

DMC 3000

Personal Electronic Dosimeter



Mirion Technologies provides a complete line of hardware and software products targeted to Health Physics and Radiation Protection personnel, in order to meet current nuclear industry and radiation safety challenges.

Covering a wide range of X-ray and Gamma radiation detection, our DMC 3000 Electronic Dosimeter represents over 25 years of real-world electronic dosimetry experience, continually refined through customer feedback.

The unique, high contrast and backlit LCD display provides a clear indication of wearer's dose and ambient dose rate for deep dose equivalent. More importantly, multiple methods (audible, visual, and tactile) are utilized to alert the wearer of alarm conditions.

The DMC 3000 provides all of this protection, for over 3,000 hours of continuous use, with a single AAA alkaline battery. Best of all, connected with plug and play add-on modules the DMC 3000 offers detection and radio transmission capabilities beyond traditional use.

The DMC 3000 dosimeter offers an enhanced communication protocol for additional features and includes a compatibility mode for previous Mirion Technologies products including calibration tools, access control, turnstiles and telemetry infrastructure.

FEATURES

- Loud, vibrating and dual ultrabright LED alarm
- Highly visible backlit display
- Simple 2-button navigation
- Additional modules (Beta, Neutron, Telemetry and Neutron Telemetry)
- Superior X-ray and gamma energy response (Hp(10) and Hp(0.07))
- Exceeds applicable IEC and ANSI standards
- Excellent immunity to electromagnetic interference
- Designed for ruggedness and durability

DMC 3000

DOSE RANGE, IEC61526 ED. 3 (DISPLAY & MEASUREMENT)

Hp(10) γ	Hp(0.07) γ
<ul style="list-style-type: none"> Effective range of dose: 0.001 mrem to 10000 rem (0.01 μSv to 100 Sv) Display resolution: 0.01 mrem to 1000 rem (0.1 μSv to 10 Sv) up to 4 decimal places Overload indication: from 1000 rem to > 10000 rem (10 Sv to > 100 Sv) 	<ul style="list-style-type: none"> Effective range of dose: 0.001 mrem to 10000 rem (0.01 μSv to 100 Sv) Display resolution: 0.01 mrem to 1000 rem (0.1 μSv to 10 Sv) up to 4 decimal places Overload indication: from 1000 rem to > 10000 rem (10 Sv to > 100 Sv)

DOSE RATE RANGE IEC61526 ED. 3 (DISPLAY & MEASUREMENT)

Hp(10) γ	Hp(0.07) γ
<ul style="list-style-type: none"> Effective range of dose rate: 0.005 mrem/h to 2000 rem/h (0.05 μSv/h to 20 Sv/h) Display resolution: 0.1 mrem/h to 1000 rem/h (1 μSv/h to 10.0 Sv/h) up to three decimal places Overload indication: from 1000 rem/h to > 5000 rem/h (10 Sv/h to > 50 Sv/h) 	<ul style="list-style-type: none"> Effective range of dose rate: 0.005 mrem/h to 2000 rem/h (0.05 μSv/h to 20 Sv/h) Display resolution: 0.1 mrem/h to 1000 rem/h (1 μSv/h to 10.0 Sv/h) up to three decimal places Overload indication: from 1000 rem/h to > 5000 rem/h (10 Sv/h to > 50 Sv/h)

ON-AXIS ENERGY RESPONSE

Photon Hp(10) (Ref. ^{137}Cs)	Photon Hp(0.07) (Ref. ^{137}Cs)
<ul style="list-style-type: none"> $\pm 15\%$ from 15 keV to 1.5 MeV -15% to +20% from 1.5 MeV to 10 MeV 	<ul style="list-style-type: none"> -29% to 67% from 24 keV to 10 MeV, 0° to 60°

COMBINED ENERGY AND ANGULAR RESPONSE

Photon Hp(10) (Ref. ^{137}Cs)	Photon Hp(0.07) (Ref. ^{137}Cs)
<ul style="list-style-type: none"> -29% to +67% from 16 keV to 10 MeV, 0° to 60° 	<ul style="list-style-type: none"> -29% to +67% from 16 keV to 10 MeV, 0° to 60°

ACCURACY

Photon Hp(10) (Ref. ^{137}Cs)	Photon Hp(0.07) (Ref. ^{137}Cs)
$\pm 5\%$	$\pm 5\%$

DOSE RATE LINEARITY

Photon Hp(10) (Ref. ^{137}Cs)	Photon Hp(0.07) (Ref. ^{137}Cs)
$\pm 10\%$ Between 1000 rem/h (10 Sv/h) and 5000 rem/h (50 Sv/h) cumulative dose	

CHARACTERISTIC FOR PULSED RADIATION

Characteristic	Rated Range	Relative Response
<i>Medical X-ray, pulse width >1 ms, pulse rate mode</i>		
Max. pulse dose rate	0.005 mrem/h to 500 rem/h (0.05 μ Sv/h to 5 Sv/h)	$\pm 20\%$ for pulse width >1 ms (-40% at 1000 rem/h, (10 Sv/h))

DMC 3000

ACCESSORIES AND OPTIONS

MODULES

- Beta Module Hp(0.07)
- Neutron Module Hp(10)
- Telemetry Module
- Neutron Telemetry Module

READERS

- LDM 320D/W™
- LDM 2000™
- LDM 3200™
- LDM 1000™

SOFTWARE

- DMCUser™
- DosiFFR™
- DosiCare™
- DosiServ™
- LDMAccess™

CALIBRATOR

- IRD 2000™



TELEMETRY

- WRM2™/WRM3™
- iPAM-Tx
- RDS-31iTx - RDS-32iTx
- TeleView 3000

SIMULATION

- DMC 3000TD
- SCC (Simulation Control Center)



