TECHSPEC® LARGE FORMAT FIXED FOCAL LENGTH LENS

#85-204 • 100mm FL • f/2.8

Our TECHSPEC® Large Format Fixed Focal Length Lenses are ideal for use in web inspection, sorting, or identification applications. Optimized for machine vision working distances, TECHSPEC® Large Format Fixed Focal Length Lenses feature high resolving powers to easily detect small defects. Additionally, these lenses also feature a lockable focus and iris, which is ideal for factory automation applications where vibrations can cause performance decreases.

Focal Length:	100mm
Minimum Working Distance[1]:	500mm
Focus Range[1]:	500mm - ∞
Max Length:	104mm
Max Rear Protrusion:	0mm
Filter Thread:	M46 x 0.75
Max Sensor Format:	35mm Full Frame
Camera Mount:	F-mount

Aperture (f/#):	f/2.8 - f/22, lockable
Magnification Range:	0X - 0.22X
Distortion[2]:	<% 0.5
Object Space NA[2]:	0.032
No. of Elements (Groups):	8 (5)
AR Coating:	1/4λ. MgF_2 @ 550nm
Weight:	564g

Sensor Size	⅔"	Sony ⅔"	1"	1" sq**	⅓"	28.7mm***	35mm*	43.0mm***
Field of View[3]	40.0mm - 5.0°	38.4mm - 4.8°	58.3mm - 7.3°	51.2mm - 6.4°	82.4mm - 10.3°	130.8mm - 16.3°	164.2mm - 20.4°	196.3mm - 24.3°

1. From front of housing 2. At Min Working Distance 3. Horizontal FOV on standard 4:3 sensor format *Full frame 43.3mm diag **1:1 Aspect ratio 16mm diag *** Linear array
Specifications subject to change

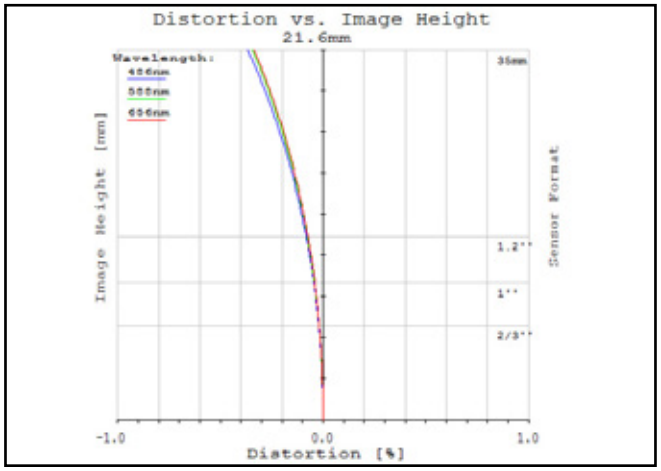

Figure 1: Distortion at the maximum sensor format. Postive values correspond to pincushion distortion, negative values correspond to barrel distortion.

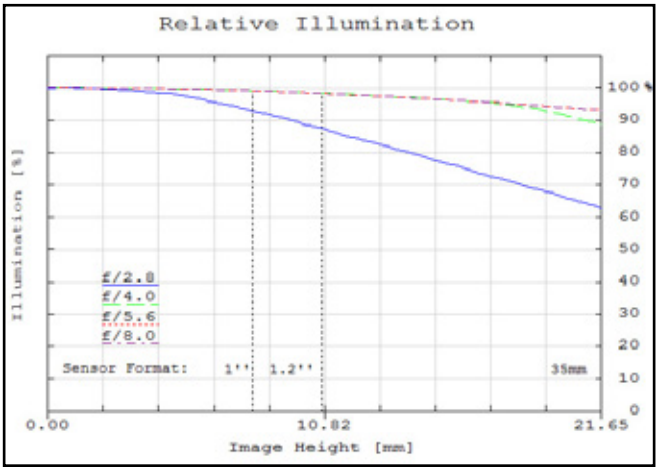

Figure 2: Relative illumination (center to corner)

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.

