



# MC500X | DATASHEET

## Macro lens for 2/3" detectors, magnification 5.000x, C mount



### KEY ADVANTAGES

#### Nearly zero distortion

Suitable for any measurement application where telecentricity is not required

#### High resolution

MC Series has been specifically designed to work in "macro" configuration

#### Compactness

MC Series small outer diameter (15 mm) fits those applications where only little room for optical components is available

**MC series macro lenses** are designed to capture images of small objects when both very good resolution and nearly zero distortion are needed.

### SPECIFICATIONS

#### Optical specifications

Magnification	(x)	5.000
Image circle	(mm)	11.0
Max sensor size		2/3"
Working distance <sup>1</sup>	(mm)	24.0
Focal length	(mm)	28
<i>f/N</i>		5.3
<i>wf/N</i> <sup>2</sup>		32
Distortion typical (max) <sup>3</sup>	(%)	< 0.02
Field depth <sup>4</sup>	(mm)	0.07
Resolution (max) <sup>5</sup>	(µm)	4.0

#### Mechanical specifications

Mount		C
Length <sup>6</sup>	(mm)	163.9
Outer diameter	(mm)	30.0
Mass	(g)	51

<sup>1</sup> Working distance: distance between the front end of the mechanics and the object. Set this distance within ±3% of the nominal value for maximum resolution and minimum distortion.

<sup>2</sup> working *f/N*: the real *f/N* of a lens in operating conditions.

<sup>3</sup> Percent deviation of the real image compared to an ideal, undistorted image. Typical (average production) values and maximum (guaranteed) values are listed.

<sup>4</sup> Object side, calculated with the Rayleigh criterion with λ= 520 nm

<sup>4</sup> At the borders of the field depth the image can be still used for measurement but, to get a very sharp image, only half of the nominal field depth should be considered. Pixel size used for calculation is 3.45 µm.

<sup>5</sup> Measured from the front end of the mechanics to the camera flange.

### FIELD OF VIEW

Sensors	(mm x mm)
1/3" (4.80 x 3.60 mm x mm)	0.96 x 0.72
1/2.5" (5.70 x 4.28 mm x mm)	1.14 x 0.86
1/2" (6.40 x 4.80 mm x mm)	1.28 x 0.96
1/1.8" (7.13 x 5.33 mm x mm)	1.43 x 1.07
2/3" (8.50 x 7.09 mm x mm)	1.70 x 1.42

### COMPATIBLE PRODUCTS

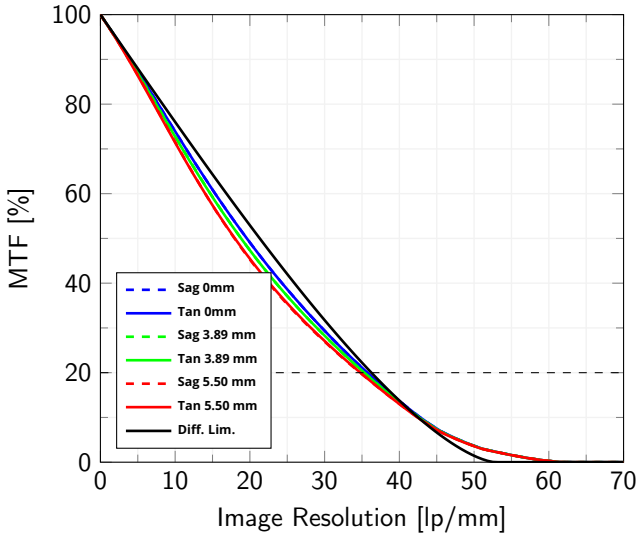
Full list of compatible products available [here](#).



A wide selection of innovative machine vision components.

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**Image Resolution**



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm. Fields in legend are represented as distance from the optical axis to the corner of the image

**Distortion**

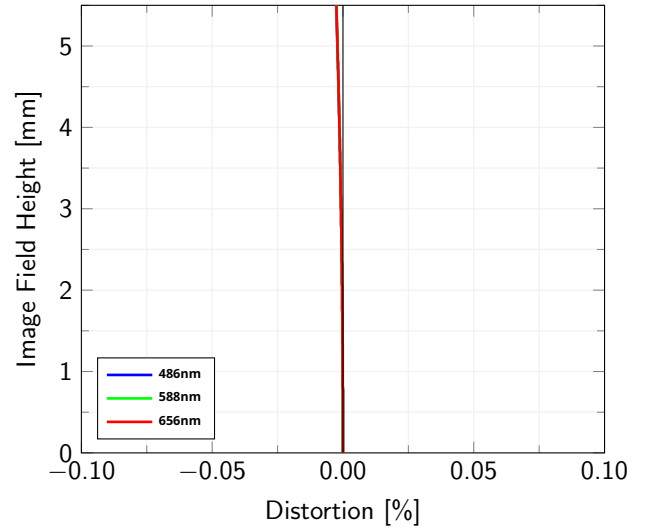
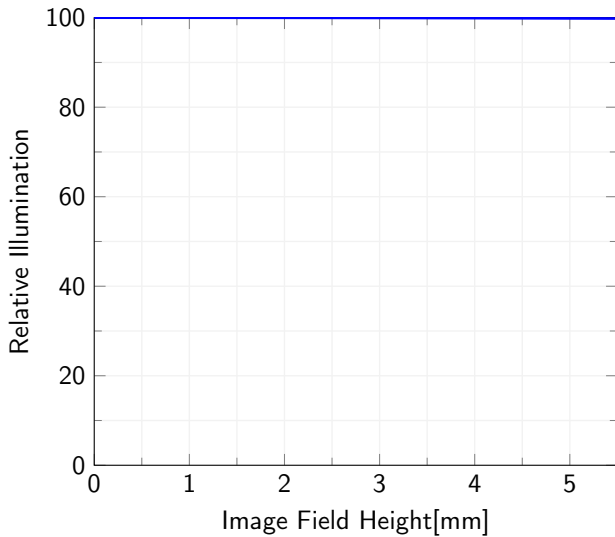


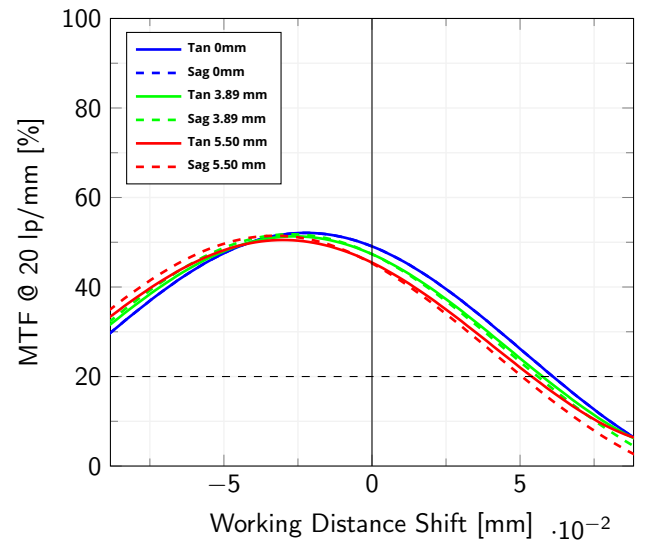
Image Field Height vs. Distortion, from the optical axis to the corner of the image

**Relative Illumination**



Relative illumination vs. Image Field Height, from the optical axis to the corner of the created image

**Depth of Field**



Modulation Transfer Function (MTF) @ 20 lp/mm vs. Working Distance Shift from the best focus Working Distance, wavelength range 486 nm - 656 nm. Fields in legend are represented as distance from the center of the image.

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