

GUARDIAN™ TM850

Rapiscan®

DATASHEET

RADIATION PORTAL MONITOR FOR LARGE VEHICLES

KEY FEATURES AND BENEFITS

Drive-through monitor for
container trucks, large vehicles,
and rail cargo

Gamma and neutron radiation
detection

Automated inspection operation

Proven in hundreds of deployments
worldwide



The Guardian TM850 is a portal radiation monitor for screening container trucks, large vehicles, and rail cargo at border crossings, ports, airports, critical infrastructure, and nuclear facilities.

The Guardian TM850 continuously measures the background radiation counts, and automatically switches to inspection mode when the occupancy sensors detect a vehicle or rail cargo approaching the monitor. Vehicles and cargo are automatically inspected as they pass between the two pillars, which are typically separated up to 6 meters. If the count exceeds the alarm level, audible and visual alarms are triggered.

Operating parameters are easily input using the touch pad on the controller. The Guardian TM850 is also compatible with Rapiscan devices and software that enable remote monitoring of the radiation inspection operation, capture inspection data, and display video images via a wired or wireless network.

SPECIFICATIONS

GUARDIAN™ TM850

PHYSICAL SPECIFICATIONS

- **Operating Configuration:** Drive-through vehicle or rail cargo monitor
- **Pillars:** Primary and secondary pillar
- **Standard Pillar Spacing:** 19.7 ft (6 m)
- **Radiation Detectors:** Four gamma radiation detectors (2/panel)
- **Gamma Detector Material:** Polyvinyltoluene (PVT) plastic scintillator
- **Gamma Detector Size:** 48 in H x 12 in W x 1.5 in D (121.9 cm H x 30.5 cm W x 4 cm D)
- **Gamma Detector Volume:** 56.6 liters total detector volume
- **Panel Dimensions on Stands:** 160 in H x 63 in W x 10 in D (406 cm H x 160 cm W x 25 cm D)
- **Panel Weight:** 1,600 lbs (725 kg)

PERFORMANCE SPECIFICATIONS

- **Special Nuclear Material (SNM) Detection:** 200 g HEU and 3 g ²³⁹Pu
- **False Alarm Rate:** Typically less than 1 in 1,000 passages

OPERATION

- **Inspection Mode:** Drive through
- **Inspection Speed:** 5 mph (8 km/h) nominal
- **Occupancy Sensors:** IR and radar sensors
- **Radiation Alarms:** Flashing light and audible alarm
- **Tamper/Fault Alarm:** Amber light
- **Main Power:** 90–240 VAC, 50–60 Hz
- **Backup Power:** Rechargeable lead acid battery for 8 hour operation
- **Ports:** RS232, Ethernet

OPERATING ENVIRONMENT

- **Temperature:** -34 °C to 50 °C
- **Humidity:** 5 to 95% non-condensing
- **Environmental Protection Standards:** IP65 rated

STANDARD FEATURES

- Gamma radiation detection

OPTIONAL FEATURES

- Neutron* Detectors:
 - 10B detectors: 4 (2/panel) or 8 (4/panel)
 - ³He detectors: 8 (4/panel) or 16 (8/panel)
- Special Nuclear Materials Detection: 200 g ²³⁹Pu shielded to less than 1% gamma flux
- Alarm Characterization: Alarm classification or alarm identification
- Interface Electrical Panel: Electrical panel for control of external devices
- Remote Monitoring: RAVEN™, RTDC
- Remote Access: Serial port
- Pillar Pedestals

TERMINOLOGY

- **Gamma Detection:** For the detection of ionizing radiation
- **Neutron Detection:** Typically used to detect Special Nuclear Materials (SNMs)
- **Gamma and Neutron Detection:** For full spectrum detection capabilities

*For neutron detection please contact your sales representative to determine availability and quantity of ³He tubes.