

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-777 • 12mm FL • f/1.8

PRIMARY WD: 150 – 500mm



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:	12mm
Minimum Working Distance¹:	150mm
Focus Range¹:	150mm - ∞
Primary Working Distance Range:	150 - 500mm
Length at Near Focus:	42.8mm
Length at Far Focus:	40.2mm
Filter Thread:	M30.5 x 0.5
Maximum Rear Protrusion:	0.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.07X
Distortion²:	<15.0%
Object Space NA²:	0.015
Number of Elements (Groups):	10 (6)
AR Coating:	425 - 675nm BBAR
Weight:	103g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	52.0mm - 17.1°	69.6mm - 22.7°	82.9mm - 27.0°	93.3mm - 30.2°	105.4mm - 33.9°	129.8mm - 41.1°	124.3mm - 39.5°	N/A
Field of View^{3,5}	52.0 - 157.6mm	69.6 - 210.7mm	82.9 - 251.0mm	93.3 - 282.5mm	105.4 - 318.8mm	129.8 - 392.4mm	124.3 - 376.0mm	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

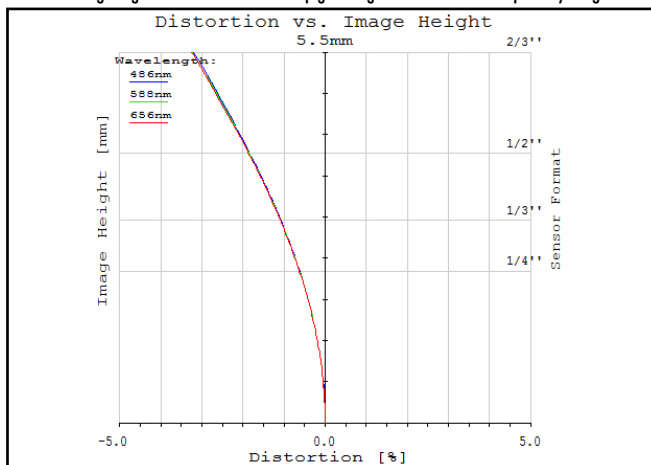


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

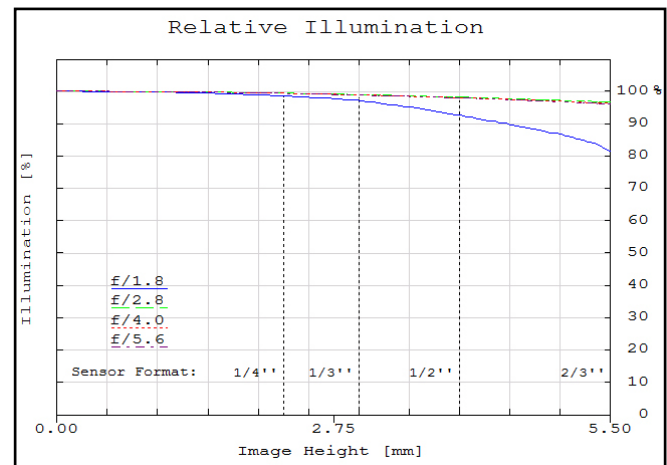


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-777 • 12mm FL • f/1.8**

PRIMARY WD: 150 – 500mm

**MTF & DOF: f/2.8
WD: 200mm**

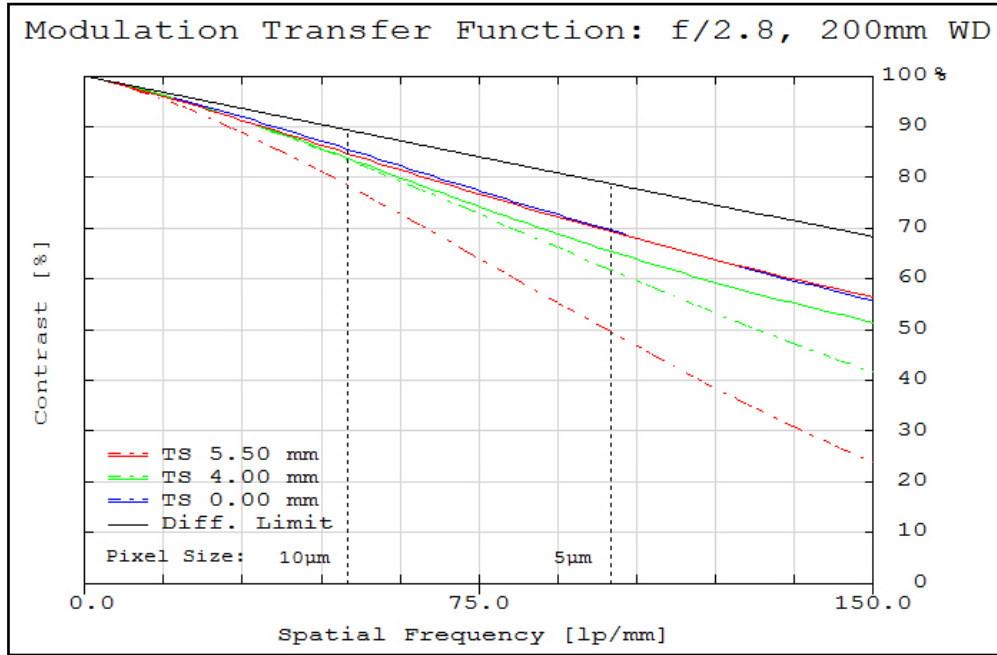


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

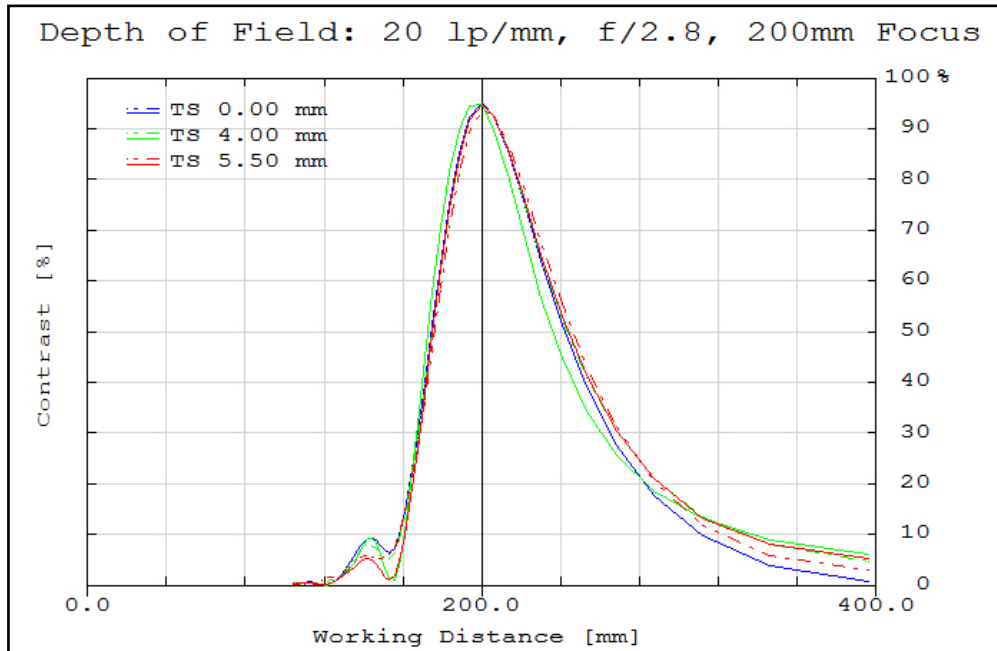


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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#63-777 • 12mm FL • f/1.8**

PRIMARY WD: 150 – 500mm

**MTF & DOF: f/4.0
WD: 200mm**

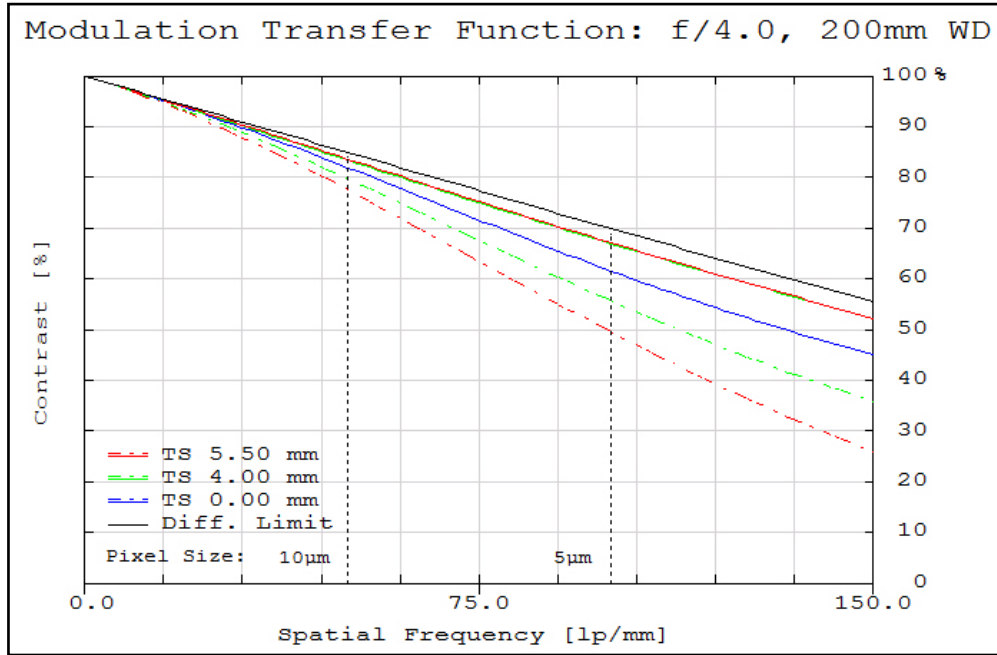


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

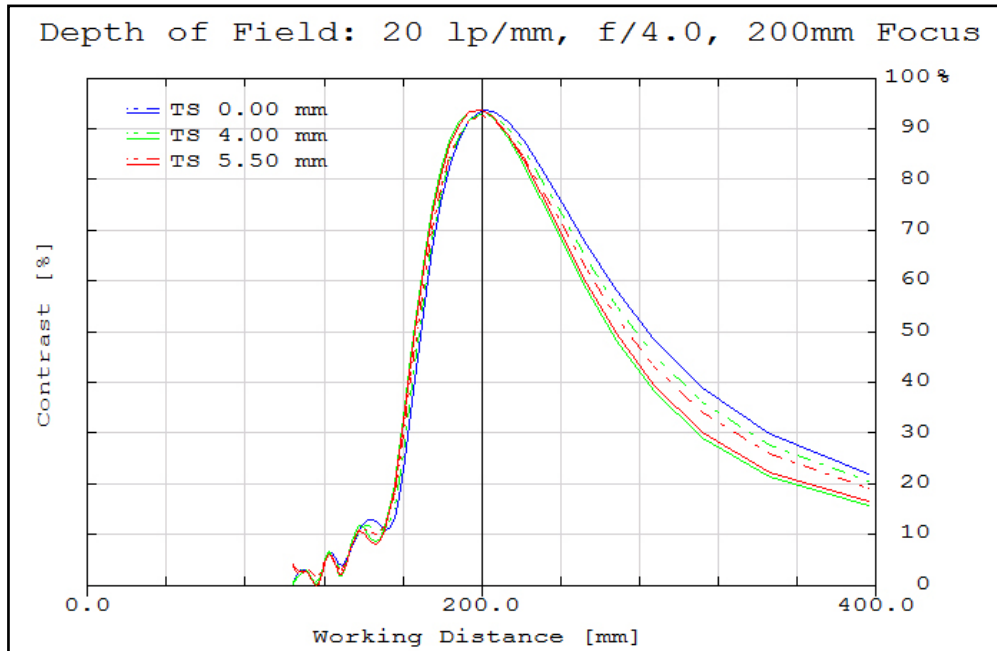


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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#63-777 • 12mm FL • f/1.8**

