

# DETECTION UNITS

## **M**odel - GB, Gamma and Beta Detector Probe Assembly



External PMT and GB

### **Gamma and Beta Detector Probe Assembly**

The GB probe is used to detect Gamma and Beta radiation. Measurements are taken via Pylon's Model AB-5.

#### **Applications:**

- Designed to use in area scanning
- Radiation surveys
- Laboratory monitoring

#### **Features:**

- High sensitivity, 100 keV to 5 MeV
- Lightweight
- Portable

#### **Theory of Operation:**

The GB unit is a high sensitivity Gamma and Beta probe. It uses a NaI crystal to detect the radiation, which converts the radiation to photons for detection and amplification by the photomultiplier tube in the external PMT. With the aluminum end cap in place, the probe is only gamma sensitive. When used in conjunction with a lead shield, the probe can be used to monitor specific gamma sources.

**MODEL GB**

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MODEL GB

## Specifications:

Sensitivity:	100 cpm/uR/hr
Accuracy - Beta:	± 5 % - At a 2 $\sigma$ Confidence Level.
Accuracy - Gamma:	± 5 % - At a 2 $\sigma$ Confidence Level.
Active Beta Surface Area:	5.06 (0.785) cm <sup>2</sup> (in <sup>2</sup> )
Gamma Background:	100 cpm
Beta Background:	< 15 cpm
Nal(Ti) Crystal Diameter:	2.54 (1) cm (in)
Nal(Ti) Crystal Volume:	20.3 (3.1) cm <sup>3</sup> (in <sup>3</sup> )
Beta Scintillator Diameter:	2.54 (1) cm (in)
Beta Scintillator Thickness:	0.32 (0.125) cm (in)
Calibration <sup>1</sup> :	Single Point
Light Shield (Fixed Window):	7 mg/cm <sup>2</sup> - Aluminum.
Beta Shield (Removable Cap):	800 mg/cm <sup>2</sup> - Aluminum.
Operating Temperature Range:	0 to +50 (+32 to +122) °C (°F)
Storage Temperature Range:	-20 to +75 (-4 to +167) °C (°F)
Relative Humidity Range:	0 to 90 % - Non-Condensing.
Diameter:	5 (2) cm (in)
Height:	5.7 (2.4) cm (in)
Weight:	260 (0.57) g (lb)

<sup>1</sup> Custom calibrations available. Custom calibrations include multi-point calibrations and calibrations at non standard activity levels.

- Values are nominal.
- Specifications are based on new units which have been appropriately calibrated.
- Beta Efficiency refers to a Sr90/Y90 source at contact.
- Gamma Efficiency refers to a Cs137 source at contact.

## Ordering Information:

<i>Model</i>	<i>Part Number</i>	<i>Description</i>
GB	6243900	Gamma and Beta Detector Probe

The GB requires an external Photomultiplier tube assembly which is sold separately.

Specifications subject to change without notice.  
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