QUART DVT_kp

Routine CBCT Test Phantom

QUART DVT_KP

Test Phantom for Quality Assurance & Routine Quality Control of
Cone Beam CT and Dental 3D X-Ray Equipment

The *QUART DVT_KP* phantom is designed to be used as a universal tool for QA/QC routine testing in Cone Beam CT (CBCT), Dental Volume Tomography (DVT) and 3D Imaging applications.

Only one exposure is required to collect all necessary parameters to determine the imaging quality for the x-ray equipment. After the exposure, the image is automatically evaluated through the unique QUART QA/QC software. The test results can be saved or printed out for documentation purposes.

The *QUART DVT_KP* phantom can be used as QA/QC tool for a wide range of 3D imaging equipment with field sizes from about 4x4cm field-of-view (FOV) and wider.

Customised phantom holders for easy and reproducible positioning are available.

Test Phantom

The phantom design is comparable with the design of a standard CT Head Phantom. However, the *QUART DVT_KP* has additional test objects which simulate structures and materials which are found in the specific anatomical region where the 3D x-ray imaging is applied to.

The phantom body consists of 2 discs. Both discs are solidly combined to ensure a good handling when used for QA/QC procedures. It has a modular set up and can easily be modified in case a future standard, or a new national standard, should require additional test objects.
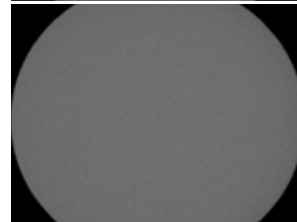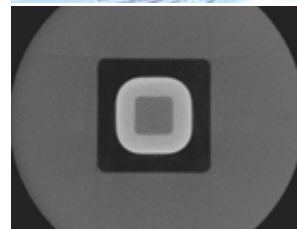
Test Procedure

The QA/QC procedure is very easy and straight forward. It can be carried out by service experts as well as less experienced users.

After the phantom had been positioned in the scan centre, the exposure is initiated. After the exposure, 2 DICOM slice images are loaded into the *QUART DVT_pro* QA software. The software will guide the user step-by-step through the evaluation process, collect all data from the test images and create a test protocol. The whole procedure from positioning the phantom to the software assisted evaluation and creation of the test protocol takes only about 5 minutes. Essential test parameters are displayed for evaluation(*), others are merely collected in the software's backend.

Test Parameters
_ Nyquist Frequency* (NF)
_ Voxel Values
_ Contrast
_ Noise
_ Contrast-to-Noise Ratio* (CNR)
_ Homogeneity*
_ Modulation Transfer Function* (MTF) at 10% & 50%
_ Artefacts, Image Flaws, etc.
_ Patient/Phantom Positioning

QUART
Quality Assurance in Radiological Technologies

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QUART DVT_pro

Easy-to-use Automatic Evaluation Software for Routine Quality Control
of Cone Beam CT and Dental 3D X-Ray Equipment

Complex QA/QC Technology simplified for ease of use

3D imaging has become the hayday of nowadays Dental X-ray Technology. It provides high-resolution images created through digital image reconstruction and volumetric image rendering technology. 3D provides sharper images with more information than the traditional dental X-ray unit. It can be used by both dentists and specialists performing implant procedures.

The complexity of the new technology, however, creates new challenges for the x-ray QA/QC. Less experienced users must be able to handle the appropriate tools as well as trained service staff. This is precisely the objective of QUART's combination of phantom and auto-evaluation software. Its ease of use makes it the perfect tool for regular QA/QC performance.

QUART DVT_pro

The unique QA/QC software automatically evaluates all parameters which are essential for the assessment of imaging quality of CBCT equipment.

The software is easy to use. It provides a walkthrough function which helps users to carry out the QA/QC procedure. The *QUART DVT_pro* stores the result of each single test in its internal data bank. In addition, a Protocol Print-Out function is provided for matters of documentation (hardcopy) or general reference.

Phantom Description
_ Size: Ø16cm
_ 2 disc setup (2cm each - 4cm total)
_ Test Object Equivalents: Free Air, Soft Tissue, Bone
_ Positioning Tools: linear and/or selective markers, bubble level
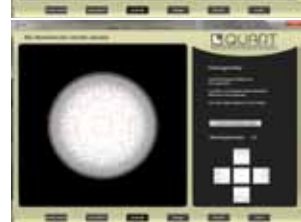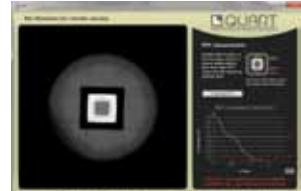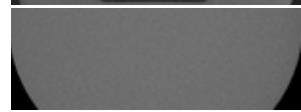_ Customised Holders for varying manufacturers available

Delivery includes
✓ *QUART DVT_KP* Test Phantom
✓ *QUART DVT_pro* Auto-Evaluation Software / License
✓ Manuals
✓ Transport Case with Foam Insert

Also available

	Variety of customised Holders
QUART DVT_AP	Phantom for Acceptance Testing/Critical Exam
QUART DVT_tec	Software Tool for Acceptance Testing
QUART dent/digitest	2D Phantoms for Routine Dental QA/QC
QUART dent/digitest M2	2D Phantom for Manufacturer QA/QC
QUART dido/time R	Constancy Test Dosemeter

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