

Model 670 Head Scatter Mini-phantom

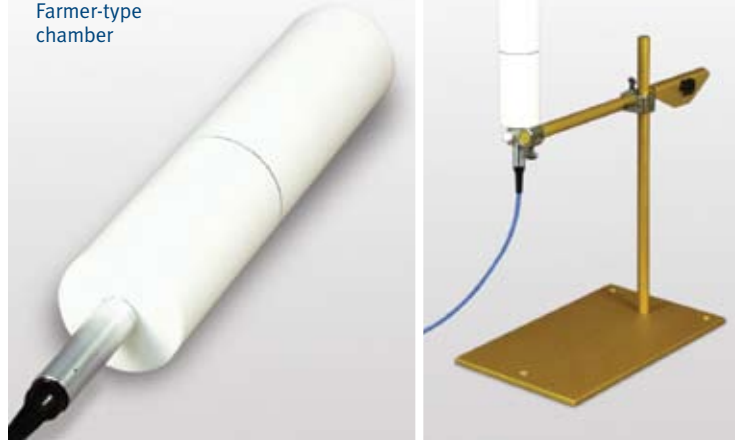
The Model 670 water-equivalent, cylinder mini-phantom improves the dosimetric accuracy and reliability of the linear accelerator beam MU calculation by taking into account stray scatter radiation and electron contamination when determining the total radiation dose given. Head scatter, the stray radiation that bounces around inside the head of a linear accelerator, occurs with each machine. Some of this radiation is scattered forward and hits the patient to become a contributing factor to the total radiation dose.

Application of this phantom is described in ESTRO Booklet March 1997, "Monitor unit calculation for high energy photon beams" for output, volume scatter and scatter primary ratio measurements. By making a measurement with the Miniphantom at a reference depth of 10 cm, the physicist can investigate and isolate the influence of scatter radiation on a reference dose measured in a slab phantom.

The Mini-phantom consists of a cylinder, 4 cm in diameter, 17.5 cm long, made of water-equivalent Plastic Water™. An alignment groove scribed at 10 cm serves to indicate the isocenter and coincides with the ion chamber reference point. The standard chamber cavity, parallel to the phantom axis, is for the classic Farmer-type chamber, but it can be made for any commercially-available cylindrical chamber at no additional cost. The Mini-phantom may be used with the CNMC Model AL-CSSP chamber stand equipped with a special vertical adaptor or any suitable chamber stand that allows vertical chamber orientation.

Plastic Water™ is a trademark of Computerized Imaging Reference Systems, Inc.

Left: Model 670-CSS
Right: shown with
Farmer-type
chamber



Features:

- ▶ Permits quick evaluation of head scatter
- ▶ Water equivalent
- ▶ Meets requirements as described in ESTRO Booklet 3
- ▶ May be drilled for any cylindrical ion chamber
- ▶ Available with or without stand

Specifications

Composition:	water equivalent for photon beams 150 keV - 100 MeV
Material:	Plastic Water™
Standard Cavity:	0.6 cc Farmer-type chamber (additional cavities available)
Dimensions:	4 cm dia., 17.55 cm long

Ordering Information

Model 670:	Miniphantom only
Model 670-CSS:	Miniphantom with AL-CSSP

Accessories

AL-CSSP:	Chamber stand with vertical adaptor
CC-90:	Vertical adaptor only for Model AL-CSS

Model AL-CSSP

Identical to the Model AL-CSS chamber stand, but it includes an additional 90° quick-release clamp to vertically position a Farmer-type chamber or any cylindrical chamber with a stem of up to 12.7 mm diameter. It retains the ability of the Model AL-CSS to hold ion chambers in a horizontal orientation for in-air measurements.