

Saphydose γ_i dosimeter

Operational $H_p(10)$ dosimeter for X, γ

Key features

- Compliance with IEC 61526
- High immunity against electromagnetic disturbances
- Long battery autonomy: 8000 hours in use with two batteries
- Integrated with an operational dosimetry system, or stand-alone use



Saphydose γ_i

The Saphydose γ_i is an isotropic electronic dosimeter which complies with the IEC 61526.

This instrument provides measurement of the $H_p(10)$, dose equivalent for the whole body.

The Saphydose γ_i has gained popularity thanks to its reliability and high immunity against electromagnetic disturbances, as well as robustness, given by its aluminum box.

Four alarm thresholds are included, each one warning the user visually (front-side LED and clear message written on the display) and acoustically (buzzer). A dosimeter management software, such as the EasyDose G, can help to customize these alarms.

Easy-to-use, the Saphydose γ_i can be used as a stand-alone device (individual mode) or be integrated in a dosimetry system (system mode). In such case, the data are sent wirelessly to the operational dosimetry system through a dosimeter reader.

The Saphydose γ_i is aimed for people working in a controlled area (nuclear power plant, fuel reprocessing plant, research center hospital, non-destructive testing service, etc.) or likely to be exposed (Armed Forces, fire brigade, etc.).

Saphydose yi dosimeter

Physical characteristics

- Detector: Dual silicon diode
- Radiation type: X and γ rays
- Measurement range of dose equivalent: From 1 μ Sv to 9999.9 mSv
- Dose equivalent uncertainty: $< \pm 15\%$
- Measurement range for dose equivalent rate: From 0.5 μ Sv/h to 5 Sv/h.
- Energy/angular response: Compliant with IEC 61526 from 50 keV to 7 MeV
Isotropy (360°) in the air to ^{60}Co
- Dose response linearity function of dose rate: $< \pm 20\%$ from 0.5 μ Sv/h to 2 Sv/h, $< \pm 25\%$ from 2 Sv/h to 5 Sv/h
- Alarm for dose equivalent overload: Above 9999.9 mSv
- Adjustment of warning & alarm thresholds for dose and dose equivalent rate: 2 different thresholds for dose and 2 for dose rate
- Alarm for overload of dose rate equivalent: Above 5 Sv/h.

Compliance to standards

- IEC 61526 class 1
- IEC 60028-2-32
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-8

Environmental characteristics

- Operating temperature: From -20 °C to +50 °C
- Ingress Protection Marking: IP65
- Vibrations resistance: 20 m/s², 15 min, from 10 to 33 Hz, on the 3 axis
- Drop resistance: Height of drop: 1 m on concrete
- Radiated RF EM field immunity: 20 V/m from 80 MHz to 1 GHz / >100 V/m from 1.8 GHz to 2 GHz
- Electrostatic discharges immunity: ± 4 kV on contact, ± 8 kV in the air
- Magnetic fields immunity: 30 A/m at 50 Hz

Mechanical characteristics

- Dimensions: 98 × 64 × 24 mm³
- Weight: 145 g with 1 battery, 160 g with 2 batteries

Electrical characteristics

- Power supply: 2 lithium batteries 3.6 V (AA types)
- Autonomy in use: 8000 h

Interfaces

- Audible alarm: Front-side buzzer, sound level > 85 dBA. at 30 cm.
- Visual alarm: Red high-luminosity LED (alarm type text-displayed)
- Faulty warning: Low battery, detector failure, memory error
- LCD: 5 scrolling alphanumeric characters: Overload - Fault - Maintenance advised – Worn/dropped (option)
- Panel lights: