Thermo Scientific EPD Mk2+ combines unequalled radiological performance with advanced software and hardware features.

Product Specifications

Thermo Scientific EPD Mk2+

Electronic Personal Dosimeter

Key Features

- Advanced radiological performance, 15 keV to 10 MeV, in a small, lightweight design
- Most complete dosimeter per IAEA Active Personal Dosimeter Intercomparison study IAEA-TECDOC-1564
- Multi-detector technology
- Excellent response to gamma, beta, and X-radiation
- Improved power management and battery monitoring
- Loud configurable audible alarm
- Excellent immunity to electromagnetic interference
- Enhanced, easy-to-read display with optional backlight
- Rugged battery cap and enhanced clip retention
- Improved reliability of LCD and case
- Additional software features provided
- Single AA battery powers the unit

The Thermo Scientific EPD Mk2+ builds upon the high performance of the original MK2 design, while providing enhanced features. The EPD Mk2+ is suitable for use as a single, stand-alone dosimeter, or as a component of a comprehensive dosimetry management system using our renowned hardware and software packages. The high quality of the Mk2+ provides low lifetime costs as well as advanced radiological performance.

The Thermo Scientific Mk2+ electronic personal dosimeter is perfect for organizations, utilities, agencies, and research laboratories to monitor employee dose and dose rates. The Mk2+ also boasts a ruggedized battery cap and an improved display.

The unit is powered by a single standard AA cell, either 1.5V alkaline or 3.6V Lithium Thionyl Chloride for maximum battery life. Pre-use integrity checks may be initiated over the IR (Infra-Red) communications link as part of the EPD Issue process of access control or dosimetry management systems. These checks include detector tests, battery test and battery voltage read. Display and function are controlled by a single button on the front of the unit, recessed to prevent inadvertent operation.

EPD Mk2+ Specifications

Radiological

Sensitive to X and gamma radiation, ß particles	
Direct readout of dose equivalents Hp (10) [deep/whole body] and Hp (0.07) [shallow/skin]	
Display Units:	Sv and rem (with prefixes) OR scaled in Sv and cGy (with prefixes)
Neutron Response:	< 2%
Dose Display and Storage:	0 µSv to > 16 Sv (0 mrem to > 1600 rem)
Display Resolution:	1 µSv (0.1 mrem), up to 10 Sv
Storage Resolution:	1/64 µSv (=1.5 µrem)
Dose Rate Display:	0 µSv/h to >4 Sv/h (0 mrem/h to >400 rem/h); auto ranging
Energy Response:	Photon: Hp(10): [All ref. ^{137}Cs]: ±50% 15 keV to 17 keV; ±20% 17 keV to 1.5 MeV; ±30% 1.5 MeV to 6 MeV; ±50% 6 MeV to 10 MeV
	Photon: Hp(0.07): [All ref. ^{137}Cs]: ±30% 20 keV to 6 MeV; ±50% 6 MeV to 10 MeV
	Beta: Hp(0.07): ±30% 250 keV to 1.5 MeV (ref. ^{90}Sr/^{90}Y)
Angular Response:	Hp(10) ^{137}Cs ±20% up to ±75°; Hp(10) ^{241}Am ±50% up to ±75°; Hp(0.07) ^{90}Sr/^{90}Y ±30% up to 55°
Accuracy:	Hp(10) ^{137}Cs ±10%; Hp(0.07) ^{90}Sr/^{90}Y ±20%
Dose Rate Linearity:	Hp(10) ^{137}Cs: ±10% <0.5 Sv/h (<50 rem/h); ±20% 0.5 to 1 Sv/h (50 to 100 rem/h); ±30% 1 to 2 Sv/h (100 to 200 rem/h);
	±50% 2 to 4 Sv/h (200 to 400 rem/h); Between 4 and 50 Sv/h continues to accumulate dose at a rate > 1 Sv/h
	Hp(0.07) ^{90}Sr/^{90}Y: ±20% <1 Sv/h (<100 rem/h); Between 1 Sv/h and 50 Sv/h continues to accumulate dose at a rate > 1Sv/h

Electrical and Mechanical

Single, recessed button controls display and function	
Power Supply:	Single AA battery, 1.5V alkaline cell, OR 3.6V lithium thionyl chloride; battery voltage is displayable (subject to display configuration settings); ON/OFF modes switchable over IR communications link or from button (when enabled), for power-saving in intermittent usage application:
Typical Battery Life:	1.5V alkaline - 45-50 days continuous, extending to 70-80 days of typical use of OFF mode 3.6V lithium - 5 months continuous, extending to ~ 10 months of typical use of OFF mode
Alarm:	Audible and LED visual alarms for dose, dose rate, count down time, read time, and failure mode; fully sealed; Time to Dose alarm display, based on current dose rate; audible alarm typically 98dB(A) at 20 cm with multiple modes; Hp(10) dose chirp settable from 0.01 to 100 µSv/chirp (1 µrem to 10 mrem/chirp); optional acoustic coupler/earpiece
Communications:	Infrared (IR) interface up to 1 meter range (39")
Dimensions:	85 x 63 x 19 mm (3.3" x 2.5" x 0.8"), excluding clip
Weight:	95 g (3.2 oz), including battery and clip
Case Material:	High-impact polycarbonate/ABS blend

Memory

10 year data retention without battery	
Short term dose registers for Hp(10) and Hp(0.07)	
Additional total-dose stores for multiple job periods	
Peak dose rates with time of occurrence	
All stored times have 1 second resolution	
Selectable fast dose rate response setting	
Dose clear events recorded	
Count Down Timer:	1 hour, 39 minutes, 59 seconds maximum, resolution 1 second
Event Log:	23 entries for time recording of alarms, etc., for incident assessments
Dose Profile History:	Settable interval from 2 seconds to 35 hours, store transitions of Hp(10) and Hp(0.07) at a resolution of 1 µSv (0.1 mrem); will store up to 579 records for transitions up to 127 µSv or less

Environmental

Operating Temperature:	-10°C to +50°C (+14°F to +122°F)
Humidity:	20% to 90% RH, non-condensing
Vibration:	IEC 1283: 2g, 15 minutes, 10 to 33 Hz
Shock:	1.5 m (5') drop on each surface onto concrete
EMI/EMC (incl. static discharge):	Exceeds IEC 61526 requirements; exceeds more stringent MIL Standard 461D RS103

Worldwide
Frauenauracher Strasse 96 — +49 (0) 9131 909-260
D 91056 Erlangen, Germany — +49 (0) 9131 909-172 fax

United Kingdom
Bath Road, Beenham, — +44 (0) 118 971 2121
Reading RG7 5PR United Kingdom — +44 (0) 118 971 2835 fax

United States — +1 (508) 520-2815
27 Forge Parkway — +1 (800) 274-4212 toll-free
Franklin, MA 02038 USA — +1 (508) 428-3535 fax

China
7th Floor, Tower West, Yonghe Plaza — +86 10 8419 3588
No. 28 Andingem East Street — +86 10 8419 3581 fax
Beijing, 100007 China

www.thermo.com/rmp
www.thermo.com/dosimetry

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