Quality Assurance at CT scanners

Phantoms for Dose measurements at CT scanners (PMMA) |

Dose measurement according to IEC 61223-2-6

Quality Assurance at CT scanners |

Dose measurement according to IEC 61223-2-6

Head Phantom: 16 cm diameter, with five holes and plugs
Body Erweiterung: 32 cm diameter, with four holes and plugs

IEC 61223-2-6 (1994-04):
Evaluation and routine testing in medical imaging departments – Part 2.6: Constancy tests – X-ray equipment for computed tomography“

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5.4 Dose

5.4.1 Summary
The dose is determined by measuring the computed tomography dose index at the centre of rotation and 1 cm beneath the surface inside the test device, using a radiation detector.

5.4.2 Test equipment
The test devices shall consist of poly-methylmethacrylate cylinders of 16 cm (for head techniques) and 32 cm (for body techniques) in diameter. The test device shall be longer than the sensitive volume of the radiation detector used for the measurements.

The test device shall contain holes large enough to accept the radiation detector. These holes shall be parallel to the axis of symmetry of the test device, and shall be located at the centre and 1 cm beneath the surface of the test device at 90° intervals.

For the holes not used during a measurement, properly fitting insert parts of the same material as the test device shall be available and used.

The radiation detector shall have a sensitive volume of at least 10 cm in length and shall fit snugly into the holes of the test devices. If an adaptor is required, it shall be made of the same material as the test device.

In addition, the sensitivity of the sensitive volume, of the radiation detector shall not vary by more than ± 3 % over the length of the sensitive volume, when measured with radiation field 2 mm wide (corresonding to a slice thickness of 2 mm).