



EN8MPL5020 | DATASHEET

8 Megapixel high resolution fixed focal lens for 1" sensors, focal length 50 mm, f/N 2.0 - 22, C-mount



SPECIFICATIONS

Optical specifications

Focal length	(mm)	50
Magnification ¹	(x)	0.222
Image circle	(mm)	16.0
Max sensor size		1"
WD range ²	(m)	0.25 - inf
f/N		2.0 - 22
Back focal length	(mm)	21.35
Distortion on 1/2" ³	(%)	0.01
Distortion on 2/3" ³	(%)	0.01
Distortion on 1" ³	(%)	0.01
Iris control		Manual
Focus Control		Manual

Mechanical specifications

Mount		C
Filter thread		M37 x 0.5
Length ⁴	(mm)	48.2
Outer Diameter	(mm)	42.4
Mass	(g)	120
Set screw thread		knobs

Environment

Operating temperature range	(°C)	-10+50
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KEY ADVANTAGES

Compact and Anti-Vibration design

Designed for factory automation, the EN8MP lenses are among the most compact fixed focal length lenses on the market for sensor format up to 1".

High resolution

Suitable with cameras with sensors up to 1", e.g. the Sony 9mp and 20 mp, and the Sony Pregius IMX174 and IMX249 with 1/1.2" format.

High quality / price ratio

High performance with reasonable cost.

Low distortion

Even down to 0.01 %.

EN8MP Series is a series of fixed focal length lenses that has a very compact design for a high resolution 1" lens.

RT - Third party product selected by Opto Engineering®.

All technical specifications are provided as declared by the original manufacturer.

ANGLE OF VIEW

Sensors	Diagonal (°)
1/2" (6.4 x 4.8 mm x mm)	9.1
2/3" (8.5 x 7.1 mm x mm)	12.6
1" (12.44 x 9.83 mm x mm)	18.2

FIELD OF VIEW AT MINIMUM WORKING DISTANCE

Sensors	(mm x mm)
1/2" (6.4 x 4.8 mm x mm)	28.84 x 21.63
2/3" (8.5 x 7.1 mm x mm)	38.31 x 31.95
1" (12.44 x 9.83 mm x mm)	56.06 x 44.30

¹ Calculated at minimum working distance

² Working distance: distance between the front end of the mechanics and the object

³ Value calculated at the corner point of the sensor diagonal. For distortion graphs see below

⁴ Measured from the front end of the mechanics to the camera flange at infinite focusing

COMPATIBLE PRODUCTS

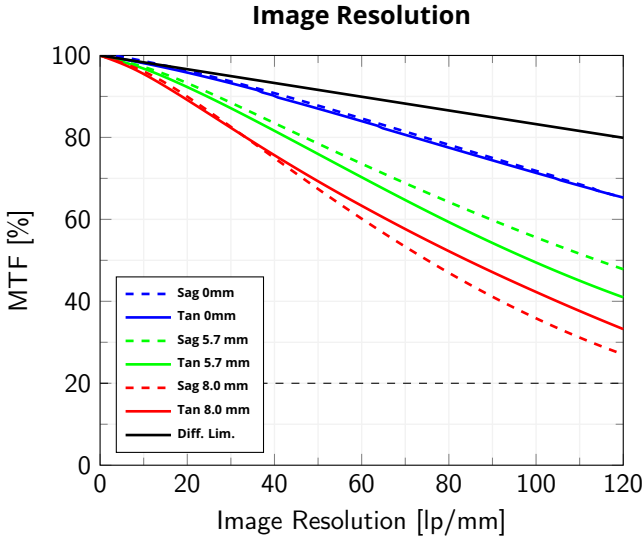
Full list of compatible products available [here](#).



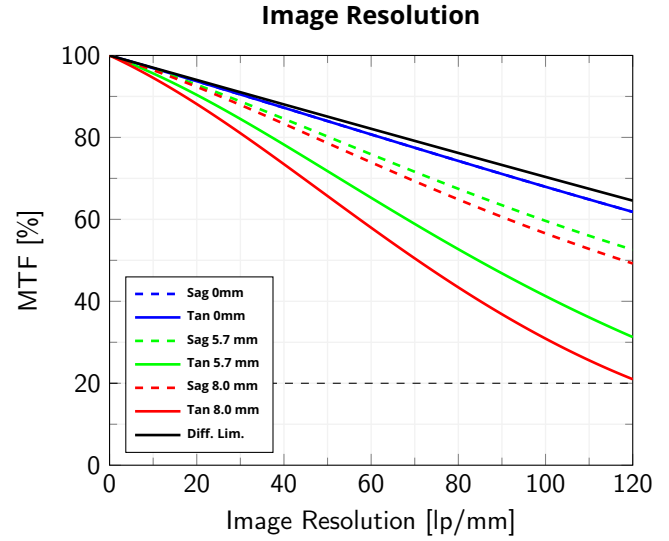
A wide selection of innovative machine vision components.

