

NE2571 Farmer 0.6cc Ionisation Chamber

The Farmer **NE2571A** cylindrical ionisation 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 (please refer to the sales office).

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

Specification	
Sensitive Volume	0.69cm ³
Sensitivity for X-rays of 1mm 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: (a) Without build-up cap: (measures exposure)	50kV to 300kV
(b) With build-up cap: (measures exposure)	0.3MV to 35MV
(c) In suitable phantom (measures absorbed dose to water)	2MV to 35MV
Energy range for electrons: In suitable phantom (measures absorbed dose to water)	5MeV to 35MeV
Leakage current: Typical: Maximum:	5 x 10 ⁻¹⁵ A 1.5 x 10 ⁻¹⁴ A
Maximum exposure rate (approx) or 99% collection efficiency:	4 kR.min ⁻¹ , continuous 25 mR/Pulse, pulsed
Polarising potential— 250V	40 Gy.min ⁻¹ , continuous 0.25 mGy/Pulse, pulsed
Polarising potential— 400V	10 kR.min ⁻¹ , continuous 40mR/Pulse, pulsed 100 Gy.min ⁻¹ , continuous 0.4 mGy/Pulse, pulsed

NE2581 Robust Farmer 0.6cc Ionisation Chamber

The 0.6 cm³ **NE2581A** is a robust Shonka Plastic version of the Graphite based NE2571A with similar applications but using a tissue equivalent inner electrode and thimble. This is particularly suitable for routine output checks of X-ray, 60Co and Linacs.



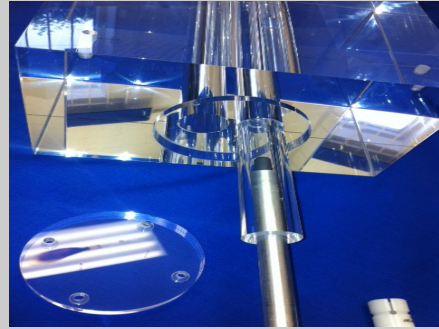
Associated and Peripheral equipment includes:

- Chamber repair kit
- **NPL2611** Secondary Standard Chamber
- **NE2566A** Intercomparison Phantom (see picture)
- **NE2528/3** Small Water Phantom for NE2571
- **PEP** small Photon Electron Water Phantom
- Dosimetry Extension Cables
- Solid Water

The **NE2581A** is delivered as standard with a detachable build-up cap, 10 metre cable, TNC plug; carry case – variations available upon request.

Physical Characteristics	
Sensitive Volume:	0.56cm ³
Sensitive Length:	24.1mm
Thimble materials:	Shonka A-150
Inner diameter:	6.3mm
Wall thickness:	0.36mm
Inner electrode:	Shonka A-150
Length:	20.6mm
Outer diameter:	3.0mm
Build-up cap:	Lucentine CH
Wall thickness:	5.61mm
Outside diameter:	18.6mm
Density:	1.06gm cm ⁻³
Stem: Outside diameter	8.62mm
Length of connecting cable:	8.62mm

NE-2566A Secondary Standard Intercomparison Phantom.



Specification

Sensitive Volume	0.56cm ³
Sensitivity for X-rays of 1mm Cu HVL	5.9 R.nC ⁻¹ 350 R.min ⁻¹ .nA ⁻¹ 59 Gy.µC ⁻¹ 3.5 Gy.min ⁻¹ .nA ⁻¹
Energy range for X and gamma radiation: (a) Without build-up cap: (measures exposure)	100kV to 300kV
(b) With build-up cap: (measures exposure)	0.3MV to 2MV
(c) In suitable phantom (measures absorbed dose to water)	2MV to 35MV
Energy range for electrons: In suitable phantom (measures absorbed dose to water)	5MeV to 35MeV
Leakage current: Typical: Maximum:	5 x 10 ⁻¹⁵ A 1.5 x 10 ⁻¹⁴ A
Maximum exposure rate (approx) or 99% collection efficiency: Polarising potential— 250V	50 kR.min ⁻¹ , continuous 100 mR/Pulse, pulsed 50 Gy.min ⁻¹ , continuous 1 mGy/Pulse, pulsed
Polarising potential— 400V	130 kR.min ⁻¹ , continuous 150mR/Pulse, pulsed 1.3 kGy.min ⁻¹ , continuous 1.5 mGy/Pulse, pulsed