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MTF & DOF: f/2.8
WD: 1000mm

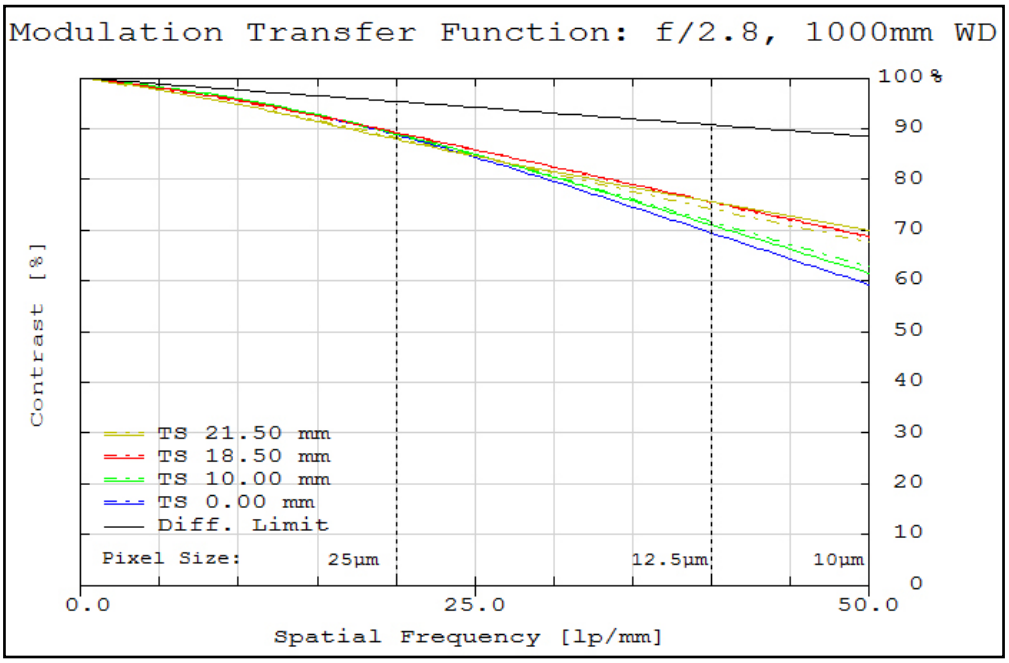

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

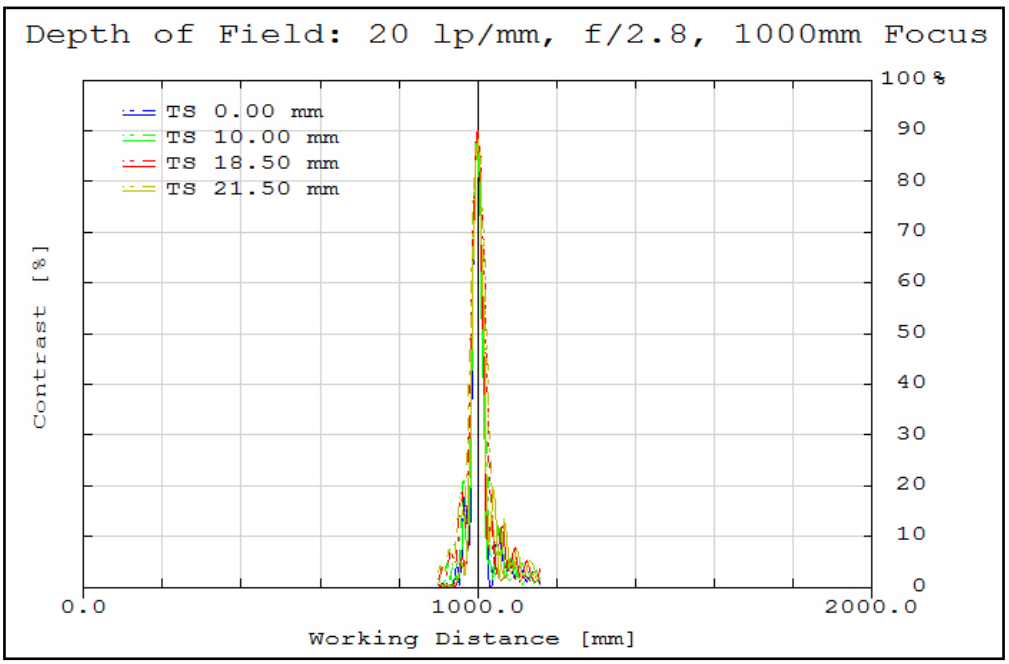

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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MTF & DOF: f/4.0
WD: 1000mm

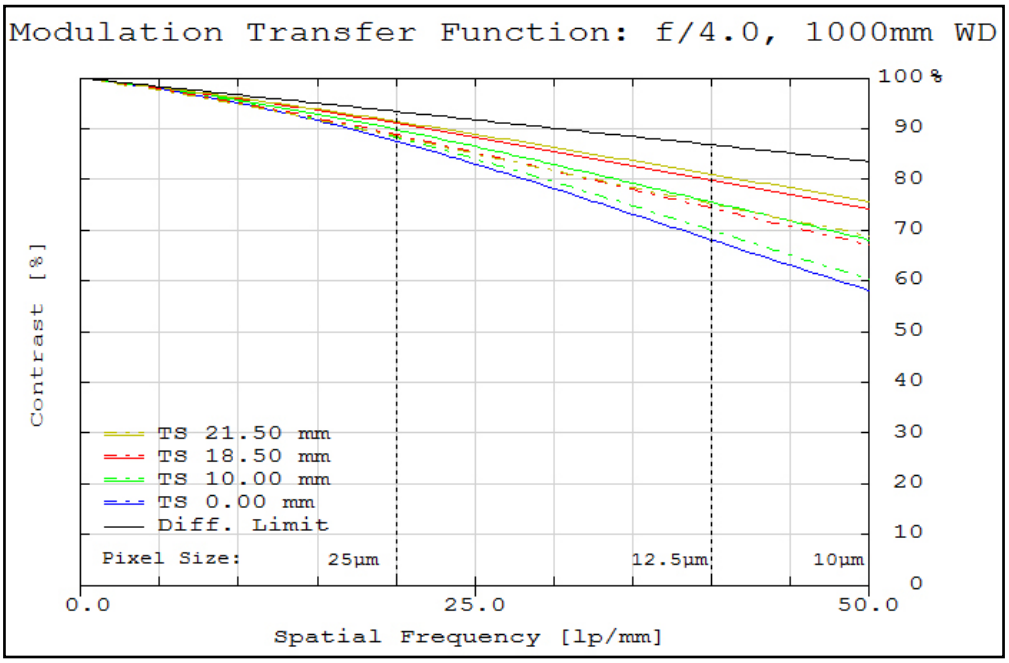

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

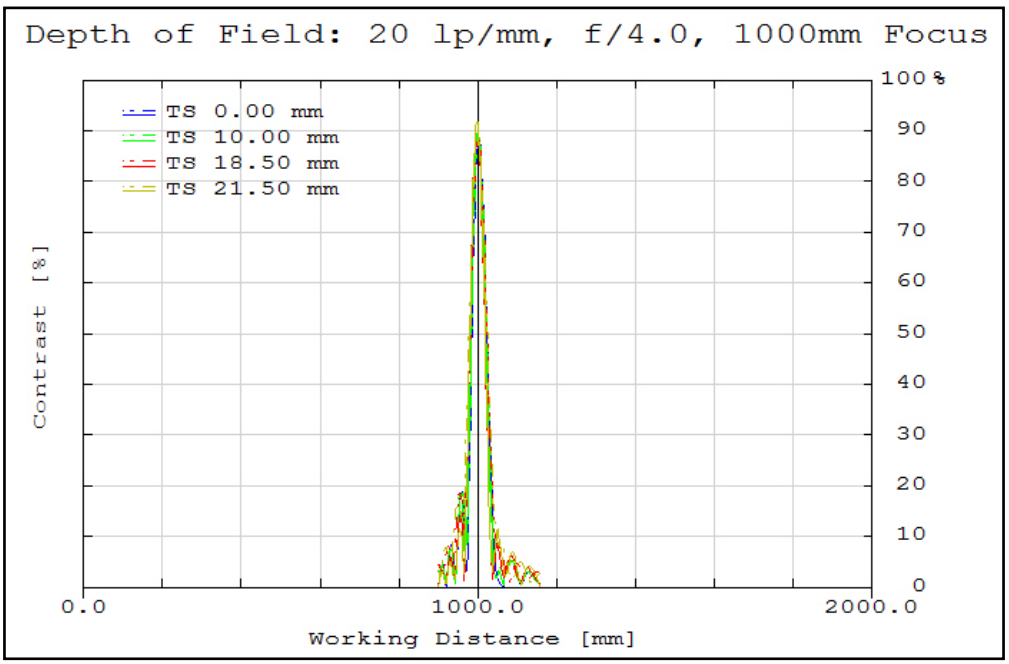

Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