

## BETA-PHOTON PROBE

NSN: 6665-01-671-4352  
LMI Part Number: V038276

The RDS Beta-Photon Probe detects beta and high energy photons (gamma and x-ray) radiation. The Beta-Photon Probe is part of the RDS radiation detecting probe family and is used with the Base Unit for radiological detection operations. It is designed to be held in the operator's hand or attached to the Telescoping Handle. The end cap is removable for increased sensitivity to beta radiation and low energy x-rays. The Beta-Photon uses a common probe cable to attach to the Base Unit where data is stored. Crosshairs on the outside of the probe housing show the center lines of the detectors. The probe has two different detectors for low to high range dose and dose rate measurements.

The Beta-Photon Probe is primarily used to extend the detection capabilities of the Base Unit and has the same detectors. It is a smart probe containing a microprocessor and high voltage circuitry for creating its own high voltage. No high voltage is transferred across the interface cable. When connected to the Base Unit, the display will show the probe's image and radiation measurements. The Beta-Photon Probe's onboard memory stores the probe type and calibration information.



### FEATURES

- Acts as an extension of the RDS Base Unit detection capability
- Compatible with the Telescoping Handle
- Detects beta and gamma radiation
- Measures gamma radiation
- Removable cap for beta detection
- Uses common probe cable to attach to Base Unit
- Part of the RDS radiation detecting probe family
- Durable, easy to use ergonomic design
- Robust cable connections
- 360 degree detection
- Smart probe functionality means it is independently calibrated and can be used with any Base Unit
- Designed and tested for military ruggedness to meet both military/defense requirements and industrial applications



## SPECIFICATIONS

## Usage

Survey for beta and photon radiation

## Radiological

Detector Type	Low dose and high dose Geiger-Mueller tubes
Used For	Beta, gamma and x-ray
Dose Rate Units of Measurement	Count Rate - cpm, cps. Dose/Exposure Rate - mRad/hr, $\mu$ Gy/hr, mRem/hr, $\mu$ Sv/hr, mR/hr Total Dose/Exposure - mRad, $\mu$ Gy, mRem, $\mu$ Sv
Count Rate Range	0 to 1.5 Mcpm
Detection	Photon range - 60 keV - 3 MeV Beta range - 200 keV - 3 MeV Gamma/x-ray - 0.1 $\mu$ Gy/hr to 100 Gy/hr
Beta Window	1.7 $\pm$ 0.3 mg/cm <sup>2</sup> mica, protected by stainless steel screen (79% open)
Typical Sensitivity	3300 cpm per mR/hr (Cs-137)
Dead Time	50 $\mu$ s
Typical Background	60 cpm (10 $\mu$ r/hr field)
Efficiency (4 $\pi$ )	15% - Pu-239, 19% - Tc-99, 22% - Sr-90 & Y-90, 5% - 14-C, 32% - P-32

## Operational

Display	RDS Base Unit
Alarms	Audible and visual via Base Unit

## Electrical

Power	Supplied by RDS Base Unit
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## Mechanical

Dimensions	9.26" x 1.2" x 1.6" (24 x 3 x 4 cm)
Probe Housing	Anodized aluminum
Weight	0.77 lb. (0.35 kg)

## Environmental

Operating Temp.	-22° to 122° F (-30° to 50° C)
Storage Temp.	-58° to 140° F (-50° to 60° C)
Relative Humidity	3%-100%
Ingress Protection	IP67
Cleaning	Decontaminate with mild detergent and water
Salt Fog	Resistant (MIL-STD 810 G, Method 509.5)
Explosive Atmosphere	Intrinsically safe
Immersion	Water & salt water 1 meter deep - 30 min.

## Standards Compliance

CE	CE Compliant, EMC (2014/30/EU), Low Voltage (2014/30/EU)
FCC	FCC Part 15, Sub-part B, Class B
ANSI	ANSI N42.17 and ANSI N42.34
MIL-STD	MIL-STD 461F, MIL-STD 1686C, & MIL-STD 810G

## Ordering Information

V038276	Beta-Photon Probe
V038429	Base Unit
V040005	Alpha-Beta Probe
V038313	Sensitive Gamma Probe
V038820	ABG Pancake Probe
V038863	FIDLER Probe
V039097	Neutron Probe
V041227	Telescoping Probe Handle
V038669	Base Unit to Probe Cable
V062817	Rad-Extender