Quality Assurance in Radiology and Medicine

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 pahntom offers the possibility to assessement 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	homogenious water equivalent slice
Section III	centrally placed high attenuating sphere

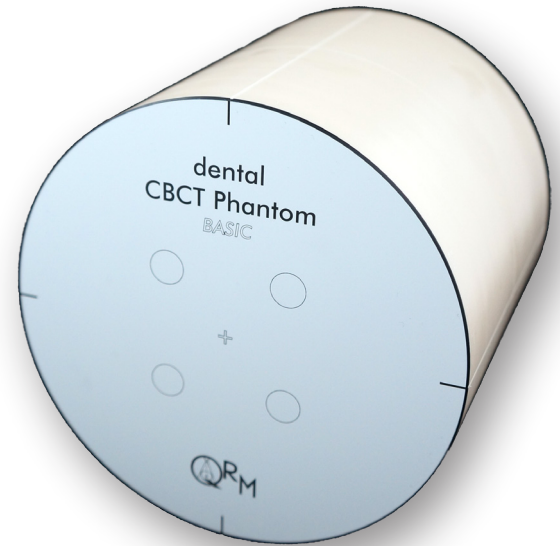**Technical Specs:**

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.
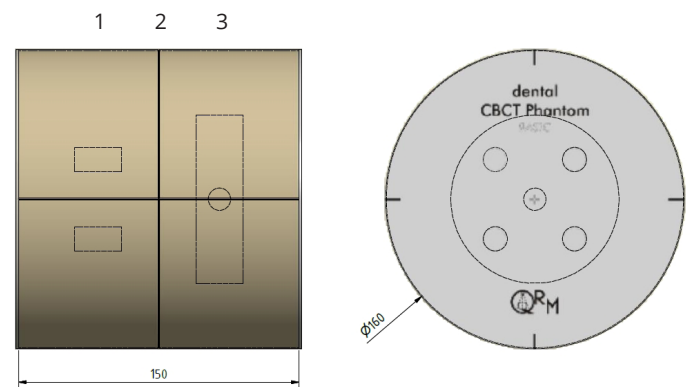*Please note: if using the software, your systems FOV has to completely cover the phantom in height, otherwise a correct automated evaluation is not pos-sible.*
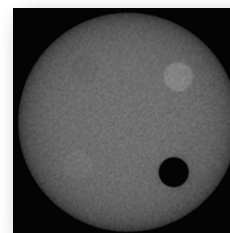
References:
A quality assurance framework for the fully automated and objective evaluation of image quality in cone-beam computed tomography
Ch Steiding, D Kolditz, WA Kalender; Medical Physics, 41, 031901 (2014)
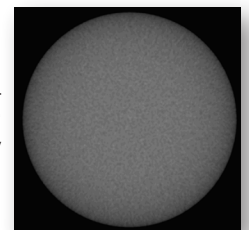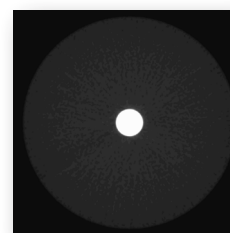

dentalCBCT-Phantom BASIC

cross sections of phantom

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

2 noise:
noise
homogeinety

3 MTF:
12 mm sphere

in-plane reconstruction of X-ray CBCT scans

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