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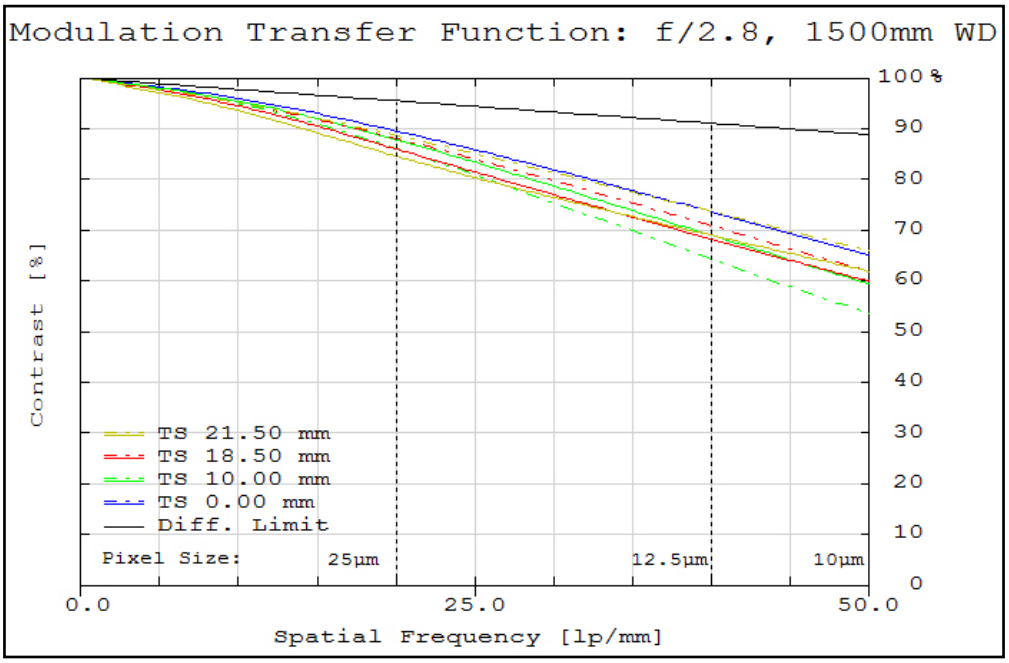
MTF & DOF: f/2.8
WD: 1500mm



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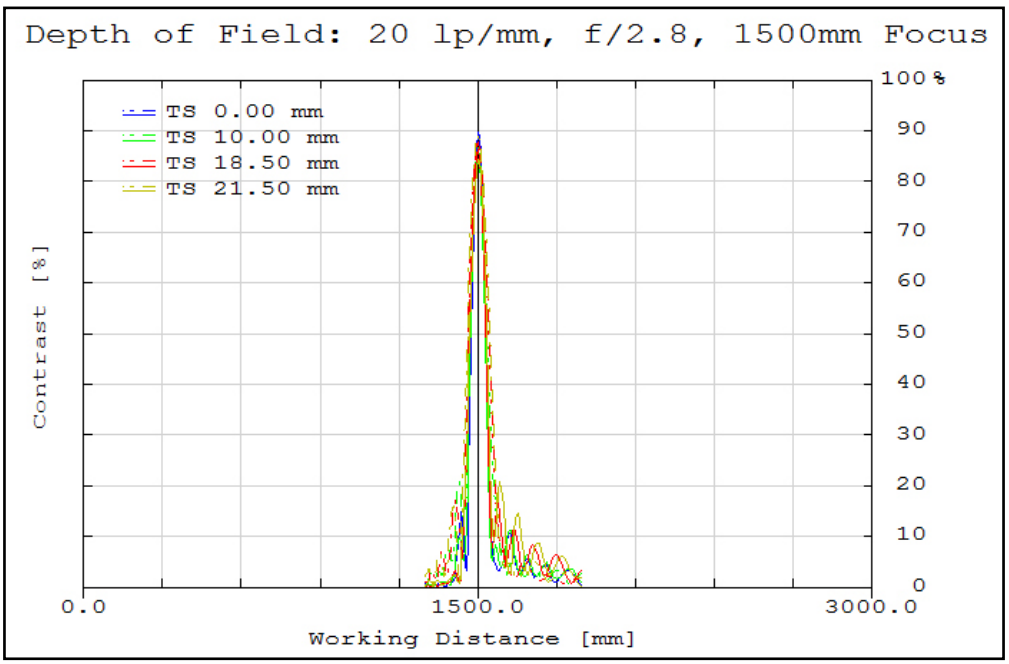

