303.20	30.320	Pass		
119.70	119.50	120.60	0.100	355.30	35.530	Pass		
79.69	79.27	80.20	0.025	38.69	15.476	Pass		
79.84	79.59	80.57	0.050	79.67	15.934	Pass		
79.88	79.70	80.35	0.100	163.20	16.320	Pass		
79.91	79.82	80.42	0.200	327.80	16.390	Pass		
79.85	79.83	80.35	0.498	820.50	16.410	Pass		
79.88	79.83	80.44	0.996	1637.00	16.370	Pass		

Percent Error	
kVp avg	P/F
-2.1%	Pass
-1.8%	Pass
-1.7%	Pass
-1.2%	Pass
0.2%	Pass
0.3%	Pass
0.2%	Pass
-0.2%	Pass
-0.4%	Pass
-0.2%	Pass
-0.2%	Pass
-0.1%	Pass
-0.2%	Pass
-0.2%	Pass



Surveyor:
 Date:

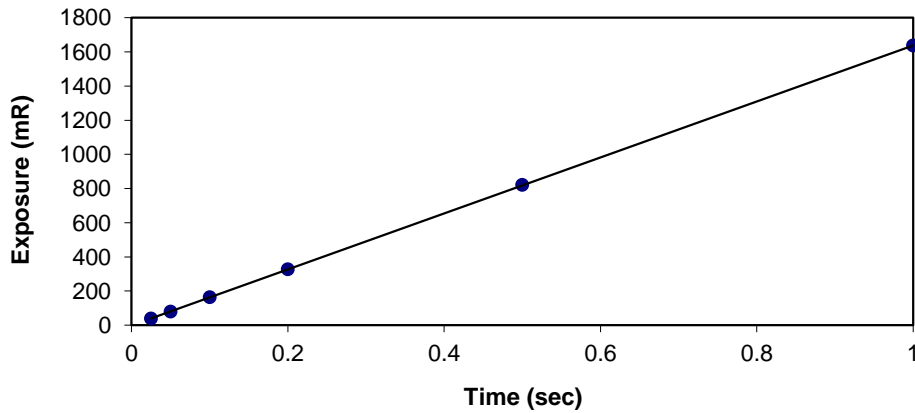
Timer Accuracy

Facility:
 Location:
 Room: ER
 System: GE Definium 8000

Machine Settings		
mA	FS	SDD
100	S	28in

Pass/Fail Criteria	
Timer	10%

		Measurements							Percent Error	
kVp	Sec	kVp avg	kV eff	kV peak	Sec	mR	mR/mAs	P/F	Sec	P/F
50	0.100	48.95	48.76	49.49	0.100	56.62	5.662	Pass	-0.2%	Pass
60	0.100	58.93	58.80	59.34	0.100	87.92	8.792	Pass	-0.2%	Pass
70	0.100	68.78	68.63	69.17	0.100	123.60	12.360	Pass	-0.2%	Pass
80	0.100	79.01	78.76	79.62	0.100	162.70	16.270	Pass	-0.2%	Pass
90	0.100	90.14	89.84	91.29	0.099	206.10	20.610	Pass	-0.6%	Pass
100	0.100	100.30	100.10	101.50	0.099	253.20	25.320	Pass	-0.6%	Pass
110	0.100	110.20	109.90	111.20	0.100	303.20	30.320	Pass	-0.4%	Pass
120	0.100	119.70	119.50	120.60	0.100	355.30	35.530	Pass	-0.3%	Pass
80	0.025	79.69	79.27	80.20	0.025	38.69	15.476	Pass	-1.1%	Pass
80	0.050	79.84	79.59	80.57	0.050	79.67	15.934	Pass	-0.6%	Pass
80	0.100	79.88	79.70	80.35	0.100	163.20	16.320	Pass	-0.3%	Pass
80	0.200	79.91	79.82	80.42	0.200	327.80	16.390	Pass	-0.2%	Pass
80	0.500	79.85	79.83	80.35	0.498	820.50	16.410	Pass	-0.4%	Pass
80	1.000	79.88	79.83	80.44	0.996	1637.00	16.370	Pass	-0.4%	Pass



