



## Ludlum Model 44-172

### Beta & Beta Gamma Scintillation Detector

**Indicated Use:** Low energy gamma detection

**Scintillator:** YSO (Yttrium Oxyorthosilicate)

**Photomultiplier Tube:** 1.125" (2.9 cm) diameter

**Window:** 1.2 mg/cm<sup>2</sup>

**Window Area:** 5 cm<sup>2</sup> active  
5 cm<sup>2</sup> open

**Efficiency (4 pi):** 25% - <sup>129</sup>I; 8% - <sup>14</sup>C;  
7% - <sup>55</sup>Fe

**Background:** 250 cpm or less (in 10 µr/hr field)

**Energy Response:** Energy dependent

**Non-Uniformity:** Less than 10%

**Operating Voltage:** Typically 500 - 1200 volts

**Suggested Instruments:** Any Ludlum meter with 00-1200 vdc and 35 mV input sensitivity

**Connector:** Series "C" (others available)

**Temperature Range:** -4° F to 122° F  
(-20° C to 50° C)

**Size:** 2" diameter x 7.0" L  
(5.1 cm diameter x 17.8 cm L)

**Weight:** 1.0 lbs (0.5 kg)



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*Ludlum Measurements, Inc.* manufactures many different types of detectors to measure alpha, beta, gamma, and neutron radiation

**Scintillation Detectors** utilize a material that emits light when exposed to radiation. This light is then converted to an electrical signal by a photomultiplier tube. Depending on the construction these detectors can be used to detect alpha, beta, gamma, or neutron radiation. This type of detector typically has good efficiency, low dead time, and energy discrimination capabilities. Photomultiplier tubes and scintillators are somewhat fragile. All Ludlum Measurements, Inc. scintillation detectors utilize a magnetically shielded photomultiplier tube.

### Common Specifications for all Detectors:

**Connector:** Series "C" (others available)

**Construction:** Aluminum housing with beige powder coat paint

**Temperature Range:** -4° F to 122° F (-20° C to 50° C). May be certified for operation from -40° F to 150° F (-40° C to 65° C).

*Note: All efficiencies and sensitivities are typical and different detectors may vary.*

