

05-450

PRIMALERT® Digital Doorway Monitor

Technical Data



The highly sensitive 05-450 PRIMALERT Digital Doorway Monitor is designed to detect low levels of gamma radiation that pass through an entryway. Common installations of the 05-450 include hospital entrances, emergency rooms, laundry rooms, nuclear medicine labs and procedure rooms, waste disposal chutes and any other area of the hospital where radiation contamination could be a concern.

The system consists of a digital monitor, two shielded NaI (Tl) scintillation detectors with NEMA enclosures, associated cabling and a 10 μCi ^{137}Cs check source. The system is AC powered with internal battery backup and user-selectable alarm settings.



Key features

- Dual detectors—highly sensitive lead shielded NaI (Tl) scintillators
- Configuration with NEMA enclosures
- Fast response time with LED digital display
- Audio and visual alarms
- Battery backup

Specifications

Detectors	Two 3 in Ø x 1 in thick (7.6 cm x 2.5 cm) shielded NaI (Tl) scintillation detectors with up to 200 ft cables (NEMA 4x enclosures included)
Connectors	BNC (others available on request)
Sensitivity	Detects an unshielded 40 µCi 137Cs source at 10 ft and unshielded 10 µCi 137Cs source at 5 ft from the detector
Check source	0.875 in Ø 10 µCi 137Cs check source
Display	4 digit LED display with 2 cm (0.8 in) character height
Display units	Can be made to display in µR/hr, mR/hr, R/hr, µSv/h, mSv/h, Sv/h, µrem/hr, mrem/hr, rem/hr, cpm, cps and others
Linearity	Reading within ± 10 % of true value with detector connected
Response	Typically 3 seconds from 10 % to 90 % of final reading
Status	(green light) Indicates the instrument is functioning properly
Low alarm	Indicated by a yellow light and slow beep (1 per sec) audible tone (can be set at any point from 0.0 to 9999)
High alarm	Indicated by a red light and fast beep (4 per sec) audible tone (can be set at any point from 0.0 to 9999)
Note: Audible indicators can be configured as a single beep if desired.	
Detector fail	Indicates overload, no count from detector, or instrument failure (red light and audible tone; > 68 dB at 2 ft)
Low battery	Yellow light indicates < 2 hours of battery power remaining
High voltage	Adjustable from 200 V to 2500 V
Threshold	Adjustable from 2 mV to 100 mV
Dead time	Adjustable to compensate for dead time of the detector and electronics (can be read on the display)
Overload	Senses detector saturation (indicated by display reading “-OL”)
Overrange	Radiation field being measured exceeds the counting range of the instrument (indicated by display reading “----”)
Data output	9 pin connector providing 5 decade log output, RS-232 output, signal ground connection, FAIL and Alarm signals (current sink), and direct connection to battery and ground
Power requirements	95 V ac to 135 V ac (178 V ac to 240 V ac available), 50 Hz to 60 Hz single phase (< 100 mA), 6 V sealed lead acid rechargeable battery (built-in)
Battery life	Typically 48 hours in non-alarm condition, 12 hours in alarm condition
Battery charger	Battery is continuously trickle-charged when instrument is connected to line power and turned on
Battery dependence	< 3 % change in readings to battery endpoint
Temperature range	-20 °C to 50 °C (-4 °F to 122 °F). May be certified for operation from -40 °C to 65 °C (-40 °F to 150 °F)
Dimensions (WxDxH)	Electronics: 24.6 cm x 6.4 cm x 18.7 cm (9.7 in x 2.5 in x 7.4 in) Detectors: 43.2 cm x 21.6 cm x 33 cm (17 in x 8.5 in x 13 in)
Weight	Electronics: 2.3 kg (6.5 lb) Detectors: 14.5 kg (32 lb)

Ordering information

Model numbers/descriptions

05-450 PRIMALERT Digital Doorway Monitor, Sv/hr, 220 V power

05-450-2200 PRIMALERT Digital Doorway Monitor, Sv/hr, 220 V power

About Fluke Biomedical

Fluke Biomedical is the world's leading manufacturer of quality biomedical test and simulation products. In addition, Fluke Biomedical provides the latest medical imaging and oncology quality-assurance solutions for regulatory compliance. Highly credentialed and equipped with a NVLAP Lab Code 200566-6 accredited laboratory, Fluke Biomedical also offers the best in quality and customer service for all your equipment calibration needs.

Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

Fluke Biomedical Regulatory Commitment

As a medical test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 certified and our products are:

- NIST Traceable and Calibrated
- UL, CSA, ETL Certified, where required
- NRC Compliant, where required

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