

dental CBCT Phantom (BASIC)

Measure the imaging performance of dental Cone-Beam computed tomography (CT) equipment. Perform acceptance and constancy tests with a compact, easy-to-use phantom.

The QRM-dental CBCT Phantom is designed to evaluate the imaging performance of CBCT devices in accordance with international guidelines (e.g. dental CBCT, digital volume tomography).

The phantom offers the possibility to assess 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 (CNR)
- Spatial resolution (3D MTF)

3 Defined Sections:

Section I 4 inserts in water: air, -3% contrast, +3% contrast, and bone arranged concentrically

Section II Homogeneous water equivalent slice

Section III Centrally placed high attenuating sphere

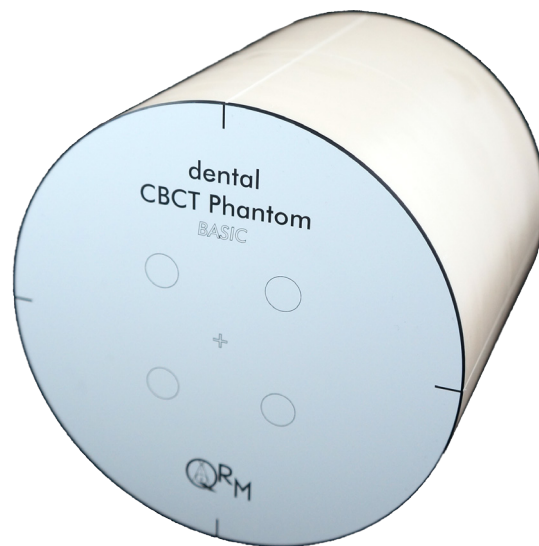
Technical Specifications:

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

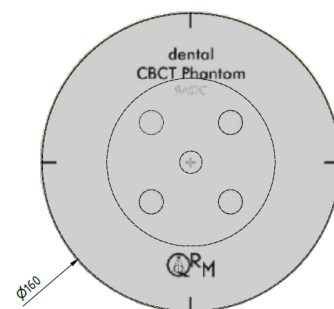
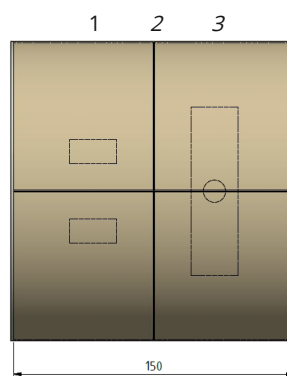
Please ask for more information:
qrmphantoms@ptwdosimetry.com

References:

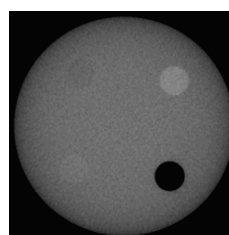
A quality assurance framework for the fully automated and objective evaluation of image quality in cone-beam computed tomography
Ch Steiding, D Kolditz, WA Kalender; Medical Physics, 41, 031901 (2014)



dental CBCT-Phantom BASIC



cross sections of phantom

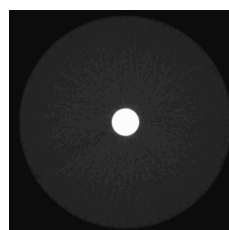
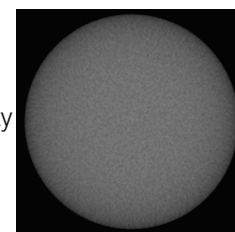


1 SCALING

bone
water
+3%; -3%

2 NOISE

homogeneity
noise



3 MTF

12 mm sphere

in-plane reconstruction of X-ray CBCT scans

dental CBCT QA Phantom (EXPERT)

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

The QRM-dental CBCT QA Phantom (EXPERT) is designed to evaluate the imaging performance of Cone-Beam CT devices according to international guidelines. (e.g. dental CBCT, Digital Volume Tomography)

