



Electronic Personal Dosimeter (EPD)

Technical Specifications

The Electronic Personal Dosimeter, or the EPD as it is more commonly called, is a personal radiation monitor that detects and measures beta and photon radiation. Radiation detected by the EPD is processed to give a real-time readout of deep dose, shallow (skin) dose, and dose rate.

Dosimeter Overview

The EPD contains three silicon diode detectors, connected to amplifiers and signal processing circuits to measure x-ray, low-energy and high-energy gamma, and beta radiation. The detector outputs are processed to calculate and display deep and shallow (skin) dose equivalent $H_p(10)$ and $H_p(0.07)$ and dose rate. The EPD provides real-time feedback to users on their radiation exposure, with both audible and visual alarms that are activated when the total dose or dose rate exceed the default pre-programmed thresholds. Clients can request custom alarm configuration by contacting their Customer Service Representative. Dose and dose rate data can be viewed on the LCD display and is stored in persistent memory, allowing for future review if required.

Dosimeter Reading Equipment

Data and settings are written to and read from the EPDs via an infra-red link to a dosimeter reader connected to a host PC. Both EPD configuration and data can be viewed and managed using Thermo Scientific's EasyEPD2 software. EPD readers and software are used by National Dosimetry Services (NDS) staff for EPD configuration and management and are not issued to clients.

Maintenance and Calibration

EPDs are returned to NDS for maintenance on an annual basis, where they undergo calibration verifications and function tests before being re-issued to clients. The EPDs are calibrated by exposing them to a known radiation dose from a Cs-137 source under standard conditions. The reported dose must fall within +/-10% of the dose delivered.



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The EPD is not licensed to be used as a “Dose of Record”, and dose data is not reported to the National Dose Registry (NDR). An EPD is meant to be used as a dose management tool and is typically used in conjunction with a passive dosimeter (e.g., InLight Nova whole body and/or extremity dosimeters).

Technical Specifications

Dosimeter Name	Thermo Scientific Mk2™ Electronic Personal Dosimeter (EPD)
Dosimeter Type	Active
Radiation Detected	Gamma, X-Ray, and Beta
Wear Location	Waist (Belt), Shirt (Pocket)
Doses Reported	Hp(10), mSv (Deep Dose Equivalent, or whole body dose) Hp(0.07), mSv (Shallow Dose Equivalent, or skin dose)
Energy Response	Gamma, X-Ray: 15 keV to 10 MeV Beta radiation (E_{mean}): 250 keV to 1.5 MeV
Power Supply	Single AA 1.5V alkaline battery for approximately 8 weeks continuous operation, or 3.6 V lithium battery for approximately 5 months continuous operation
Display Units	Sieverts (Sv) or rem (with prefixes)
Dose Display and Storage	0 μ Sv to 16 Sv
Display Threshold	1 μ Sv

