



6 cm³ SFD Mammo Chamber Type 34069

Shadow-free plane parallel chamber for absolute dosimetry in diagnostic radiology and mammography

Features

- ▶ Shadow-free design for use with automatic exposure control
- ▶ Sensitive volume 6 cm³, vented to air
- ▶ Suitable for measurements in front of and behind a phantom

The 34069 SFD mammo chamber is a high precision chamber for measurements in diagnostic radiology at high dose rates and in mammography. The chamber complies with the standard IEC 61674. Its shadow-free design makes it possible to use the chamber even while the automatic exposure control is activated. Together with an adequate diagnostic dosimeter the chamber features a wide dynamic range for measurements either in front of or behind a patient-equivalent phantom. The length of the mounted connection cable is 2.5 m.

Specification

Type of product	vented plane parallel ionization chamber acc. IEC 61674
Application	absolute dosimetry in diagnostic radiology
Measuring quantities	air kerma, exposure
Reference radiation quality	30 kV, HVL 0.337 mm Al (RQR-M3) 70 kV, HVL 2.58 mm Al (RQR5)
Nominal sensitive volume	6 cm ³
Design	not waterproof, vented
Reference point	in chamber center
Direction of incidence	perpendicular to chamber plane, see label 'Focus'
Nominal response	230 nC/Gy
Long-term stability	≤ 2 % per year
Chamber voltage	200 V nominal ± 400 V maximal
Energy response	≤ ± 2 % (25 ... 35) kV
Polarity effect	≤ 1 % (≤ 2 %)
Directional response	≤ 3 % for chamber tilting up to ≤ ± 15°
Leakage current	≤ 5 fA
Cable leakage	≤ 1 pC/(Gy·cm)

Materials and measures:

Entrance window	0.32 mm PMMA, 1.19 g/cm ³ 0.002 mm graphite 0.32 g/cm ³
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Total window area density	38 mg/cm ²
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Water-equivalent window thickness	0.4 mm
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Sensitive volume	radius 15.2 mm depth 2 x 4.21 mm
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Ion collection efficiency at nominal voltage:

Ion collection time	550 μs
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Max. dose rate for ≥ 99 % saturation	0.53 Gy/s
≥ 95 % saturation	2.65 Gy/s

Useful ranges:

Chamber voltage	± (100 ... 400) V
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Radiation quality	(25 ... 150) kV X-rays
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Field size	(5 x 5) cm ² ... (40 x 40) cm ²
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Temperature	(10 ... 40) °C (50 ... 104) °F
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Humidity	(10 ... 80) %, max 20 g/m ³
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Air pressure	(700 ... 1060) hPa
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Ordering Information

TN34069 SFD mammo chamber 6 cm³,
connecting system BNT

TW34069 SFD mammo chamber 6 cm³,
connecting system TNC

TM34069 SFD mammo chamber 6 cm³,
connecting system M

TL34069 SFD mammo chamber 6 cm³,
connecting system L