

The Safety-Guard series of radiation detection systems offer a configurable approach to optimize screening of packages, people, or vehicles, for incident prevention

Safety-Guard Series II

Intelligent radiation detection systems to maximize interdiction protection



Safety-Guard Protects:

- Borders
- Airports
- Seaports
- Government Buildings
- Power Plants
- Financial Institutions
- Banks
- Mints
- Military Bases
- Postal Service
- Courier Service
- Public Utilities
- Embassies



Thermo Electron Corporation's Safety-Guard Series of radiation detection systems offer optimized protection against illicit trafficking of nuclear materials. With over 1400 systems installed worldwide at borders, sea ports, couriers, government buildings and other critical infrastructures, Thermo has a dominant presence in supplying these mission critical type systems.

Our industry-leading "Natural Background Reduction" (NBR) technology offers significant gains in detection sensitivity, while lowering false alarms due to naturally radioactive materials of no consequence or concern. Large area, premium-grade scintillation detectors provide 24/7 maximum detection to any objects, persons or vehicles passing by. Neutron detectors are also available to enhance detection of Special Nuclear Materials (SNM).

Thermo offers a configured approach to best facilitate each site-specific criteria to optimize protection without compromise in fulfilling the mission. A variety of controllers, detectors, options, accessories and services all combine to ensure the highest level of security is assured.

Our mission at Thermo, to maximize protection by delivering the very best technology, detection sensitivity and reliability, is no less important than your own - protecting our families, friends, neighbors and properties.



Radiation Monitoring Systems

The advanced Safety-Guard series of radiation detection systems utilizes a modular design that offers selection between two configurable controllers (Series I & Series II). To optimize detection coverage, up to 8 detectors may be linked to a controller using either the gamma only (G) or gamma-neutron (GN) detectors equipped with either 8.2 liter or 25 liter scintillation volumes. Contact our security specialists to configure a system optimized to meet your criteria.

The SGS II / 1500 GN is the recommended system for applications in accordance to "ITRAP" requirements. It consists of:

- 1 - Series II Controller**
- 2 - Model 1500 G detectors**
- 2 - Neutron (He³) Detectors**

Technical Data

Detector Specification

Gamma detection limit:	< 100 nSv/h at 200 nSv/h (< 10 µR/h at 20 µR/h)background
Neutron detection limit:	20,000 n/s for 10 sec duration at a distance of 2 m (6.5") ²⁵² Cf, gamma radiation shielded to < 1%
Search region:	vertical 0 to 4 m (0' to 13'), hor. 0 to 3 m (0' to 10')
Detection probability:	> 99,9%
False alarm rate:	< 1 in 10,000
Availability:	> 99%, proven by more than 1500 systems world wide

1500G Detector Specifications

Gamma Detector

Volume:	25 liter (1500 in ³)
Sensitivity:	150,000 cps / µSv/h (¹³⁷ Cs)
Detector Plastic Size:	122 H x 38 W x 5 cm D (48" H x 15" W x 2" D)
Detector Enclosure Size:	183 H x 46 W x 30.5 cm D (72" H x 18" W x 12" D)*
Weight:	154 kg (340 lbs.)
Operating Temperature:	-30 °C to 45 °C (-22 to 113 °F)
Lead Shield:	3 mm (0.12")

Neutron Detector

Length:	80 cm (31.5")
Diameter:	5 cm (2")
Gas filling:	³ He, 3 atm.
Sensitivity (per detector tube):	170 cps / n/sec/cm ²

* Alternative Detector Enclosure Size:
192 H x 85 W x 17 D cm (75.6" H x 33.5" W x 6.7" D)

SERIES II Controller Specifications

NBR Technology	Yes
Maximum Detectors	8 Gamma or 4 Gamma & 8 Neutron
Electronics System	PC-based system
Data Logging	Defined by Hard Drive Size (>20 Gb)
Data Collection	Every 200 milli seconds
Enhanced Neutron Alarm	Yes
Sum Channels	Yes
Audible Alarm	Optional
Size:	17.8 H x 49.3 W x 50 cm D (7" H x 19" W x 19.5" D)
Operating Temperature:	0 to 40 °C (32 to 122 °F)
Humidity	10 - 90 % Non condensing
Camera Support	Optional
Display	15" Color CRT 6.5" built-in color LCD (optional)
External Modem Support	Yes
Setup/Calibration	Built-into existing program running on PC

Options

Remote Alarm	Occupancy Sensor	Camera (Series II only)
Modem	Uninterruptible Power Supply (UPS)	Mounting Stanchions
Speed Sensor	Ethernet Connection	

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