TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #68-215 • 8.5mm FL • f/1.4

PRIMARY WD: 200MM – ∞

Our TECHSPEC® High Resolution 5 Megapixel Fixed Focal Length Lenses are available in multiple focal lengths and feature multiple versions to optimize for different working distance ranges. Perfect for use on high-end 5 megapixel sensors that require 145 lp/mm resolution, these lenses offer an attractive price-to-performance ratio. All lenses feature locking focus and iris rings and a front filter thread to allow the use of standard optical filters, for increased versatility.

Focal Length:	8.5mm
Minimum Working Distance[1]:	75mm
Focus Range[1]:	75mm - ∞
Primary Working Distance Range:	200mm - ∞
Length at Near Focus:	44.6mm
Length at Far Focus:	44.3mm
Filter Thread:	M40.5 x 0.5
Maximum Rear Protrusion:	0.74mm
Camera Mount:	C-Mount

Maximum Sensor Format:	⅔"
Aperture (f/#) (lockable):	f/1.4 - f/16
Magnification Range:	0X - 0.037X
Distortion[2]:	<-6.5%
Object Space NA[2]:	0.0074
Number of Elements (Groups):	9 (8)
AR Coating:	425 - 675nm BBAR
Weight:	120g

Sensor Size	¼"	⅓"	½.5"	½"	⅓.8"	⅔"	Sony ⅔"	1"
Field of View[3, 4]	39.7mm - 24.1°	53.3mm - 32.0°	63.7mm - 37.8°	72.0mm - 42.2°	81.6mm - 47.2°	101.5mm - 56.8°	97.0mm - 54.7°	N/A
Field of View[3, 5]	93.1mm - 24.1°	125.0mm - 32.0°	149.3mm - 37.8°	168.5mm - 42.2°	190.8mm - 47.2°	236.7mm - 56.8°	226.4mm - 54.7°	N/A

1. From front of housing 2. At 200mm W.D. 3. Horizontal FOV on standard 4:3 sensor format
4. For focusing range: Min. W.D. - infinite conjugate angular FOV 5. For primary range

Specifications subject to change

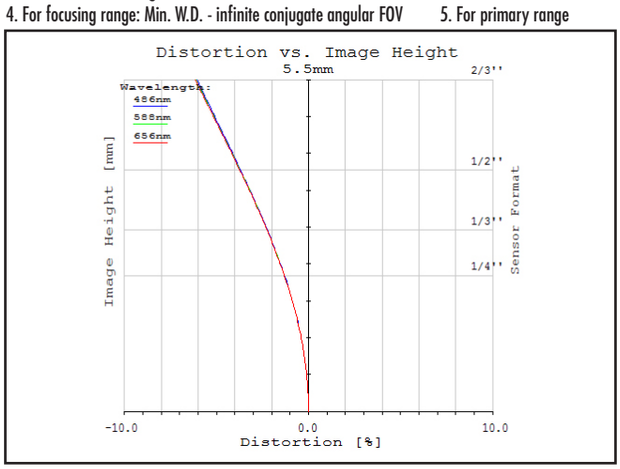

Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

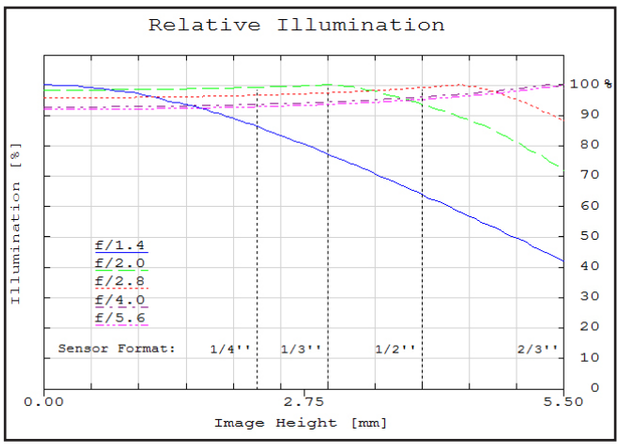

Figure 2: Relative illumination (center to corner)

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.