All product specifications and data are subject to change without notice to improve reliability, functionality, design or other. Photos and pictures are for illustration purposes only. Data are reported by design, actual lens performance may vary due to manufacturing tolerances.

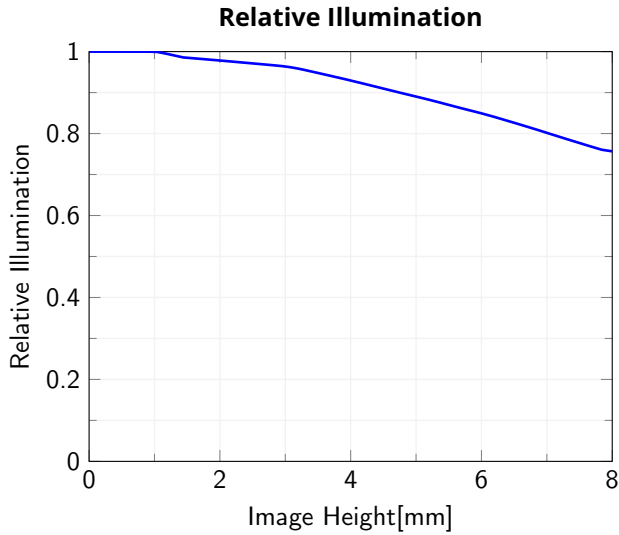
DATA AT INFINITE WORKING DISTANCE



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at infinite working distance and maximum aperture



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at infinite working distance at $f/4$



Relative illumination vs. Image Field Height, from the optical axis to the maximum image height at maximum aperture

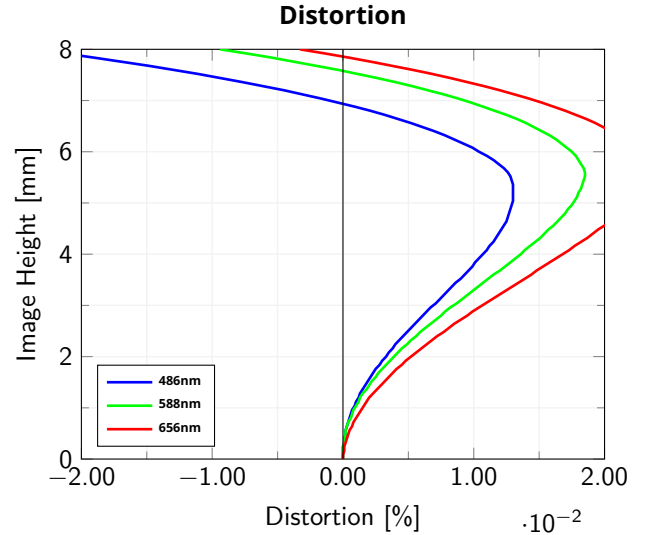
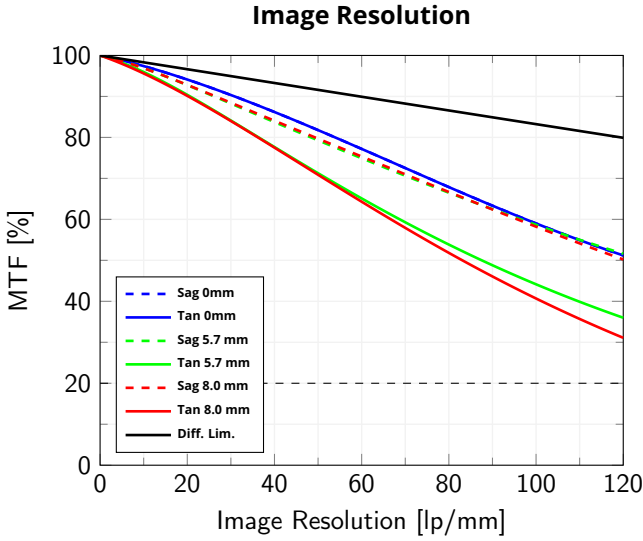


