

Model 43-143

100 cm² Gas Flow Proportional Detector

Radiation Detection for a Safer World



Ludlum Measurements, Inc.



Part Number: 47-3887

Specifications

EQUIVALENT TO EBERLINE HP-100

INDICATED USE: alpha beta survey

SUGGESTED INSTRUMENTS: Models 12, 16, 18, 2000, 2200, 2221, 2224-1, 2241-2, 2350-1, 2360, 4906-Series

DETECTOR TYPE: gas proportional

RECOMMENDED COUNTING GAS: P-10 (10% methane, 90% argon) is recommended. Other counting gases are also acceptable.

GAS FLOW: counting gas enters through the HV/Signal cable via the single MHV connector (located at the bottom side of the detector) and then exhausts through a small pin-sized hole located at the top of the detector to ensure good gas flow across the volume. The gas flow rate is approximately 30–50 cc/min.

DETECTOR CONNECTOR: Gas is fed through the coax cable, MHV only. If gas injection connection is required for cable, use LMI part number 4342-195.

EFFICIENCY (4π): 20% for ²³⁹Pu; 15% for ¹⁴C; 30% for ⁹⁹Tc; 20% for ⁹⁰Sr/⁹⁰Y less than 1% for gamma

SIMULTANEOUS ALPHA/BETA COUNTING: 17.5% for ²³⁹Pu; 20% for ⁹⁹Tc; 20% for ⁹⁰Sr/⁹⁰Y

WINDOW: typically two layers of metalized polyester (0.8 mg/cm²) other thicknesses available), easy access for replacement by simply sliding the removable front cover off the detector body

WINDOW AREA: 100 cm² (15.5 in²) active, 70 cm² (10.9 in²) open

BACKGROUND: alpha: 3 cpm or less when operating at alpha-only plateau region
beta-gamma: typically 350 cpm or less in a 10 μR/hr field

OPERATING VOLTAGE: alpha typically 1100–1400 volts; beta-gamma: typically 1600–1800 volts

COUNTER THRESHOLD SETTING: typically 2–5 mV for scaler or gross counting instrument

SIZE: 8.4 x 11.9 x 15.5 cm (3.3 x 4.7 x 6.1 in.) (H x W x L), with handle

WEIGHT: 0.59 kg (1.3 lb)

Detector Accessories

Part Number	Quantity	Description
2310017	1	2-stage regulator
8303-947	1	RG62 detector cable
4342-195	1	Gas Adapter for introducing counting gas into detector cable
22-9522	2	fittings for flowmeter (1/8 in. MPT to 1/4 in. tubing)
21-9547	1	10 to 100 cc flowmeter (1/8 in. MPT to 1/4 in. tubing)
22-9514	AR	x feet 1/4 in. OD vinyl tubing for gas supply

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