

CTDI Phantom Set

Two Parts & Three Parts Kit

User Manual



INDEPENDENT X-RAY
QUALITY ASSURANCE

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NOTICE

The following methodologies are derived from standards: IEC 60601-2-44, IEC 61223-3-5:2019, and the withdrawn standard IEC 61223-2-6. For a more detailed technical procedure, please consult these source documents directly.

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Intended Use of the CTDI Phantoms

The CTDI Phantom Kits are designed to evaluate performance of Computed Tomography (CT) systems. It is manufactured in accordance with IEC 61223 and IEC 60601 standards.

Specifications

Art. No	9705125-00 (Two parts)
Art. No	9705130-00 (Three parts)
Pediatric head diameter*	10 cm
Adult head diameter	16 cm
Body diameter	32 cm
Cylinder length	15 cm
Hole diameter body phantom	320 mm
Hole diameter, plugs	12.6 mm
Material	PMMA
Density	1.19 g/cm ³

**Not included in the 2 parts kit.*

Testing & Measurement

1. Setup and Alignment

- Place the phantom on the patient support without additional attenuating material.
- Center the phantom in the scan field on both the rotational axis and the z-axis of the scanner (isocentre) with the help of the positioning lasers and using the phantom's centre markers and alignment supports.

2. Chamber Insertion

- Insert the radiation dose detector into the desired hole (centre or periphery).
- All unused holes and air gaps must always be filled with the provided PMMA rods to ensure proper attenuation.

3. Data Acquisition

- Obtain images and corresponding CT dose index measurements using the local regulatory or manufacturer-suggested conditions of operation, such as slice thickness, kVp, and mA.

Performance Monitoring

- According to the IEC-60601-2-44, the volume CT Dose Index ($CTDI_{vol}$) values must stay within the $\pm 20\%$ range compared with the scanner reported values.
- Measurements should be performed at specific intervals to ensure the scanner operates within established criteria.