

# ISO 15529:2010-08 (E)

## Optics and photonics - Optical transfer function - Principles of measurement of modulation transfer function (MTF) of sampled imaging system s

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms, definitions and symbols .....</b>	<b>1</b>
<b>3.1</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>3.2</b>	<b>Symbols .....</b>	<b>4</b>
<b>4</b>	<b>Theoretical relationships .....</b>	<b>5</b>
<b>4.1</b>	<b>Fourier transform of the image of a (static) slit object .....</b>	<b>5</b>
<b>4.2</b>	<b>Fourier transform of the output from a single sampling aperture for a slit object scanned across the aperture .....</b>	<b>6</b>
<b>4.3</b>	<b>Fourier transform of the average LSF for different positions of the slit object .....</b>	<b>8</b>
<b>5</b>	<b>Methods of measuring the MTFs associated with sampled imaging systems .....</b>	<b>8</b>
<b>5.1</b>	<b>General .....</b>	<b>8</b>
<b>5.2</b>	<b>Test azimuth .....</b>	<b>9</b>
<b>5.3</b>	<b>Measurement of <math>T_{sys}</math> of a sampled imaging device or complete system .....</b>	<b>9</b>
<b>5.4</b>	<b>Measurement of the MTF of the sampling aperture, <math>T_{ap}</math> .....</b>	<b>15</b>
<b>6</b>	<b>Method of measuring the aliasing function, the aliasing ratio and the aliasing potential ...</b>	<b>15</b>
<b>Annex A (informative) Background theory .....</b>		<b>17</b>
<b>Annex B (informative) Aliasing in sampled imaging systems .....</b>		<b>20</b>
<b>Bibliography .....</b>		<b>25</b>