TC16M018-K | DATASHEET

OPTO ENGINEERING

Telecentric lens for 35 mm Full Frame sensors, magnification 2.000x, M58x0.75 FD 12.96 mount



KEY ADVANTAGES

Wide image circle suitable for sensors up to 43.3mm.

Excellent resolution and low distortion.

Simple and robust design for industrial environments.

Detailed **test report** with **certified optical parameters**.

REACH DOSSIER

TC16M series telecentric lenses have been specifically designed to fit 45 mm format (36 x 24 mm) detectors with very high resolution, such as 11, 16 or 29 MP.

SPECIFICATIONS

Optical specifications		
Magnification		2.000
Image circle	(mm)	43.3
Max sensor size		35 mm Full Frame
Working distance[1]	(mm)	57.7
wf/N[2]		16
Telecentricity typical (max)[3]	(°)	< 0.03 (0.05)
Distortion typical (max)[4]	(%)	< 0.03 (0.05)
Field depth[5]	(mm)	0.3
Resolution (max)[6]	(µm)	5

Mechanical specifications		
Mount[7]		M58x0.75 FD 12.96
Phase adjustment[8]		No
Length[9]	(mm)	293.1
Front diameter	(mm)	37.7
Mass	(g)	986

FIELD OF VIEW

Sensors	(mm x mm)
APS-C IMX342 (22.36 x 16.77 mm x mm)	11.18 x 8.38
CHR70M (31.00 x 21.99 mm x mm)	15.50 x 11.00
Line 8k x 5 µm (40.80 mm)	20.40
Full frame - 35mm (36.00 x 24.00 mm x mm)	18.00 x 12.00
CMV50000 (36.43 x 27.62 mm x mm)	18.22 x 13.81

[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] Maximum angle between chief rays and optical axis on the object side. Typical (average production) values and maximum (guaranteed) values are listed.
[4] Percent deviation of the real image compared to an ideal, undistorted image. Typical (average production) values and maximum (guaranteed) values are listed.
[5] 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 5.5 µm.
[6] Object side, calculated with the Rayleigh criterion with λ= 520 nm
[7] FD stands for Flange distance (in mm), defined as the distance from the mounting flange to the camera detector plane.
[8] Indicates the availability of an integrated camera phase adjustment feature.
[9] Measured from the front end of the mechanics to the camera flange.

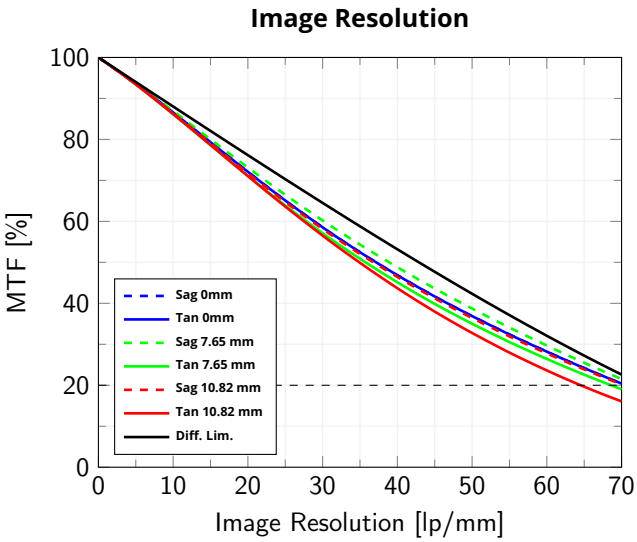
COMPATIBLE PRODUCTS

Full list of compatible products available *here*.

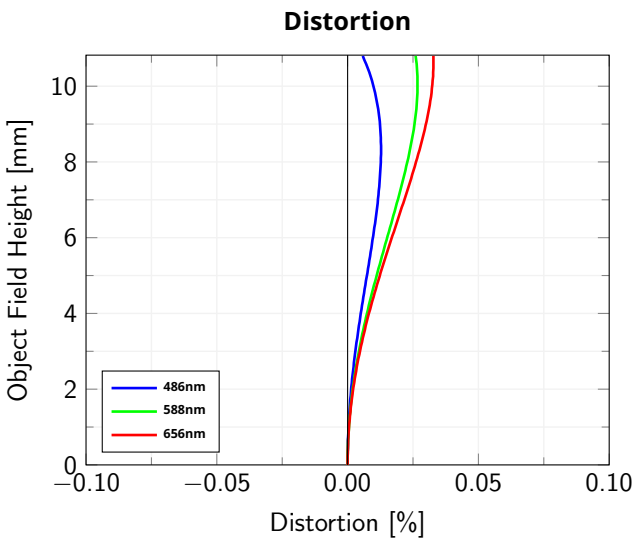


A wide selection of innovative machine vision components.

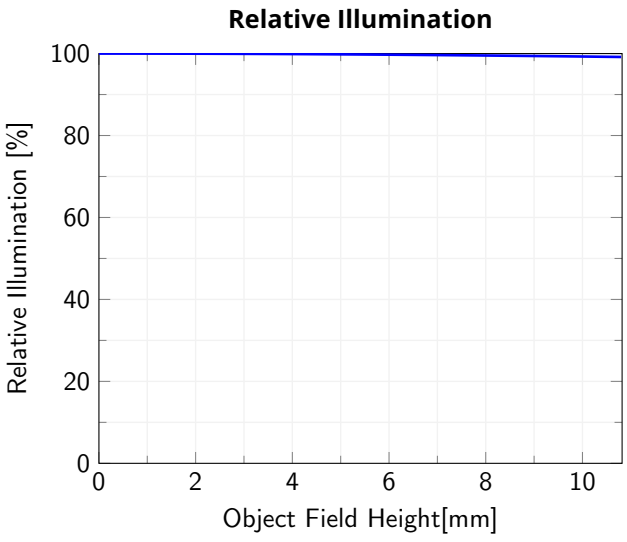
All product specifications and data are subject to change without notice to improve reliability, functionality, design or other. Photos and pictures are for illustration purposes only. Data are reported by design, actual lens performance may vary due to manufacturing tolerances.



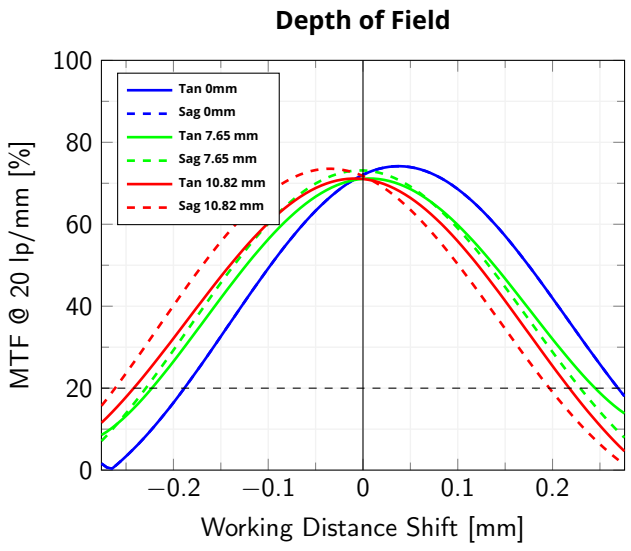
Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm



Object Field Height vs. Distortion, from the optical axis to the corner of the field of view



Relative illumination vs. Object Field Height, from the optical axis to the corner of the field of view



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

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