

LUDLUM MEASUREMENTS, INC.

Model 195 with Model 43-132 High Range Alpha Ion Chamber

Part Number 48-3233 and Part Number 47-3234

Introduction

The high-range alpha ion chamber system uses the Model 43-132 Ion Chamber and the Model 195 readout unit. The Model 43-132 is designed to enhance alpha detection, although it is also sensitive to beta-gamma radiation. The Model 195 has a rugged cast aluminum instrument housing with sealed battery compartment that offer an industrial robustness and quality that promote long-lasting protection and instrument life.



Specifications

SPECIFICATIONS for MODEL 195 RATEMETER

RANGE: High Range reads as 0 to 1999 million dpm, but the usable range is 0 to 900 million dpm. Low Range is 0 to 19.99 million dpm

READOUT: 3½-digit LED

AUDIO: headset for audio. Sound frequency increases as meter reading increases

RESPONSE: approximately 5 seconds to 90% of final reading

CONNECTOR: 5-pin DIN

CALIBRATION CONTROLS: individual recessed potentiometers for HI/LO Gain and Balance (BAL)

NUL: surface control for adjusting offset for zero

WARM-UP TIME: allow 5 minutes settling time after initial turn-on

CONSTRUCTION: drawn-and-cast aluminum case with silk-screened nomenclature, and beige powder-coating

POWER: 2 to 3 volts at 50 milliamps, provided by two "D" size batteries

SIZE: 17.0 x 8.9 x 21.6 cm (6.7 x 3.5 x 8.5 in.) (H x W x L)

WEIGHT: 1.2 kg (2.7 lb)

SPECIFICATIONS for MODEL 43-132 DETECTOR

WINDOW: 0.4 mg/cm² metalized polyester; 100 cm² with 83% open grid

CHAMBER VOLUME: approximately 100 cm³

SENSITIVITY: up to 900 mdpm

FEET: window screws provide spacing of 0.28 cm (0.11 in.)

WINDOW SPACING: alpha window spaced 0.25 cm (0.10 in.) from front surface of detector

POWER REQUIREMENTS: 85 volts for the electrode, 85 +12/-1.2 volts for the electrometer (all nominal ± 5% voltages)

CABLE: 5-pin DIN-type connector with 3 m (10 ft) cord

SIGNAL OUT: analog from 0 to 12 volts

TEST: a push-button switch on the back of the detector. Depress switch for a reading of approximately 225 x 106 dpm ± 25%. Take the

reading before and after using to confirm detector operation. Test data is only for Model 195 used with the Model 43-132 detector.

CALIBRATION CONTROL: remove the Cal Cover to expose a column of four holes

- First hole exposes a subsurface control to allow adjustment of the electrometer offset
- Second hole exposes a subsurface control to allow adjustment of the detector signal output
- Third (large) hole allows access to the guard voltage
- Fourth hole allows access to the anode voltage

CONSTRUCTION: aluminum body with solder-plated phenolic electrode and 0.4 mg/cm² window with stainless steel protective grid

SIZE: 20.3 x 10.2 x 10.2 cm (8 x 4 x 4 in.) (L x W x H)

WEIGHT: 0.51 kg (1.1 lb)