

TECHSPEC® PlatinumTL™ Telecentric Lenses are designed for semiconductor and electronics inspection, measurement, and gauging applications. These telecentric lenses feature the lowest f/# in the industry for high light throughput, less than 0.1° telecentricity, and less than 0.1% distortion. Our 28.7mm diagonal sensor format lenses are compatible with the Kodak 4MP 1.3" sensor and other larger format sensors (7μm pixel, 4k Line Scan Cameras).



Primary Magnification:	0.55X
Working Distance¹:	150mm
Depth of Field²:	±1.75mm at f/10 (20% @ 20 lp/mm)
Max. Sensor Format:	1"
Camera Mount:	C-Mount
Aperture (f/#):	f/6.0 - f/16.0
Distortion %:	<0.017%
Object Space NA:	0.046

1. From front housing 2. Image space MTF contrast

Telecentricity:	<0.03°
Type:	Telecentric Lens
Length:	182.5mm
Front Diameter:	62mm
Weight:	629g
RoHS:	Compliant
Number of Elements (Groups):	10 (7)
AR Coating:	425 - 675nm BBAR

At 150mm W.D.							
Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	1"
Field Of View ³	6.5mm	8.7mm	10.5mm	11.6mm	13.1mm	16.0mm	23.3mm

3. Horizontal FOV on Standard (4:3) sensor format.

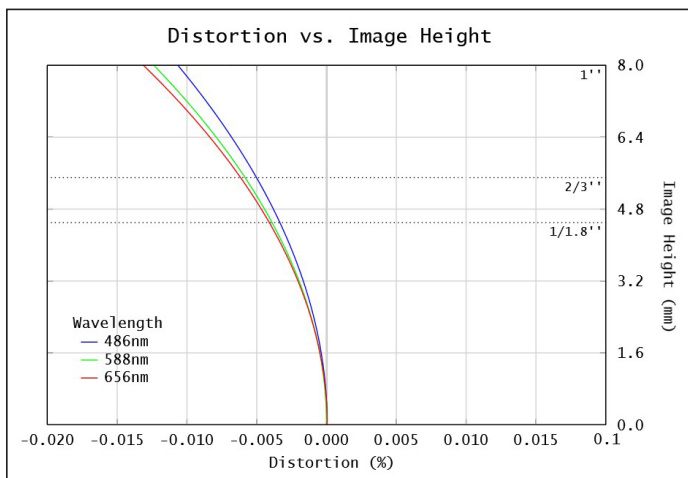


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

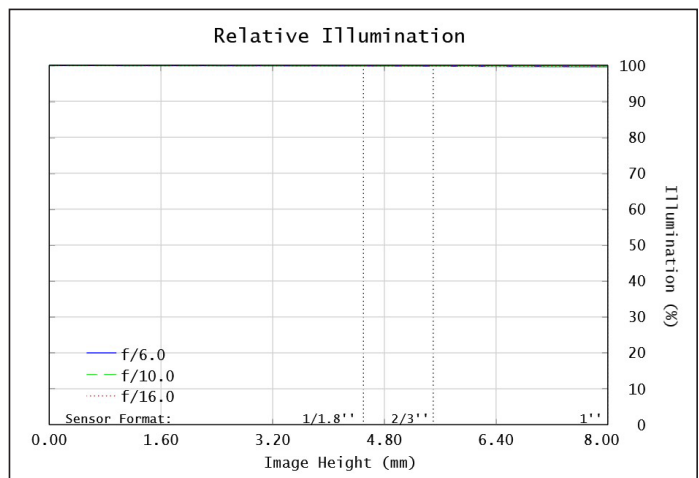


Figure 2: Relative illumination (center to corner)

In both plots, field points corresponding to the image circle of common sensor formats are included. Plots represent theoretical values from lens design software. Actual lens performance varies due to manufacturing tolerances.

