

## 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.

*continued...*

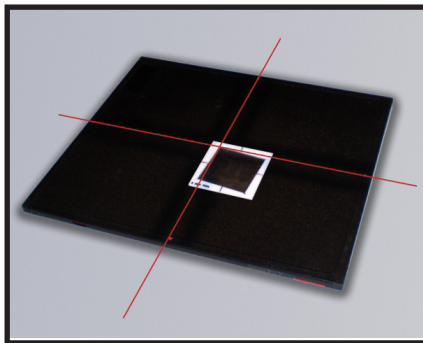


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DIAGNOSTIC RADIOLOGY

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



## Specifications

### *Tungsten Edge Tool*

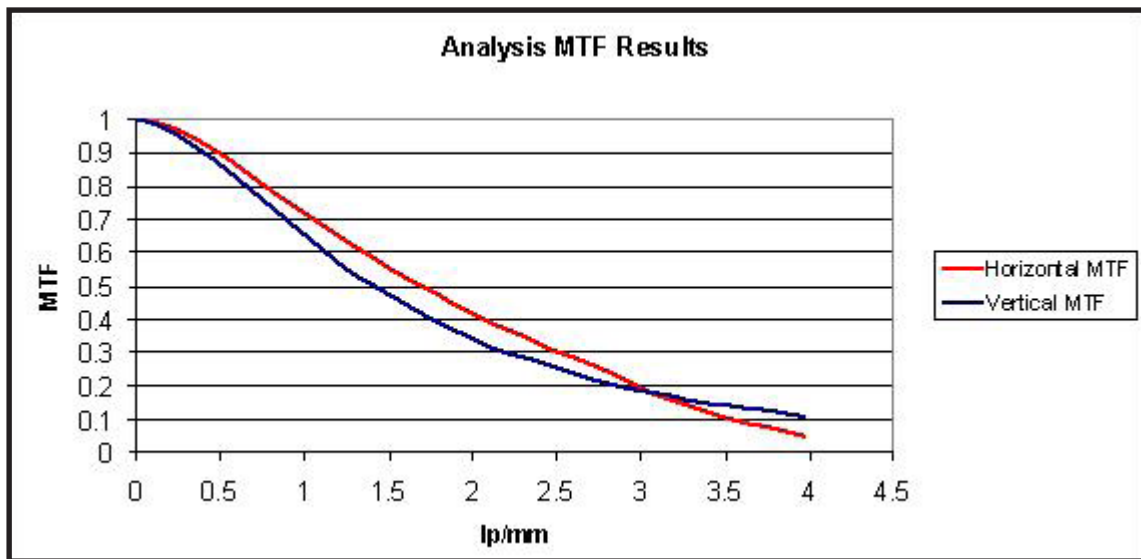
75mm x 75mm x 1mm  
2 adjacent polished edges  
2 edges with fiducial marks

### *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



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