



Wellhöfer Waterproof Farmer-Type Ionization Chambers

The FC series are ionization chambers of a classic Farmer design, intended for absolute dosimetry, that meet or exceed performance standards of the original Farmer design. Similarities to the original Farmer include conformity to all external physical dimensions, a choice of thimble material (graphite or robust) sensitive volumes of 0.65 cc and 0.23 cc, and atmospheric communication. Additional features not shared with the original Farmer include guarding up to the measuring volume and waterproof construction.

The low-noise 3.3 mm diameter triaxial cable is sheathed along the entire 1.5 m length and terminated with a male triax BNC connector with dust cap and chain (TNC connector is optional). Each chamber includes a Delrin 60 Co buildup cap, a padded storage case and QA checkout at CNMC.

Model FC65-G

Graphite thimble, aluminum electrode

The Model FC65-G is a direct replacement for the NE 2571A. It features a thin-walled graphite thimble, aluminum center electrode, and a sensitive volume of 0.65 cc.

Model FC65-P

Delrin thimble, aluminum electrode

The Model FC65-P most closely resembles the NE 2581A, in that it has a rugged thimble made of Delrin (POM, poly-oxy-methylate), an aluminum center electrode and a sensitive volume of 0.65 cc.

Model FC23-C

AE Thimble and electrode

The Model FC23-C offers improved spatial resolution for greater precision in the measurements of beam profiles and isodose contours. It most closely resembles the NE 2577C but features a conductive C552 air equivalent thimble, C552 center electrode and a volume of 0.23 cc.

Specifications	FC65-G	FC65-P	FC-23C
Ngas/(NxAlon) (cGy/R)	0.854	0.850	0.856
K_{ECAL}	0.903	0.897	0.903
Sensitive volume	0.65 cm ³	0.65 cm ³	0.23 cm ³
Sensitivity (nom.)	0.21 nC/cGy	0.21 nC/cGy	0.7 nC/cGy
Sensitive length	23 mm	23 mm	8.8 mm
Reference point	13 mm from tip	13 mm from tip	5.8 mm from tip
Thimble inside dia.	6.2 mm	6.2 mm	6.2 mm
Wall material	graphite	Delrin (POM*)	C552
Wall thickness	0.4 mm	0.4 mm	0.4 mm
Wall density	74 mg/cm ²	57 mg/cm ²	70 mg/cm ²
Electrode material	aluminum	aluminum	C552
Electrode length	20 mm		7.5 mm
Electrode diameter 1mm	1 mm		
Guard	up to measuring volume		
	1.3 mm		
Buildup cap thread	M11 x 0.75		
Buildup cap	Delrin, 15 mm dia., 3.9 mm thick, 555 g/cm ³		
Cable, connector	1.5 m, triaxial BNC or TNC		

* POM, poly-oxy-methylate, 1.425g/cm³

Accessories

CO-60-NE.6	16.4 mm diameter acrylic 60 Co buildup cap for FC65-G, FC65-P
CO-60-NE.2	16.4 mm diameter acrylic 60 Co buildup cap for FC23-C
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

Features:

- ▶ Waterproof
- ▶ Fully guarded
- ▶ Designed for long term stability
- ▶ Characterized by TG-51