MTF & DOF: f/6.0
WD: 150mm
HORIZONTAL FOV: 23.3mm

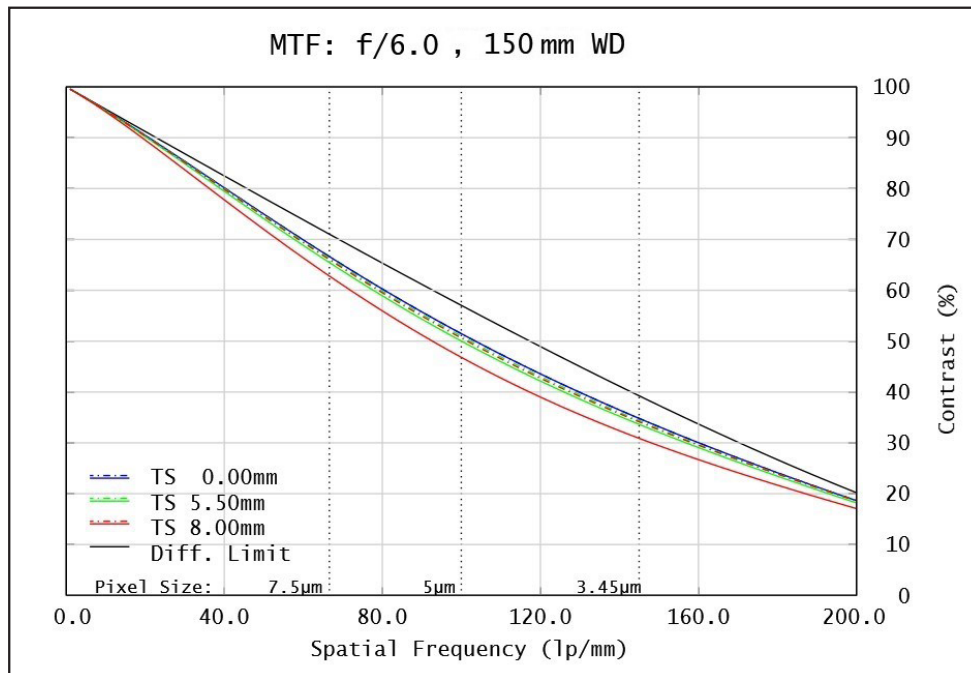


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequencies corresponding to the Nyquist resolution limit of pixel sizes are indicated.

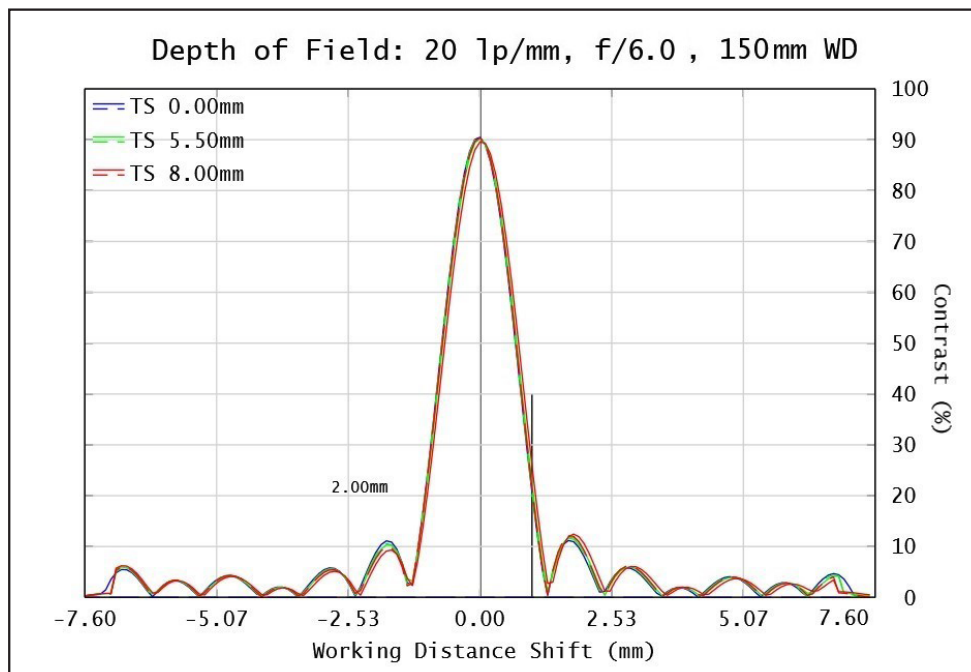


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

Plots represent theoretical values from lens design software. Actual lens performance varies due to manufacturing tolerances.

