EN10MPL5020 | DATASHEET

OPTO ENGINEERING

10 Megapixel high resolution fixed focal lens for 1” sensors, focal length 50 mm, ƒ/N 2.0 - 22, C-mount

REACH DOSSIER

KEY ADVANTAGES

Designed for the new high resolution Sony Pregius sensors

Suitable with the Sony Pregius 12mp IMX304 and IMX253 sensors with 1.1" format, and the new Sony Pregius 7.1mp IMX420 and IMX428 with 1.1" format.

High quality / price ratio

High performance with reasonable cost.

Low distortion

Even down to 0.14 %.

EN10MP Series is a series of powerful fixed focal length lenses designed for the high sensitivity and precise high-speed imaging of the new 1.1" and 4/3" Sony Pregius sensors.

SPECIFICATIONS

Optical specifications

Focal length	(mm)	50
Magnification[1]	(x)	0.194
Image circle	(mm)	23.0
Max sensor size		4/3"
WD range[2]	(m)	0.3 - inf
ƒ/N		2.0 - 22
Back focal length	(mm)	20.29
Distortion on 2/3"[3]	(%)	0.02
Distortion on 1"[3]	(%)	0.05
Distortion on 4/3"[3]	(%)	0.14
Iris control		Manual
Focus Control		Manual

Mechanical specifications

Mount		C
Filter thread		M40.5 x 0.5
Length[4]	(mm)	53.7
Outer Diameter	(mm)	44.6
Mass	(g)	170

Environment

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

[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 machanics to the camera flange at infinite focusing

ANGLE OF VIEW

Sensors	Diagonal (°)
2/3" (8.5 x 7.1 mm x mm)	12.6
1" (12.44 x 9.83 mm x mm)	18.2
4/3" (18.93 x 10.61 mm x mm)	25.9

FIELD OF VIEW AT MINIMUM WORKING DISTANCE

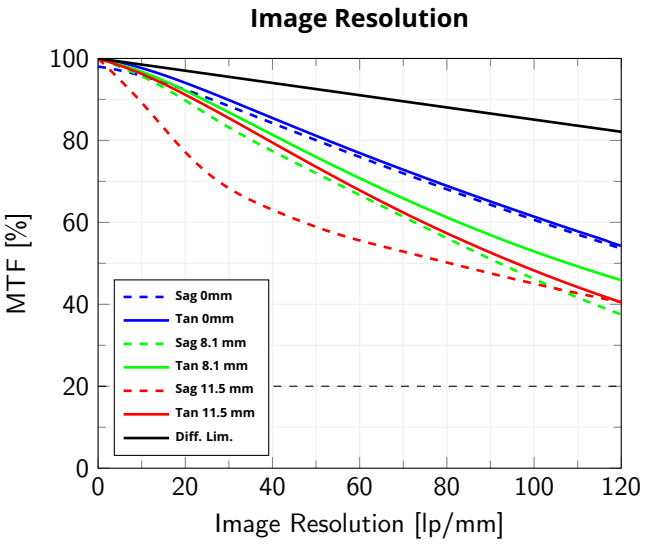
Sensors	(mm x mm)
2/3" (8.5 x 7.1 mm x mm)	43.77 x 36.51
1" (12.44 x 9.83 mm x mm)	64.06 x 50.62
4/3" (18.93 x 10.61 mm x mm)	97.48 x 54.63

