



Model 44G Well Chamber for LDR, HDR and IVB

The 44G is a hermetically-sealed re-entrant well ion chamber, requiring no air density corrections. The fill gas is pure argon at an absolute pressure of 23.5 psi, which provides three distinct benefits. First, through photoelectric absorption, argon enhances the response at low energies emitted from ¹²⁵I and ¹⁰⁹Pd. Second, because of its low electron attachment coefficient, argon provides a higher ion collection efficiency, making it more suitable for 10 Ci HDR ¹⁹²Ir sources. Third, the positive pressure provides long term constancy measurements with the ability to verify the chamber seal.

The 44G is fully guarded into the chamber and is equipped with a 1.5 meter triaxial cable. It may be connected to any precision, dosimetry-grade electrometer. To cover the entire range of clinical sources from ¹²⁵I seeds to HDR ¹⁹²Ir, the electrometer should be capable of resolving at least 10 fA and measure up to 2000 nA or 20,000 nC.

Features:

- Sealed - no air density correction required
- Filled with argon
- Assures high collection efficiency at high doses
- Enhances response at low energy gammas, 1.0 mCi ¹²⁵I source yields 20 pA
- Compact - 5 in diameter x 14.5 in high

Specifications:

Active volume:..... 1200 cc
Nominal response factors:..... (not to be used to calibrate source strength)..... ¹²⁵I 20 pA/mCi

Axial response:..... "sweet spot" defined as $\pm 0.5\%$ of response, nominal length is 40 mm ± 5 mm, center located between 36 and 46 mm from the bottom of the well

Ion collection efficiency:..... >99.8% with 10 Ci of ¹⁹²Ir
Leakage current:..... guard to collector, <0.1 pA
Background:..... 0.1 pA per 1 μ R of background rad.
Stability:..... <1% per year, long term
Maximum bias:..... guard to HV electrode, 800 V
Well opening:..... 7.1 cm dia. x 25.1 cm deep
Cable:..... 1.5 meter triaxial with BNC conn.
Dimensions:..... 12.7 dia. x 37 cm high (5 in x 14.5 in)
Weight:..... 3.5 kg (7.7 lb)

Accessories

44G-1 Holder for Tube and Seed Sources
44G-1SL..... Holder for Single Linear Seed Sources
44G-2..... Holder for Flexible Ribbon Sources
44G-3..... Holder for seed batch assay
44G-4..... Mick cartridge holder
44G-6..... Indigo Express seeding cartridge holder
44G-CASE..... Carrying Case for 44D
AAPM ADCL Calibration:..... HDR: ¹⁹²Ir
LDR:..... ¹⁹²Ir, ¹²⁵I, ¹³⁷Cs, ¹⁰⁹Pd