MTF & DOF: f/10.0
WD: 150mm
HORIZONTAL FOV: 23.3mm

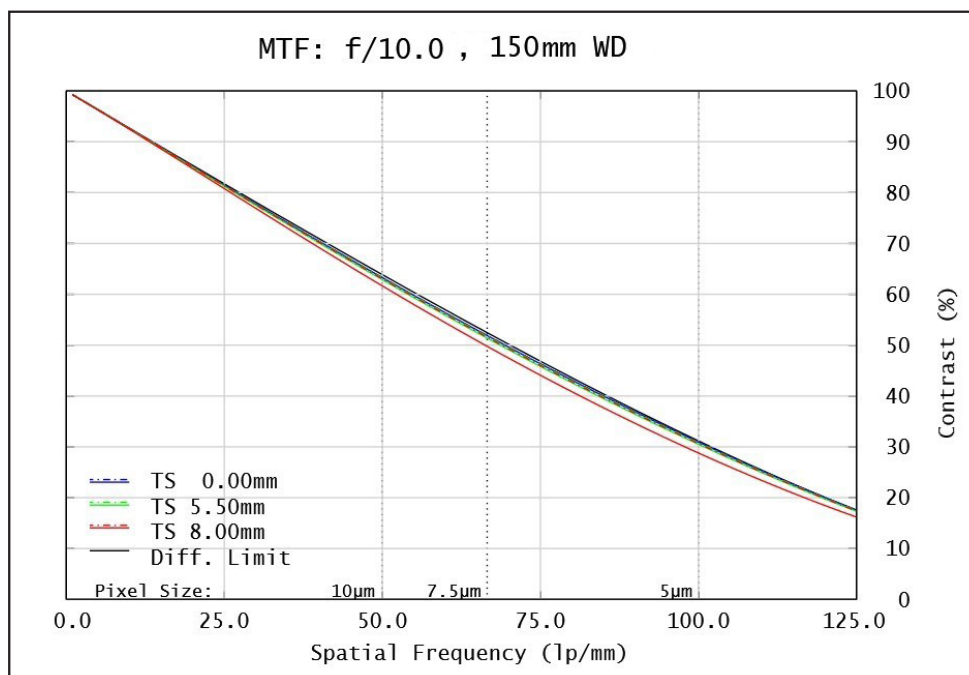


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequencies corresponding to the Nyquist resolution limit of pixel sizes are indicated.

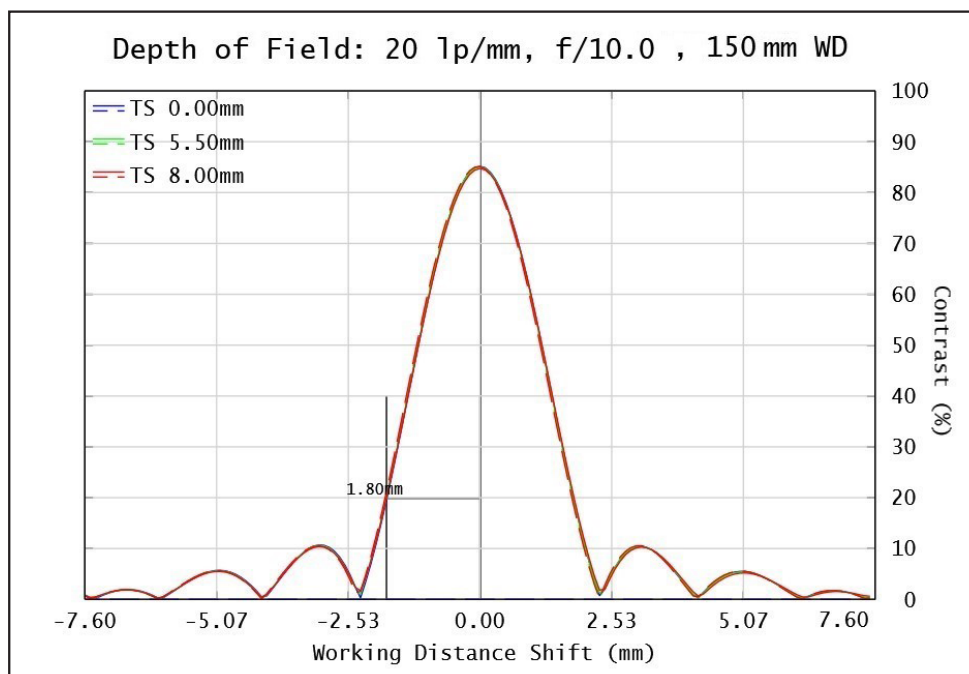


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

Plots represent theoretical values from lens design software. Actual lens performance varies due to manufacturing tolerances.