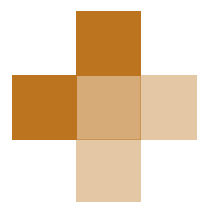




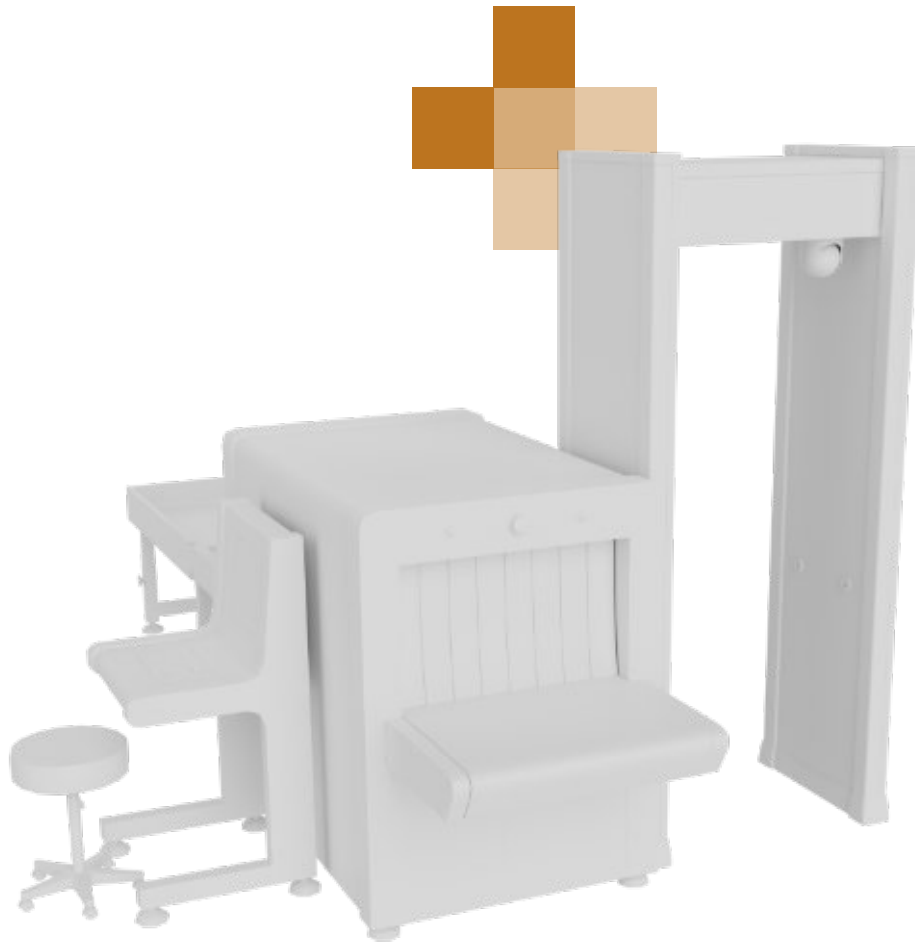
Non-Destructive Testing





Non-Destructive Testing

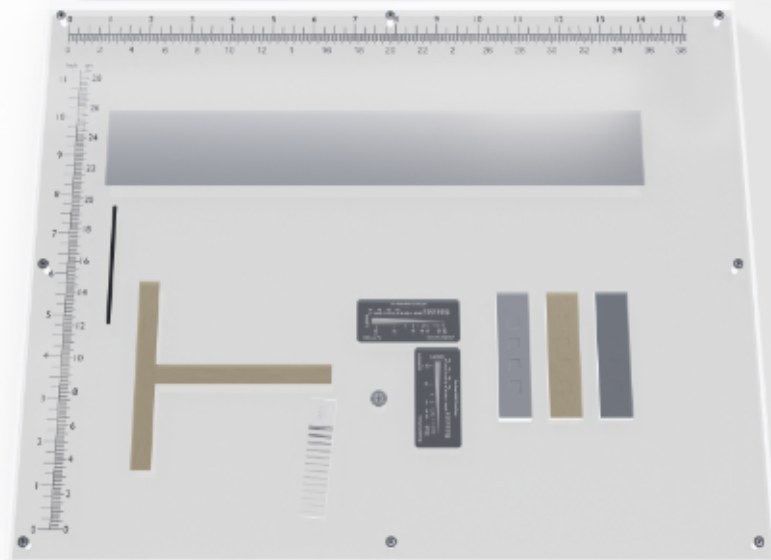
Phantoms



Pro-NDT CR



- 10-101 - version with one Pro-NDT DuplexWireIQI
- 10-103 - version with two Pro-NDT DuplexWireIQI
- 10-104 - version with two Pro-NDT DuplexWireIQI D15



This **Image Quality Indicator** is used for testing **all important parameters of CR scanner systems** according to ASTM E 2445-05, ISO 16371-1 and EN 14784-1 standards. It provides the means to measure: **spatial resolution, unsharpness, contrast, MTF, laser beam jitter, scanner slipping and shading.**

Technical data (can be modified to customer specifications):

- dimensions: 350 x 430 x 19 mm
