Rapiscan systems

BAGGAGE/PARCEL CABINET X-RAY SYSTEM RADIATION LEAKAGE REPORT

FIELD SERVICE ENGINEERS

Form R-0588-3 9/9/09

45. RSI W.O.# 3743925
Deferred W.O.#

1. Name of Facility: IOC (SRA International)	2. Region: NJ	3. Street Address: 2628 Fire Rd	
4. City: Egg Harbor Township		5. State or Province Code: NJ	6. Zip Code: 08234
7. Room No. or Other Physical Location of System: X-Ray Room	8. Person Interviewed: [redacted]	9. Telephone Number: [redacted]	10. Fax Number: [redacted]
11. Manufacture Information & Certification Label Present ☒ Yes - Pass ☐ No - Fail	12. Radiation Measuring Instrument: FSE Shall Attach Copy of Calibration Certificate to This Form. Model: Radeye Serial No. 0287 Calibration Due Date: 2/24/12		
Manufacturer: Rapiscan Systems Inc.	13. System Model No.: 620DV	14. Single Source ☐ Dual Source ☒ Other ☐, Describe:	15. System Serial No.: 7090702
16. Date of Manufacture Mo. 2 Yr. 2009	18. Facility Owner Has been notified of responsibility for "Application for Registration" with their State Radiation Control Agency ☒ Yes ☐ No	19. Customer has been notified of their responsibility for posting their State "Notice to Employees" Document and Posted in Several Conspicuous Locations so Employees Can View ☒ Yes ☐ No	
17. X-ray Tube Serial Number(s): Vertical: P-1355, Horizontal P-6807	20. Operator Instructions Available ☒ Yes - Pass ☐ No - Fail	21. Maintenance Schedule Available ☐ Yes - Pass ☐ No - Fail N/A	
22. Warning Label Present at Controls Stating: "Caution: X-Rays Produced When Energized" ☒ Yes - Pass ☐ No - Fail	23. Warning Labels Present at Ports Stating: "Caution: Do Not Insert Any Part of the Body When System is Energized, X-Ray Hazard" ☒ Yes - Pass ☐ No - Fail	24. Two Indicators Labeled "X-Ray On" Present at Controls (including software user interface) ☒ Yes - Pass ☐ No - Fail	
25. At Least One Indicator, Marked "X-Ray On" is Visible from Each Port ☒ Yes - Pass ☐ No - Fail	26. Captured Key: The Key for the Key Actuated Control Cannot be Removed in Any Mode that Allows X-Ray Generation ☒ Yes - Pass ☐ No - Fail		
27. All Doors and Access Panels To the X-Ray Beam Prevent Generation of X-Radiation ☒ Yes - Pass ☐ No - Fail	28. Some Part of the Body Can Be Inserted Through a Port Into The Primary Beam ☐ Yes ☒ No		
29. Use of X-Ray Control Necessary to Resume Operation Following Interruption ☒ Yes ☐ No	30. Means Provided to Ensure Operator Presence at the Control Area X-ray located in a public access area ☐ Yes - Pass ☐ No – Fail Or X-ray located in a non-public access area ☒ Not Required		
Rapiscan Systems Test Procedure Used: Rapiscan Systems WI-0023-4	31. Scatter Block Description: ☐ Two (2) Reame Copy Paper ☒ Other, Describe: Petron Case 1120	32. Means Provided to Operator for Terminating Exposures of Greater than One-Half Second and Preventing X-rays (E-Stop Test) ☒ Yes - Pass ☐ No - Fail	
33. X-Ray Generator Settings: 160.8 kVp 1.007 mA: V; 160.8 kVp 1.007 mA: H	Note: All Survey Measurements Shall be Obtained at 5 cm from All External Surfaces and at 5 cm from the Plane of All Access Port Openings or Shroud Extension Openings. Scatter Block shall be Stacked and Positioned Centerline of Primary Beam.		
34.1. Background Radiation: 4 uR/hr	--	**Maximum External Surface Dose Rate Not to Exceed 500 uR/hr at 5 cm from all external surfaces.**	

34.3 Record All Readings in uR/hr Unless Otherwise Noted

Please see model specific diagram (attached)

36. Overall Condition of Lead Drapes: ☒ SAT - Pass ☐ UNSAT - Fail Description	37. Overall Condition of Machine: ☒ SAT – Pass ☐ UNSAT – Fail	38. Comments, Corrective Active Actions and/or Recommendations: WO # 3743925

39. Surveyor Name (Print: L, F, MI)	40. Surveyor Signature	41. Date of Survey: 3/23/11	42. Time of Survey: 10:00 AM
[redacted]			

The Surveyor has inspected, tested and certified this x-ray machine is in compliance with U.S. FDA 21 CFR 1020.40 and equivalent international radiation emission leakage standards.

43. I ( ) have received a copy of this Radiation Survey Report and under[redacted]port for State inspection.

Signa[redacted] 3/23/11

This report is to certify this x-ray unit has been surveyed for radiation leakage emissions and found to be within the regulatory radiation emission limit. The safety features, controls and indicators incorporated in the x-ray unit have been satisfactorily tested and/or inspected. The owner of this x-ray unit is responsible for State Radiation Control Agency compliance (not applicable for facilities exclusively operated by the Federal Government) and for the safe use and routine inspection, general maintenance and cleanliness of this x-ray unit. Only trained and qualified individuals should operate this equipment.