PRIMARY WD: 150 – 500mm

**MTF & DOF: f/2.8
WD: 500mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

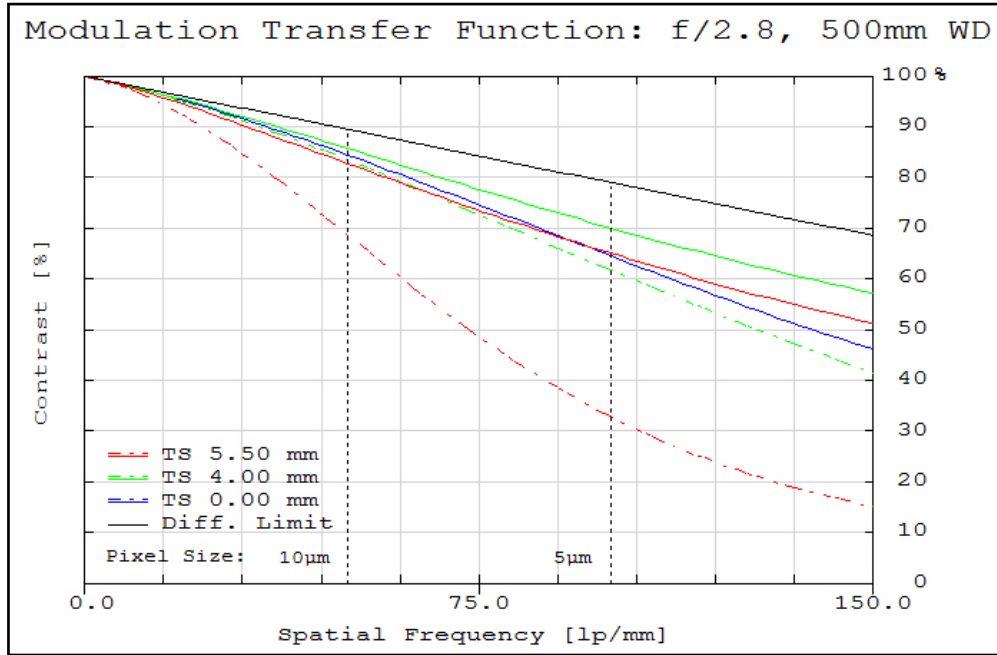


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

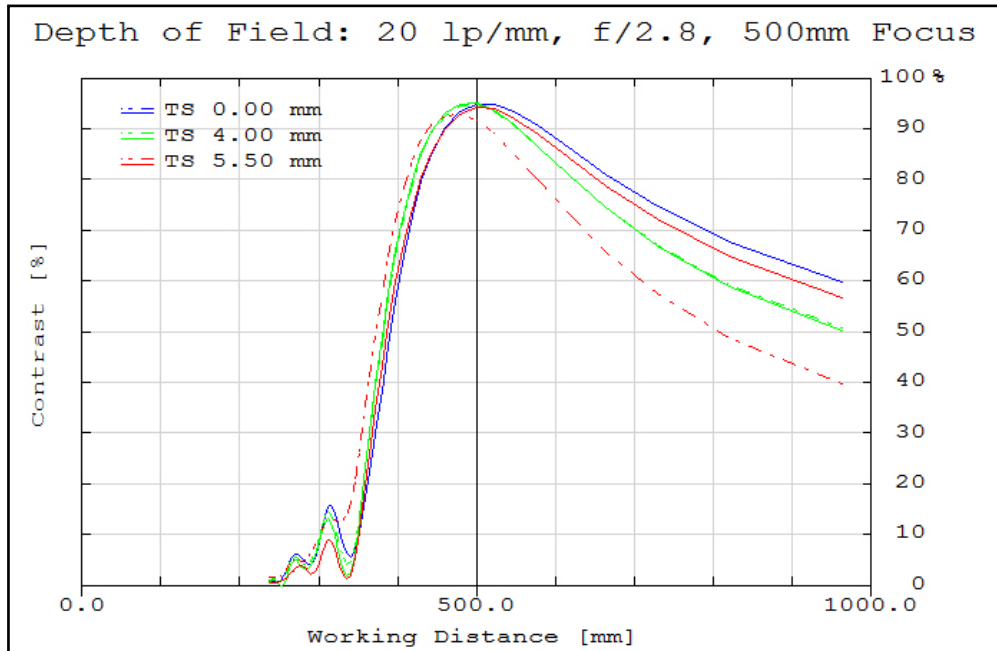


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-777 • 12mm FL • f/1.8

PRIMARY WD: 150 – 500mm

MTF & DOF: f/4.0
WD: 500mm

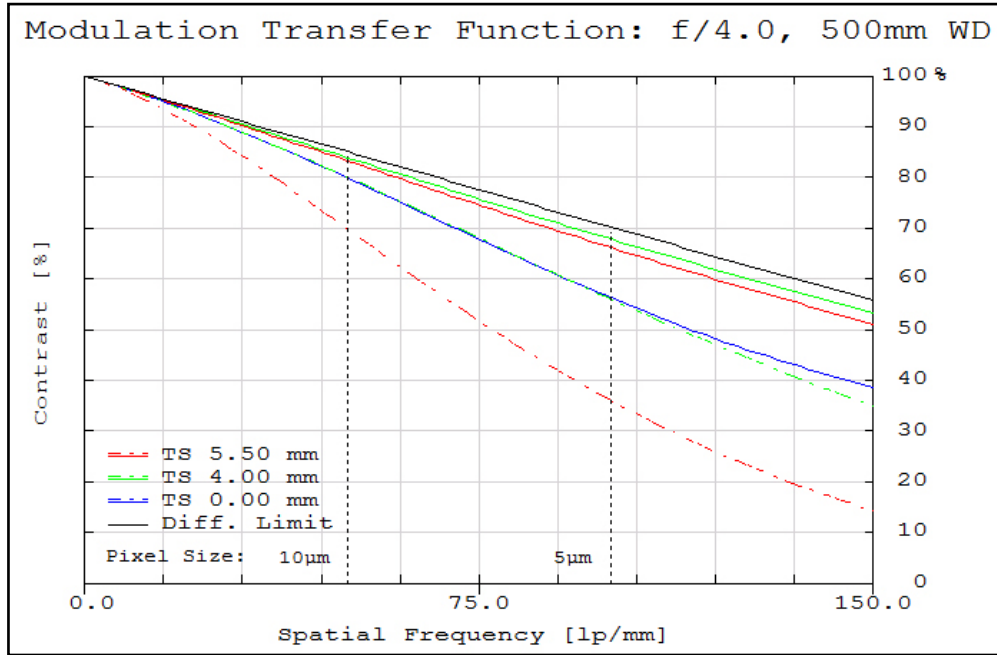


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

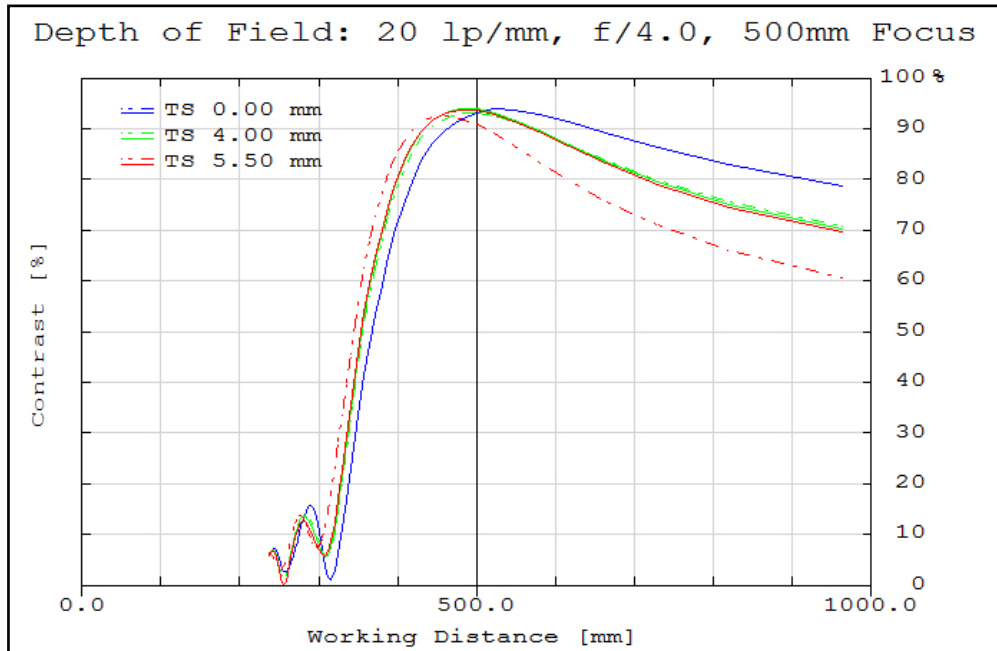


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-778 • 12mm FL • f/1.8 PRIMARY WD: 400 – 2000mm

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:	12mm
Minimum Working Distance¹:	150mm
Focus Range¹:	150mm - ∞
Primary Working Distance Range:	400 - 2000mm
Length at Near Focus:	42.8mm
Length at Far Focus:	40.2mm
