Radiation Survey for eXaminer

General Information	
Date Survey Performed:	11/10/2009
Tunnel Numbers:	**Entrance SN: 2333A / Exit SN: plate with S/N has been removed**

General Notes

The worse case radiation scatter occurs while scanning bags. These instructions simulate this condition by using the IQTK bag while surveying explosive detection systems.

The Victoreen Ion Chamber Survey Meter's detection area is approximately 2 inches square and is located directly behind the display screen on the bottom of the unit. The meter must be placed within 5 cm. of the area or surface being measured.

Equipment

Victoreen Ion Chamber Survey Meter - Model 450P or Inovision Ion Chamber Survey Meter - Model 451P

Materials

N/A

References

1. 21 CFR 1020.4 Cabinet x-ray systems
2. Victoreen Operation and Instruction Manual – Rev 2

Instruction **Unit Number 6236**

1. In an area away from the scanners, turn on the meter by pressing the on-off key. Wait approximately 4 minutes for the meter to run through the initialization procedure. After the initialization procedure is complete and the meter is reading less than 20 μ R/h the meter is ready for use.
2. Change the manual tunnel control on the scanner and exit tunnel to stop. Place the IQTK bag on the exit tunnel in the B orientation and push it into the scanner approximately 19.5 inches from the edge of the exit tunnel. Use a tape measure to verify distance.
3. Start the system by pressing "7" <enter> at the main FCC screen.
4. After system is running, type 2 <enter> and verify on the FCC screen that the high voltage exceeds 160KV. Verify that the scanner x-ray indicator lights are lit.
5. Place the meter against the surface at the approximate center point of one of the boxes indicated on Figure 1. Move the meter around the entire box at a speed of approximately 2 in/sec. Record the highest reading observed at the appropriate location on Figure 1. Continue scanning until measurements are obtained for each box. **NOTE: Special care must be used when scanning seams where the tunnels and scanners connect as well as areas in front of and surrounding the lead curtains. These areas have been shaded in Fig. 1**
6. After radiation survey is complete, change the setting on the exit conveyor to forward and manually turn the scanner conveyor to forward to remove the IQTK bag.

Radiation Survey for eXaminer

Scanner Radiation Survey
(Enter radiation in µrem)