Rapiscan systems	MODEL 620DV OR 600 SERIES EQUIVALENT RADIATION LEAKAGE SURVEY FORM	MODEL 620DV FSE SURVEY FORM	FORM FSE-R-0047-620DV-1

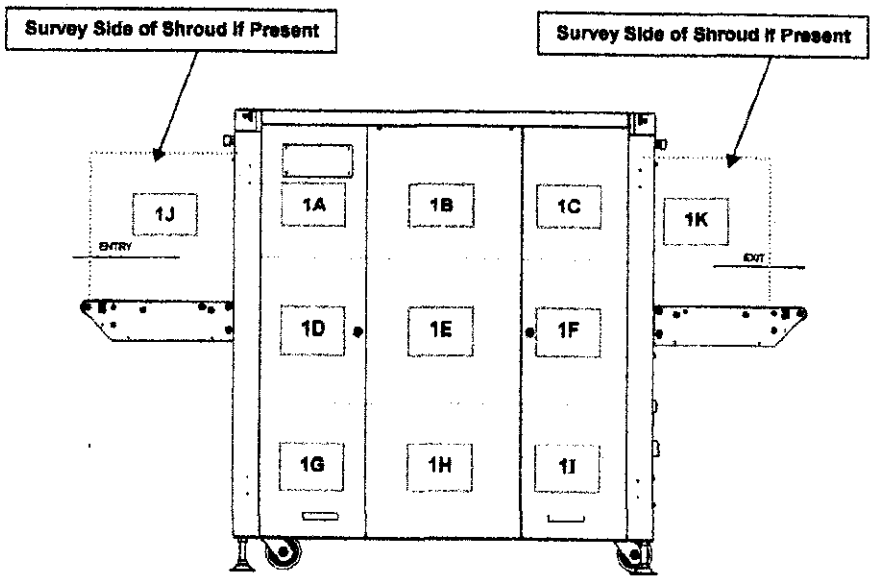
FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY

United States and Canada External Surface Radiation Leakage Limit is 5.0 uSv/hr at 5 cm (500 uR/hr)

Global External Surface Radiation Leakage Limit is 1.0 uSv/hr at 5 cm (100 uR/hr at 5 cm)

WORK ORDER # 3743925

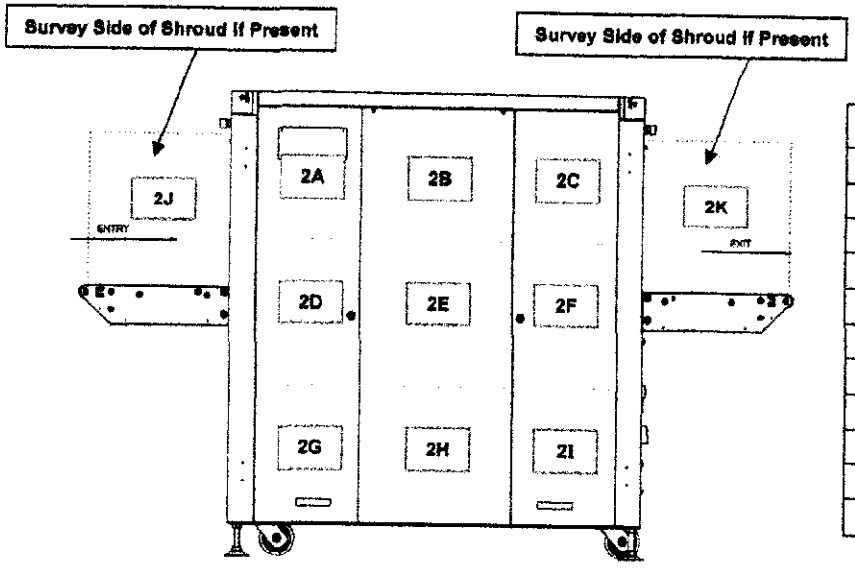
Date: 3/23/11	Location Manufactured: (Check One) ___ Malaysia ___ UK X US	Instrument Model No: RADEYE PRO-ER
Time: 10:00 AM	Date of Mfg: 2/2009	Instrument Serial No: 0287
Background: ___ uSv/hr (4 uR/hr)	Serial No: 7090702	Instrument Calibration Due: 2/24/2012
All Measurements Recorded In: ___ uSv/hr ✓ uR/hr (Check One)	Settings: 160.8 kvP 1.007 mA = V Settings: 160.8 kvP 1.007 mA = H	Description of Scatter Body: (Check One) ___ Paper (2 Reams, 500 sheets each) ___ Wood Block (4" x 4" x 12" L) X Other PELICAN 1120 CASE



