Reference procedure

Determination of image quality parameters of digital image detectors for industrial radiology

Proof of competence
ISO/IEC 17025 accreditation

Testing quantities and objects
Measurement of signal transfer curve, signal-to-noise ratio and basic spatial resolution (MTF) using a reference film (ISO 14096 film digitization systems) or a standardized exposure set-up according to ISO 16371 (Computed radiography using imaging plates) or ASTM E 2597 (Digital detector arrays).

Testing range
The test result is typically a classification of the investigated device into a system class defined in the applied standards.

Expanded measurement uncertainty ($k = 2$)
The measured parameters for system classification have typically an expanded uncertainty of < 5 %.

Field of application
Classification of film digitization systems and other digital detectors (imaging plate systems or digital detector arrays) for application in industrial radiographic testing. The reference procedure is the base for BAM certification schemes BZS-ZP / 2.5.5 & 2.56.

References
DIN EN ISO 14096-1:2020-10, https://dx.doi.org/10.31030/3147498.
DIN EN ISO 14096-2:2020-10, https://dx.doi.org/10.31030/3147500
ISO 16371-2:2017, Non-destructive testing - Industrial computed radiography with storage phosphor imaging plates - Part 2: General principles for testing of metallic materials using X-rays and gamma rays, https://www.iso.org/standard/67690.html.
ASTM E2597 / E2597M-14, Standard Practice for Manufacturing Characterization of Digital Detector Arrays, https://www.doi.org/10.1520/E2597_E2597M-14.

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