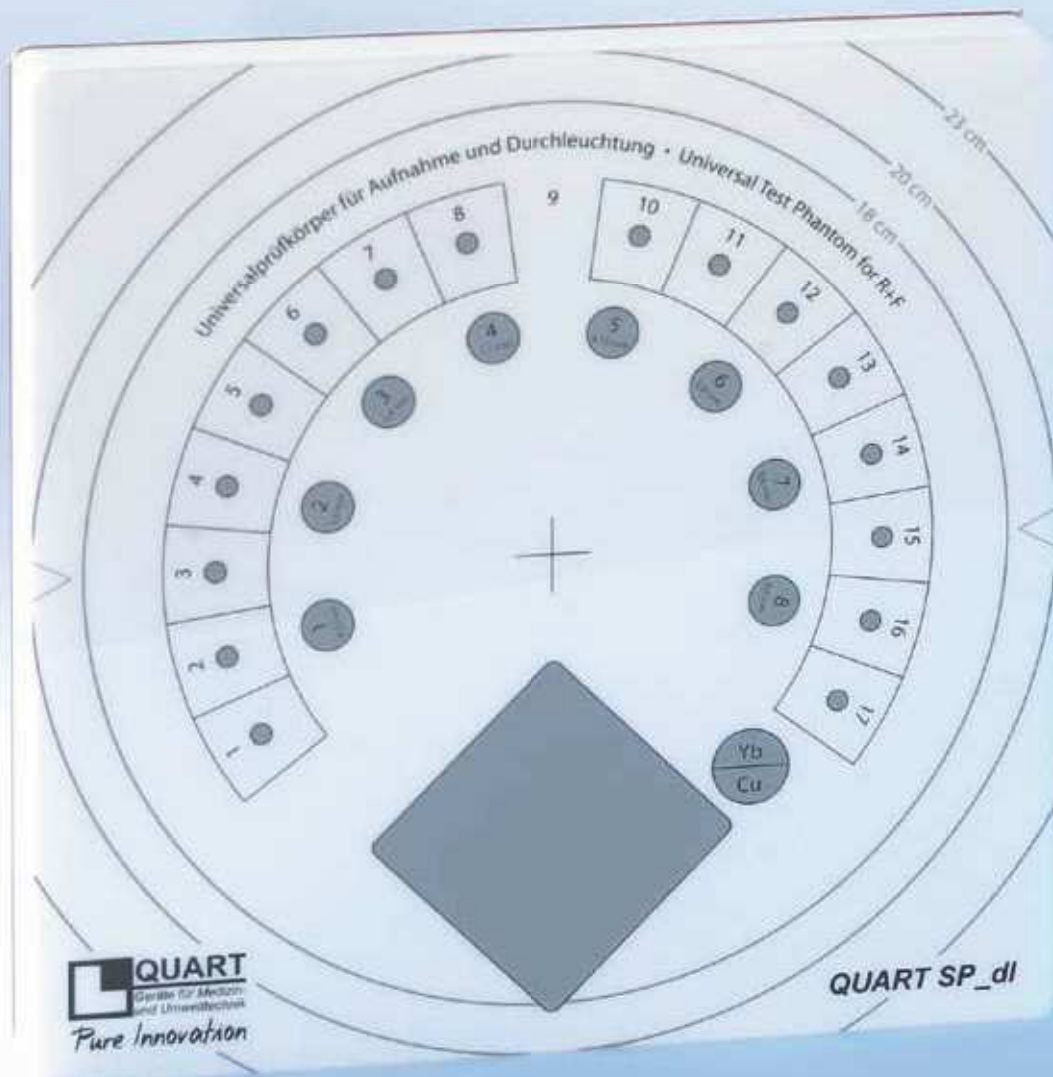


QUART SP\_dl

# R+F QA/QC Test Phantom



# QUART SP\_dI

Test Phantom for Quality Assurance & Critical Examination of Digital & Analogue Radiography Equipment



The *QUART SP\_dI* phantom is designed to be used for QA/QC routine testing in Digital and Conventional X-Ray applications ranging from DR, CR to Fluoroscopy equipment.

