

Product Datasheet

Neutron Module Hp(10)

For the DMC 3000 dosimeter

The Neutron Module provides operational dosimetry for Military, First Responders and radiation workers where there is a Neutron radiation risk.

The add-on Neutron Module attaches to the DMC 3000 dosimeter and is able to measure Hp(10) radiation at a wide range of energy levels.

The Hp(10) Neutron measurements, display and alarms are highly visible on the DMC 3000's LEDs and high contrast backlit LCD display.

Powered by the DMC 3000, the add-on module does not require any supplementary battery and remains operational over 2000 hours in continuous use. Calibration and functional parameters are stored in the module.



Features

- Dose and dose rate Neutron Hp(10) displayed.
- Totalised dose for Hp(10) Gamma + Neutron displayed.
- Superior gamma rejection in Neutron channel.
- Connect and ready to use.
- Full Neutron energy range coverage.
- Meets or exceeds applicable IEC and ANSI standards.
- Designed for ruggedness and durability.
- Excellent EMC Immunity.
- Waterproof IP67.

Related Products

- Telemetry module, Beta module.
- Readers: LDM 2000, LDM 3200, LDM 320D, LDM 320W.
- Software: DMCUser, DosiCare, DosiServ.

Specifications

Physical Characteristics

Compliance	Compliant with IEC 61526 Ed. 3, ANSI 42.20*
Measurement Range Hp(10) (DMC 3000 + module)	X and gamma ray energy range: 15 keV to 7 MeV Neutron energy range: 0.025 eV to 15 MeV
Display range Hp(10) Neutron	Dose: from 1 μ Sv to 10 Sv (0.1 mrem to 1000 rem) Dose rate: from 100 μ Sv/h to 10 Sv/h (10 mrem/h to 1000 rem/h)
Accuracy Hp(10) Neutron	$\leq \pm 10\%$ (MnBe, 0.75 Sv/h, 75 mrem/h) Hp(10) Typical Energy response from thermal to fast Neutron (see curve)
Dose Rate Linearity Hp(10)	$\leq \pm 20\%$ up to 10 Sv/h, 1000 rem/h

* isotropy ^{241}Am and ^{137}Cs with $\pm 75^\circ$ angle

Display Neutron measurement Hp(10)



Electrical Characteristics

Power	Powered by DMC 3000
Battery Life	8 calendar month battery life for Neutron module and DMC 3000 (typical, 8 h per day, 5 days per week in run mode, without excessive alarms)* 2000 h battery life for DMC 3000 with Neutron module and DMC 3000 in continuous run, without excessive alarms*

* 0.2% of the time in alarm

Mechanical Characteristics

Case	Rugged, high impact polycarbonate-ABS case
Dimensions with DMC 3000	131 mm x 60 mm x 21 mm (5.1 in x 2.4 in x 0.8 in) max. without clip 131 mm x 60 mm x 28mm (5.1 in x 2.4 in x 1.1 in) with standard clip
Weight with DMC 3000	138 g (4.9 oz)

Worn by a replaceable clip in pocket or on belt

Environmental Characteristics

Temperature range	-10°C to 50°C (14°F to 122°F)
Storage	-20°C to 71°C (-4°F to 160°F)
	Shock, vibration and drop resistant
Waterproofing	Waterproof IP67
EMC	Complies with and exceeds standards by a large margin (CE compliant) – MIL STD 461F RS103 (pulsed electric field) exceeds 150 V/m from 10 kHz to 5 GHz – MIL STD 461F RS103 (pulsed electric field) exceeds 150 V/m from 10 kHz to 5 GHz

Product Characteristics

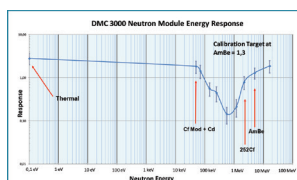
Histogram Features	Additional Hp(10) Neutron measurement (dose, dose rate and maximum dose rate) saved on non volatile memory (EEPROM) at the same time as Hp(10) Gamma measurement in configurable steps (10 s, 60 s, 10 min, 1 hour, 24 hours)
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Display Features	Additional Hp(10) Neutron measurement displayed on DMC 3000 high quality white backlighting Blue top LED for Neutron dose increment indication
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Alarm Features and Communication	DMC 3000 alarming speaker, vibrator, high efficiency red flash LED, 3 top LEDs and display indicators Hp(10) Neutron dose/rate alarms, adjustable over the display range Hp(10) Neutron dose/rate warnings, adjustable over the display range and acknowledgeable
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Calibration	Factory calibration in accordance with ISO/IEC 17025 Parameters saved into the module
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Compatibility	Backward compatibility with LDM 2000 and LDM 3200 readers (requires reader firmware and software upgrade) – Compatible with LDM 320D/W – Compatible with DMC 3000 firmware V7.x (New communication protocol)
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