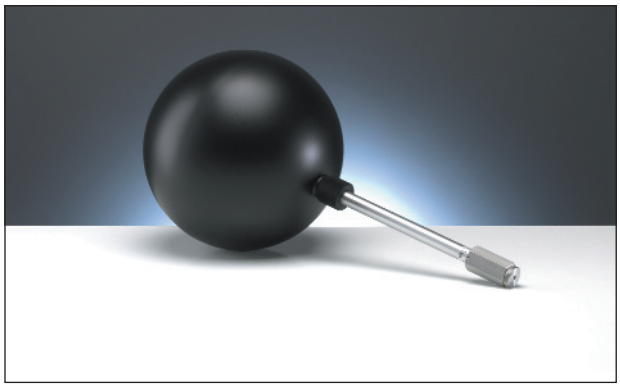

10 Liter Spherical Ionization Chamber

Type 32003

Spherical ionization chamber for radiation protection

Features

- Vented sensitive volume of 10 liters
- Suitable for survey meter calibration and low level measurements
- Superior energy response, reproducibility, directional dependence and long-term stability
- Radioactive check device (option)

The spherical chamber is designed for the measurement of ionizing radiation in radiation protection. Superior features make the chamber suitable as standard chamber for calibration purposes. It fulfills the requirement for excellent reproducibility and long-term stability of the sensitive volume. The spherical construction ensures a nearly uniform response to radiation from every direction. The energy response is very flat. This is achieved by the thin layer of aluminum on the inner wall surface, which provides for an increased photoelectric yield to compensate for the absorption of soft X-rays. The outer chamber diameter is 276 mm.

Specification

Type of product	vented spherical ionization chamber
Application	radiation protection measurements
Measuring quantity	photon equivalent dose
Nominal sensitive volume	10 l
Design	not waterproof, vented
Reference point	chamber center
Nominal response	330 µC/Gy
Chamber voltage	400 V nominal ± 500 V maximal
Energy response	≤ ± 3 %
Leakage current	≤ ± 10 fA

Materials and measures:

Wall of sensitive volume	2.75 mm POM (polyoxymethylene)
Total wall area density	417 mg/cm^2
Central electrode	graphite coated polystyrene, diameter 100 mm
Outer dimensions	diameter 276 mm

Ion collection efficiency at nominal range:

Ion collection time	150 ms
Max. dose rate for ≥ 99.5 % saturation ≥ 99.0 % saturation	 13 mGy/h 26 mGy/h
Max. dose per pulse for ≥ 99.5 % saturation ≥ 99.0 % saturation	 0.3 µGy 0.8 µGy

Useful ranges:

Chamber voltage	± (300 ... 500) V
Radiation quality	25 keV ... 50 MeV
Temperature	(10 ... 40) °C (50 ... 104) °F
Humidity	(10 ... 80) %, max 20 g/m^3
Air pressure	(700 ... 1060) hPa

Ordering information

TN32003 Spherical chamber 10 l, connecting system BNT
TW32003 Spherical chamber 10 l, connecting system TNC
TM32003 Spherical chamber 10 l, connecting system M

Options

T48010 Radioactive check device ^{90}Sr
T48001 Chamber holding device for check device