

dental CBCT Phantom (BASIC)

Measure imaging performance of dental Cone-Beam Computed Tomography equipment. Perform acceptance and constancy tests with a compact easy-to-use phantom.

The QRM-dentalCBCT Phantom is designed to evaluate the imaging performance of CBCT devices in accordance to international guidelines (e.g. dentalCBCT, Digital Volume Tomography).

The phantom offers the possibility to assessment all image quality metrics in accordance with national and international standards (e.g. DIN IEC 61223-3-5 or DIN IEC 61223-2-6)

The following image quality metrics can be obtained:

- CT value uniformity
- CT value accuracy
- image noise
- contrast-to-noise ratio
- spatial resolution (3D MTF)

3 defined sections:

| | |
|-------------|--|
| Section I | 4 Inserts in water: air, -3% contrast, +3% contrast and bone arranged concentrically |
| Section II | homogenous water equivalent slice |
| Section III | centrally placed high attenuating sphere |

Technical Specs:

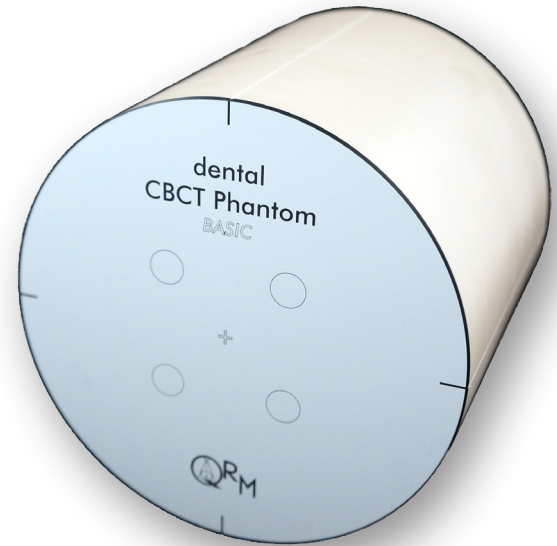
| | |
|----------------|------------------|
| Diameter (xy): | 160 mm |
| Height (z): | 150 mm |
| Body: | CTWATER® |
| Sphere: | Al, Ø 12 mm |
| Inserts: | Ø 13 mm, L 25 mm |

An automated evaluation software (ImpactIQ Wizard) is available seperately or as a package with the phantom.

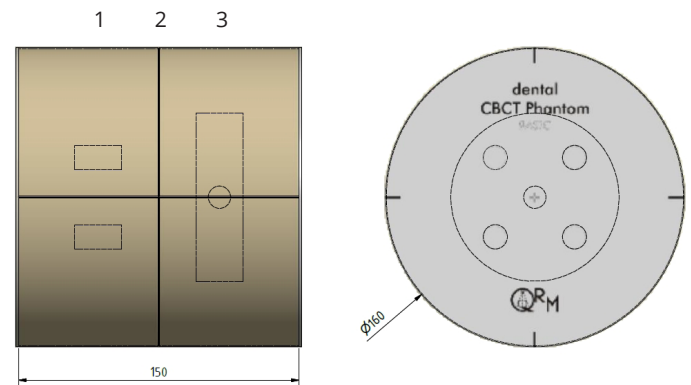
Please note: if using the software, your systems FOV has to completely cover the phantom in height, otherwise a correct automated evaluation is not possible. Please ask for more information: info@qrm.de

References:

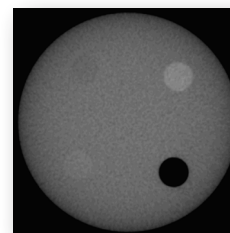
A quality assurance framework for the fully automated and objective evaluation of image quality in cone-beam computed tomography
Ch Steiding, D Kolditz, WA Kalender; Medical Physics, 41, 031901 (2014)



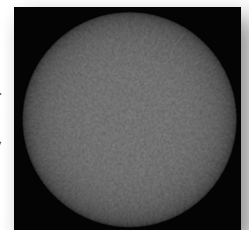
dentalCBCT-Phantom BASIC



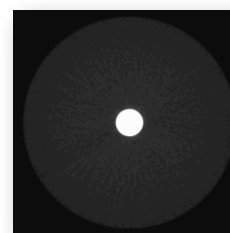
cross sections of phantom



1 scaling:
bone
water
+3%; -3%



2 noise:
noise
homogeneity



3 MTF:
12 mm sphere

in-plane reconstruction of X-ray CBCT scans