Filter Thread:	M30.5 x 0.5
Maximum Rear Protrusion:	0.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.07X
Distortion²:	<3.3%
Object Space NA²:	0.015
Number of Elements (Groups):	10 (6)
AR Coating:	425 - 675nm BBAR
Weight:	103g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	52.0mm - 17.1°	69.6mm - 22.7°	82.9mm - 27.0°	93.3mm - 30.2°	105.4mm - 33.9°	129.8mm - 41.1°	124.3mm - 39.5°	N/A
Field of View^{3,5}	129.5 - 619.6mm	173.2 - 828.7mm	206.3 - 986.8mm	232.2 - 1110.8mm	262.1 - 1253.6mm	322.8 - 1543.0mm	309.2 - 1478.5mm	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

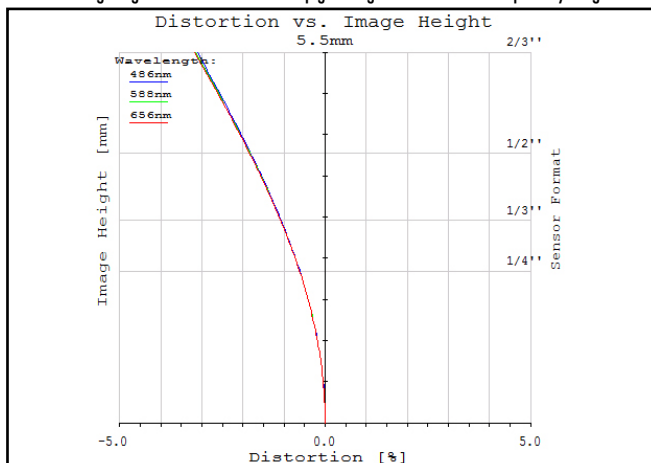


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

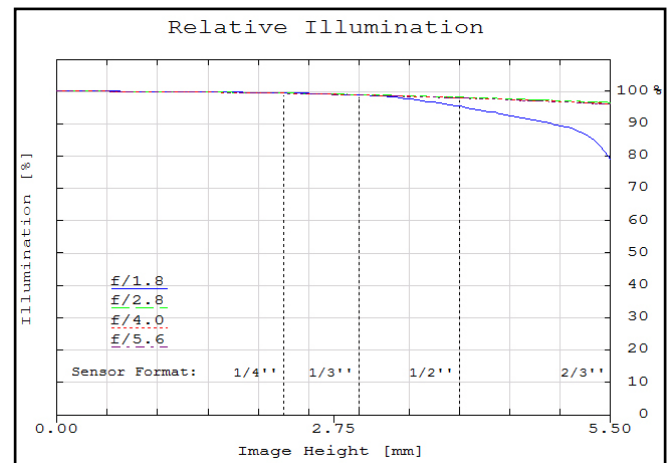


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-778 • 12mm FL • f/1.8
PRIMARY WD: 400 – 2000mm**

**MTF & DOF: f/2.8
WD: 1000mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

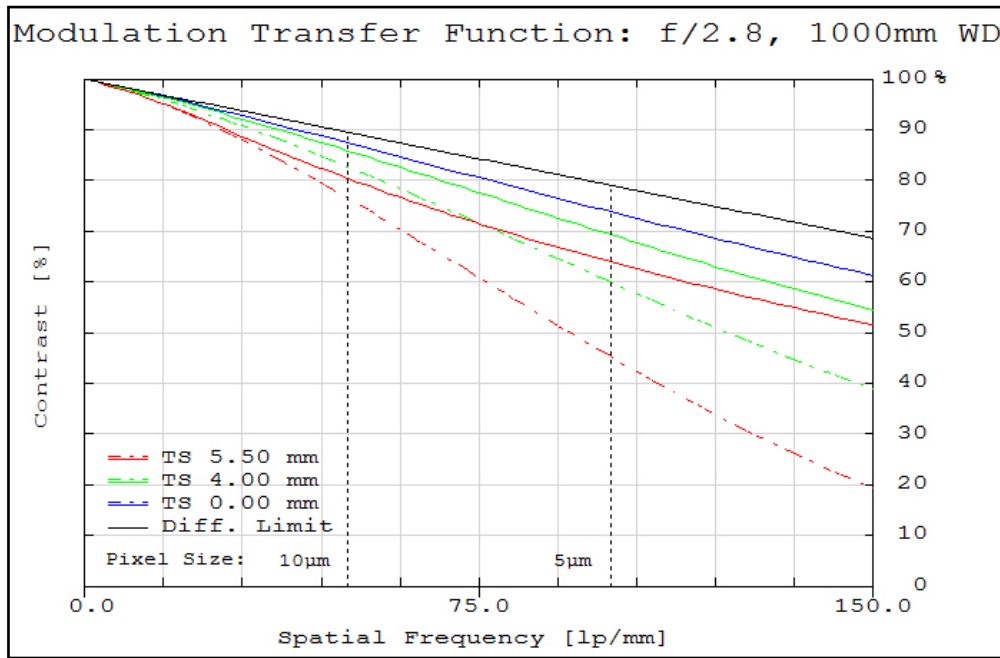


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

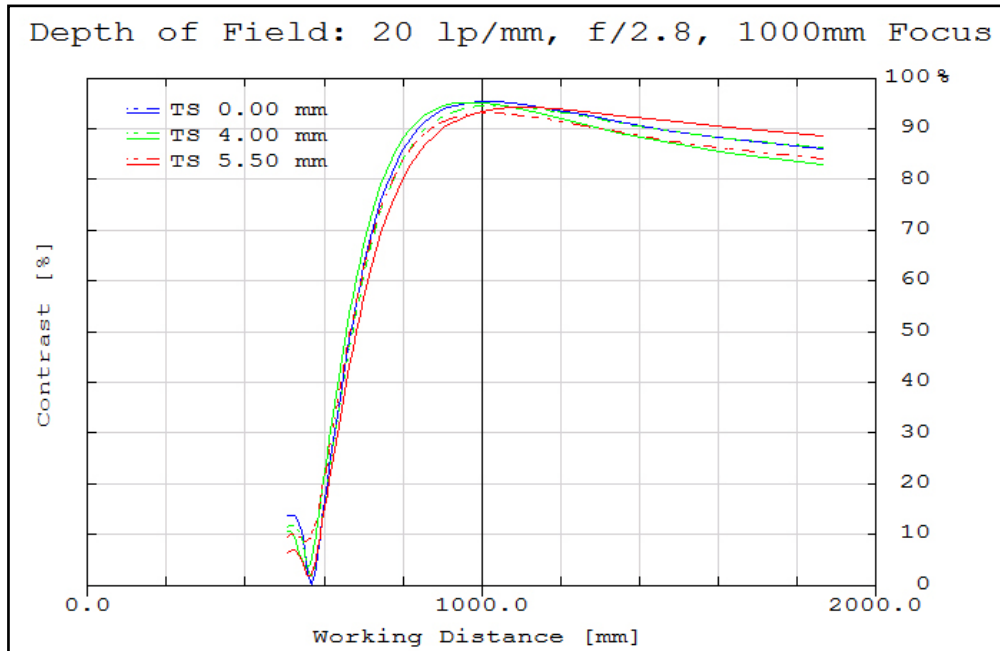


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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FIXED FOCAL LENGTH LENS**
#63-778 • 12mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/4.0
WD: 1000mm**