COMPATIBLE PRODUCTS

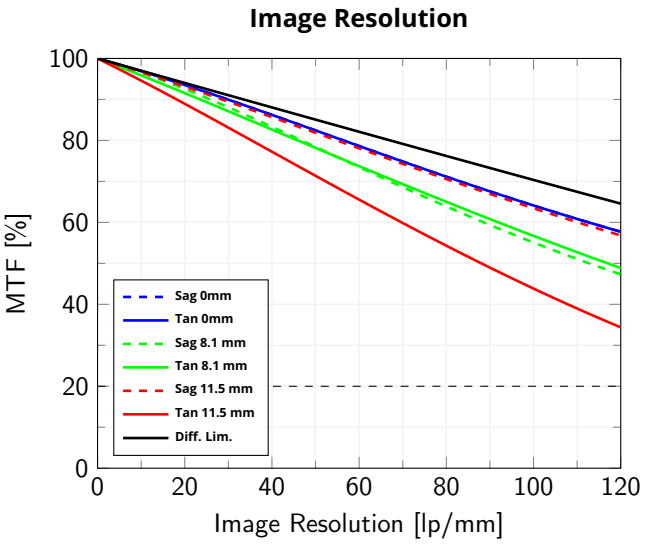
Full list of compatible products available *here*.

A wide selection of innovative machine vision components.

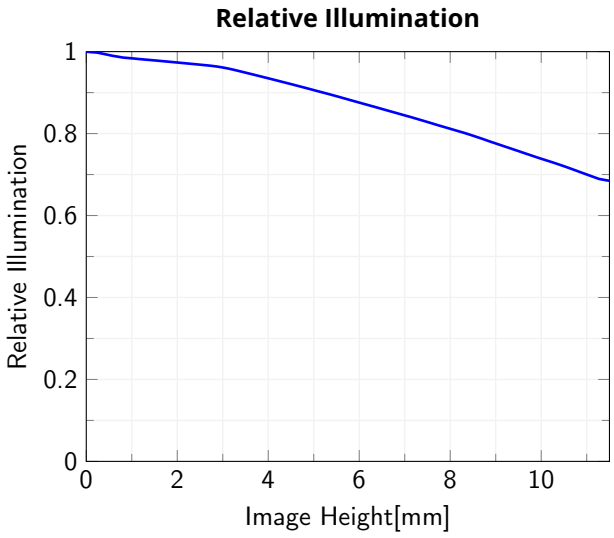
DATA AT INFINITE WORKING DISTANCE



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

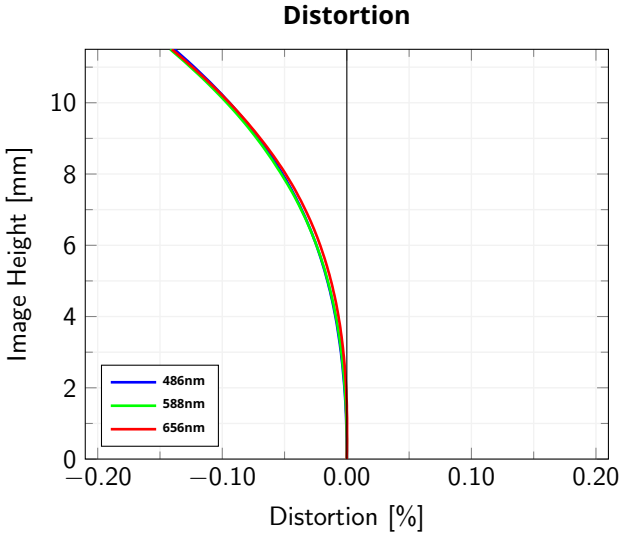
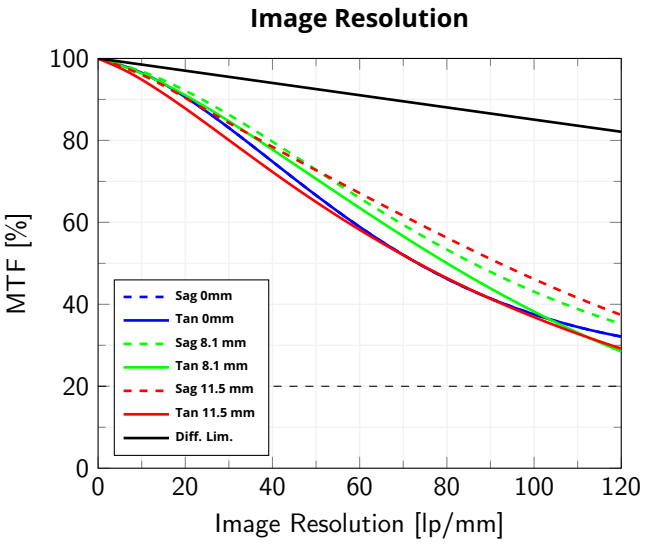
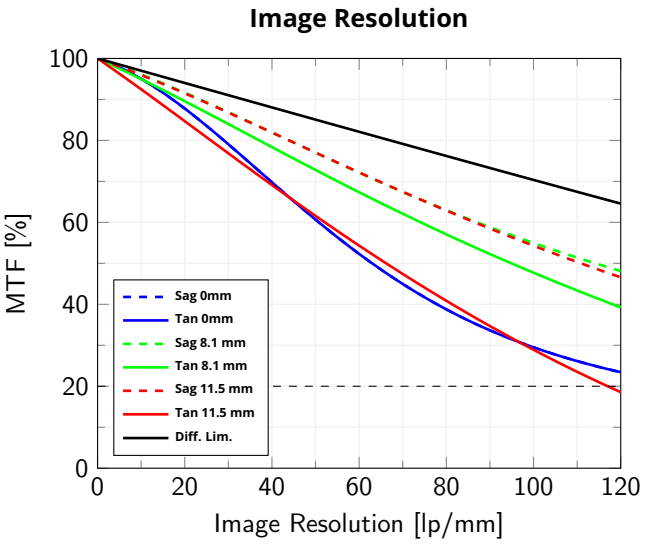