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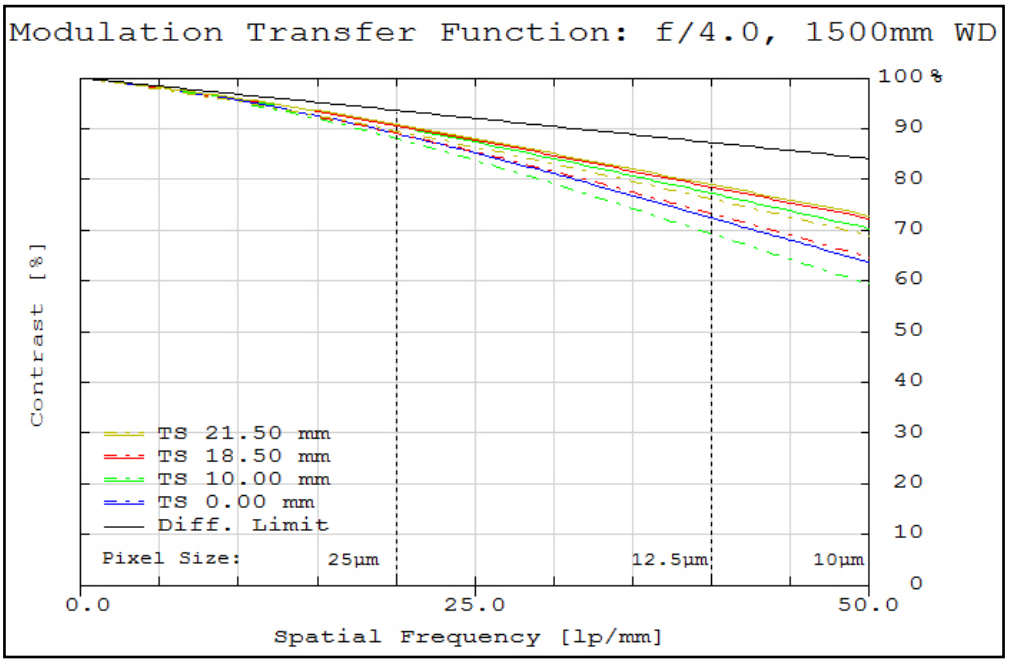
MTF & DOF: f14.0
WD: 1500mm



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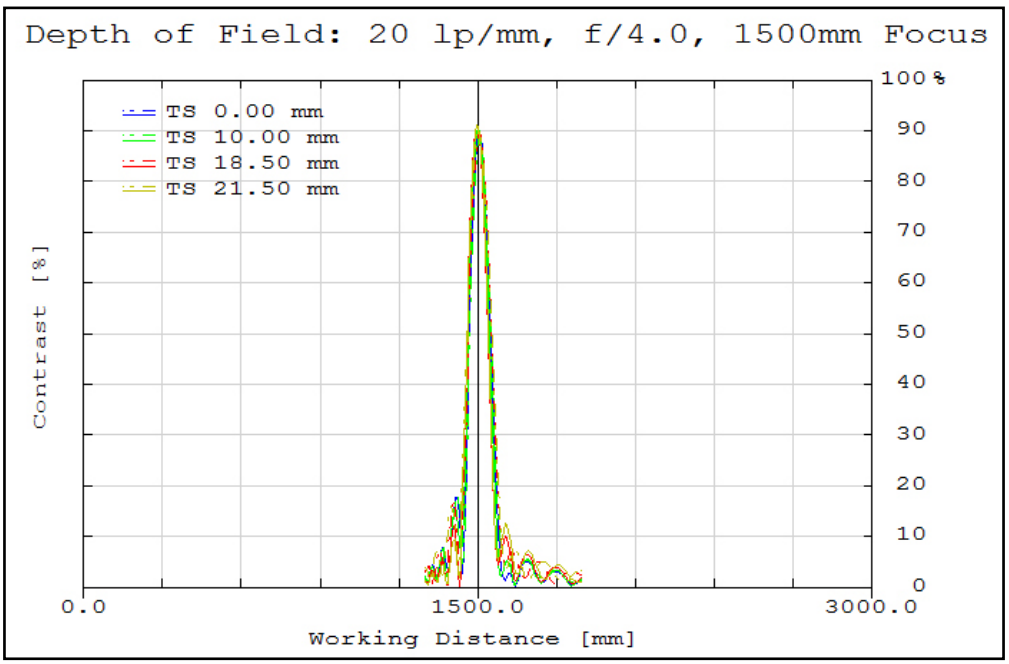

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