

## NEUTRON PROBE

NSN: 6665-01-671-4376  
LMI Part Number: V039097

The RDS Neutron Probe is designed to detect neutrons in the energy range from 0.025 eV (thermal or slow) neutrons to 15 MeV (fast). The Neutron Probe has advanced solid state neutron detection capability. The detector is surrounded by a High Density Polyethylene (HDPE) material that efficiently slows high-energy neutrons down to a detectable level. The rounded shape allows for sensitivity to neutrons coming in from all directions. The orientation plate on the side of the probe is to be used as a positioning aid against flat vertical surfaces.

As a smart probe, the Neutron Probe contains a microprocessor and High Voltage circuitry for creating it's 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 measurement. The probe's onboard memory stores the probe type and calibration information.



## FEATURES

- Detection of neutron radiation
- Advanced solid state neutron detection capability (no He-3, but just as reliable)
- Detector surrounded by High Density Polyethylene (HDPE) material that efficiently slows high-energy neutrons to a detectable level
- Sensitive to neutrons coming in all directions
- Detection range from 0.025eV to 15MeV
- Orientation plate is included as a positioning aid against flat surfaces
- Meets ANSI N42.34 standard
- Part of the RDS radiation detecting probe family
- Robust cable connections
- Smart Capability as a smart probe
- Military-grade durability
- Ergonomic handle plus an optional shoulder strap

## SPECIFICATIONS

**Usage**

Survey for measuring neutron dose equivalent rate

**Radiological**

Detector Type	Advanced solid state neutron detection
Emitter:	Neutron
Dose Rate Units	Count Rate - cpm, cps. Dose/Exposure Rate - mRad/hr, $\mu$ Gy/hr, mrem/hr, $\mu$ Sv/hr, Total Dose/Exposure - Mrad, $\mu$ Gy, mrem, $\mu$ Sv
Detection	Neutron energy range - thermal (0.025 eV) - 15 MeV
Dose Rate Range	1 $\mu$ Rem/hr to 10 Rem/hr
Typical Sensitivity	380 cpm per Rem/hr
Measurement Range	0-10 Rem/h
Measurement Accuracy	$\pm$ 25% for dose rates <1 mRem $\pm$ 10% for dose rates $\geq$ 1 mRem
Gamma Rejection Ratio	3000:1
Typical Background	< 1 cpm

**Operational**

Display	RDS Base Unit
Alarms	Saved in Base Unit memory

**Electrical**

Power	Supplied by RDS Base Unit 25 mA maximum consumption
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**Mechanical**

Dimensions	8.3" x 8.3" x 12.4" (21 x 21 x 32 cm)
Probe Housing	High Density Polyethylene (HDPE)
Weight	11.8 lb. (5.33 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 810G, 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
ANSI	ANSI N42.17 and ANSI N42.34
MIL-STD	MIL-STD 461F, MIL-STD 1686C, & MIL-STD 810G

**Ordering Information**

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