

Model 19 MicroR Ratemeter



Ludlum Measurements, Inc.

Features

- High Sensitivity to Gamma
- 0–5000 $\mu\text{R/hr}$ Range
- Rugged Construction
- Splashproof Protection for Outdoor Use
- 2000 Hour Battery life
- Meter Light
- CE Certified

Part Number: 48-1615



Introduction

The Model 19 uses an internally-mounted scintillation detector for optimum performance in locating and measuring low-level (near background) gamma radiation. Rugged construction details include waterproof and dust-proof seals and boots for bezel and controls. Calibration controls, including a potentiometer for each of the five measurement ranges, are easily accessible from the front panel. A high-voltage (HV) test control provides rapid plateau testing of the detector.

Front-panel controls include a rotary switch for selecting the five-decade range and instrument shut-off, an audio on/off switch, a fast/slow response switch, and pushbuttons for activating the meter lamp, high-voltage display, battery test, and count reset. The Model 19 includes two “D” cell batteries making a complete turn-key system.

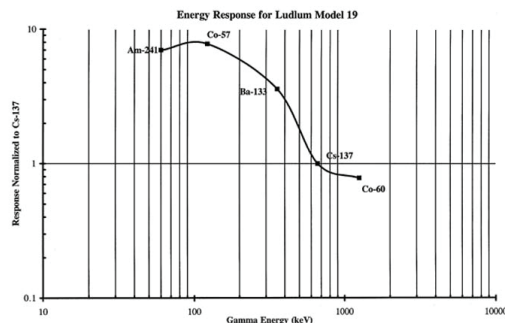
Note: While the detector used in this instrument is sensitive and is often used for detection of near-background levels of radiation, its nonlinear energy response means that dose and exposure measurements may be over/underreported.

Specifications

INDICATED USE: low-level (μR) gamma survey
MEASUREMENT RANGE: 0–5000 $\mu\text{R/hr}$ (for $\mu\text{Sv/h}$, see note below)
DETECTOR: internal 2.5 x 2.5 cm (1 x 1 in.) NaI(Tl) scintillator
SENSITIVITY: approximately 175 cpm/ $\mu\text{R/hr}$ (^{137}Cs gamma)
ENERGY RESPONSE: energy dependent (see curve at right)
LINEARITY: reading within 10% of true value
METER: 6.4 cm (2.5 in.) arc, 1 mA analog type
METER DIAL: 0–25 $\mu\text{R/hr}$, 0–50 $\mu\text{R/hr}$, BAT TEST, High Voltage Test
CONTROLS

ROTARY KNOB SELECTOR: 0–25, 0–50, 0–250, 0–500, 0–5000 $\mu\text{R/hr}$, Instrument Off
 RESPONSE: toggle switch for FAST (4 seconds) or SLOW (22 seconds) from 10% to 90% of final reading
 AUDIO: built-in unimorph speaker with ON/OFF switch (greater than 60 dB at 0.6 meters [2 ft])
 HIGH VOLTAGE: pushbutton to display HV setting on meter
 BATTERY: pushbutton checks battery voltage
 RESET: pushbutton to zero meter
 LAMP: pushbutton to activate meter light
 CALIBRATION CONTROLS: accessible from front of instrument (protective cover provided)

WORKING ENVIRONMENT: splashproof shields for outdoor use
TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)
POWER: 2 each “D” cell batteries (housed in sealed compartment that is externally accessible)
BATTERY LIFE: typically 2000 hours with alkaline batteries (battery condition can be checked on meter)
CONSTRUCTION: cast and drawn aluminum with beige powder-coat finish
SIZE: 15.2 x 8.9 x 21.6 cm (6.0 x 3.5 x 8.5 in.) (H x W x L), not including instrument handle
WEIGHT: 2.04 kg (4.5 lb), including batteries



Note: For $\mu\text{Sv/h}$, use Model 19 Series 8 (P/N: 48-2582).