

DATASHEET

HANDHELD RADIATION MONITOR

KEY FEATURES AND BENEFITS

Small and lightweight

Easy to operate

Audio and LED indicators pinpoint
radioactive sources



The Guardian PRM470 personal handheld radiation monitor locates radioactive sources and contaminated areas, performs background monitoring, and measures intensity. Its small size, light weight, and long battery life make it ideal for searching space-constrained locations and areas that require extended search times, along with monitoring plant exits and material access areas.

The Guardian PRM470 is typically ready to use within 20 seconds of start up and uses low-power electronics to provide up to 17 hours of continuous operation from the rechargeable batteries. During power up it performs a self test, automatic background count, and user-determined alarm settings. The audio and visual search/find mode assists in pinpointing radioactive sources—as detected counts increase, the frequency of the audio signal increases, helping to locate the radioactive source. LED indicators respond similarly by flashing faster as counts increase and, on gamma and neutron instruments, LED colors indicate the type of radiation detected. The Guardian PRM470 uses a motion switch to automatically shift from background to search mode when the instrument is moved while the backlit display makes it ideal for use in dark or light conditions.

The Guardian PRM470 is available in three configurations: gamma, neutron, or a combination of gamma and neutron detection. Gamma provides detection of ionizing radiation and neutron provides detection of special nuclear materials (SNMs) while the combined gamma and neutron configuration provides the most powerful detection capabilities for radioactive isotopes, even in shielded materials.

SPECIFICATIONS

GUARDIAN™ PRM470

PHYSICAL SPECIFICATIONS

- **Operating Configuration:** Handheld
- **Number of Gamma Detectors:** 1
- **Gamma Detector Material:** Organic plastic scintillator detectors
- **Gamma Detector Size:** 3.5 in H x 2.88 in W x 1.5 in D (8.8 cm H x 7.2 cm W x 3.8 cm D)
- **Gamma Detector Volume (total):** 240 cc
- **Number of Neutron Detectors:** 1
- **Neutron Detector Material:** ^3He
- **Neutron Detector Size:** 0.75 in Dia x 6 in L (9.1 cm Dia x 15.2 cm L)
- **Dimensions:**
 - **Box:** 7.85 in H x 4.75 in W x 3.5 in D (19.9 cm H x 12.06 cm W x 8.9 cm D)
 - **Handle:** 4.75 in H x 2.75 in W x .75 in D (12.06 cm H x 7.00 cm W x 1.90 cm D)
- **Weight:** 2.4 lb (1.1 kg) with batteries

PERFORMANCE SPECIFICATIONS

- **Special Nuclear Materials (SNM):** Meets ASTM C 1237*

OPERATION

- **Alarm Level:** User configurable from 0.1 to 9.9 sigma
- **Alarm Indication:** Audible tone and LED display
- **Count Time:**
 - **Gamma search mode:** 0.05 second count with 0.4 second moving average
 - **Neutron:** 1 second count time
 - **Background time:** Operator configurable
- **Display:** Alphanumeric LCD, 4 lines x 16 characters, with back light
- **Power Requirements:** Internal rechargeable battery pack

OPERATING ENVIRONMENT

- **Environmental:** 32 °F to 100 °F (0 °C to 38 °C)

*ASTM Standard C 1237 is available for purchase from The American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428 (610) 832-9585

STANDARD FEATURES

- Programmable detection parameters
- Programmable security levels
- Audio and visual indicators
- Universal power supply
- Serial port connectivity
- NiMH battery pack

OPTIONAL FEATURES

- Replaceable alkaline battery
- Serial port

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