



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.

Radiological

Sensitive to X and gamma radiation, β 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 μ Sv to > 16 Sv (0
mrem to > 1600 rem)
Display Resolution: 1 μ Sv (0.1 mrem), up to 10 Sv
Storage Resolution: 1/64 μ Sv (=1.5 μ rem)
Dose Rate Display: 0 μ Sv/h to >4 Sv/h (0 mrem/h
to >400 rem/h); auto ranging
Energy Response: Photon: Hp(10): [All ref.
137Cs]: $\pm 50\%$ 15 keV to 17 keV; $\pm 20\%$ 17 keV to
1.5 MeV; $\pm 30\%$ 1.5 MeV to 6 MeV;
 $\pm 50\%$ 6 MeV to 10 MeV
Photon: Hp(0.07): [All ref. 137Cs]: $\pm 30\%$ 20 keV to
6 MeV; $\pm 50\%$ 6 MeV to 10 MeV
Beta: Hp(0.07): $\pm 30\%$ 250 keV to 1.5 MeV (ref.
90Sr/90Y)
Angular Response: Hp(10) 137Cs $\pm 20\%$ up to
 $\pm 75^\circ$; Hp(10) 241Am $\pm 50\%$ up to $\pm 75^\circ$; Hp(0.07)
90Sr/90Y $\pm 30\%$ up to 55°
Accuracy: Hp(10) 137Cs $\pm 10\%$; Hp(0.07)
90Sr/90Y $\pm 20\%$
Dose Rate Linearity: Hp(10) 137Cs: $\pm 10\%$ <0.5
Sv/h (<50 rem/h); $\pm 20\%$ 0.5 to 1 Sv/h (50 to 100
rem/h); $\pm 30\%$ 1 to 2 Sv/h (100 to 200 rem/h);
 $\pm 50\%$ 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) 90Sr/90Y: $\pm 20\%$ <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 μ Sv/chirp (1 μ rem 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 μ Sv
(0.1 mrem); will store up to 579 records for
transitions up to 127 μ Sv 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