



## 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 <sup>125</sup>I and <sup>109</sup>Pd. Second, because of its low electron attachment coefficient, argon provides a higher ion collection efficiency, making it more suitable for 10 Ci HDR <sup>192</sup>Ir 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 <sup>125</sup>I seeds to HDR <sup>192</sup>Ir, 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 <sup>125</sup>I 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)..... <sup>125</sup>I 20 pA/mCi

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

Ion collection efficiency:..... >99.8% with 10 Ci of <sup>192</sup>Ir  
Leakage current:..... guard to collector, <0.1 pA  
Background:..... 0.1 pA per 1  $\mu$ 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: <sup>192</sup>Ir  
LDR:..... <sup>192</sup>Ir, <sup>125</sup>I, <sup>137</sup>Cs, <sup>109</sup>Pd