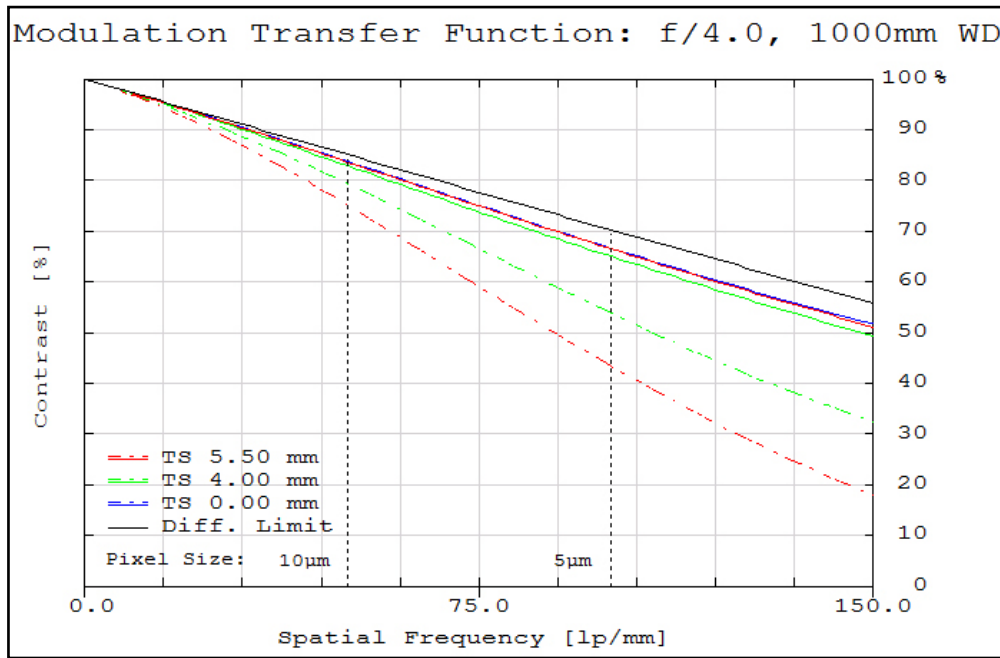


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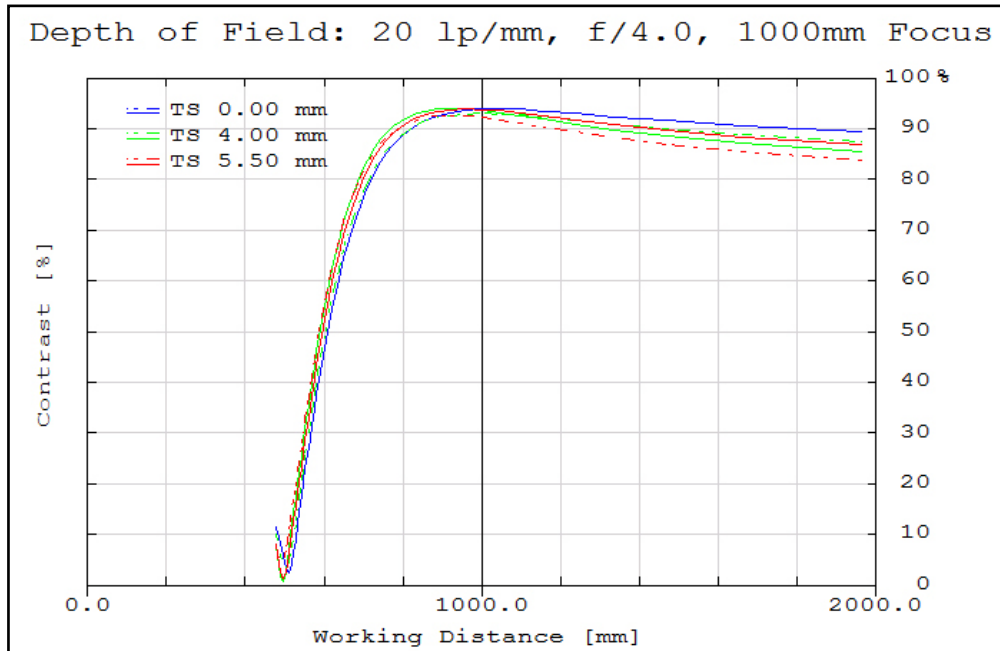


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#63-778 • 12mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/2.8
WD: 2000mm**

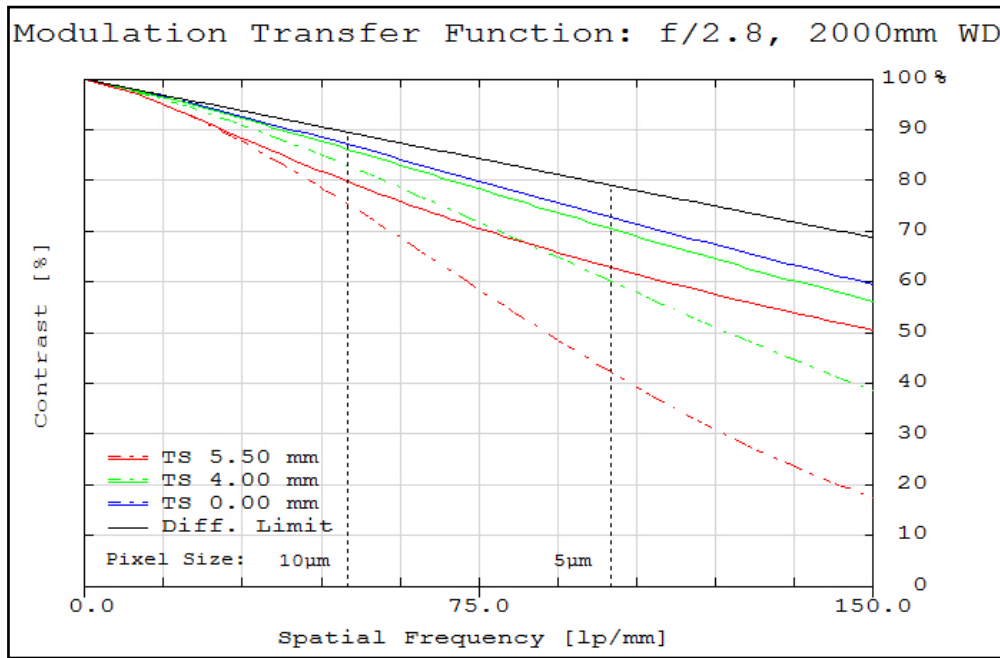


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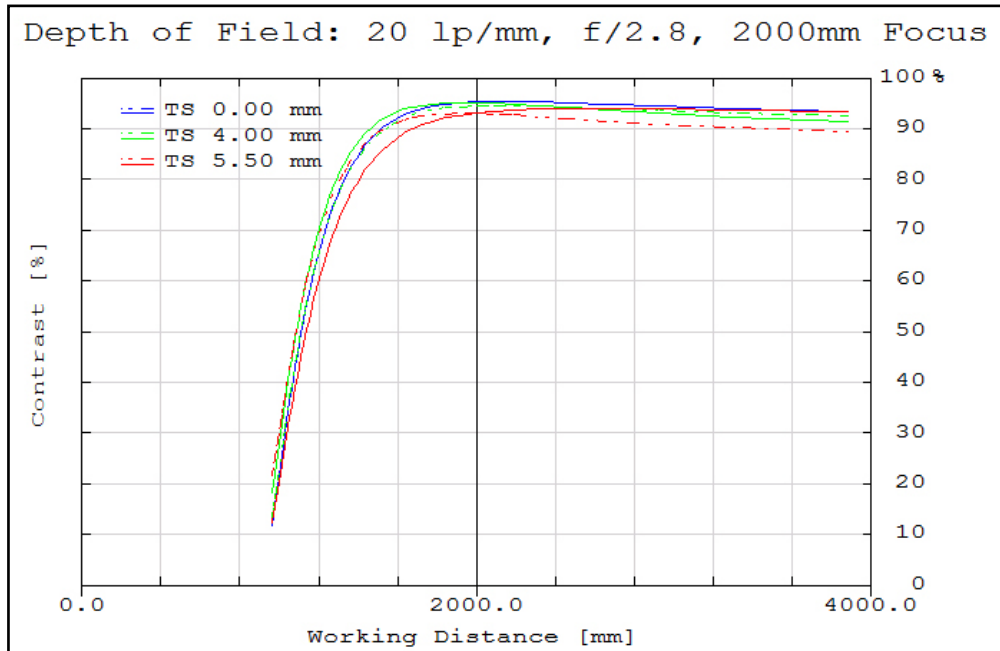


