



COCIR CT Manufacturers' CTDI_{vol} Reference Phantom Size FAQ

With the release of IEC 60601-2-44, Edition 3.1, in 2012, the IEC clarified that CTDI should be displayed for the 32 cm (320 mm) CTDI phantom for all Body techniques and 16 cm (160 mm) CTDI phantom for all Head techniques. Prior to that, the standard was not as specific, and some vendors chose to use different CTDI phantom reference sizes for pediatric techniques. The exceptions to the 32 cm phantom for all Body techniques are listed below.

GE

The reference phantom used in CTDI calculations is determined by the SFOV type which determines the bowtie filter selection and the reference phantom used to report the dose delivered. SFOV type is selectable by the user during the exam setup and recorded with the exam data. A table of SFOV types and corresponding reference phantom sizes are located in the Quality Assurance Chapter of the Technical Reference Manual in the Dosimetry Section for each system manufactured after 2006.

The only exception to IEC 60601-2-44 ed.3.1 is that pediatric body scans use the 16cm reference phantom rather than the 32cm. GE Healthcare plans to update these exams to use the 32cm reference phantom for our new product releases starting in 2014.

Philips

Philips has always used a 16 cm CTDI phantom for all Head protocols, and 32 cm CTDI phantom for all Body protocols, except for the release of iDose4 in March, 2011, on Ingenuity, Brilliance-64 and iCT. For those three products, the 16 cm CTDI phantom was used to report CTDI for Infant (<18 months old) Body protocols, while 32 cm was used for Child and Adult protocols. When iPatient was released in 2013, Philips changed back to using 32 cm for ALL Body protocols.

Siemens

Siemens has always used a 16 cm CTDI phantom for all Head protocols, and 32 cm CTDI phantom for all Body protocols (including child). There are no exceptions to the 32 cm phantom for all Body protocols.

Toshiba

Since approximately 2 years all Toshiba CT scanners which comply with IEC 60601-2-44 ed.3.1 display CTDI_{vol} based on 16cm phantom for head protocols and 32cm for body protocols, regardless of age. The exact date of implementation depends on model names per system. The scanners which were shipped before that timing, display CTDI_{vol} based on 16cm phantom for all pediatric protocols, and for adults (>12 years) the scanners display 16cm for head protocols and 32cm for body protocols.