The phantom offers the possibility to assess 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, sphere)
- Spatial resolution (visual, hole pattern)
- Artifact behavior metal / bone / soft tissue

5 defined sections:

- Section I** 4 inserts in water: air, -3% contrast, +3% contrast and bone arranged concentrically
- Section II** Centrally placed high attenuating sphere
- Section III** Homogenous water-equivalent slice
- Section IV** Acrylic resolution pattern
- Section V** Titanium rods and tissue-equivalent inserts

Technical Specifications:

Diameter (xy) : 100 mm

Height (z) : 100 mm

Body : CTWater®

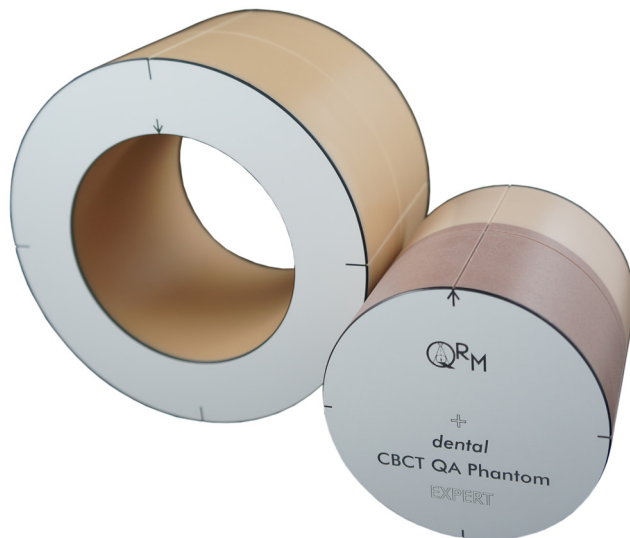
Sphere : Al, Ø 12 mm

Inserts : Ø 13 mm, L 17.5 mm
Ø 9 mm, L 17.5 mm

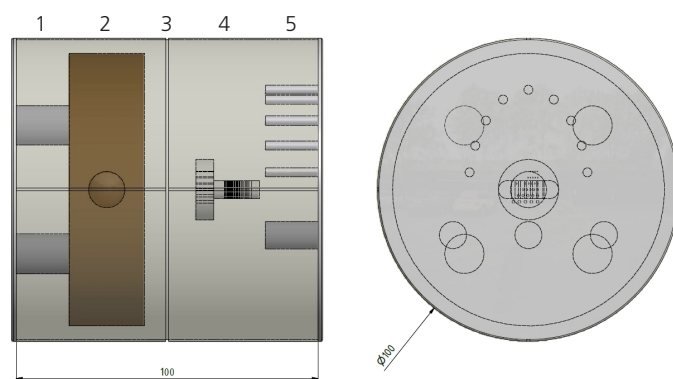
Hole pattern : 0.3 to 1.0 mm h°/v°

Extension ring : Ø 160 mm

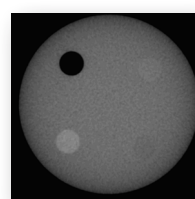
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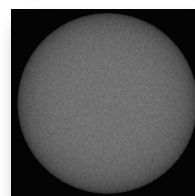
dental CBCT QA Phantom (Expert)



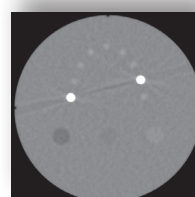
cross sections of phantom



1 SCALING
bone
water
+3%; -3%



3 NOISE
noise
homogeneity

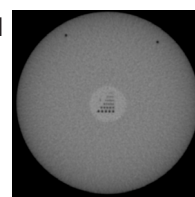


5 ARTEFACTS
-8%; 0%; +8%
tooth sector (HA)
titanium rods

2 MTF
12 mm sphere



4 RESOLUTION
hole pattern
0.3 - 1.0 mm



in-plane reconstruction of X-ray CBCT scans