TECHSPEC® RUGGED BLUE SERIES
M12 IMAGING LENSES
#36-374 • 12.5mm • f/5.6

TECHSPEC® Rugged Blue Series M12 Lenses are Stability Ruggedized, protecting the lens from damage, while reducing pixel shift and maintaining optical pointing stability after shock and vibration. Each lens consists of several precision glass optics that are glued in place inside a compact, aluminum housing. Gluing the glass optics prevents even the smallest movements that often cause pixel shift.

Focal Length:	12.5mm
Working Distance[1]:	150mm - ∞
Max. Sensor Format:	1/2"
Camera Mount:	M12 x 0.5 (S-Mount)
Aperture (f/#):	f/5.6
Distortion %[2]:	<0.37%
Object Space NA[2]:	0.006763

Magnification Range:	0 - 0.082X
Type:	Micro-Video Lens
Length:	22.9mm
Weight:	6g
RoHS:	Compliant
Stability Ruggedized:	<1 µm pixel shift at 50 G
Number of Elements (Groups):	5 (5)
AR Coating:	400-700nm MgF_2

1. From front housing 2. At Minimum W.D.

At Minimum W.D. (150mm)									
Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	1"	28.7mm	4/3"
Field Of View[3]	43.8mm - 16.4°	58.4mm - 21.8°	70.6mm - 26.2°	78.0mm - 28.8°	N/A	N/A	N/A	N/A	N/A

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

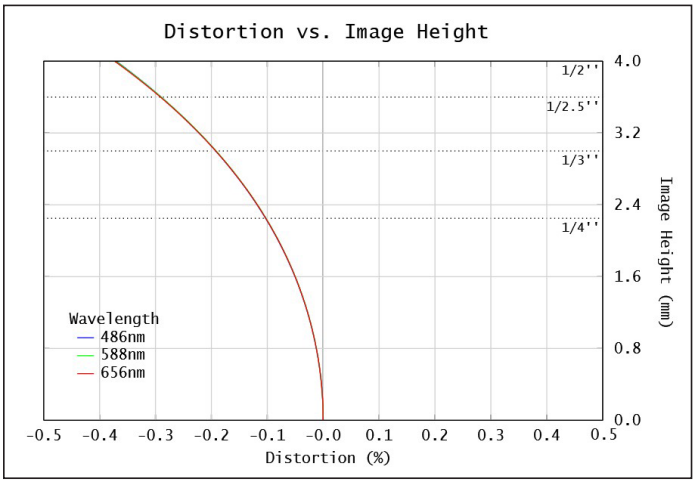

Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

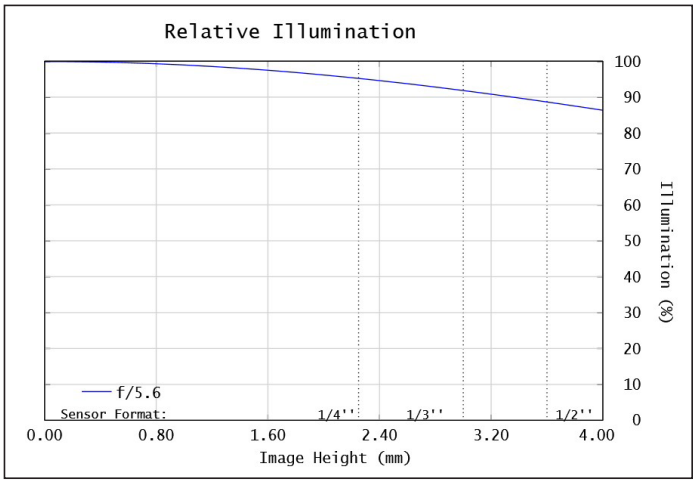

Figure 2: Relative illumination (center to corner)

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.

Edmund optics | worldwide
www.edmundoptics.com | +1-856-547-3488
101 East Gloucester Pike, Barrington, NJ 08007

