

## Beta Module For DMC 3000



### **Add-on Module for Personal Electronic Dosimeters**

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 challenges. The Beta Module provides operational dosimetry for hospital personnel, first responders, and radiation workers where there is a Beta radiation risk.

The add-on Beta module plugged to the DMC 3000 dosimeter provides  $H_p(0.07)$  and a wide range of beta radiation measurement.

The  $H_p(0.07)$  and Beta measurement, display and alarms features are highly visible on the DMC 3000 high contrast and backlit LCD display, and LEDs.

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

The Beta Module provides a global coverage for operational dosimetry for personnel operating in hospitals, for first responders and any radiation worker from industrial facilities where there is a Beta radiation risk.

### **KEY FEATURES**

- Dose and dose rate  $H_p(0,07)$  displayed
- Connect and ready for use
- High efficiency beta measurement
- Superior  $H_p(0,07)$  energy response
- Meets or exceeds applicable IEC and ANSI standards
- Excellent EMC Immunity
- Designed for ruggedness and durability

## PHYSICAL CHARACTERISTICS

- **Compliant with IEC 61526 Ed. 3, ANSI 42.20(\*)**  
(\*) *isotropy Am-241 and Cs-137 with  $\pm 75^\circ$  angle*
- **Hp(0,07) Measurement range (DMC3000 + module)**
  - X and gamma energy range: 15 keV to 7 MeV at 0°
  - Beta  $E_{\text{mean}} > 60$  keV ( $E_{\text{max}}$ : 0.22 MeV to 2.3 MeV)
- **Accuracy Hp(0,07)**
  - $\leq \pm 5\%^*$  (Cs-137, ~ 24 mSv/h, 2.4 rem/h);
  - $\leq \pm 10\%^*$ , (Am-241, ~ 23 mSv/h, 2.3 rem/h);
  - $\leq \pm 10\%^{**}$  X-ray 16keV  
(\*without  $\pm 5\%$  extended uncertainty  $k=2$ ) ;  
(\*\* without  $\pm 9\%$  extended uncertainty  $k=2$ )
- **Responses:**
  - Relative Hp(0,07) Beta response of Pm-147, Kr-85 and Sr-90/Y-90 within  $\pm 20\%$  (\*)
  - Hp(0,07) X and gamma response within  $\pm 20\%$  (\*) from 16 keV to 7 MeV  
(\*) *in reference to the typical curve given here below*
- **Hp(0,07) Dose Rate Linearity**
  - $< \pm 20\%$  up to 10 Sv/h, 1000 rem/h
- **Display of Hp(0,07) measurement**



## ELECTRICAL CHARACTERISTICS

- Powered by DMC 3000
- 8 calendar month battery life for beta module and the DMC 3000 (typical, 8 h per day, 5 days per week in run mode, without excessive alarms\*)
- 1800 h battery life for DMC 3000 with beta module and DMC 3000 in continuous run, without excessive alarms\*  
\*0.2% of the time in alarm

## MECHANICAL CHARACTERISTICS

- Rugged, high impact polycarbonate-ABS case
- Dimensions with DMC 3000:
  - 4.8 x 2.4 x 0.8 in (122 x 60 x 21 mm) max. without clip
  - 4.8 x 2.4 x 1.1 in (122 x 60 x 28 mm) with standard clip
- Weight with DMC 3000: 3.9 oz (< 112 g) with clip
- Worn by a replaceable standard clip



## ENVIRONMENTAL CHARACTERISTICS

- Temperature range: 14°F to 122°F (-10°C to 50°C)
- Storage: -4°F to 160°F (-20°C to 71°C)
- Shock, vibration and drop resistant
- IP50 protection
- EMC: complies and exceeds standards by a large margin (compliant)
- MIL STD 461F RS103 (pulsed electric field): exceeds 200 V/m from 10 kHz to 5 GHz
- MIL STD 461F RS101 (magnetic field 30 Hz to 100 kHz)

## PRODUCT CHARACTERISTIC

- **Histogram Features**
  - Additional Hp(0,07) measurement (dose, dose rate and maximum dose rate) saved on non volatile memory (EEPROM) at the same time as Hp(10) measurement in configurable steps (10 s, 60 s, 10 min, 1 hour, 24 hours)
- **Display Features**
  - Additional Hp(0,07) measurement displayed on DMC 3000 high quality white backlighting
  - Blue top LED for Hp(0,07) dose increment indication
- **Alarm Features and Communication**
  - DMC 3000 alarming speaker, vibrator, high efficiency red flash LED, 3 top LEDs and display indicators
  - Hp(0,07) dose/rate alarms, adjustable over the display range
  - Hp(0,07) dose/rate warnings, adjustable over the display range and acknowledgeable
- **Calibration**
  - Factory calibration in accordance with ISO/IEC 17025
  - Parameters saved into the module
- **Compatibility**
  - Backward compatibility with LDM 2000, LDM 3000M and LDM 3200 readers (*requires reader firmware/software upgrade*)
  - Compatible with LDM 320D/W readers
  - Compatible with DMC 3000 V7.x firmware (new communication protocol)