Scanner Left Side

Unit Number
6236

Output / **Input**

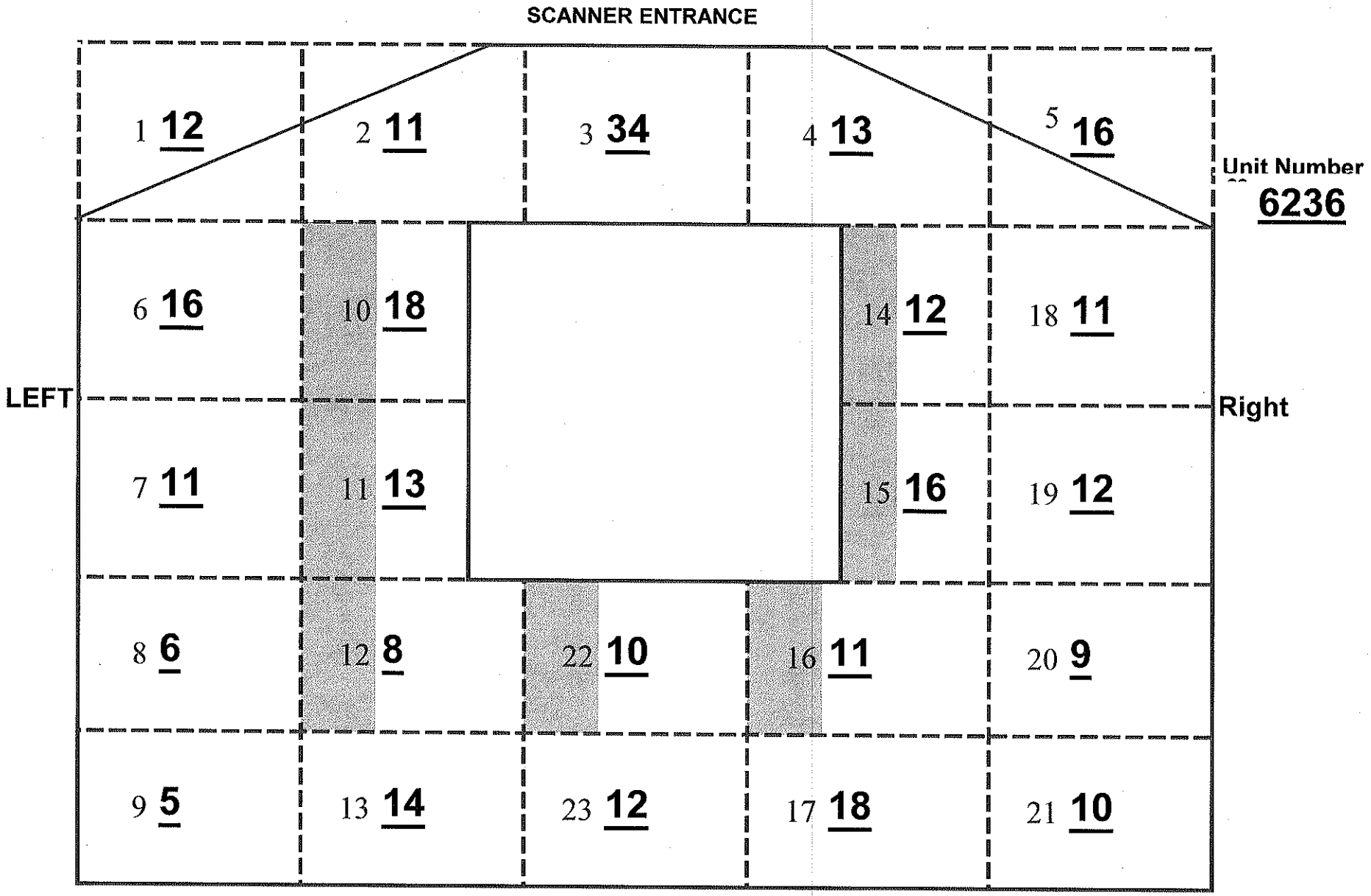
26 **12**	1T **23** 1 **18** 1S **26**	2T **23** 2 **19** 2S **23**	3 **11**	4 **9**	5 **6**	
27 **11**	6S **28** 6 **15**	7S **19** 7 **28**	8 **26**	9 **14**	10 **11**	
28 **16**	11S **22**	12S **32**	13 **6**	14 **8**	15 **6**	29 **17**
30 **17**						
31 **32**	11 **12**	12 **15**				
32 **12**	16S **11** 16 **6**	17S **7** 17 **12**	18 **5**	19 **15**	20 **13**	
33 **12**	21S **18** 21 **15** 21B **30**	22S **18** 22 **34** 22B **29**	23 **3**	24 **9**	25 **10**	

Legend

T – Top of A/C
S – Side of A/C
B – Bottom of A/C

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

Radiation Survey for eXaminer



Checked by: [redacted]

