EL12MP2540 | DATASHEET

OPTO ENGINEERING

12 MP fixel focal lens with liquid lens technology, focal length 25 mm, *ƒ*/4.0, C-mount

KEY ADVANTAGES

Precise and quick autofocus
Electronically driven liquid lenses allow for extremely fast and precise changes of focus

Easy installation
Optotune® liquid lenses are integrated in the optics for a ready-to-use solution

Excellent accuracy
High repeatability enhanced by a precise thermal calibration algorithm

Robust design
Lifetime guaranteed for over 1 billion cycles

The EL12MP series are 12 MP fixed focal length optics for sensors up to 1.1" with integrated Optotune® liquid lens technology.

SPECIFICATIONS

Optical specifications

Focal length	(mm)	25
Magnification[1]	(x)	0.136
Image circle	(mm)	17.6
Max sensor size		1.1"
WD range[2]	(m)	160 - inf
ƒ/N		4.0
Back focal length	(mm)	13.5
Distortion [3]	(%)	< 0.20

Liquid lens specifications

Liquid lens model		EL-12-30
Temperature sensor		Yes
Focal power mode		Yes
Response time	(ms)	3.0
Setting time	(ms)	20.0
Current range	(mA)	-300 to +300
Lifecycles (10%-90% sinusoidal)		>1,000,000,000
Connector		HR10A-7R-6PB

Mechanical specifications

Mount		C
Filter thread		M40.5 x 0.5
Length[4]	(mm)	89.7
Outer Diameter	(mm)	42.0
Mass	(g)	160.0

Environment

Operating temperature	(°C)	0-40
Storage temperature	(°C)	0-50
Operating relative humidity	(%)	20-85, non condensing
Installation		Indoor use only

[1] Calculated at minimum working distance
[2] Working distance: distance between the front end of the mechanics and the object
[3] Percent deviation of the real image compared to an ideal, undistorted image
[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)	24.7
1" (14.19 x 7.51 mm x mm)	35.4
1.1" (14.16 x 10.37 mm x mm)	38.6

FIELD OF VIEW AT MINIMUM WORKING DISTANCE

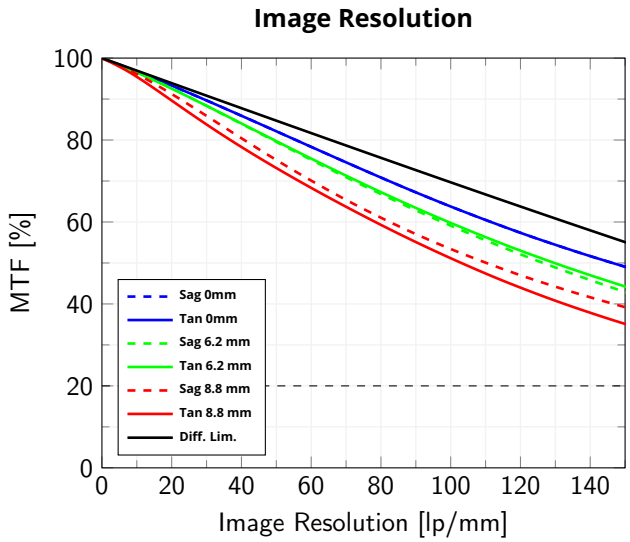
Sensors	(mm x mm)
2/3" (8.5 x 7.1 mm x mm)	62.5 x 52.1
1" (14.19 x 7.51 mm x mm)	104.3 x 55.2
1.1" (14.16 x 10.37 mm x mm)	104.1 x 76.2

COMPATIBLE PRODUCTS

Full list of compatible products available *here*.

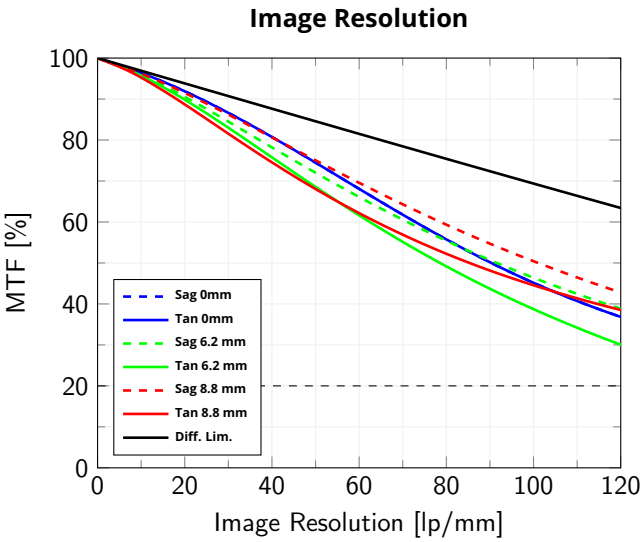
A wide selection of innovative machine vision components.

