

Model 76-430 Mini CT QC Phantom

The Model 76-430 is a highly-versatile phantom designed for routine monitoring of the consistency of all the major parameters of CT image quality and radiation dose. Its unique, compact design allows for unparalleled portability, easy setup and reliable parameter determinations. It is perfect for use by physicists, technologists and service engineers.

The disc section consists of a 1 in thick acrylic disc with a 6 in diameter. Five of the six large holes are for the placement of inserts for the evaluation of CT number consistency. The sixth hole is for a high-contrast resolution insert or an optional low contrast resolution insert. The seven small holes are for inserting an ion chamber at differing locations within the phantom. Six acrylic inserts are provided to fill these holes, leaving one hole to accommodate an ion chamber during a given measurement.

The disc section is attached to a rectangular acrylic bar containing a thin copper wire embedded along a central groove. This section of the phantom is used to evaluate laser beam alignment and accuracy of the slice thickness, slice spacing, slice contiguity and pilot scan to transverse; or longitudinal scan correspondence. This is achieved by exposing a nonscreen film placed underneath the phantom and making several cuts while the phantom is advanced along the gantry in a pre-programmed manner.

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Features:

- ▶ Lightweight, compact and extremely portable, ideal for field service use
- ▶ Can be used with any CT scanner
- ▶ For measurement and analysis of all major CT scanner functions and radiation dose
- ▶ For making inhomogeneity corrections in radiation oncology



The low-cost, all-in-one QC phantom accurately evaluates:

- ▶ Laser beam alignment
- ▶ Slice thickness, spacing and contiguity
- ▶ Table movement
- ▶ CT numbers and noise level
- ▶ CT number uniformity
- ▶ Relative radiation dose
- ▶ Video monitor and image processing equipment
- ▶ Scout and axial scan correspondence
- ▶ High-contrast resolution
- ▶ Low-contrast resolution (optional insert)

Specifications

BODY

Material: acrylic (PMMA)

Dimensions: 6 in diameter, 1 in thick (15.25 cm dia. 2.54 cm thick)

Holes: six 1.125 in diameter through holes, seven 0.50 in diameter through holes

Weight: 1.35 kg (3 lbs)

INSERTS

Material: One 1.125 in dia. plug each: Plastic Water™, nylon, bone-equivalent, polyethylene, polystyrene, polycarbonate, and acrylic. Six 0.50 in diameter plugs each: acrylic, for chamber holes

BASE

Material: acrylic

Construction: copper wire approx. 0.02 in, fixed into a 0.02 in deep groove centered along base, disc is attached to the side of the body with 2 removable nylon slotted screws

Dimensions: 30.3 cm long, 4.6 cm wide, 1.75 cm thick

Accessories

76-430-1000 Low-contrast resolution insert

76-430-2000 Teflon® insert

76-430-3000 Lung insert

76-430-4000 Teflon®-Bone 270° semi-ring for evaluation of beam hardening correction software

89-430 Carrying case