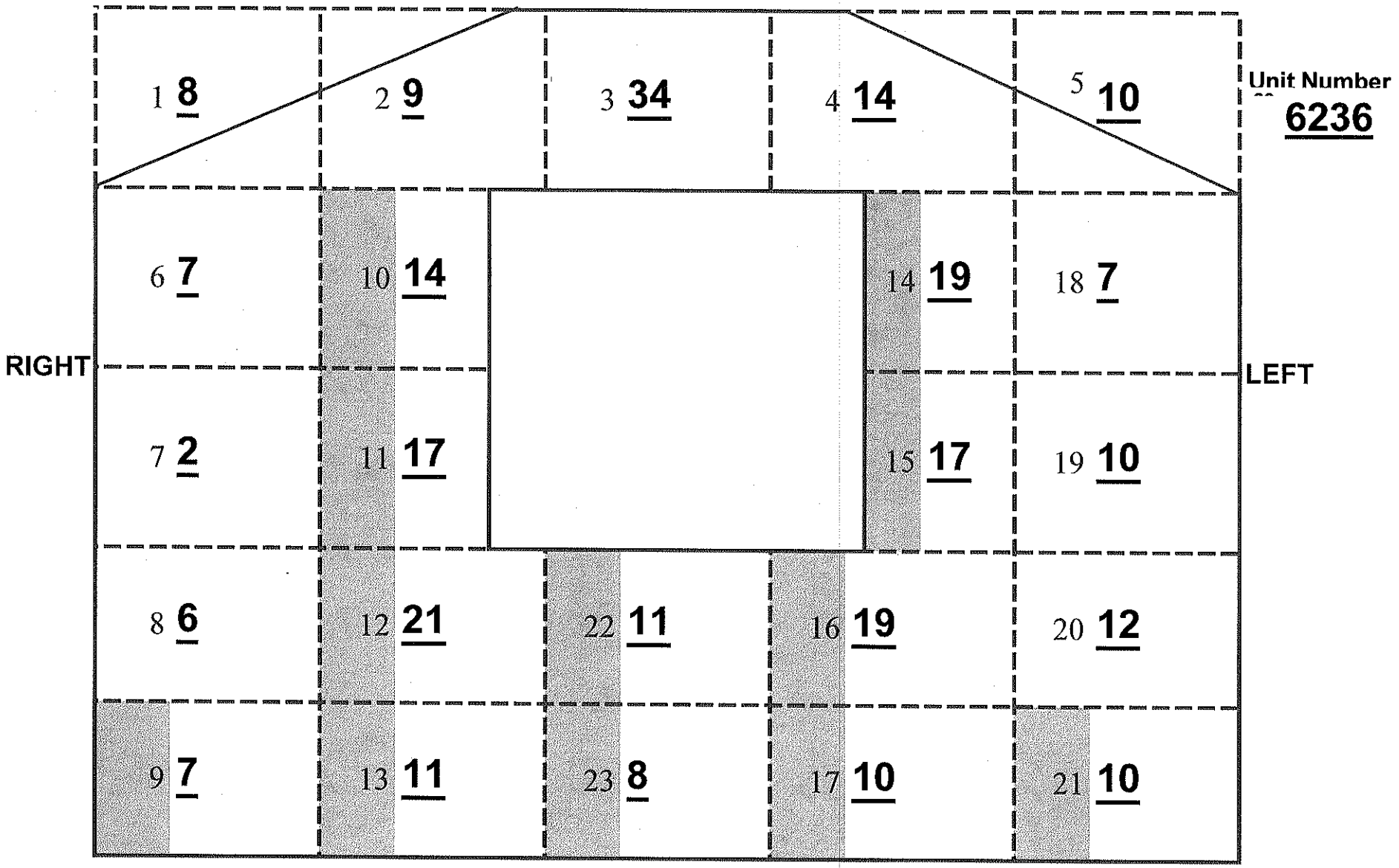
Meter Number: 451P

Meter Serial #: 263

Calibration Due Date: 10/22/2010

Radiation Survey for eXaminer

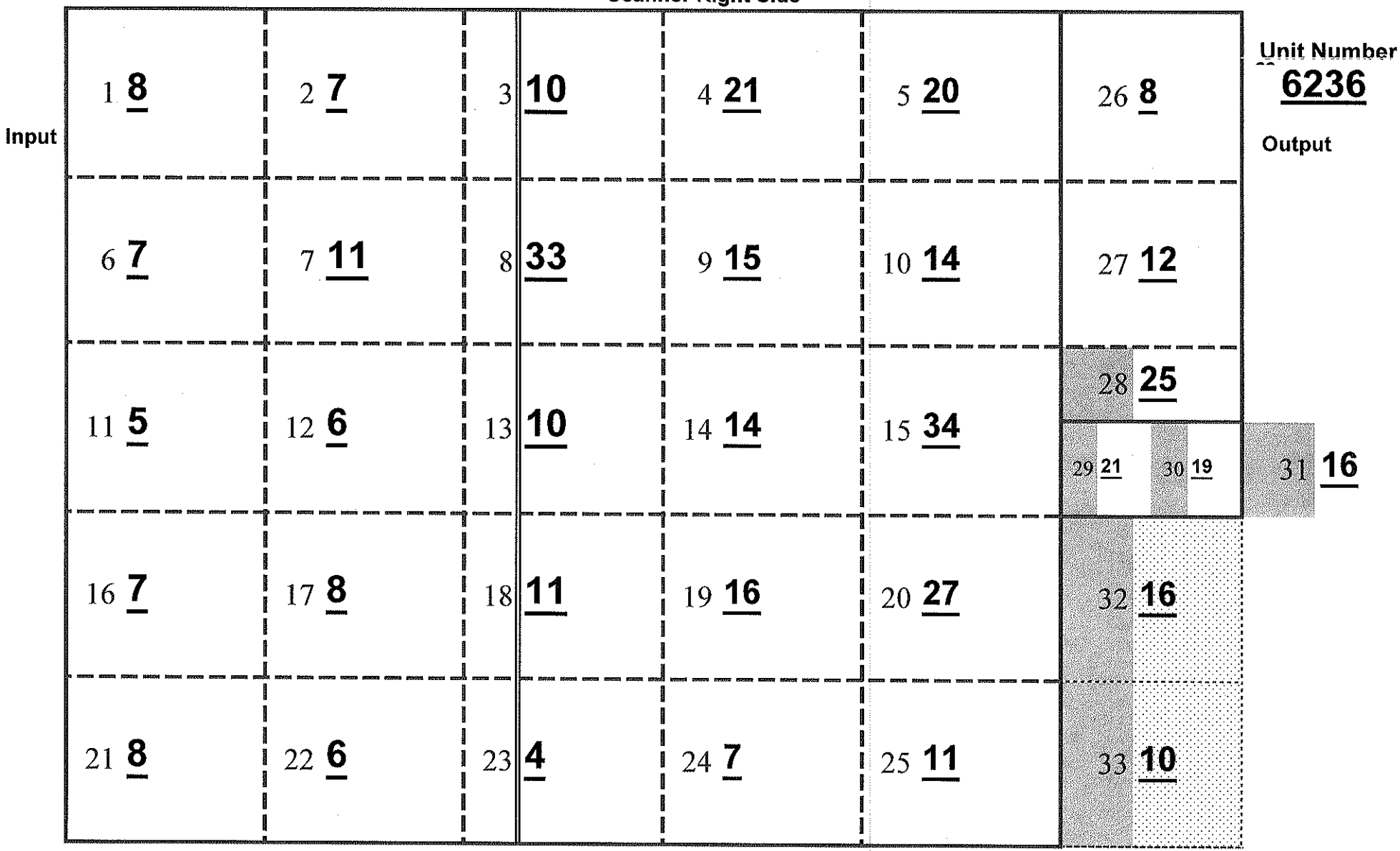
SCANNER EXIT



Checked by: [redacted] Meter Number: 451P Meter Serial #: 263 Calibration Due Date: 10/22/2010

Radiation Survey for eXaminer

Scanner Right Side



Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

Radiation Survey for eXaminer

SCANNER ROOF

1 **13**	2 **11**	3 **14**	4 **10**	5 **9**	
