



MIRION
TECHNOLOGIES

Radiation. **Safety.**

DIS-1

Direct Ion Storage Dosimeter



Nuclear
Power



Homeland
Security
& Defense



Industrial and
Manufacturing



Healthcare



Labs and
Education

OVERVIEW

The RADOS DIS-1 personal dosimeter is based on an ionization 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 necessary.

The DIS-1 dosimeter has a small, lightweight, 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.

KEY 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 interferences
- Operation at high dose rates
- Operation at pulsed fields
- Complies with: IEC 61066, 62387:2012, 17025:2005, PTB

PHYSICAL CHARACTERISTICS

- Detector type: three TMDIS (Direct Ion Storage) detectors and two MOSFET detectors
- Sensitive to gamma, X-ray and beta radiation
- Insensitive to neutrons (<5 %)

	Hp(10)	Hp(0.07)
Calibration accuracy		
	±5 % at 1 mSv ¹³⁷ Cs	±10 % at 10 mSv ¹³⁷ Cs
Instant readout of ICRU dose equivalents		
	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⁾
Energy response in the dose range up to 1 Sv / Photons		
	±30 % from 15 keV to 9 MeV ²⁾	±30 % from 6 keV and higher (to 9 MeV)
Energy response in the dose range up to 1 Sv / Beta		
		(0.07) -20...+35% from 0.24 MeV to 0.80 MeV (E _{mean})
Angular response for photons		
	±20 % up to 60° at 65 keV	±20 % up to 60° at 65 keV

¹⁾ When calibrated after every 10 Sv of accumulated dose

²⁾ PTB approved 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 aluminum

ENVIRONMENTAL CHARACTERISTICS

- Temperature range from - 10°C to +50°C (14°F to 122°F)
- Enclosure class: IP 67 (waterproof)



DIS Dosimetry System

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.

The DBR-1 and DBR-2 Readers are designed to read DIS-1 Dosimeters assembled in the DDH 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.

> CHINA - SHANGHAI

T: +86 21 6180 6920 | E: info-cn@mirion.com

> FINLAND - TURKU

T: +358 2 4684 600 | E: info-fi@mirion.com

> FRANCE - LAMANON

T: +33 (0) 90 595959 | E: info-fr@mirion.com

> GERMANY - HAMBURG

T: +49 40 85193 0 | E: info-de@mirion.com

> USA - SMYRNA, GEORGIA

T: +1 770 432 2744 | E: info-us@mirion.com

Copyright (c) 2014 Mirion Technologies, Inc. or its affiliates. All rights reserved. Mirion, the Mirion logo, and other trade names of Mirion products listed herein are registered trademarks or trademarks of Mirion Technologies, Inc. or its affiliates in the United States and other countries. Third party trademarks mentioned are the property of their respective owners.