MTF & DOF: f/5.6
WD: 150mm (Minimum W.D.)
HORIZONTAL FOV: 78mm

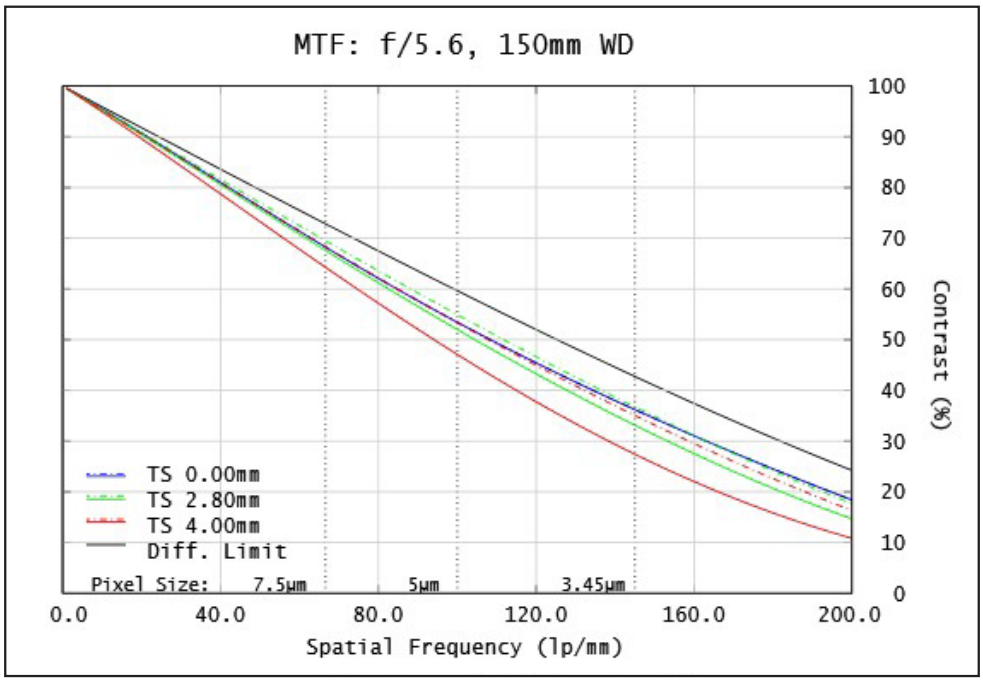

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

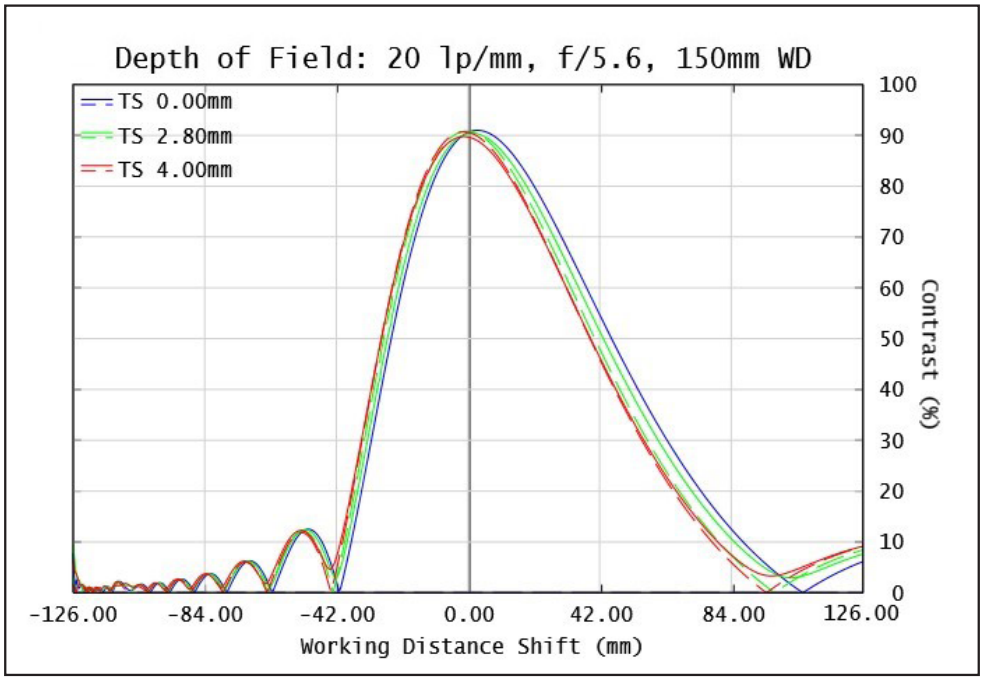

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