- made of PMMA (Lucite)
- T-shaped brass target (laser beam jitter, MFT check, blooming / flare)
- Pro-NDT DuplexWireIQI test object (basic spatial resolution, unsharpness)
- BAM snail made of lead and low absorbent material (central beam alignment)
- two converging line pairs resolution patterns (Pro-Res MAM ConeType)
- three Ø19 x 0.3 mm (EL, EC, ER) measuring points (shading correction)
- cassette positioning locator
- homogeneous 0.5 mm Al strip (scanning slipping, shading)
- two cm/inch rulers (linearity check)
- three contrast sensitivity gauges made of Al, Cu and stainless steel with four holes of different depth
- calibration / test certificate according to ASTM E 2445-05, EN 14784-1 and ISO 16371-1

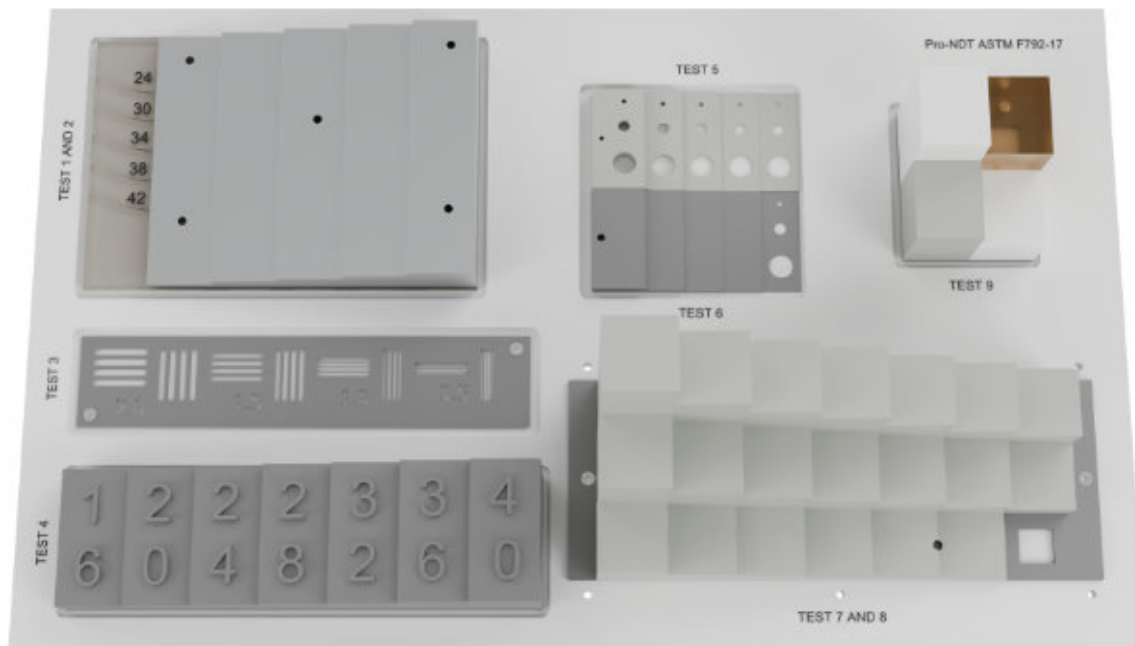
Product features:

