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

**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, 20keV-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 Scientific EPD readers, software and accessories
EPD-N2 Specifications

Radiological
- Sensitive to X- and γ-radiation (E > 20keV) 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 > 16Sv, auto-ranging
- Resolution for display: 1μSv (< 10mSv/1rem) (γ, and neutron under best conditions)
- Resolution for storage: 1/64μSv (~1.5μrem) (γ), 1μSv for neutron dose under best conditions
- Dose rate display: 0μSv/h to > 45Sv/h (400rem/h), auto-ranging, variable resolution

Energy response (γ): ± 20% 25keV to 1.5MeV
± 30% 20keV to 6MeV
± 50% 6MeV to 10MeV

Energy response (n):
- see energy response curve above
- 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) (γ) ± 20% up to ± 75° Cs-137
  Hp(10) (n) ± 30% up to ± 60° Am-Be
- Internal detector self -test under CPU control
- Accuracy:
  Hp(10) (γ) 10% Cs-137
  Hp(10) (n) 20% Am-Be

Alarms
- Audible & visual alarms: Photon dose rate (2), photon dose, combined photon + neutron dose, neutron dose rate, neutron dose, 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 98-100 dB(A) @ 20cm on 4kHz ‘loud’ setting

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: typically 42 days
  3.6V lithium: 4.5 - 5 months
  8h/24 with use of ‘OFF’ standby state:
  1.5V alkaline: ~ 2.5 months
  3.6V lithium: ~ 9 months
- Average dose rate < 5μSv/h (<0.5rem/h), IR communications < 5s, 2x/day, audible alarm sounding <2h total during battery life
- 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 18.5 mm, without clip, (approx 3.4 x 2.5 x .75“)
- Weight: 108 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)
- Dose profile storage: ~ 500 dose data points for γ & neutron dose with date & time

Battery life (see assumptions below)
- Continuous use: 1.5V alkaline: typically 42 days
  3.6V lithium: 4.5 - 5 months
- 8h/24 with use of ‘OFF’ standby state:
  1.5V alkaline: ~ 2.5 months
  3.6V lithium: ~ 9 months

Memory
- 10 year data retention without battery
- Short term and Total dose registers for Hp(10) γ & 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 γ & neutron dose with date & time

Environmental
- Operating temperature: -10 ºC to 40 ºC (15 to 105 ºF)
- Storage temperature: -25 ºC to 70 ºC (-13 to 158 ºF)
- 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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