Only one exposure is required to collect all necessary parameters to determine the imaging quality of the x-ray equipment. After the exposure, the test image is evaluated visually.

The *QUART SP\_dI* phantom complies with IEC, DIN 6868-58 and DIN 6868-4 as well as IPEM, ÖNORM, PN-EN standards and AFSSAPS regulations.

## Phantom and Test Procedure

QC tests are carried out at initial equipment installation to establish a visual reference. On a regular routine basis, they are meant to ensure the constancy of the system's imaging capabilities. Any deterioration in imaging performance would be revealed by the visual evaluation of the test images. A single image of the QA/QC phantom contains a lot of information for that purpose.

The phantom's special feature is the integrated kV test object. With it, the generator output stability can be monitored on a monthly basis without performing invasive or non-invasive kV measurements. As the kV test object consists of 2 different materials, 2 transition points can be defined for a specific radiation quality. The accuracy of the method is  $\pm 2$  kV for a pure visual evaluation. When measured with a luminance meter (digital) or a sensitometer (film/screen), the accuracy of the method will increase to  $\pm 0.5$  kV.

The *QUART SP\_dI* can also be used as a Pediatric Phantom (Child Phantom), if no additional filtration, i.e. Al or PMMA/Cu, is used in acceptance or constancy test routines.

## Test Parameters

- \_ Spatial Resolution
- \_ Low Contrast Resolution
- \_ Radiation Field Alignment
- \_ Image Homogeneity
- \_ Artefacts, Image Flaws, etc.
- \_ Generator Stability
- \_ Radiation Quality
- \_ Dose Indicator



# QUART SP\_dI



## An Innovative Test Tool for Critical and Routine QA/QC

The QUART SP\_dI phantom is designed for maximum precision and diagnostic relevance in quality control of digital and conventional (analogue) Fluoroscopy equipment.

The phantom's integrated test objects meet and exceed current standard regulations. It features a unique test object which provides the possibility to assess the kV output/stability of x-ray generators. Only this kind of test object is recommended to define a specific transition point as required by current QA standards.

The phantom body has a dimension of 20 x 20cm. This size is sufficient for small x-ray fields. For larger FOV formats up to 33 x 33cm, an extension is available. The combination of both phantom and extension covers all fields-of-view in Digital and Conventional CR & DR. Using the combination saves the radiologist the acquisition of a separate phantom for equipment with FOVs larger than 20 x 20cm.

## Phantom Description

- \_ Integrated Filtration of 1.5 mm copper
- \_ Dynamic Test Step Wedge (17 steps; thickness 0 – 3.5 mm)
- \_ 17 Additional Low Contrast Test objects; 1 per step (Ø 4 mm)
- \_ 8 Low Contrast Test Objects (Aluminium; 0.4 – 4 mm; Ø 15 mm)
- \_ Integrated Line Pair Test Pattern (Type 38 / Pb 0.05 mm / 45°)
- \_ Unique kV Test Object (Yt + Pb)
- \_ Radio-Opaque Field Size Markings
- \_ Radio-Opaque Center Marker
- \_ Phantom Size: 200x200x18.5 mm (LxWxH)
- \_ Extension available to provide a homogeneous surface and field markings for formats up to 33 cm x 33 cm

## Delivery includes

- ✓ QUART SP\_dI Test Phantom
- ✓ Manual
- ✓ Soft Bag

QUART al250 Added Standard Filtration (optional)

Large-Field Extension for QUART SP\_dI (optional)

Transport Case for QUART SP\_dI, Extension and Dosimeter (optional)

## Also available

QUART SP econo	Phantom for Conventional QA/QC
QUART SP digi	Phantom for CR/DR
QUART al250	Added Standard Filtration for QA/QC
QUART cu10	Added Filtration for QA/QC (>100 kV)
QUART dido/EASY	Constancy Test Dosimeter