- complies with:
 - ASTM E 2445-05
 - ISO 16371-1
 - EN 14784-1
- CE certified (declaration of conformity according to ISO/IEC 17050-1)
- the Manual provides guidelines for carrying out each test, results assessment and registration

Pro-NDT ASTM F792-17



10-401



Standardized HP Test Object for evaluating the imaging performance of security X-Ray systems according to ASTM F792-17.

Technical data (can be modified to customer specifications):

- dimensions of the entire test tool: 415 x 250 x 110 mm
- tool contains the following test objects:
- Test 1 – WireDisplay
- Test 2 – Useful Penetration
- Test 3 – Spatial Resolution
- Test 4 – Simple Penetration
- Test 5 – Thin Organic Imaging
- Test 6 – Steel Contrast Sensitivity
- Test 7 – Materials Discrimination
- Test 8 – Materials Classification
- Test 9 – Organic Differentiation
- carrying case

Product features:

- complies with:
 - ASTM F792-17
- CE certified (declaration of conformity according to ISO/IEC 17050-1)
- the Manual provides guidelines for carrying out each test, results assessment and registration

Pro-NDT DuplexWireIQI



10-201



This **Image Quality Indicator** is especially made for **digital X-ray applications**. It can be used to **evaluate image unsharpness** (film and digital images) and **basic spatial resolution** in digital images according to EN 13068 (Radioscopy), EN 14784 and ISO 13671 (CR - Computed Radiography with imaging plates), ISO 17636-2 (digital radiography of welds - flat panel detectors) or ASTM E 2597 (characterization of digital detector arrays). It may also be used to determine focal spot sizes.

Technical data (can be modified to customer specifications):

- dimensions: 15 x 70 x 4 mm
- 13 groups of wire pairs (from 1D to 13D) embedded in PMMA
- groups 1D - 3D made of tungsten
- groups 4D - 13D made of platinum
- diameter of wires / spacing between wires ranges from 0.050 to 0.800 mm
- calibration / test certificate according to ASTM E 2002 and ISO 19232-5

Product features:

- complies with:
 - ISO 19232-5
 - EN 462-5
 - ASTM E2002-99 Duplex IQI
- CE certified (declaration of conformity according to ISO/IEC 17050-1)
- the Manual provides guidelines for carrying out each test, results assessment and registration

Pro-NDT DuplexWireIQI D15



10-202



This **Image Quality Indicator** is especially made for **digital X-ray applications**. It can be used to **evaluate image unsharpness** (film and digital images) and **basic spatial resolution** in digital images according to EN 13068 (Radioscopy), EN 14784 and ISO 13671 (CR - Computed Radiography with imaging plates), ISO 17636-2 (digital radiography of welds - flat panel detectors) or ASTM E 2597 (characterization of digital detector arrays). It can also be used to determine focal spot sizes.

Technical data (can be modified to customer specifications):

- dimensions: 15 x 77.5 x 4 mm
- 15 groups of wire pairs (from 1D to 15D) embedded in PMMA
- groups 1D - 3D made of tungsten
- groups 4D - 15D made of platinum
- diameter of wires / spacing between wires ranges from 0.032 to 0.800 mm
- calibration / test certificate according to ASTM E 2002 and ISO 19232-5