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MTF & DOF: f/2.8
WD: 200mm

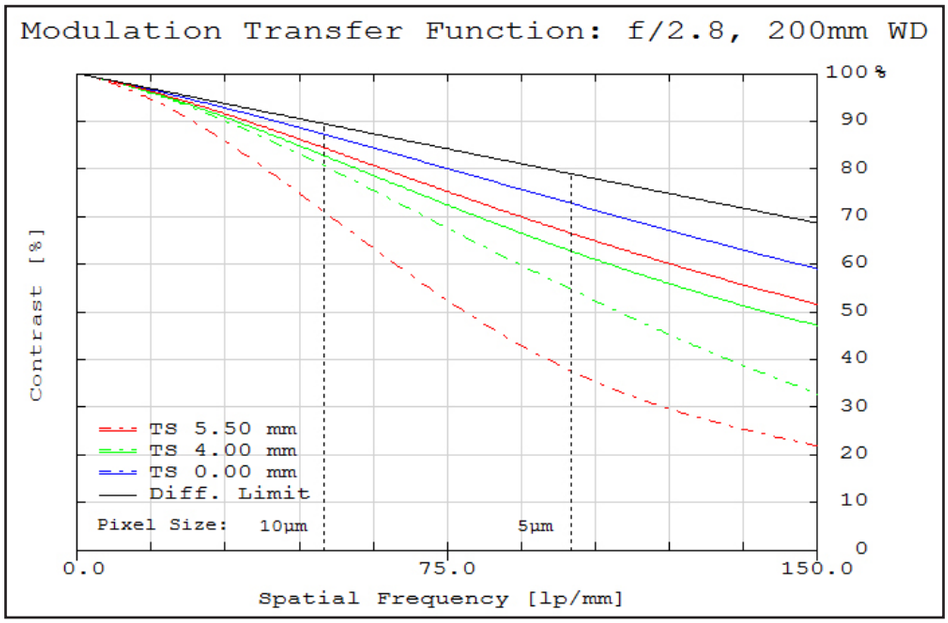

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

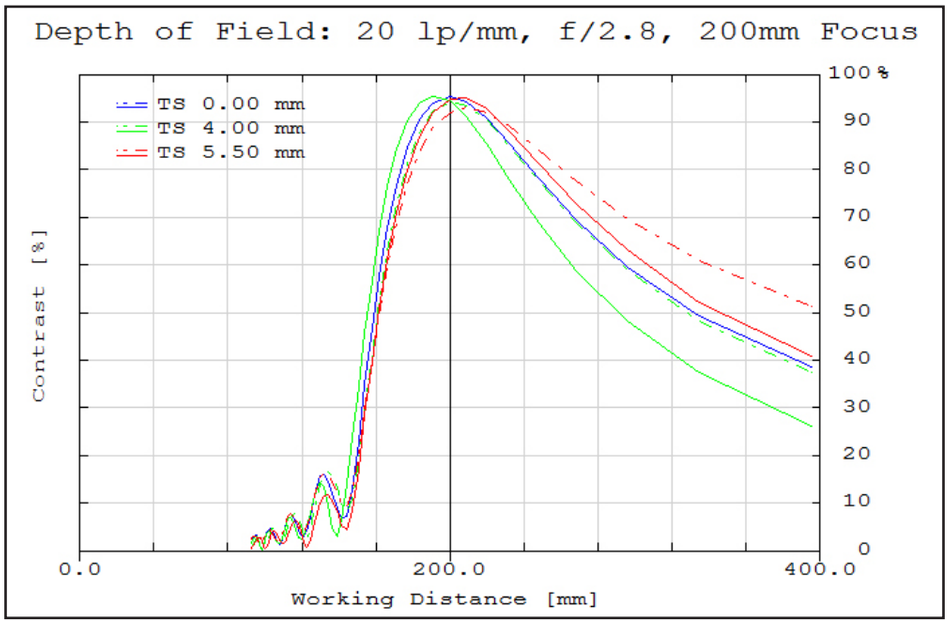

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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WD: 200mm