Surveyor:
 Date:

Reproducibility

Facility:
 Location:
 Room: ER
 System: GE Definium 8000

Machine Settings				
kV	mA	FS	Sec	SDD
80	100	S	0.1	28in

Pass/Fail Criteria
CV
0.05

Measurements						
kVp avg	kV eff	kV peak	Sec	mR	mR/mAs	
79.01	78.76	79.62	0.100	162.70	16.270	
79.88	79.70	80.35	0.100	163.20	16.320	
79.89	79.74	80.28	0.100	163.50	16.350	
79.88	79.71	80.51	0.100	163.70	16.370	
79.88	79.71	80.39	0.100	164.20	16.420	

Avg	79.71	79.52	80.23	0.10	163.46	16.346
CV	0.005	0.005	0.004	0.001	0.003	0.003

P/F	Pass	Pass	Pass	Pass	Pass	Pass
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Photocell Comparison and Delivered Dose

Responses of Left and Right Photocells compared to Center Photocell

	Photo Cell:	Left	Center	Right	
Table Bucky	Feedback mAs:	7.4	7.3	7.2	kV set: 80
	mAs Deviation from Center Cell:	+0.1	Std.	-0.1	mA set: 320
	Skin Entry Dose (mR):	70.4	69.5	68.5	Density: 0
					Phantom: 0.5 mm Pb
Chest Bucky	Feedback mAs:	3.4	3.6	3.4	kV set: 120
	mAs Deviation from Center Cell:	-0.2	Std.	-0.2	mA set: 320
	Skin Entry Dose (mR):	17.7	18.7	17.7	Density: 0
					Phantom: 0.5 mm Pb

Surveyor:
 Date: December 21, 2017

mAs Linearity

Facility:
 Location:
 Room: ER
 System: GE Definium 8000

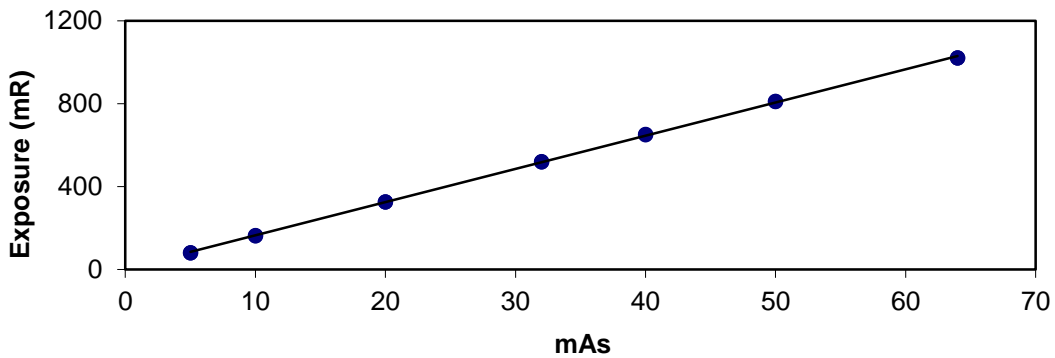
Machine Settings		
kV	Sec	SDD
80	0.1	28in

Pass/Fail Criteria		
Adjacent	Non-adjacent	
0.050		0.1

mA station	FS
50	S
50	S
100	S
100	S
200	S
200	S
320	L
320	L
400	L
400	L
500	L
500	L
640	L
640	L