IMAGE RESOLUTION AT 1 M WORKING DISTANCE

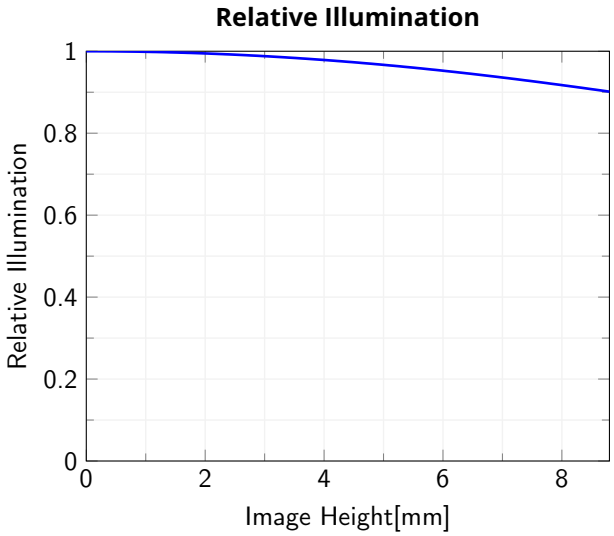


Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, at 1 m working distance

IMAGE RESOLUTION AT MINIMUM WORKING DISTANCE



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



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

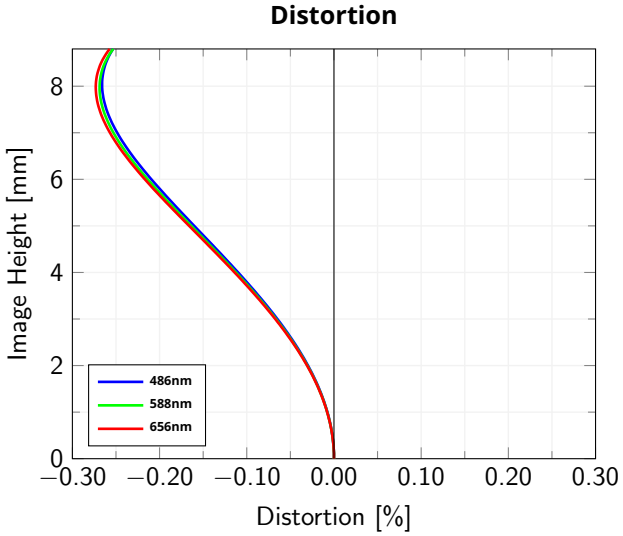
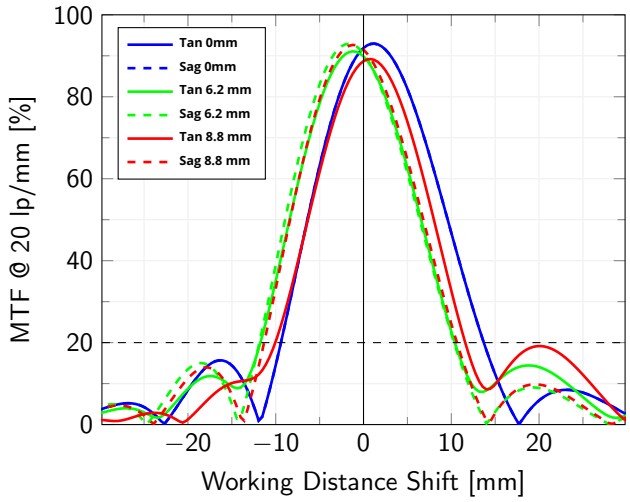


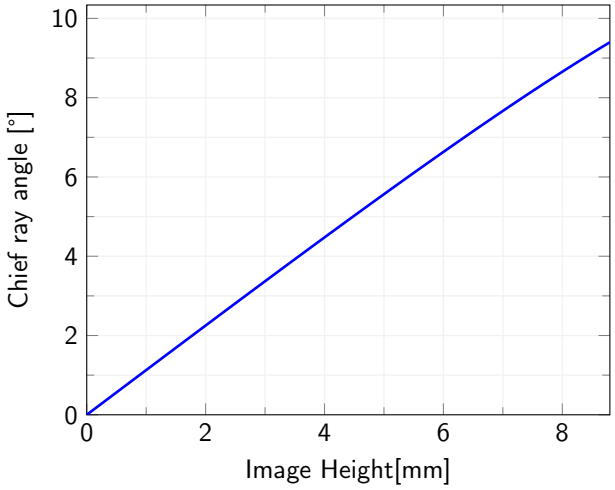
Image Field Height vs. Distortion, from the optical axis to the maximum image height

Depth of Field



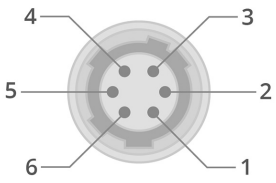
Modulation Transfer Function (MTF) @ 20 lp/mm vs. Working Distance Shift from the best focus at minimum working distance, wavelength range 486 nm - 656 nm

Chief ray angle



Chief ray angle vs. Image Field Height, from the optical axis to the maximum image height at maximum aperture

CONNECTOR PINOUT



Device side

Pin	Description
1	Control current +
2	Control current -
3	GND
4	Power
5	I^2C SCL
6	I^2C SDA

ATTENTION: observe precaution for handling.
Electrostatic sensitive device