

Model 133 Series Gamma Survey Detectors



Ludlum Measurements, Inc.

Features

- Energy Compensated GM
- Halogen Quenched
- Waterproof Versions Available
- Stainless Steel Tube
- Range of Models to Suit Needs



Model 133-2 and Model 133-6 detectors
(Other detectors in the Model 133 series are similar.)

Introduction

The Model 133 series of Geiger-Mueller (GM) gamma survey detectors can be used with any portable ratemeter, scaler instrument, or area monitor that provides the appropriate amount of voltage (see table below) with an input sensitivity of 30 ± 10 mV. Model numbers of this detector with the “-1” on the end are waterproof versions.

Waterproof versions of these detectors (all 133-x-1 versions) have the same characteristics as non-waterproof models, other than they are waterproof, contain an O-ring, and do not have a “C” connector on the probe end (base). A 30-meter (100 foot) cable is hard-wired into the detector. They weigh slightly more and have a slightly larger diameter than the non-waterproof versions. They are submersible up to 30 m (100 ft).

Specifications

Model #	133-2 and 133-2-1	133-4 and 133-4-1	133-6 and 133-6-1	133-7 and 133-7-1
Operating Voltage	550 Vdc	550 Vdc	550 Vdc	460 Vdc
Sensitivity (^{137}Cs Gamma)	100 cpm/ $\mu\text{Sv/h}$ (1000 cpm/mR/hr)	10 cpm/ $\mu\text{Sv/h}$ (100 cpm/mR/hr)	1.8 cpm/ $\mu\text{Sv/h}$ (18 cpm/mR/hr)	0.42 cpm/ $\mu\text{Sv/h}$ (4.2 cpm/mR/hr)
Linear Range without DTC	1 $\mu\text{Sv/h}$ to 2 mSv/h (0.1 to 200 mR/hr)	10 $\mu\text{Sv/h}$ to 20 mSv/h (1 mR/hr to 2 R/hr)	40 $\mu\text{Sv/h}$ to 60 mSv/h (4 mR/hr to 6 R/hr)	250 $\mu\text{Sv/h}$ to 60 mSv/h (25 mR/hr to 6 R/hr)
Linear Range with DTC	1 $\mu\text{Sv/h}$ to 10 mSv/h (0.1 mR/hr to 1 R/hr)	10 $\mu\text{Sv/h}$ to 100 mSv/h (1 mR/hr to 10 R/hr)	40 $\mu\text{Sv/h}$ to 400 mSv/h (4 mR/hr to 40 R/hr)	(25 mR/hr to 100 R/hr)
Linear Range with Series Correction Constant (SCC)	1 $\mu\text{Sv/h}$ to 40 mSv/h (0.1 mR/hr to 4 R/hr)	10 $\mu\text{Sv/h}$ to 500 mSv/h (1 mR/hr to 50 R/hr)	40 $\mu\text{Sv/h}$ to 10 Sv/h (4 mR/hr to 1000 R/hr)	---
Energy Response (60 keV to 3 MeV)	within 25%	within 15%	within 15%	within 15%
Background (in 10 $\mu\text{R/hr}$)	12 cpm	1 cpm	1 cpm or less	1 cpm
Part Number	47-1717 and 47-2450	47-1674 and 47-2451	47-1718 and 47-2452	47-1216 and 47-2453

ALSO AVAILABLE: Model 133-3 with energy-compensated GM detector Part Number 47-1314

INPUT SENSITIVITY: 30 mV \pm 10 mV

DEAD TIME: typically 50 microseconds

TUBE: 30 mg/cm² stainless steel (halogen quenched) GM

CONNECTOR: series “C,” unless a waterproof detector. Other connectors are available upon request.

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

SIZE: Model 133-4, 133-6: 2.2 x 10.2 cm (0.88 x 4 in.) (Dia x L)

Model 133-2, 133-2-1, 133-4-1, 133-6-1, 133-7-1, 133-8-1: 2.5 x 10.2 cm (1 x 4 in.) (Dia x L)

WEIGHT: approximately 0.090 kg (0.20 lb)

WATERPROOF VERSIONS: all Model 133-x-1 versions of this series of detectors are submersible up to 30 m (100 ft); IP68 or better

(OPTIONAL) PROBE CLIP: included at no additional charge when meter and detector are purchased at the same time (Part Number 4285-018)

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Note: specifications subject to change without notification. We are not responsible for errors or omissions.

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