

# DIN ISO 15529:2010-11 (E)

## Optics and photonics - Optical transfer function - Principles of measurement of modulation transfer function (MTF ) of sampled imaging systems (ISO 15529:2010)

---

<b>Contents</b>		<b>Page</b>
National foreword .....		3
National Annex NA (informative) Bibliography .....		3
Introduction .....		4
1	Scope .....	5
2	Normative references .....	5
3	Terms, definitions and symbols .....	5
3.1	Terms and definitions .....	5
3.2	Symbols .....	8
4	Theoretical relationships .....	9
4.1	Fourier transform of the image of a (static) slit object .....	9
4.2	Fourier transform of the output from a single sampling aperture for a slit object scanned across the aperture .....	10
4.3	Fourier transform of the average LSF for different positions of the slit object .....	12
5	Methods of measuring the MTFs associated with sampled imaging systems .....	12
5.1	General .....	12
5.2	Test azimuth .....	13
5.3	Measurement of system MTF, $T_{sys}(r)$ of a sampled imaging device or complete system ..	13
5.4	Measurement of the MTF of the sampling aperture, $T_{ap}$ .....	19
6	Method of measuring the aliasing function, the aliasing ratio and the aliasing potential ...	19
Annex A (informative) Background theory .....		21
Annex B (informative) Aliasing in sampled imaging systems .....		24
Bibliography .....		29