Measurements					
kVp avg	kV eff	kV peak	Sec	mR	
79.80	79.51	80.62	0.099	81.31	
79.77	79.49	80.66	0.099	81.66	
79.87	79.69	80.50	0.100	164.40	
79.86	79.71	80.39	0.100	162.50	
79.78	79.62	80.29	0.100	325.90	
79.78	79.61	80.21	0.100	326.70	
79.87	79.76	80.29	0.100	521.70	
79.85	79.72	80.29	0.100	519.80	
79.83	79.70	80.07	0.100	650.90	
79.78	79.71	80.07	0.100	651.90	
79.73	79.63	80.00	0.100	812.00	
79.72	79.61	80.07	0.100	812.00	
79.66	79.58	80.12	0.100	1022.00	
79.66	79.58	79.92	0.100	1021.00	

mR/mAs	Linearity	P/F
16.262	-	-
16.332	0.002	Pass
16.440	0.003	Pass
16.250	0.006	Pass
16.295	0.001	Pass
16.335	0.001	Pass
16.303	0.001	Pass
16.244	0.002	Pass
16.273	0.001	Pass
16.298	0.001	Pass
16.240	0.002	Pass
16.240	0.000	Pass
15.969	0.008	Pass
15.953	0.000	Pass



Surveyor:
 Date: December 21, 2017

Beam Quality (HVL)

Facility:
 Location:
 Room: ER
 System: GE Definium 8000

Surveyor: F.X. Massé Associates
 Date: December 21, 2017

Machine Settings				
kV	mA	FS	Sec	SDD
79.89	79.74	80.28	0.0997	28in

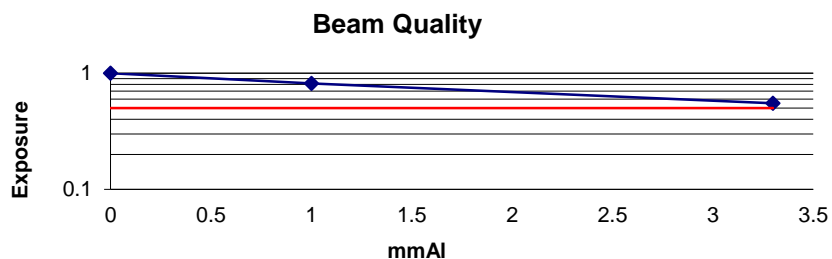
Pass/Fail Criteria	
Minimum HVL	
2.86	mm Al

Measurements					
kVp avg	kV eff	kV peak	Sec	mR	mR/mAs
79.88	79.71	80.39	0.100	164.20	20.652
80.53	80.34	81.02	0.100	134.00	16.853
81.81	81.65	82.43	0.100	90.38	11.367

mm Al	Normalized Exposure
0	1
1	0.816077954
3.3	0.550426309

Avg	80.74	80.567	81.28	HVL	3.83	Pass
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The Half-Value Layer passed measuring 3.83 mm Al at 79.88 kVp



ENTRANCE SKIN EXPOSURE (ESE) / ENTRANCE AIR KERMA (EAK) GUIDE FOR NON-PHOTOTIMED EXPOSURES

Facility: NSMC - Salem Hospital
 Location: 81 Highland Ave., Salem, MA
 Room: ER
 System: GE Definium 8000