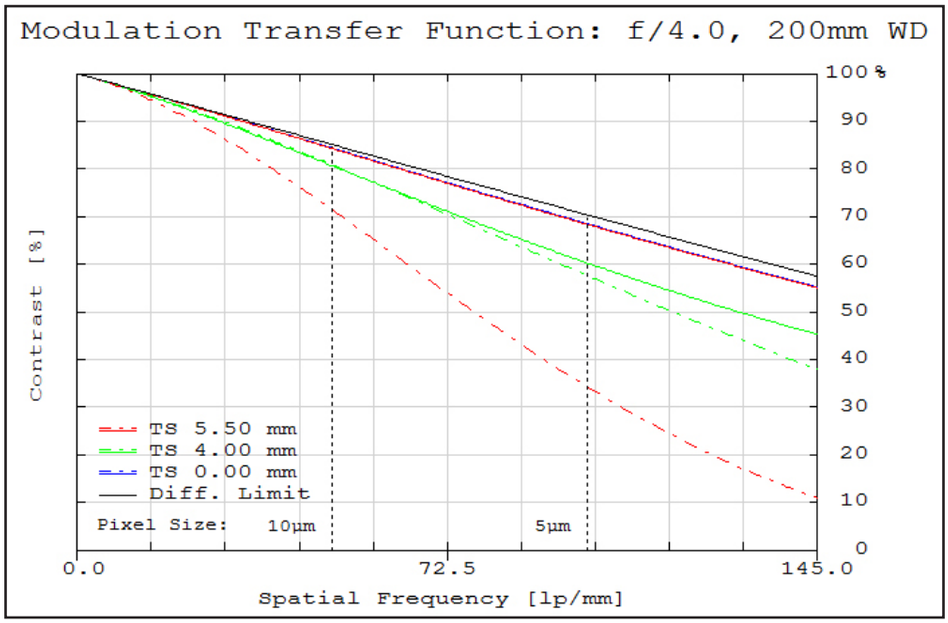

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

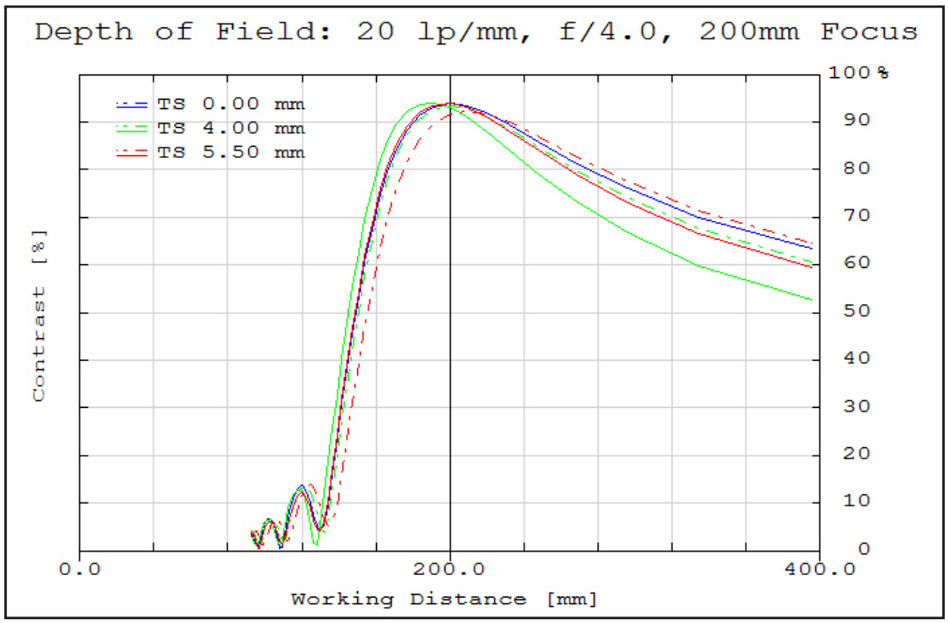

Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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MTF & DOF: f/2.8
WD: 500mm