6 **16**	7 **12**	8 **16**	9 **15**	10 **11**	26 **10**
11 **13**	12 **22**	13 **21**	14 **22**	15 **14**	27 **11**
16 **12**	17 **10**	18 **16**	19 **12**	20 **11**	28 **11**
21 **6**	22 **14**	23 **10**	24 **21**	25 **8**	

INPUT **OUTPUT**

Unit Number
6236

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

L-3 Communications Security and Detection Systems - Proprietary

Radiation Survey for eXaminer

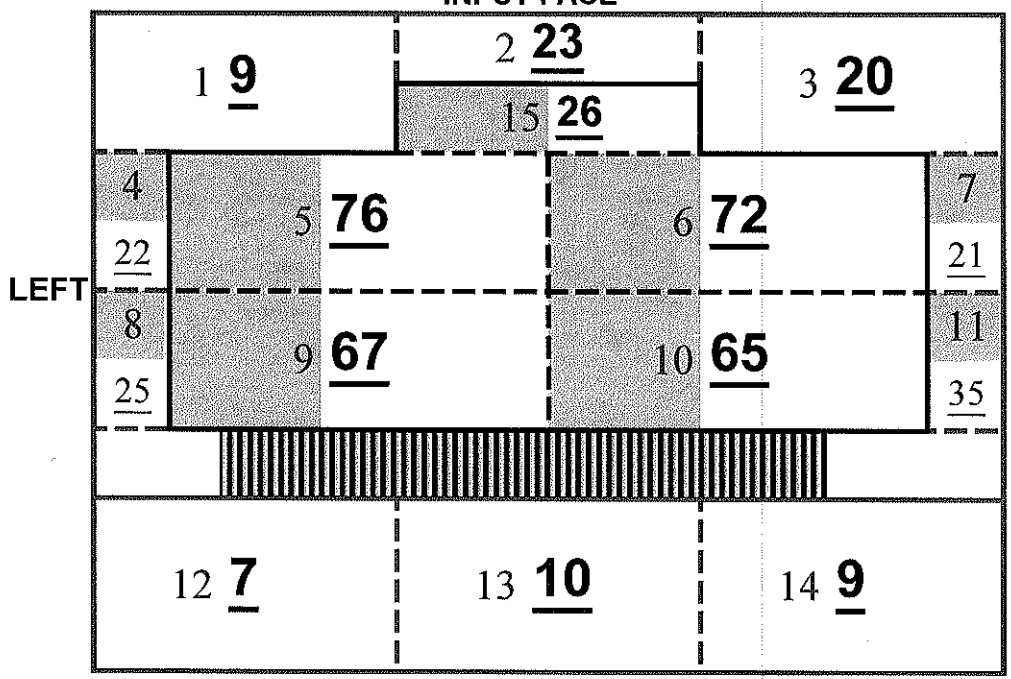
Tunnel Radiation Survey
(Enter radiation in µrem)