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FIXED FOCAL LENGTH LENS
#63-778 • 12mm FL • f/1.8
PRIMARY WD: 400 – 2000mm**

**MTF & DOF: f/4.0
WD: 2000mm**

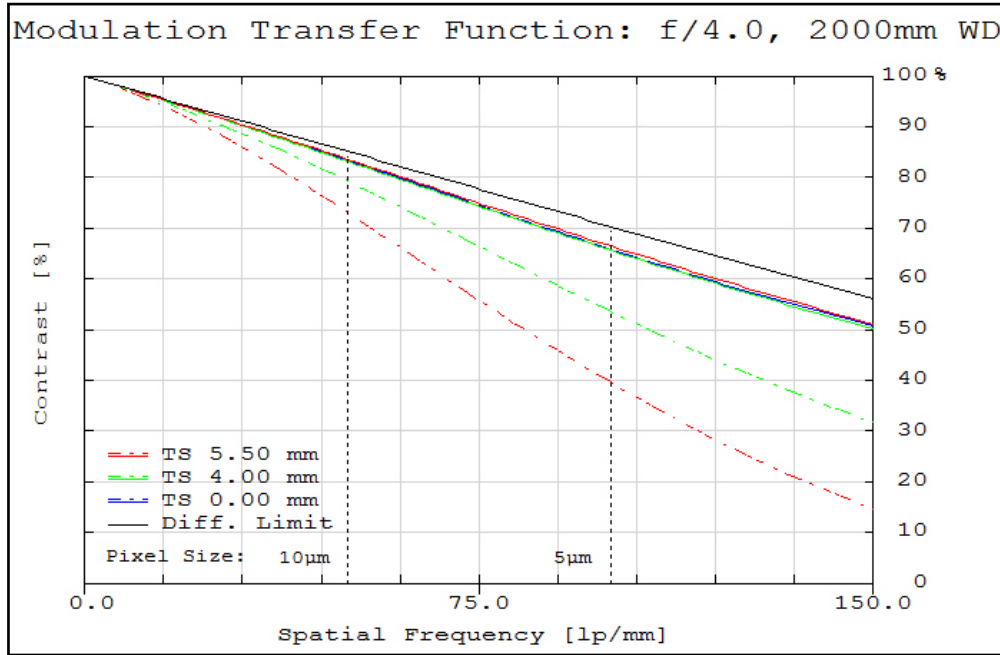


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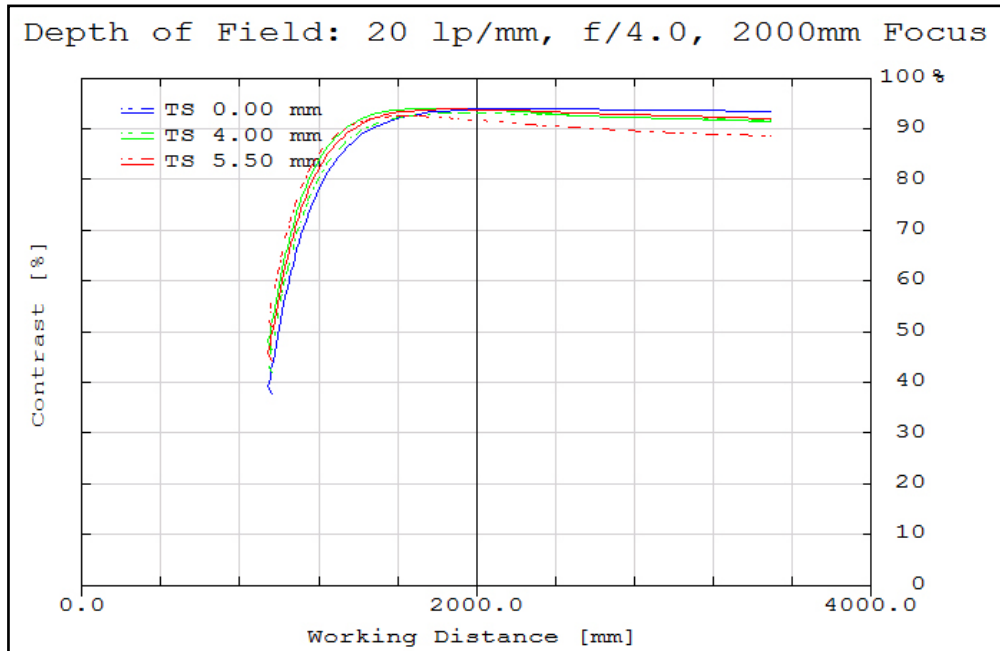


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TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-779 • 12mm FL • f/1.8 PRIMARY WD: 1000mm - ∞

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.



TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

Focal Length:	12mm
Minimum Working Distance¹:	150mm
Focus Range¹:	150mm - ∞
Primary Working Distance Range:	1000mm - ∞
Length at Near Focus:	42.8mm
Length at Far Focus:	40.2mm
Filter Thread:	M30.5 x 0.5
Maximum Rear Protrusion:	0.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.07X
Distortion²:	<3.3%
Object Space NA²:	0.015
Number of Elements (Groups):	10 (6)
AR Coating:	425 - 675nm BBAR
Weight:	103g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	52.0mm - 17.1°	69.6mm - 22.7°	82.9mm - 27.0°	93.3mm - 30.2°	105.4mm - 33.9°	129.8mm - 41.1°	124.3mm - 39.5°	N/A
Field of View^{3,5}	315.7mm - 17.1°	422.3mm - 22.7°	502.9mm - 27.0°	566.1mm - 30.2°	638.9mm - 33.9°	786.5mm - 41.1°	753.6mm - 39.5°	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

