

Model 70 Series Spectroscopic Personal Radiation Detector

Features

- Handheld Gamma Spectrometer
- Mobile Phone Sized
- Three Button Operation
- Radiation Dose Assessment
- Dose Rate Time Profile Recording
- Express Nuclide Identification
- One Thousand Gamma-Spectra Storage
- Temperature Stabilized
- Complies with ANSI 42.48 – 2018



Introduction

The Ludlum Model 70 Series is a high resolution CZT-type detector that delivers unparalleled performance in express radionuclide identification and radiation dose assessment from low to moderate-high or moderately high levels. Continuous dose rate monitoring and recording enables the user to be instantly informed about radiation exposure and to carefully analyze radiation dose risks by exploring the dose rate recorded charts.

The instrument is accompanied by GalaxRayWiz software, a powerful tool which communicates with the device, analyzes gamma-spectra and dose-rate time profiles accumulation of 14 hours. Collected data can be easily transferred via USB or Wi-Fi.

Model 70 Series Configurations:

Model	Detector	Dimensions of the CZT/Neutron Detector	Part Number
70/1	500 mm ³ CZT detector	CZT Detector: 5 mm x 10 mm x 10 mm	48-4373
70/2	500 mm ³ CZT detector and Neutron Detector	CZT Detector: 5 mm x 10 mm x 10 mm Neutron Detector: 15 mm x 40 mm (Li-6 based cylindrical detector)	48-4374
70/3	1600 mm ³ CZT detector	CZT Detector: 16 mm x 10 mm x 10 mm	48-4375
70/4	1600 mm ³ CZT detector and Neutron Detector	CZT Detector: 16 mm x 10 mm x 10 mm Neutron Detector: 15 mm x 40 mm (Li-6 based cylindrical detector)	48-4376

Specifications

ENERGY RANGE: 0.03 – 3.0 MeV, 1024 Ch

ENERGY RESOLUTION: 1.8 – 2.5% @662 keV

DOSE RATE RANGE: 0.01 μ Sv/hr – 30 mSv/hr

DOSE RATE ACCURACY: \pm 30% (0.1 μ Sv/hr to 100 μ Sv/hr)

GAMMA EFFICIENCY: 0.06 cps per μ R/h (M70/1, M70/2) 0.18 cps per μ R/h (M70/3, M70/4) **NEUTRON**

SENSITIVITY: \approx 2.4 cps/nv

NUCLIDE ID OVER-RANGE DOSE RATE: 0.5 mSv/hr

PRESET TIME: 86,400 s

DISPLAY: LCD 7.1 cm (2.8 in.), 240 x 320 pixels, backlight

ALARMS: Audio (~85 dB), audio jack, vibrator, LED operations, 3-button keyboard

DATA STORAGE: up to 1000 spectra & up to 24 hours of dose rate time records

DATA TRANSFER: via USB & Wi-Fi

DATA THROUGHPUT: \approx 70,000 cps

POWER: Lithium-ion rechargeable battery, 3.7 V 5200 mAh

BATTERY LIFE: with Wi-Fi on & back-light on: up to 14 hours with Wi-Fi off & back-light on: up to 26 hours

CHARGE TIME: 4 – 5 hours, with battery indicator on display

TEMPERATURE RANGE: from -10° C to +50° C (-4 F to 122 F). Relative humidity \leq 95%

DIMENSIONS (L x W x H): 100 x 75 x 48 mm (4 x 3 x 1.9 in.)

WEIGHT: 220 g (0.5 lb.) with battery

ENVIRONMENTAL RATING: IP63 with rubber sleeve

Model 70 Series Nuclide Identification

Special Nuclear Material (SNM)	Naturally Occurring Radioactive Material (NORM)	Industrial		Medical
Uranium - 233	Uranium - 238	Americium - 241	Cesium - 137	Thallium - 201
Uranium - 235	Thorium - 232	Iridium -192	Barium - 133	Iodine - 131
Neptunium - 237	Radium - 226	Europium - 152	Cobalt - 57	Technetium - 99m
Plutonium - 239	Potassium - 40	Cesium - 134	Cobalt - 60	Gallium - 67

Model 70 Series is suitable for:

- Nuclear Energy Workers
- Radiochemical & Radiopharmaceutical Industries
- Steel, Scrap and Waste Recycling
- Radiological Services
- First Response and Border Control
- General Public