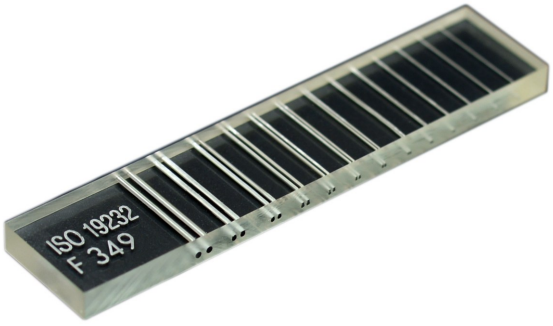
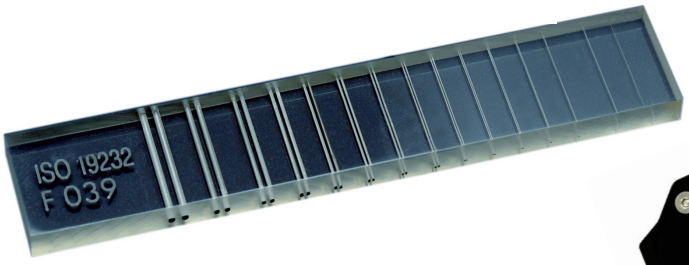
DUPLEX IQI

Duplex Wire Type IQI

Total Image Unsharpness Gage according to ISO 19232-5, ASTM E2002





Evaluation of basic spatial resolution and unsharpness of digital X-ray images

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Image Quality Indicator for evaluation of Basic Spatial Resolution

The Duplex IQI is useful for many X-ray applications, especially in digital X-ray. Designed for evaluating total image unsharpness of X-ray films now it is mainly used for basic spatial resolution evaluation of digital images according to EN 13068 (Radioscopy), ISO 16371or ASTM E2445 (CR – Computed Radiography with Imaging Plates), ASTM E2446 and ASTM E2597 (characterization of CR systems and DDAs) and ASTM E2737 (Long term stability of DDAs). But also for digital radiology of welds (ISO 17636-2) and castings (EN 12681-2).

Image valuation with Duplex Wire Type IQI

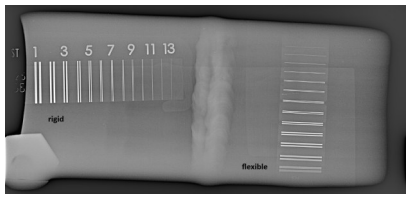
In radiography the wire pair with largest diameter d has to be identified, which cannot be separated visually. The radiographic film may be magnified up to 4X. In digital radiology the separation between wires (Dip) is evaluated. The wire pair with largest d, showing Dip less than 20 percent of the wire pair contrast, identifies total image unsharpness (U = 2d) and basic spatial resolution (SRb = d) of digital image.
The Duplex IQI is also available in a flexible version. This version offers the same technical properties as the standard model but is bendable, making it particularly suitable for use on curved test surfaces with flexible detectors. (DDA)

Specification:

Duplex IQI consists of following wire pairs:
D13 - D1 to D13 , D15 - D1 to D15 , D17 HR4 - D4 to D17
Material for wires D1 to D3 is tungsten (W), for wires D4 to D17 is platinum (Pt)
Distance between wires of each wire pair equals exactly diameter of wires
Wires are casted in a transparent, resistant and dimensional stable plastic

DD	d (µm)	UT (µm)	SRb (µm)	LP (1/mm)
D 1	800	1600	800	0.63
D 2	630	1260	630	0.79
D 3	500	1000	500	1.00
D 4	400	800	400	1.25
D 5	320	640	320	1.56
D 6	250	500	250	2.00
D 7	200	400	200	2.50
D 8	160	320	160	3.13
D 9	130	260	130	3.85
D 10	100	200	100	5.00
D 11	80	160	80	6.25
D 12	63	126	63	7.94
D 13	50	100	50	10.00
D 14	40	80	40	12.50
D 15	32	63	32	15.90
D 16	25	50	25	20.00
D 17	20	40	20	25.00

DD	Duplex Wire Pair Number
d	Wire Diameter and Spacing
UT	Corresponding Unsharpness
SRb	Corresponding Basic Spatial Resolution
LP	Corresponding Line Pair Value (LP per mm)



Duplex Wire Type IQI - D13 *Article No.: 11 00155*
Duplex Wire Type IQI - D15 HiRes *Article No.: 11 00160*
Duplex Wire Type IQI - D17 HR4 UHiRes *Article No.: 11 00165*
Duplex Wire Type IQI - flexible D13 *Article No.: 11 00158*

Wire Identifier Brackets

for easy wire pair identification and 5° alignment

for Duplex IQI - D13 *Article No.: 11 00156*
for Duplex IQI - D15 *Article No.: 11 00161*
for Duplex IQI - D17 *Article No.: 11 00166*
Holder for Duplex IQI, magnetic *Article No.: 11 00159*

Scope of Supply:

Duplex Wire Type IQI in wooden etui
Test Report according to ASTM E 2002, ISO 19232-5
Declaration of Conformity according to ISO/IEC 17050-1

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