MTF & DOF: f/5.6
WD: 193mm
HORIZONTAL FOV: 100mm

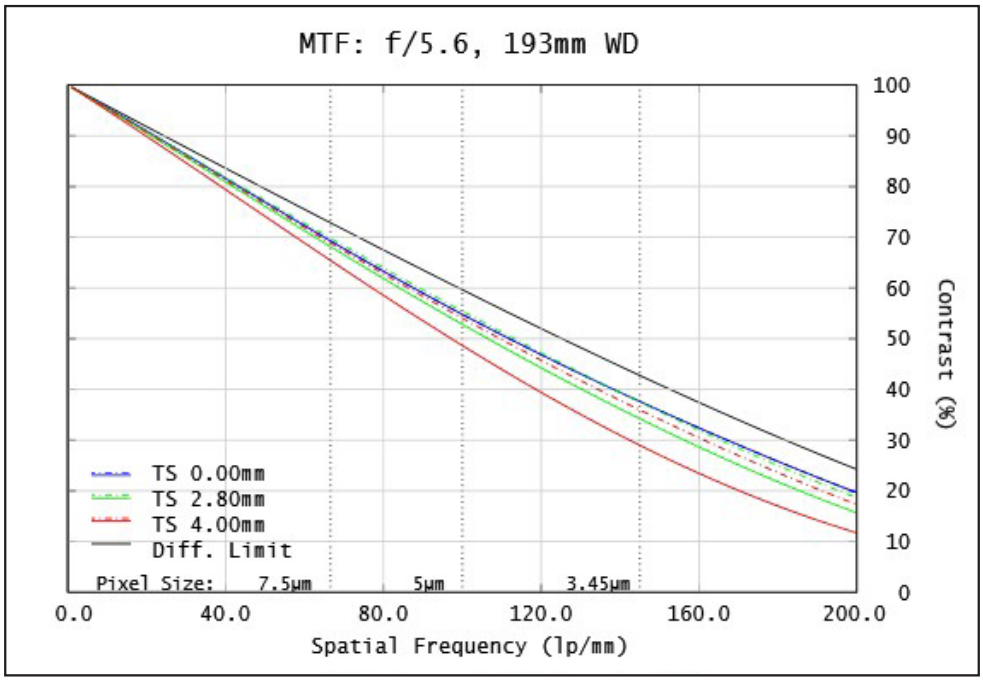

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

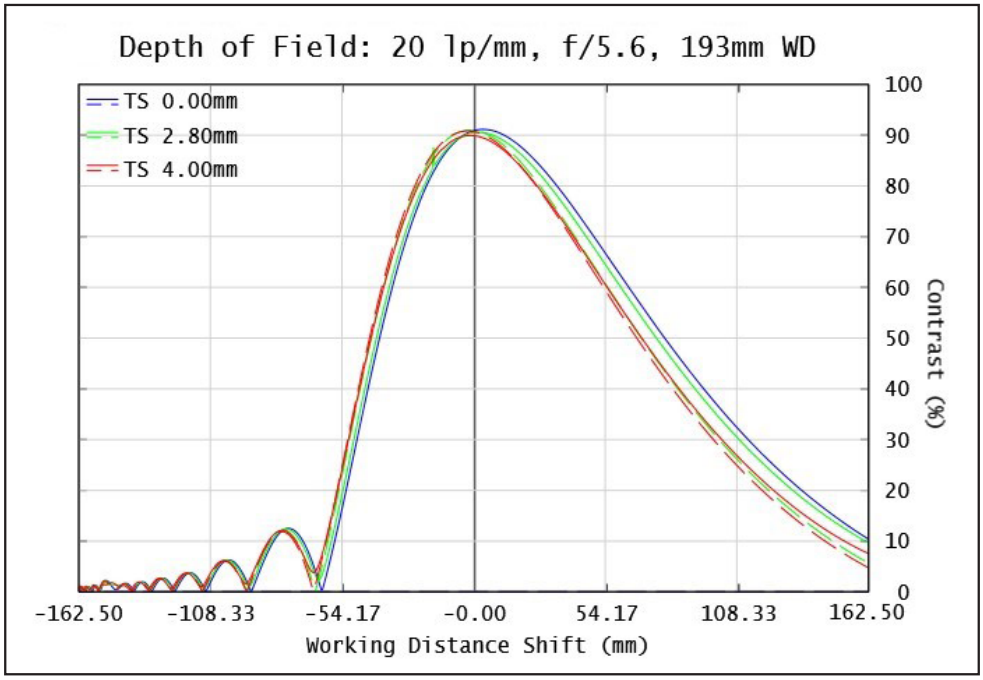

Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

