The new Thermo Electron EPD-N2 combines excellent photon dosimetry with full-spectrum neutron response, making this dosimeter ideal for those working in mixed neutron/gamma fields.

**EPD-N2™**
Electronic Personal Gamma-Neutron Dosimeter

**Applications include:**
- Reactors
- Spent fuel and glass waste transport
- Reprocessing and plutonium finishing
- MOX - plants, neutron source manufacture
- Many types of nuclear and university research
- Accelerator facilities
- Medical facilities

- Advanced radiological performance, 25keV-10MeV (photon), thermal – (0.025ev) 15MeV (neutron)
- Excellent performance in mixed gamma/neutron fields
- Multi-detector technology
- Excellent performance for low-dose measurements
- Direct display of Hp(10) for neutrons and for photons
- Outstanding immunity to electromagnetic interference
- AA battery, lithium or alkaline, interchangeable
- Compatible with current or upgradeable Thermo Electron EPD readers, software and accessories
EPD-N2 Specifications

Radiological
- Sensitive to x- and y-radiation (E > 25keV) and neutrons
  0,025eV < E < 15MeV
- Direct readout of Hp(10) for neutron & photon dose
- Multiple diode detectors with converters and energy compensation shields
- Display units: Sv & rem (with prefixes µ, m), set via internal software
- Generally in accordance with ANSI standards 13.11, 13.27 & 42.20
  (photons performance) and most aspects of IEC 61525 (neutrons & photons)
- Dose display & storage 0µSv to >1Sv, auto-ranging
- Resolution for display: 1µSv (< 10µSv/1rem) \(\gamma\), and neutron under best conditions
- Resolution for storage: 1/64µSv (~1.5µrem) \(\gamma\), 1µSv for neutron dose under best conditions
- Dose rate display: 0µSv/h to >4Sv/h (400rem/h), auto-ranging, variable resolution \(\gamma\) & neutron

![NEUTRON RESPONSE](image)

Electrical & Mechanical
- Power supply: 1 x AA battery, 1.5V alkaline or 3.6V lithium, interchangeable without any adjustment
- Operating life (see assumptions below)
  Continuous use: 1.5V alkaline: 47 to 55 days
  3.6V lithium: 4.5 to 5 months
  8h/24 with use of ‘OFF’ standby state:
  1.5V alkaline: ~3 months
  3.6V lithium: ~9 months

Assumptions: average dose rate < 5µSv/h (<0.5mrem/h), IR communications < 5s, 2x/day, audible alarm sounding <2h total during battery life
- Energy response (\(\gamma\)): ±20% 30keV to 1.5MeV
- Energy response (n): ±30% 25keV to 7MeV

With a single calibration, the neutron dose estimated by the EPD-N2 will be within approximately ±30% of the true value for many workplace fields
- Angular response:
  Hp(10) (\(\gamma\)) ±20% up to &75°
  Hp(10) (n) ±30% up to &60°
- Internal detector self-test under CPU control
- Accuracy:
  Hp(10) (\(\gamma\)) ±10% Cs-137
- Communications:
  IR interface, ≤1m range (39")

- Display and enabled functions controlled by button on front face of EPD
  (button recessed and sealed)
- Size: 86 x 63 x 20 mm
- Weight: 110 g (–4oz) incl. battery & clip
- Case material: high impact polycarbonate blend
- Clip: high impact plastic, easily renewed, strong clamp, with eyelets for lanyard
  (optional lanyard-only version)

Alarms
- Audible & visual alarms:
  Photon dose rate (2), photon dose, combined photon + neutron dose, neutron dose rate, over-range, failure, count - down timer, low battery, ‘return for read’
  Alarm tone, pattern, sound level, mutability and red LED configurable via external software
- ‘Beep’ for \(\gamma\)-dose with configurable sensitivity
- Alarm sounder:
  sealed, typically 97 dB(A) @ 20cm on ‘loud’ setting

Memory
- 10 year data retention without battery
- Short term and Total dose registers for Hp(10) \(\gamma\) & n
- Storage of peak photon & neutron dose rates, with date & time
  (1s resolution for all stored times)
- 23 most recent alarms or events stored with date & time
- Dose profile storage: ~500 dose data points for \(\gamma\) & neutron dose with date & time

Environmental
- Operating temperature: -10 °C to 40 °C (15 to 105 °F)
- Storage temperature: -25 °C to 70 °C (13 to 125 °F)
- Humidity: 20% - 90% RH, non-condensing
- Protection rating: IP55 (protection against dust ingress & low pressure jets of water from all directions)
- Vibration: IEC 1283 (2 g, 15 min., 10-33 Hz)
- Shock: 1.5 m drop onto concrete on each surface
- EMI/EMC: Exceeds MIL STD 461D RS103; » IEC 1283 & IEC 61525

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