Operators Side

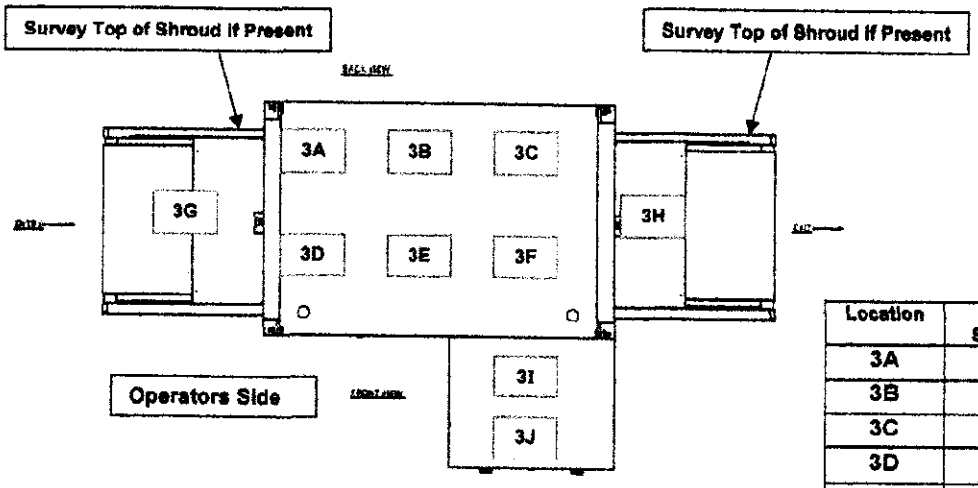
Location	Results NO Scatter Body	Results WITH Scatter Body
1A	7	6
1B	15	17
1C	12	15
1D	7	7
1E	13	21
1F	9	8
1G	4	4
1H	11	5
1I	4	6
1J	46	48
1K	45	42

FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY



Non-Operators Side

Location	Results NO Scatter Body	Results WITH Scatter Body
2A	7	7
2B	7	7
2C	10	5
2D	5	7
2E	8	6
2F	5	4
2G	9	8
2H	6	6
2I	5	5
2J	52	65
2K	55	89

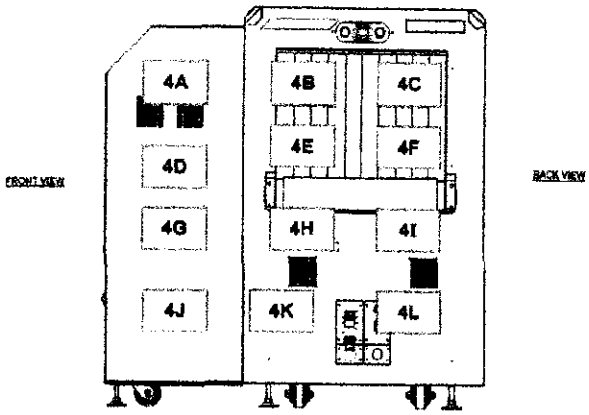


Top View

Location	Results NO Scatter Body	Results WITH Scatter Body
3A	4	4
3B	10	11
3C	7	9
3D	5	4
3E	5	5
3F	4	5
3G	66	89
3H	103	92
3I	27	30
3J	14	11

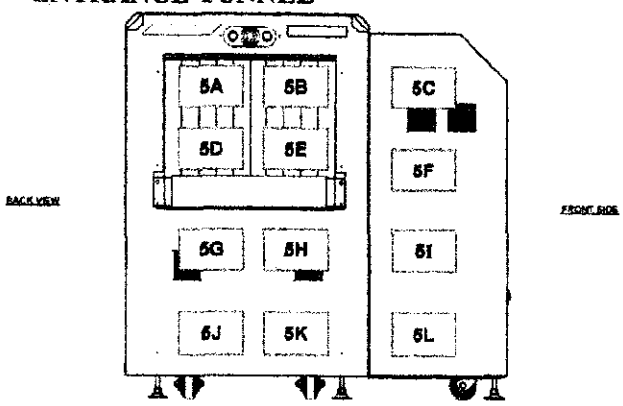
FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY

EXIT TUNNEL



Location	Results NO Scatter Body	Results WITH Scatter Body
4A	12	15
4B	26	27
4C	29	26
4D	23	18
4E	36	32
4F	27	25
4G	11	9
4H	16	18
4I	12	22
4J	4	5
4K	8	6
4L	7	8

ENTRANCE TUNNEL



Location	Results NO Scatter Body	Results WITH Scatter Body
5A	31	31
5B	31	31
5C	12	16
5D	47	41
5E	23	31
5F	26	23
5G	4	7
5H	9	14
5I	8	5
5J	4	4
5K	8	9
5L	5	6

Instructions:

- If shrouds are NOT installed, radiation measurements shall be taken 5 cm from the lead drapes.
- If shrouds are installed, radiation measurements shall be taken at the imaginary plane of the shroud opening.
- Lead Drapes should touch the conveyor. If they do not, check to verify x-ray radiation is not traveling down the conveyor where the gap exists between the lead drapes and the conveyor surface.
- Survey below the conveyor up against the cabinet near any gaps, mating surfaces, and photo sensor cut-outs.

SURVEY PERFORMED BY: [redacted] DATE: 5/23/11