MTF & DOF: f/5.6
WD: 250mm
HORIZONTAL FOV: 129mm

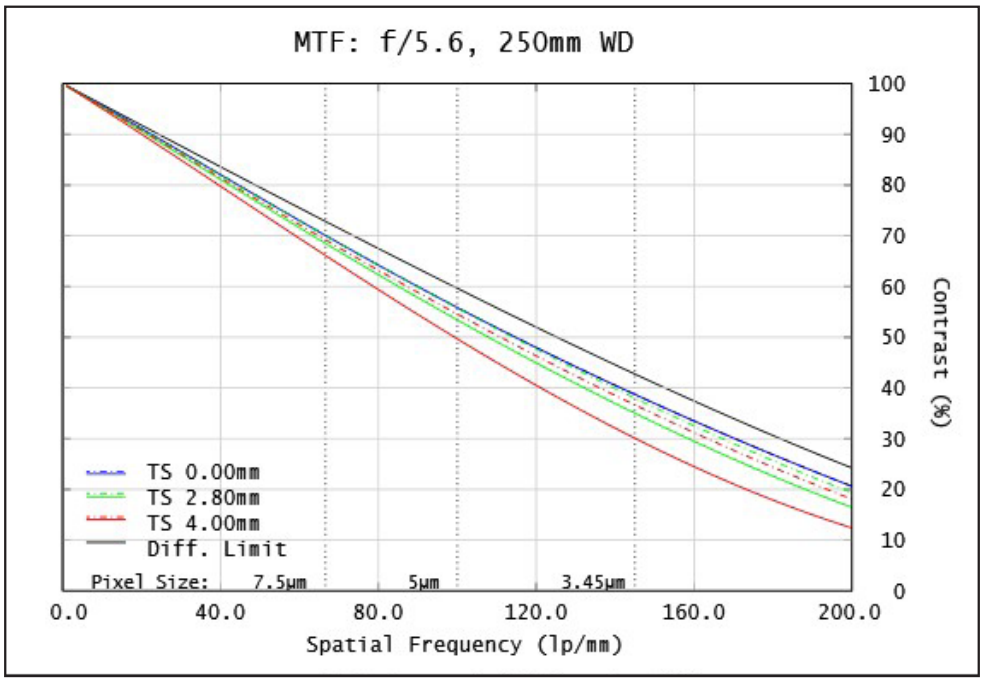

Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequencies corresponding to the Nyquist resolution limit of pixel sizes are indicated.