INPUT TUNNEL ROOF

SCANNER	1 **21**	2 **26**	3 **14**	4 **10**	5 **6**
	6 **19**	7 **20**	8 **11**	9 **8**	10 **9**
	11 **22**	12 **36**	13 **11**	14 **9**	15 **8**

INPUT

INPUT FACE



Unit Number
6236

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

Radiation Survey for eXaminer

INPUT TUNNEL

1 **17**	2 **22**	3 **11**	4 **13**	5 **9**
6 **11**	7 **17**	8 **15**	9 **13**	10 **12**
11 **13**	12 **10**	13 **6**	14 **10**	15 **9**
16 **17**	17 **10**	18 **11**	19 **8**	20 **6**
21 **16**	22 **6**	23 **8**	24 **3**	25 **5**

SCANNER

INPUT

Unit Number **6236**

LEFT SIDE

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

L-3 Communications Security and Detection Systems - Proprietary

Radiation Survey for eXaminer

EXIT TUNNEL

Unit Number 6236

OUTPUT

1 **8**	2 **10**	3 **14**	4 **11**	5 **8**
6 **11**	7 **9**	8 **11**	9 **7**	10 **10**
11 **9**	12 **7**	13 **5**	14 **9**	15 **17**
16 **7**	17 **5**	18 **8**	19 **15**	20 **19**
21 **5**	22 **3**	23 **4**	24 **7**	25 **10**

SCANNER

LEFT SIDE

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

Radiation Survey for eXaminer

OUTPUT TUNNEL ROOF

SCANNER						OUTPUT
	1 **21**	2 **20**	3 **14**	4 **8**	5 **5**	
	6 **22**	7 **23**	8 **25**	9 **16**	10 **7**	
	11 **16**	12 **27**	13 **17**	14 **7**	15 **8**	

OUTPUT FACE

RIGHT				LEFT
	1 **7**	2 **12**	3 **9**	
4 / 18	5 **56**	6 **50**		7 / 22
8 / 55	9 **40**	10 **42**		11 / 21
	12 **6**	13 **7**	14 **12**	

Unit Number
6236

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

Radiation Survey for eXaminer

EXIT TUNNEL

SCANNER

OUTPUT

1 **11**	2 **32**	3 **32**	4 **19**	5 **9**
6 **14**	7 **10**	8 **23**	9 **3**	10 **11**
11 **22**	12 **19**	13 **18**	14 **16**	15 **13**
16 **19**	17 **9**	18 **11**	19 **16**	20 **8**
21 **10**	22 **5**	23 **8**	24 **3**	25 **10**

Unit Number
6236

RIGHT SIDE

Checked by: [redacted]

Meter Number: **451P**

Meter Serial #: **263**

Calibration Due Date: **10/22/2010**

L-3 Communications Security and Detection Systems - Proprietary

Radiation Survey for eXaminer

INPUT TUNNEL

1 **7**	2 **5**	3 **17**	4 **38**	5 **19**
6 **5**	7 **4**	8 **10**	9 **23**	10 **16**
11 **10**	12 **9**	13 **11**	14 **12**	15 **12**
16 **9**	17 **13**	18 **10**	19 **14**	20 **17**
21 **4**	22 **7**	23 **6**	24 **9**	25 **10**

INPUT

SCANNER

Unit Number
6236

RIGHT SIDE

Checked by: [redacted] Meter Number: **451P** Meter Serial #: **263** Calibration Due Date: **10/22/2010**

L-3 Communications Security and Detection Systems - Proprietary