

Comprehensive Electron Density Phantom

The phantom is an excellent tool for the calibration of Hounsfield Unit (HU) vs. electron density of radiotherapy treatment plans to optimize the dose delivered to the patient (CT/CBCT).

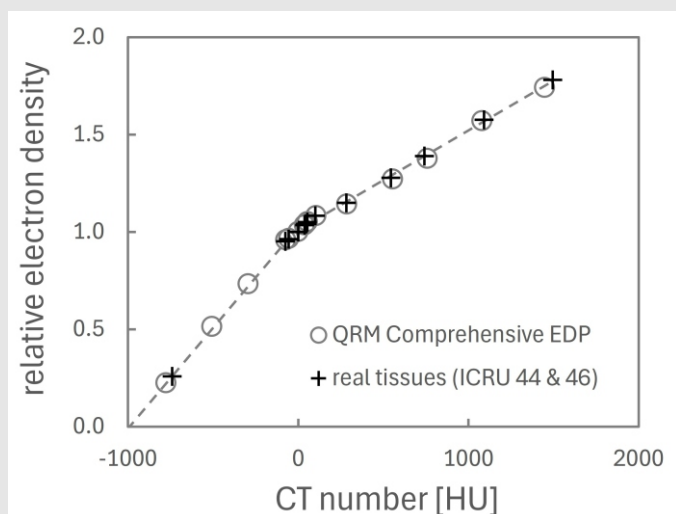
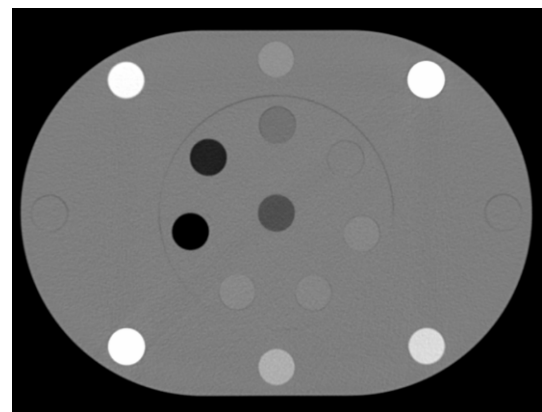
The Comprehensive EDP phantom is ideally suited for the creation of a HU vs the electron density table for treatment planning CT (4DCT). It consists of a water-equivalent body section and a removable/stand-alone head section with in total 16 holes for exchangeable inserts that mimic real human tissue regarding its physical and electron density according to the ICRU Report 44 and 46. Remarkably, the phantom provides realistic tissue also in the higher density range (bone).

The phantom comes with a protocol displaying physical density, electron density, electron density relative to water and effective atomic number (other values are optional).

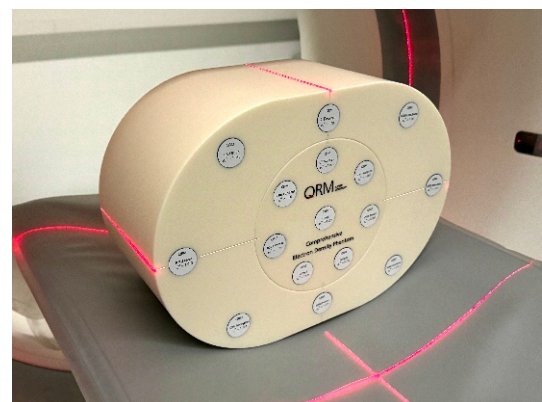
The phantom is not only suitable for the high energy ranges (MeV electron, photon, and proton therapy systems), but is also a valuable tool for kV-energies in diagnostic imaging (e.g. Multi-Energy CT).



Comprehensive Electron Density Phantom (QRM-C-EDP)

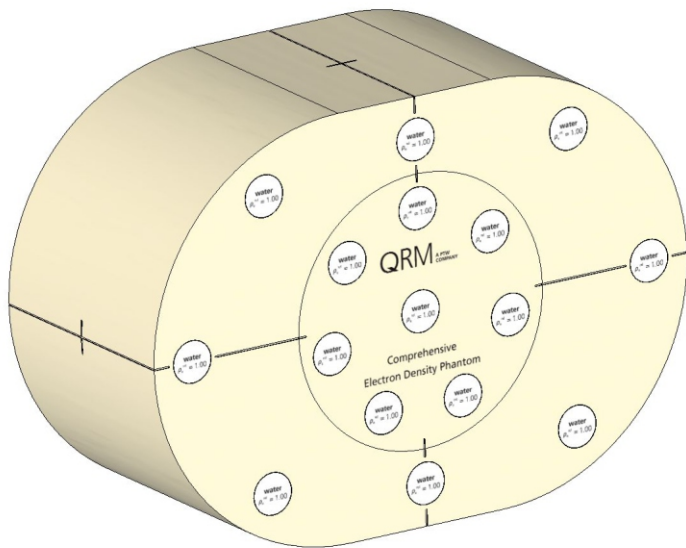
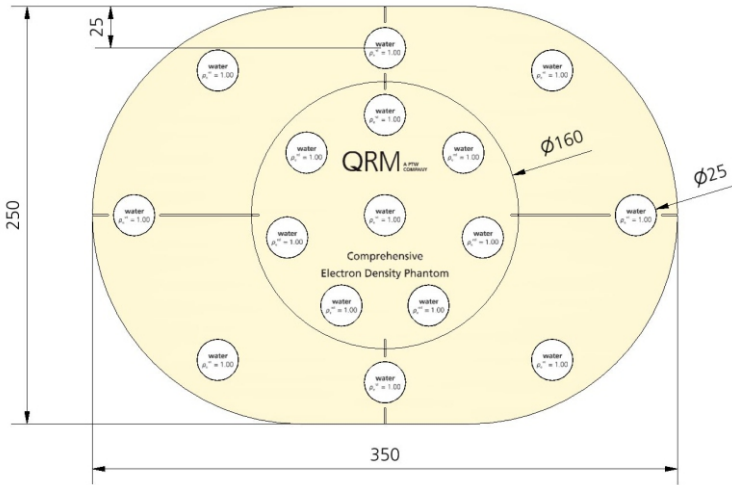


Electron density vs. HU (at 120 kV)



QRM-Comprehensive -EDP with different tissue equivalent rods

Comprehensive Electron Density Phantom



Specifications

Body:

Phantom dimension: 250 mm x 350 mm
 Phantom length: 150 mm
 Holes: 8 pcs., 25 mm diameter

Head insert:

Phantom diameter: 160 mm
 Phantom length: 150 mm
 Holes: 8 pcs., 25 mm diameter

Tissue-equivalent rods:

Diameter: 25 mm
 Length: 150 mm

Phantom weight: 12.0 kg

Material: Water-equivalent (CT_{WATER}[®])
 app. 0 ± 5 HU (at 80-140 kV)

The phantom includes the following 16 inserts:

- CT_{WATER}[®] (2 pcs.)
- ICRU Lung I (inflated)
- ICRU Lung II
- ICRU Lung III
- ICRU Adipose
- ICRU Breast (50/50)
- ICRU Brain
- ICRU Muscle
- ICRU Liver
- ICRU Cartilage
- ICRU Skeleton-Spongiosa
- ICRU Skeleton-Femur
- ICRU Skeleton-Humerus
- ICRU Skeleton-Mandible
- ICRU Skeleton-Cortical Bone

The phantom comes with a protocol displaying:
 Physical density, electron density, electron density relative to water, effective Z (other values are optional).

Optional rods (ICRU tissues, Aluminum, Stainless Steel, Titanium or other materials) are available.

qrmphantoms@ptwdosimetry.com