DMC 3000 Beta



DMC 3000 Neutron



DMC 3000 Telemetry



DMC 3000 Neutron Telemetry

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SPECIFICATIONS

ELECTRICAL CHARACTERISTICS

- Standard AAA (LR03) 1.5V Alkaline battery
- Autonomy
 - 12 calendar month battery life (typical, 8 h per day, 5 days per week in run mode, without excessive alarms (1))
 - 3300 h battery life in continuous run, without excessive alarm (1)
 - (1) 0.1% of the time in alarm, with a quality industrial battery

MECHANICAL CHARACTERISTICS

- Rugged, high impact polycarbonate-ABS case
- Dimensions: 3.4 x 2.2 x 0.8 in (86 x 56 x 21 mm) without clip
- Weight with alkaline battery and clip: <3.0 oz (< 84 g)
- Replaceable clips: 3 back clips and 1 front-facing clip

ENVIRONMENTAL CHARACTERISTICS

- Temperature range: 14°F to 122°F (-10°C to 50°C): deviation in response less than ±5%
- Humidity: < 90% at 108°F (42°C)
- Storage: -4°F to 160°F (-20°C to 71°C)
- Shock, vibration and drop resistant (1.5 meters on concrete),
- Waterproof IP67 1m (39 in) during 1 hour
- EMC: complies and exceeds standards by a large margin (compliant, certificate number: 153720)
 - MIL STD 461F RS103 (pulsed electric field): exceeds 200V/m from 30 kHz to 5 GHz
 - MIL STD 461F RS101 (magnetic field 30 Hz - 100 kHz)
- Factory calibration approved under ISO/IEC 17025, COFRAC accreditation N° 2-1663 (See www.cofrac.fr)

FUNCTIONAL FEATURES

DISPLAY FEATURES

- Large LCD display with high quality white backlighting
- Eight alphanumeric digit display for full name display and fix dose/dose rate display format
- Two push buttons for an easy customized data and parameters display

ALARM FEATURES

- Audible and tactile
 - Alarming speaker with level of 85 dB (A) typical (> 90 dB (C) peak) at 30 cm (11.8 in), frequency < 4800 Hz
 - Vibrating alarm
- Visual
 - High efficiency red flash LED on front
 - Three top LEDs for Alarming (Red), gamma counting (Green), and Hp(0.07) or Neutron counting (Blue)
- Customize
 - Adjustable dose and dose rate alarms
 - Adjustable and acknowledgeable dose and dose rate warnings
 - Configurable visual and audible alarm chirp
 - Configurable latched dose rate alarm and warning
 - Remaining time and run time alarms

DISPLAY HISTOGRAM FEATURES

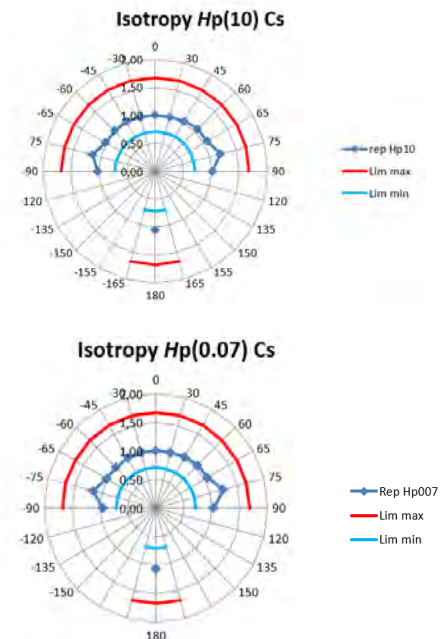
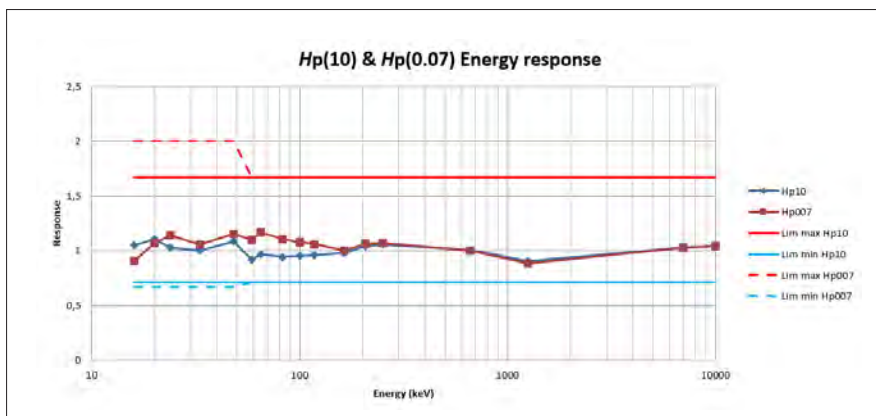
- Dose increments with a 1 μ Sv (0.1 mrem) resolution and dose rate saved on non-volatile memory (EEPROM) in configurable steps (10 s, 60 s, 10 min, 1 hour, 24 hours)
- Event log (alarms, faults, changes) saved during the selected time periods
- Stores data for several consecutive workers' entries and exits (more than 2,500 steps)

COMMUNICATION

- Hands-free communication, frequency: 125 kHz
- Backward compatibility with existing readers
- Enhanced protocol to support additional features with the new readers (LDM 320D, LDM 320W, LDM 2000, LDM 3200, LDM 1000 models)

AUTONOMOUS MODE SETTINGS

- Dose / Dose Rate Alarm thresholds (primary, secondary and total measurements)
- Dose / Dose Rate Pre-alarm thresholds (primary, secondary and total measurements)
- Reset or Total Dose
- Time Alarm thresholds



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