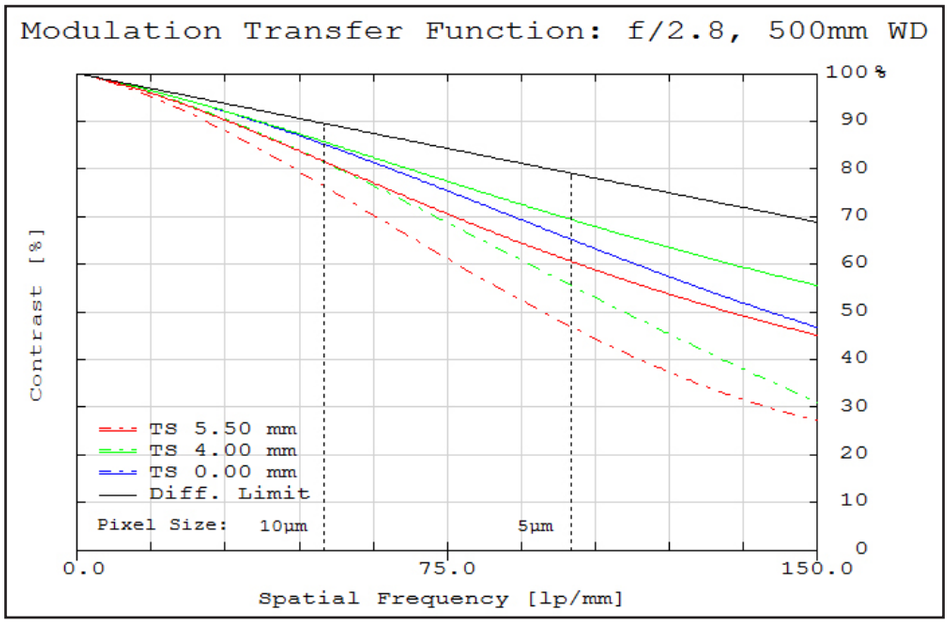

Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

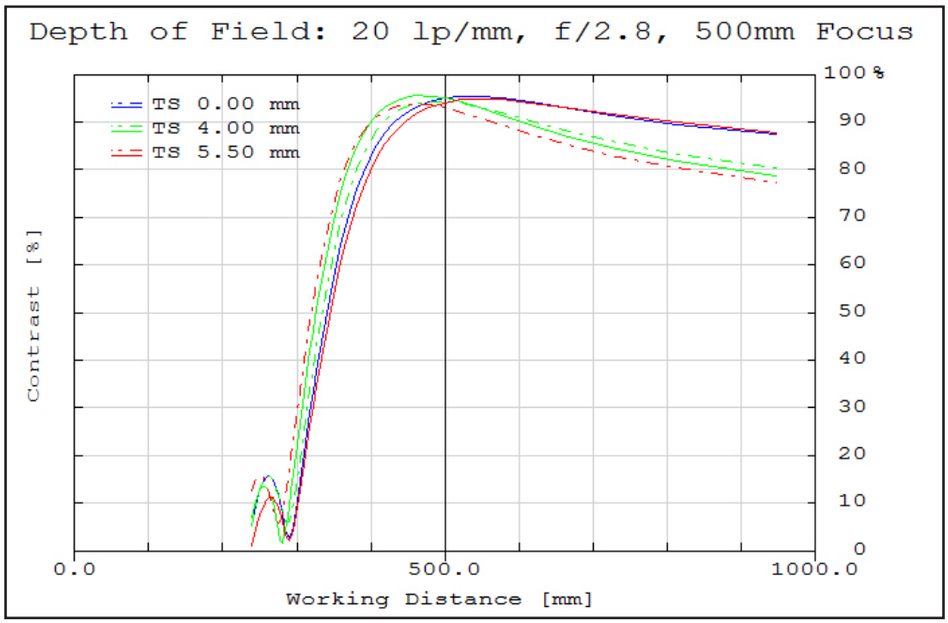

Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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MTF & DOF: f/4.0
WD: 500mm