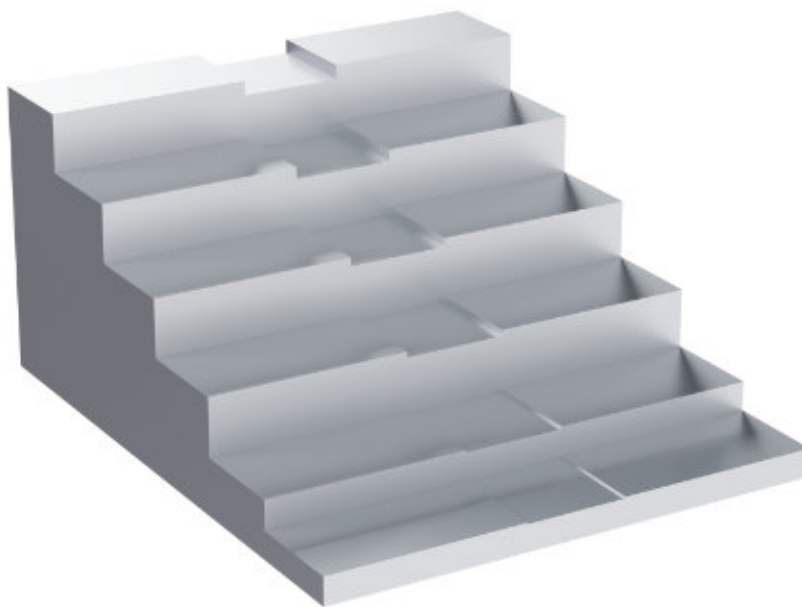
Product features:

- complies with:
 - ISO 19232-5
 - EN 462-5
 - ASTM E2002-99 Duplex IQI
- CE certified (declaration of conformity according to ISO/IEC 17050-1)
- the Manual provides guidelines for carrying out each test, results assessment and registration

Pro-NDT ASTM Step



10-301



Step-Wedge Image Quality Indicator according to **ASTM E2597-07** Standard Practice for Manufacturing Characterization of Digital Detector Arrays. A step wedge made from **Aluminium-6061**.

Technical data (can be modified to customer specifications):

- dimensions: 210 x 175 x 100 mm
- material: Aluminium-6061
- calibration / test certificate according to ASTM E2597-07

Product features:

- complies with:
 - ASTM E2597-07
- CE certified (declaration of conformity according to ISO/IEC 17050-1)
- the Manual provides guidelines for carrying out each test, results assessment and registration

Pro-Pinhole



- 05-701 - 0.010 mm size
- 05-702 - 0.030 mm size
- 05-703 - 0.075 mm size
- 05-704 - 0.100 mm size



The Pro-Pinhole phantom is the so called **pinhole camera for accurate measurement of the focal spot size according to IEC 60336:2020**. Its main advantages are repeatability, accuracy and possibility to measure the size of different focal spots.

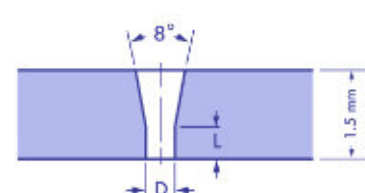
Technical data (can be modified to customer specifications):

- diaphragm dimensions: $\varnothing 5 \times 1.5$ mm
- diaphragm made from a 90:10 gold-platinum alloy
- four different pinhole diameters:
 - 0.010 mm for focal spot sizes from 0.5 to 0.10 mm
 - 0.030 mm for focal spot sizes below 1.0 mm
 - 0.075 mm for focal spots from 1.0 to 2.5 mm
 - 0.100 mm for focal spot sizes above 2.5 mm
- mounting screw
- stainless steel mounting frame for Pro-Stand
- optional Pro-Stand in a heavy duty carrying case with two layer foam inly

Product features:

- complies with:
 - IEC 60336:2020
 - IEC 61223-3-1, 2, 4
 - EN 12543-2:2008
- CE certified
- the Manual provides detailed guidelines for carrying out each test, results assessment and registration

Pro-Pinhole



Pro-Pinhole aperture sizes (Millimeters)		Nominal diameter (Millimeters)
D	L	
0.010 ± 0.005	0.020 ± 0.010	0.010
0.030 ± 0.005	0.075 ± 0.010	0.030
0.075 ± 0.005	0.350 ± 0.010	0.075
0.100 ± 0.005	0.500 ± 0.010	0.100



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