Model P11
Plane-Parallel Ion Chamber

The Model P11 plane-parallel ion chamber is recommended for routine electron beam measurements and for depth dose studies in electron, photon, proton and neutron beams.

The sensitive region of the chamber is defined by a wide guard ring for negligible perturbation in field lines and polarity effect. The collecting volume is thus precisely defined and independent of operating conditions.

The exceptional shielding provided by the cable and the complete guarding combine to eliminate stem and soakage effects. Ionization currents may therefore be read immediately upon the application and reversal of the polarizing potential.

The P11's rigid stem allows accurate positioning. No stem effects are present. The chamber is vented through a flexible tube that surrounds the cable. The vent tube is sealed to the chamber body and open near the connector.

The Model P11 is made from a polystyreneequivalent plastic, which is a mixture of polyethylene, polystyrene and carbon black, with a density of 1.1 g/cm^3 and electrical resistivity in the range of 0.01 to 10 hm/meter.

Features:
▸ Waterproof
▸ Wide guard ring for negligible perturbation and polarity effects
▸ 20 mm diameter collector
▸ Characterized for TG-51

Specifications

$N_{gas}/(N_x A_{ion})$ (cGy/R): 0.8480
K_{ecal}: 0.888
Volume: .... 0.6 cc, nominal, vented
Sensitivity: .... 0.2 nC/cGy, nominal
Leakage current: .... <10^{-15} A
Body material: .... conductive polystyrene-equivalent plastic
Entrance window: .... 1.0 mm thick conductive polystyrene equivalent plastic, 106 mg/cm^2
Ion collector: .... 20 mm diameter
Electrode separation: .... 2 mm
Guard ring: .... 4.14 mm wide
Bias voltage: .... ±1000 V maximum
Stem: .... black phenolic tube, 8.9 mm diameter
Cable: .... low-noise triaxial, BNC male triaxial connector, (TNC optional) 2 meters
External dimensions: .... 45 mm diameter x 17.5 mm

Accessories

3BM-F10 .... 10 m extension cable, triax BNC, male/female with caps and chains (also available in custom lengths and/or mounted in a reel)
3BF-3TMF .... Triaxial BNC to TNC adapter