MC300X | DATASHEET

OPTO ENGINEERING

Macro lens for 2/3" detectors, magnification 3.000x, C mount

KEY ADVANTAGES

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)	3.000
Image circle	(mm)	11.0
Max sensor size		2/3"
Working distance[1]	(mm)	27.8
Focal length	(mm)	28
f/N		5.3
wf/N[2]		21
Distortion typical (max)[3]	(%)	< 0.01
Field depth[4]	(mm)	0.1
Resolution (max)[5]	(µm)	4.0

Mechanical specifications

Mount		C
Length[6]	(mm)	106.5
Outer diameter	(mm)	30.0
Mass	(g)	41

[1] Working distance: distance between the front end of the mechanics and the object. Set this distance within $\pm 3\%$ of the nominal value for maximum resolution and minimum distortion.
[2] working f/N: the real f/N of a lens in operating conditions.
[3] Percent deviation of the real image compared to an ideal, undistorted image. Typical (average production) values and maximum (guaranteed) values are listed.
[4] Object side, calculated with the Rayleigh criterion with λ= 520 nm
[4] 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.
[5] Measured from the front end of the mechanics to the camera flange.

FIELD OF VIEW

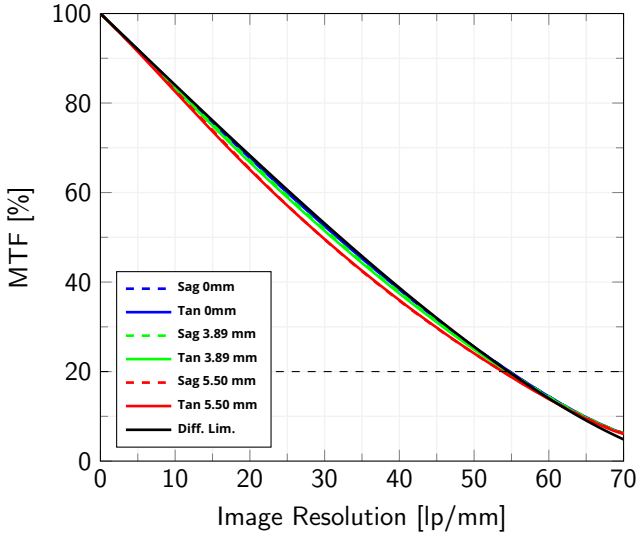| Sensors	(mm x mm)
1/3" (4.80 x 3.60 mm x mm)	1.60 x 1.20
1/2.5" (5.70 x 4.28 mm x mm)	1.90 x 1.43
1/2" (6.40 x 4.80 mm x mm)	2.13 x 1.60
1/1.8" (7.13 x 5.33 mm x mm)	2.38 x 1.78
2/3" (8.50 x 7.09 mm x mm)	2.83 x 2.36

COMPATIBLE PRODUCTS

Full list of compatible products available *here*.

OPTICS	LIGHTING	CAMERAS	SOFTWARE	ACCESSORIES

A wide selection of innovative machine vision components.

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
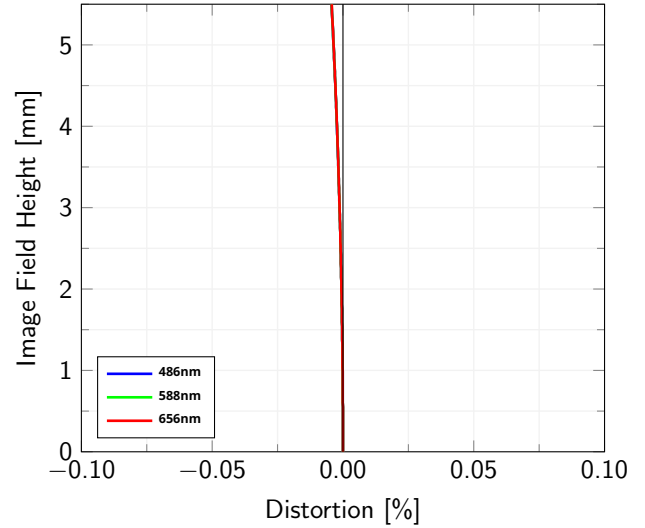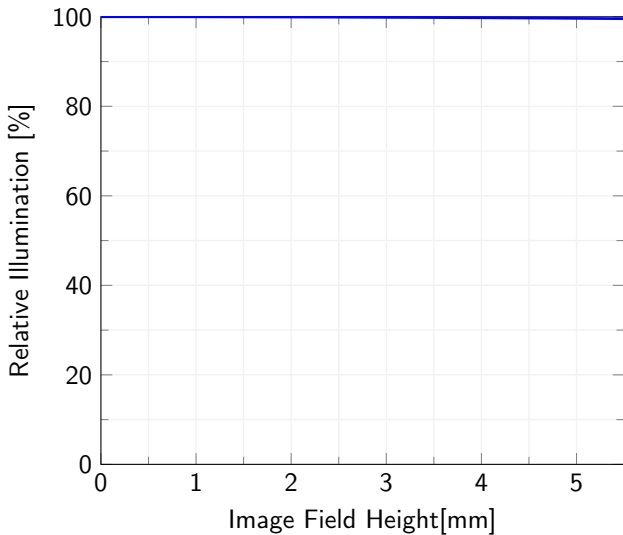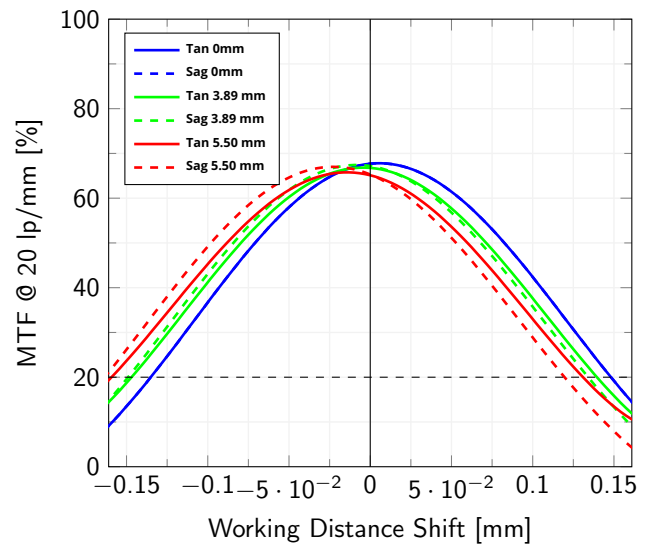
Distortion

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.