Date: December 21, 2017
 Surveyor: F.X. Massé Associates

View (Position)	Bucky		kVp	mAs	Body-Dim (cm.)	Dist (cm.)	ESE Roentgen	EAK (mGy)
	Inch	(cm)						
Skull-AP	40	102	70	25	20	73	0.248	2.18
Skull-lateral	40	102	72	20	22	71	0.223	1.96
Skull-Townes	40	102	76	32	20	73	0.377	3.32
Skull-Basal	40	102	76	64	22	71	0.798	7.02
Sinuses-AP	40	102	72	20	16	77	0.189	1.67
Sinuses-Waters	40	102	72	20	20	73	0.211	1.85
Sinuses-Lateral	40	102	70	16	16	77	0.142	1.25
Sinuses-Basal	40	102	80	32	22	71	0.441	3.88
Mandible-AP/PA	40	102	62	12.5	12	81	0.077	0.68
Mastoids-Laws	40	102	60	20	14	79	0.120	1.06
Mastoids-Stens	40	102	60	20	16	77	0.127	1.11
Orbits-PA	40	102	82	25	16	77	0.309	2.71
Facial-Waters	40	102	75	25	16	77	0.258	2.27
Facial-Lateral	40	102	66	16	16	77	0.126	1.11
Cervical Spine-AP	40	102	70	6.4	12	81	0.051	0.45
Cervical Spine-Lateral	72	183	76	32	14	164	0.074	0.65
Cervical Spine- Obl	72	183			14	164		
Chest-AP	72	183	85	5	23	155	0.016	0.14
Chest-Lateral	72	183	80	10	28	150	0.031	0.27
Thoracic Spine-AP/OBL	40	102	76	32	25	68	0.435	3.83
Lumbar Spine-AP	40	102	76	40	22	71	0.499	4.39
Lumbar Spine-Lateral	40	102	86	75	35	58	1.803	15.86
Lumbar-L5/S1-Lateral	40	102	85	120	29	64	2.311	20.34
Pelvis Hips-AP	40	102	80	40	30	63	0.702	6.17
Hips-Lateral	40	102	80	80	22	71	1.103	9.71
Ribs above diaphragm	40	102	66	25	23	70	0.238	2.10
Ribs below diaphragm	40	102	66	40	23	70	0.381	3.36
Abdomen-AP/PA	40	102	80	19.4	22	71	0.268	2.35
Gall Bladder-AP	40	102	76	50	24	69	0.660	5.81
BE-GI AP/OBL	40	102	120	11.7	24	69	0.373	3.28
Shoulder-AP	40	102	76	25	12	81	0.239	2.10
Femur-AP/Lateral	40	102	70	25	12	81	0.201	1.77
Lower leg, Knee/AP	40TT	102	60	2.5	10	92	0.011	0.10
Elbow, Arm/AP	40TT	102	65	7	7	95	0.035	0.31
Hand, Wrist/AP/PA	40TT	102	60	5	5	97	0.020	0.18
Ankle, Foot/AP	40TT	102	66	7	9	93	0.038	0.33

Diagnostic Reference Levels (DRLs) are action levels used to identify unusually high radiation doses for common procedures. Doses exceeding DRLs should be reviewed to determine if techniques can be reduced and acceptable image quality achieved at lower doses. DRLs are set at the 75th percentile of doses at representative facilities (i.e., 75% of facilities surveyed by the ACR / AAPM deliver doses below DRLs). Achievable Doses (ADs) are set at the 50th percentile (i.e., 50% of facilities surveyed deliver doses below ADs), and can be used with DRLs to further optimize protocols.

ACR / AAPM DRLs and ADs are set as follows (ACR Practice Guidelines, 2014):	DRL (mGy) AD (mGy)		Delivered Dose (mGy)	Do above techniques meet suggested DRLs?	Are doses below ADs?
Adult PA Chest	0.15	0.11	0.14	Yes	No
Adult AP Abdomen	3.4	2.4	2.35	Yes	Yes
Adult AP Lumbar Spine	4.2	2.8	4.39	No	No

ENTRANCE SKIN EXPOSURE (ESE) GUIDE FOR PHOTOTIMED EX

Facility: NSMC - Salem Hospital
 Location: 81 Highland Ave., Salem, MA

Room: ER
 System: GE Definium 8000

Date:
 Surveyor:

Views: Skull (AP, Lateral, Townes, Basal); Sinuses (AP, Waters, Lateral, Basal); Mandible (AP/PA); Mastoids (Laws, Stens); Orbits; Facial (Waters, Lateral); Shoulder (AP); Femur (AP/Lateral)
 Cervical Spine (AP) (SID: 40"; Body Dim. 17 ± 4 cm*)

		Feedback mAs							
		5	10	20	30	40	50	60	70
Applied kVp	55	0.026	0.053	0.106	0.159	0.211	0.264	0.317	0.370
	60	0.032	0.064	0.129	0.193	0.257	0.322	0.386	0.450
	65	0.039	0.077	0.155	0.232	0.309	0.387	0.464	0.542
	70	0.045	0.090	0.181	0.271	0.362	0.452	0.542	0.633
	75	0.052	0.105	0.209	0.314	0.419	0.524	0.628	0.733
	80	0.060	0.119	0.238	0.357	0.476	0.595	0.714	0.833
	85	0.067	0.135	0.270	0.405	0.540	0.674	0.809	0.944