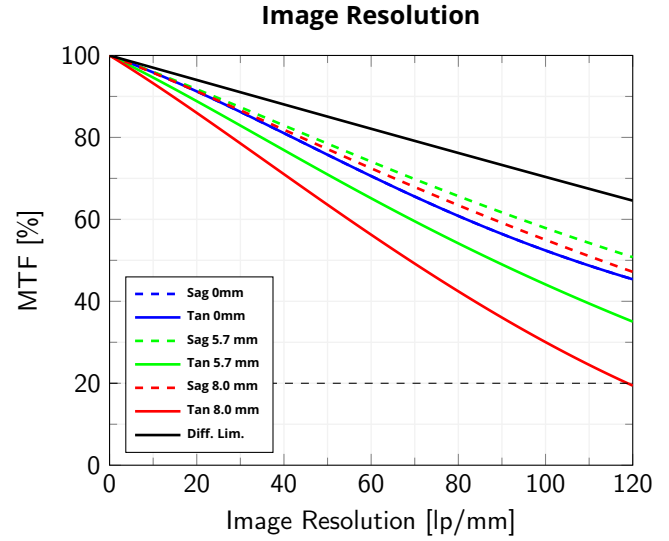
Image Field Height vs. Distortion, from the optical axis to the maximum image height

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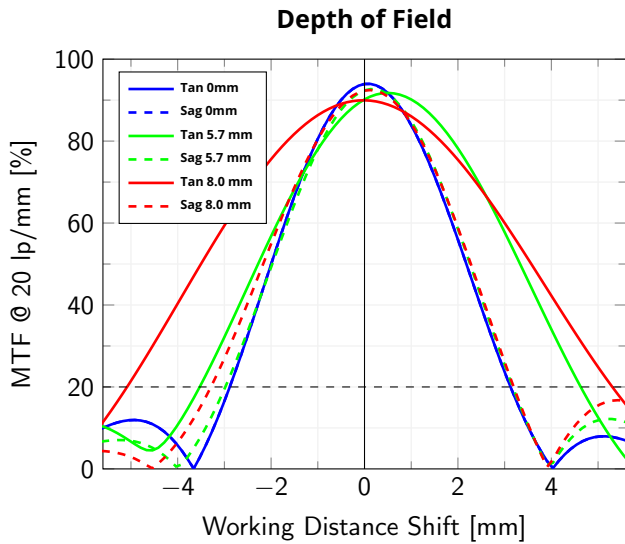
DATA AT MINIMUM WORKING DISTANCE



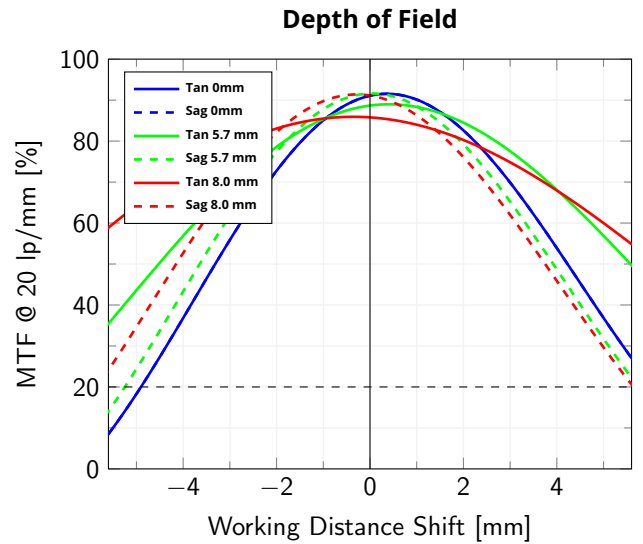
Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at minimum working distance and maximum aperture



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at minimum working distance at $f/4$



Modulation Transfer Function (MTF) @ 20 lp/mm vs. Working Distance Shift from the best focus at minimum working distance, wavelength range 486 nm - 656 nm, maximum aperture



Modulation Transfer Function (MTF) @ 20 lp/mm vs. Working Distance Shift from the best focus at minimum working distance, wavelength range 486 nm - 656 nm, $f/4$

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