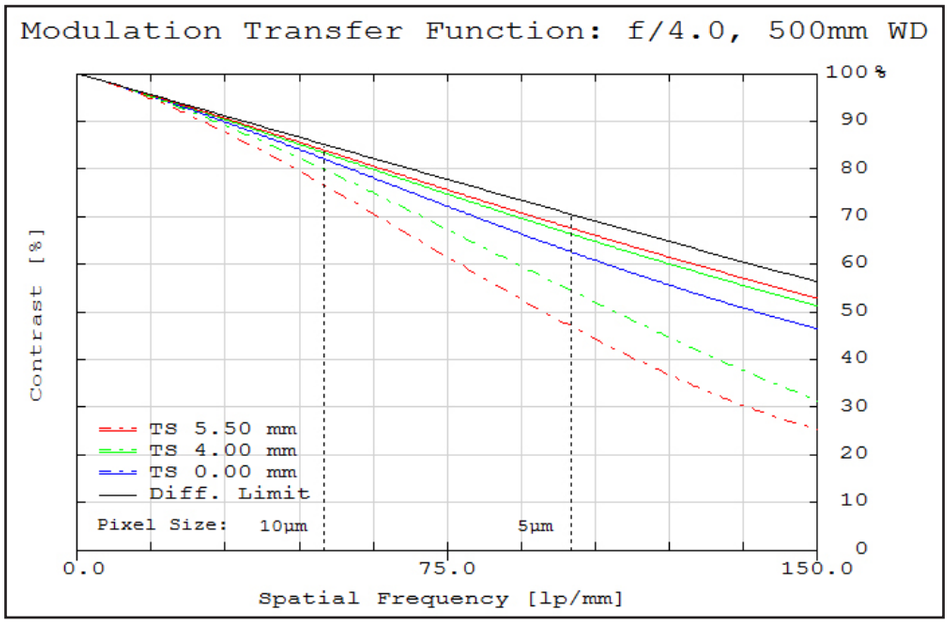

Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

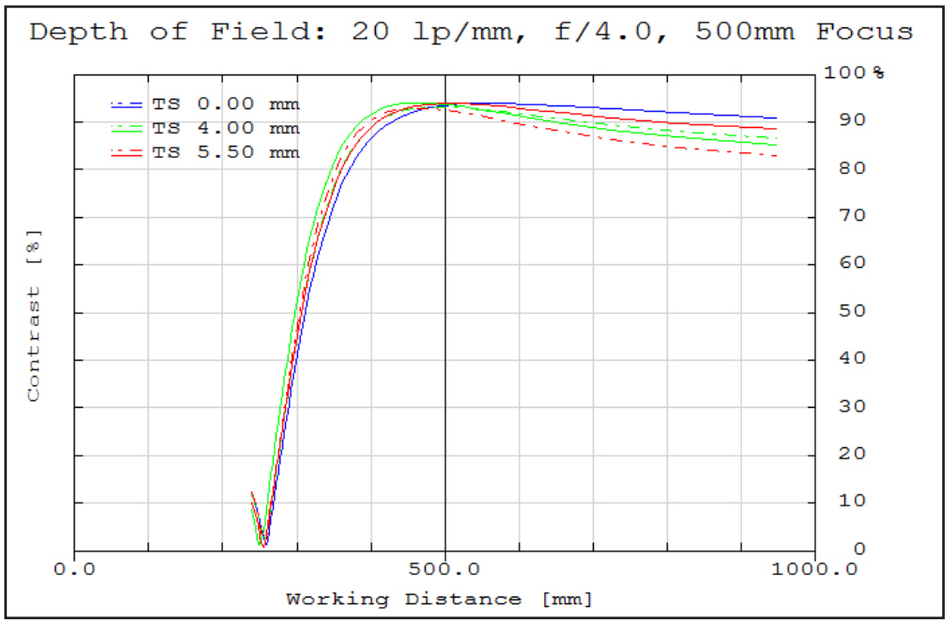

Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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