ESE (Roentgen)

Views: Thoracic Spine (AP/OBL); Lumbar L5/S1 (Lateral) (SID: 40"; Body

		Feedback mAs				
		25	50	75	100	125
Applied kVp	50	0.142	0.283	0.425	0.566	0.708
	60	0.220	0.440	0.659	0.879	1.099
	70	0.309	0.618	0.927	1.236	1.545
	80	0.407	0.814	1.220	1.627	2.034
	90	0.515	1.031	1.546	2.061	2.576
	100	0.633	1.266	1.899	2.532	3.165
	110	0.758	1.516	2.274	3.032	3.790

ESE (Roentgen)

Views: Chest (AP, Lateral)

(SID: 72"; Body Dim. 27 ± 2 cm)

		Feedback mAs							
		2	5	10	15	20	25	30	35
Applied kVp	65	0.004	0.010	0.020	0.029	0.039	0.049	0.059	0.069
	75	0.005	0.013	0.027	0.040	0.053	0.066	0.080	0.093
	85	0.007	0.017	0.034	0.051	0.068	0.085	0.103	0.120
	95	0.009	0.021	0.043	0.064	0.085	0.106	0.128	0.149
	105	0.010	0.026	0.052	0.077	0.103	0.129	0.155	0.180
	115	0.012	0.031	0.061	0.092	0.122	0.153	0.183	0.214
	125	0.013	0.033	0.066	0.099	0.132	0.165	0.198	0.230

ESE (Roentgen)

Views: Cervical Spine (AP, Lateral, Obl)

(SID: 72"; Body

		Feedback mAs				
		5	10	15	20	25
Applied kVp	60	0.007	0.014	0.020	0.027	0.034
	65	0.008	0.016	0.025	0.033	0.041
	70	0.010	0.019	0.029	0.038	0.048
	75	0.011	0.022	0.033	0.044	0.056
	80	0.013	0.025	0.038	0.050	0.063
	85	0.014	0.029	0.043	0.057	0.072
	90	0.016	0.032	0.048	0.064	0.080

ESE (Roentgen)

Views: Pelvis Hips (AP); Hips (Lateral); Ribs; Abdomen (AP/PA); Gall Bladder (AP); BE-GI (AP/Obl) (SID: 40"; Body

		Feedback mAs														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Applied kVp	50	0.050	0.100	0.151	0.201	0.251	0.301	0.352	0.402	0.452	0.502	0.553	0.603	0.653	0.703	0.754
	60	0.078	0.156	0.234	0.312	0.390	0.468	0.546	0.624	0.702	0.780	0.858	0.936	1.014	1.092	1.170
	70	0.110	0.219	0.329	0.439	0.548	0.658	0.768	0.877	0.987	1.097	1.207	1.316	1.426	1.536	1.645
	80	0.144	0.289	0.433	0.578	0.722	0.866	1.011	1.155	1.299	1.444	1.588	1.733	1.877	2.021	2.166
	90	0.183	0.366	0.549	0.732	0.914	1.097	1.280	1.463	1.646	1.829	2.012	2.195	2.378	2.561	2.743
	100	0.225	0.449	0.674	0.899	1.123	1.348	1.573	1.798	2.022	2.247	2.472	2.696	2.921	3.146	3.370
	110	0.269	0.538	0.807	1.076	1.345	1.614	1.883	2.153	2.422	2.691	2.960	3.229	3.498	3.767	4.036
120	0.315	0.631	0.946	1.261	1.576	1.892	2.207	2.522	2.838	3.153	3.468	3.784	4.099	4.414	4.729	

ESE (Roentgen)

* Mean + SD