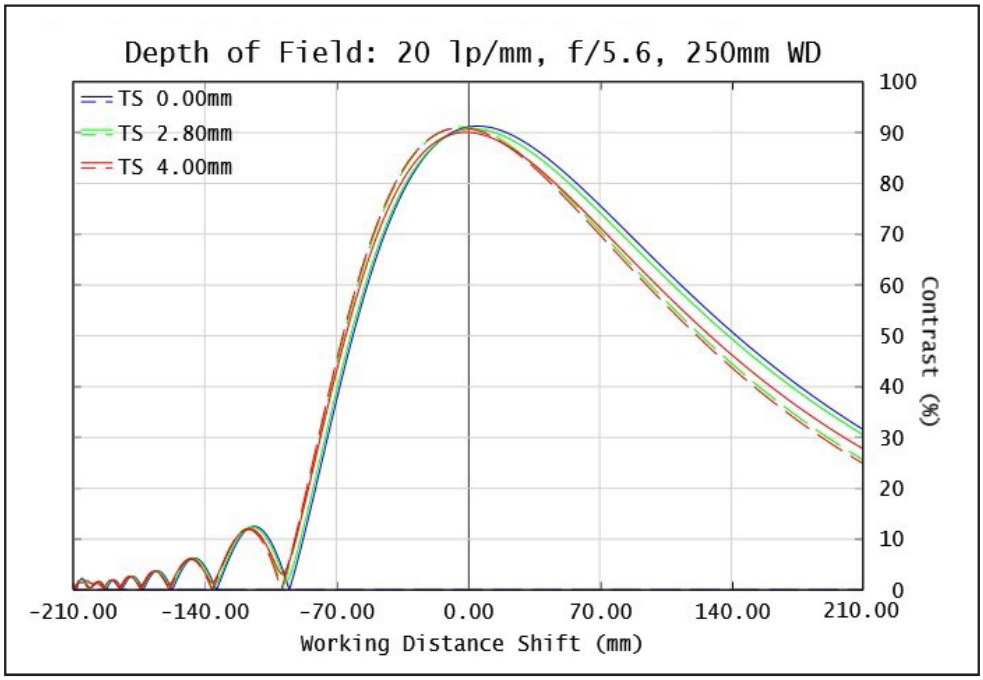

Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

MTF & DOF: f/5.6
WD: 387mm
HORIZONTAL FOV: 200mm

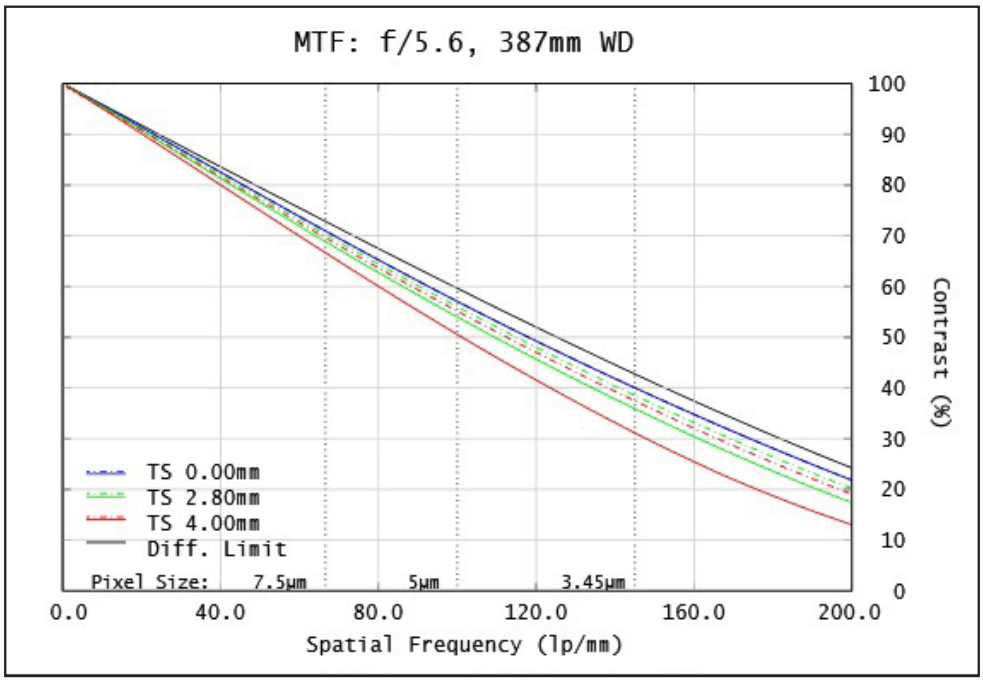

Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequencies corresponding to the Nyquist resolution limit of pixel sizes are indicated.

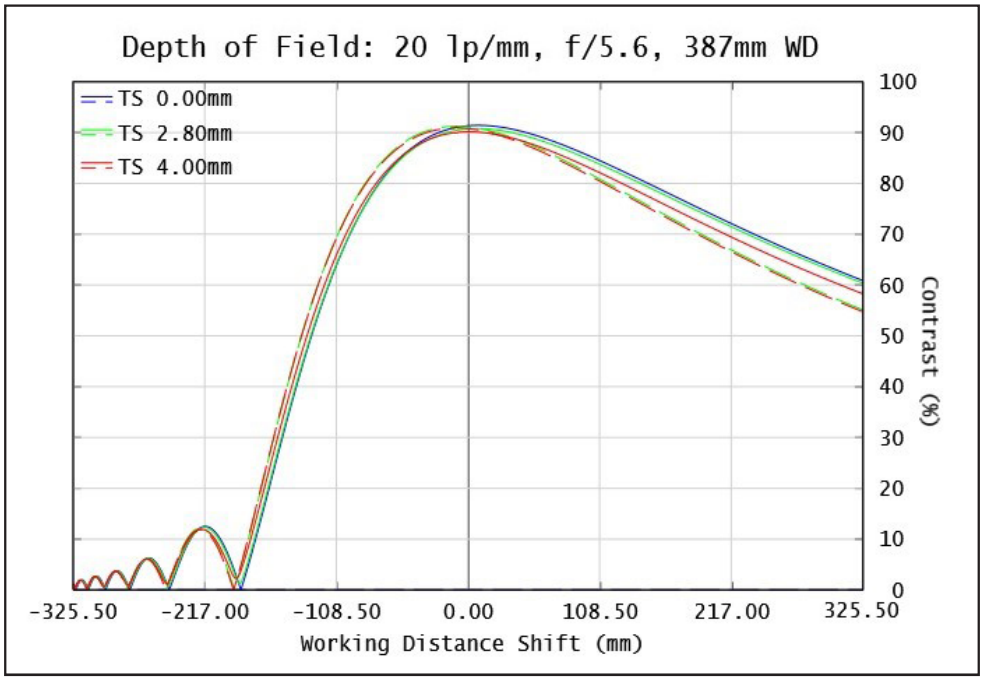

Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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