DIS-1

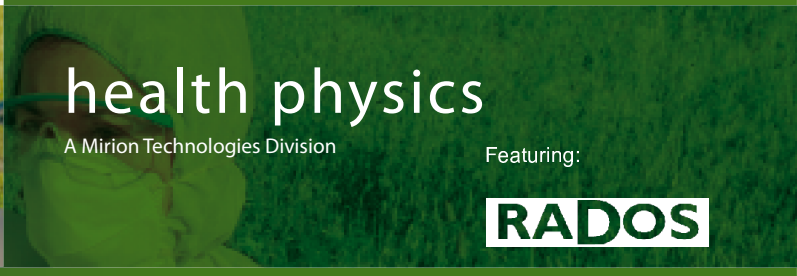
Direct Ion Storage Dosimeter

The RADOS DIS-1 personal dosimeter is based on an ionisation chamber combined with a modern electronic Direct Ion Storage (DIS) memory cell. The Ion chamber is widely used as a reference detector in radiation detection and is now available in everyday dosimetry applications.
The DIS-1 dosimeter could be described as a passive electronic TLD or Film badge, which can be read instantly and non-destructively without any loss of dose information. This unique feature allows the user of the DIS-1 to read his/her accumulated doses whenever necessery.
The DIS-1 dosimeter has a small, lightweigth, rugged and watertight construction, which makes the DIS-1 dosimeter reliable and easy to use.

The radiological range of the DIS-1 covers the entire Hp (10) and Hp (0.07) photon and beta energies without any compromises. The wide dose and energy range, the ability to operate in pulsed fields and the performance at high dose rates make DIS-1 an ideal device for all kinds of radiation dosimetry applications. The DIS-1 allows for the detection of heavy, high-energy ions and its immunity to any external interference is unequalled. There are no deviations in the dose readings even at very high EM or RF fields.

FEATURES

- direct measurement of Hp(10) and Hp(0.07) over the entire energy range
- instant readout
- extremely easy readout process
- passive operation
- not sensitive to EM and RF interference
- operation at high dose rates
- operation at pulsed fields
- PTB approved model available



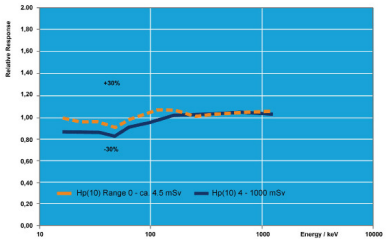
health physics
A Mirion Technologies Division

Featuring:
RADOS

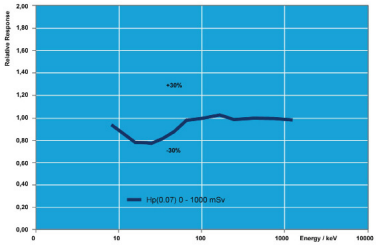
TECHNICAL SPECIFICATIONS:

Physical Characteristics	• detector type: three ™DIS (Direct Ion Storage)detectors and two MOSFET detectors • sensitive to gamma, X-ray and beta radiation • insensitive to neutrons (<5 %) • instant readout of ICRU dose equivalents: - Hp(10) 1 µSv to 40 Sv (0.1 mrem to 4000 rem) [1)] - Hp(0.07) 10 µSv to 40 Sv (1 mrem to 4000 rem)[1)] • calibration accuracy: ±5 % at 1 mSv ^{137}Cs Hp(10) ±10 % at 10 mSv ^{137}Cs Hp(0.07) • energy response in the dose range up to 1 Sv: photons - Hp(10) ±30 % from 15 keV to 9 MeV [2)] - Hp(0.07) ±30 % from 6 keV (to 9 MeV) beta - Hp(0.07) -20...+35% from 0.24 MeV to 0.80 MeV (E_{mean}) • angular response for photons: - Hp(10) ±20 % up to 60° at 65 keV - Hp(0.07) ±20 % up to 60° at 65 keV [1)] When calibrated after every 10 Sv of accumulated dose [2)] PTB approved model up to 7 Mev
Functional Characteristics	• recording of official Hp(10) and Hp(0.07) doses • memory: - calibration date - dose reset dates - user identification
Mechanical Characteristics	• size: 41 x 44 x 12 mm, with holder 47 (95 with strap) x 49 x 13 mm (1.61 x 1.73 x 0.47 in , with holder 1.85 (3.74 with strap) x 1.93 x 0.51 in) • weight: 25 g (0.88 oz) , with holder 43 g (1.52 oz) • beta window: aluminized PI (app. 7 mg/cm2) • holder: anodized aluminium
Environmental Characteristics	• temperature range from - 10°C to +50 °C (14 °F to 122 °F) • enclosure class: IP 67 (waterproof)

The DBR-1 and DBR-2 Readers are designed to read DIS-1 dosimeters assembled in the DDH-2 Snap-in Dosimeter Holders. To obtain the most recent dose value, the user simply plugs the dosimeter into the reader and the dose values are displayed in a few seconds.



Typical energy response of personal dose equivalent Hp(10)



Typical energy response of personal dose equivalent Hp(0.07)

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