

GAMMEX

DIAGNOSTIC RADIOLOGY



Edge Tool and Analysis Software

GAMMEX 617

The Gammex Edge Tool was developed to provide Medical Physicists with an easy method of evaluating the imaging performance of Digital Radiography (DR) and Computed Radiography (CR) systems. Normal measurements to monitor this are to determine the Modulation Transfer Function (MTF), the Noise Power Spectrum (NPS) and the Detector Quantum Efficiency (DQE). The Edge Tool and the Analysis Software make such measurements simple and fast to make and analyze.

Modulation Transfer Function is a graph of the resolution capabilities of an imaging system. While traditional methods of acquiring measurements have measured slit spacing, the use of a polished edge of a tungsten sheet has proven to be more reliable and easier to use.

Using the tungsten edge allows users to produce an Edge Spread Function. From the ESF, a de-convolution of the resulting waveform is performed resulting in a Point Spread Function (PSF). A Fourier Transformation is applied resulting in the system MTF.

The Edge Tool also measures the DQE and NPS. Noise has spatial frequency components just as the signal does and thus a frequency distribution can be determined. NPS is the square of this.

DQE is a method used to determine the varying levels of performance of different detectors.

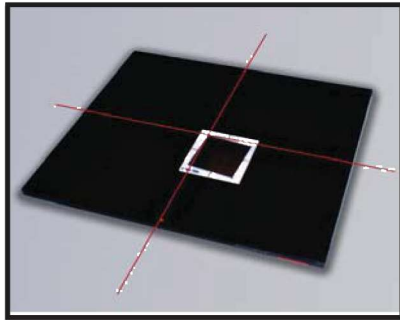
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The Value can be obtained once MTF and NPS values are obtained.



Specifications

Tungsten Edge Tool

75mm x 75mm x 1mm
 2 adjacent polished edges
 2 edges with fiducial marks

Two White Acrylic Alignment Plates

outer: 95mm x 94mm x 3mm
 inner: 75.25mm x 75.25mm

Software

Windows: XP, Vista, Win 7
 32-bit and 64-bit
 1 GB free hard drive space
 1 GB RAM
 CD-ROM
 32-bit color
 1280 x 1024 display resolution

