

NE2571 Farmer 0.6 cc Ionization Chamber

The Farmer NE2571A cylindrical ionization chamber is the original 0.6 cm³ chamber designed by Professor F.T. Farmer. It is constructed from a thin-walled, high purity graphite thimble and aluminium electrode, with a detachable build-up cap which also protects the thimble. Careful guarding of the signal conductors and cable has ensured low post-irradiation leakage. The NE2571A is used throughout the world for the measurement of photon and electron beam dosimetry.

It is also possible to purchase the graphite thimble replacements and water proof sheaths.

NE2571A is delivered as standard with a detachable build-up cap, 10 metre cable, Triax TNC plug; and carry case. Variations to this are available upon request.

Physical Characteristics

Sensitive volume	0.69 cm ³
Sensitive length	24.1 mm
Thimble materials	99.99% graphite
Inner diameter	6.3 mm
Wall thickness	0.36 mm
Inner electrode	99.99% aluminium
Length	20.6 mm
Outer diameter	1.0 mm
Build-up cap	Delrin CH ₂ O
Wall thickness	3.87 mm
Outside diameter	15.1 mm
Density	1.425 gm cm ⁻³
Stem outside diameter	8.62 mm
Length of connecting cable	10 m



Specifications

Sensitive volume	0.69 cm ³
Sensitivity for X-rays of 1 mm Cu HVL	4.6 R.nC ⁻¹
	275 R.min ⁻¹ .nA ⁻¹
	46 Gy.µC ⁻¹
	2.75 Gy.min ⁻¹ .nA ⁻¹

Energy range for X and gamma radiation

Without build-up cap (measures exposure)	50 kV to 300 kV
With build-up cap (measures exposure)	0.3 MV to 35 MV
In suitable phantom (measures absorbed dose to water)	2 MV to 35 MV

Energy range for electrons

In suitable phantom (measures absorbed dose to water)	5 MeV to 35 MeV
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Leakage current

Typical	5 x 10 ⁻¹⁵ A
Maximum	1.5 x 10 ⁻¹⁴ A
Maximum exposure rate (approx.) or 99% collection efficiency	4 kR.min ⁻¹ , continuous 25 mR/Pulse, pulsed
Polarizing potential—250V	40 Gy.min ⁻¹ , continuous 0.25 mGy/Pulse, pulsed
Polarizing potential—400V	10 kR.min ⁻¹ , continuous 40mR/Pulse, pulsed
	100 Gy.min ⁻¹ , continuous 0.4 mGy/Pulse, pulsed

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