Image Field Height vs. Distortion, from the optical axis to the maximum image height

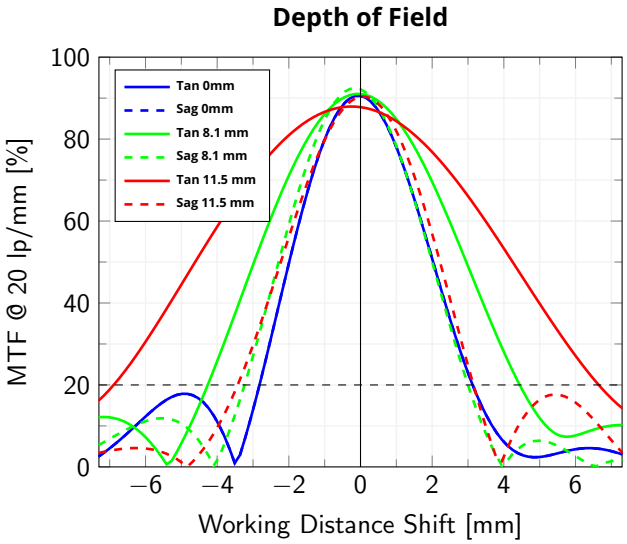
DATA AT MINIMUM WORKING DISTANCE



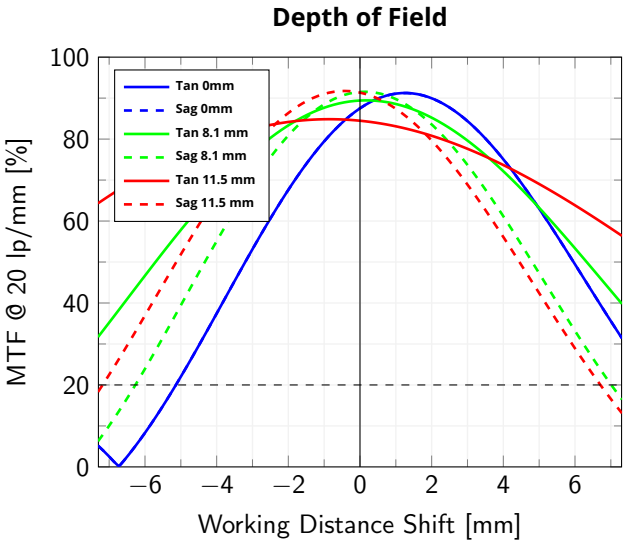
Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at minimum working distance and maximum aperture



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, $f/4$