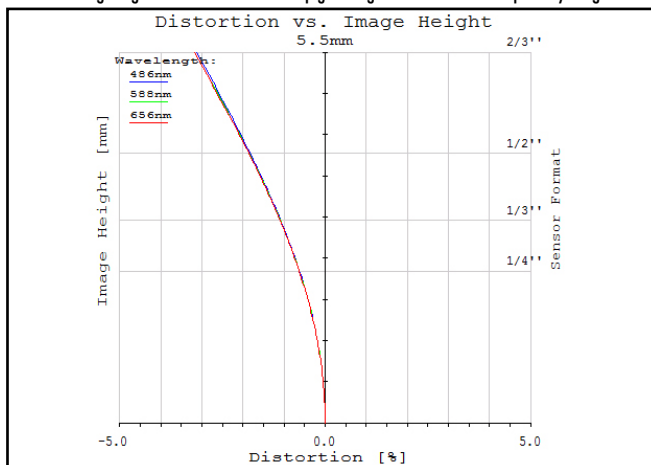


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

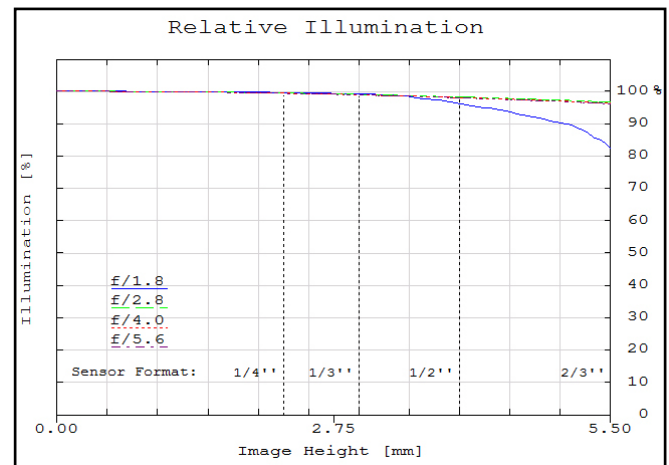


Figure 2: Relative illumination (center to corner)

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**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-779 • 12mm FL • f/1.8
PRIMARY WD: 1000mm - ∞**

**MTF & DOF: f/2.8
WD: 2000mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

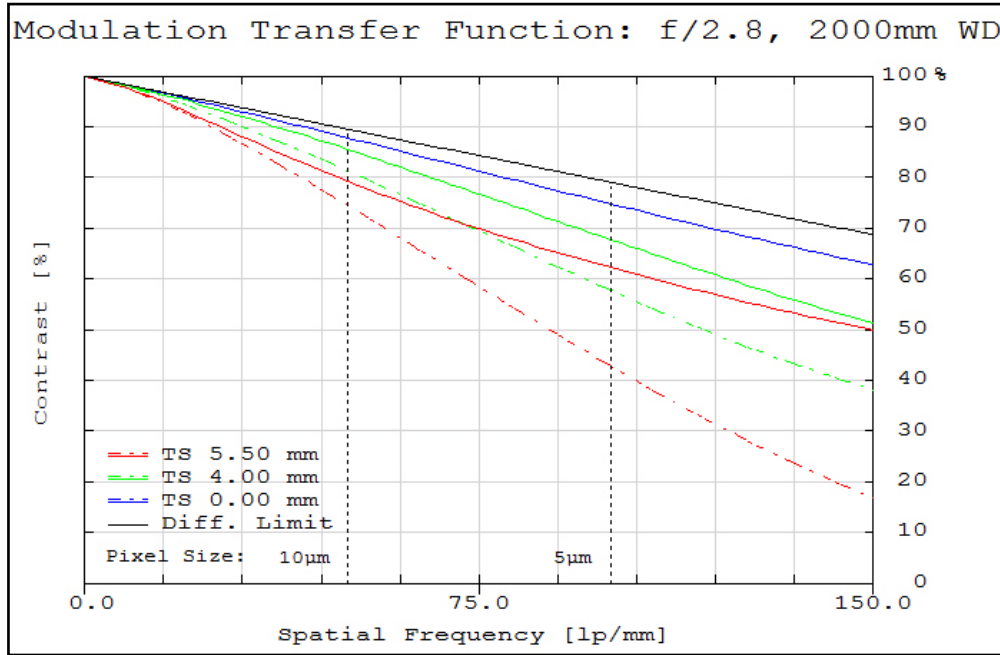


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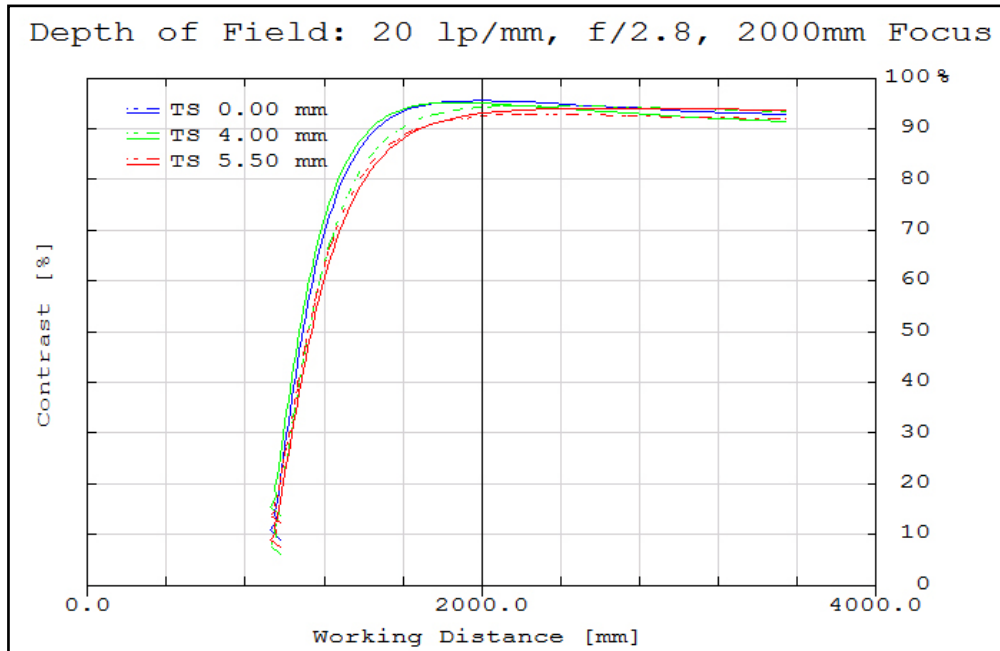


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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FIXED FOCAL LENGTH LENS
#63-779 • 12mm FL • f/1.8
PRIMARY WD: 1000mm - ∞**

**MTF & DOF: f/2.8
WD: 5000mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

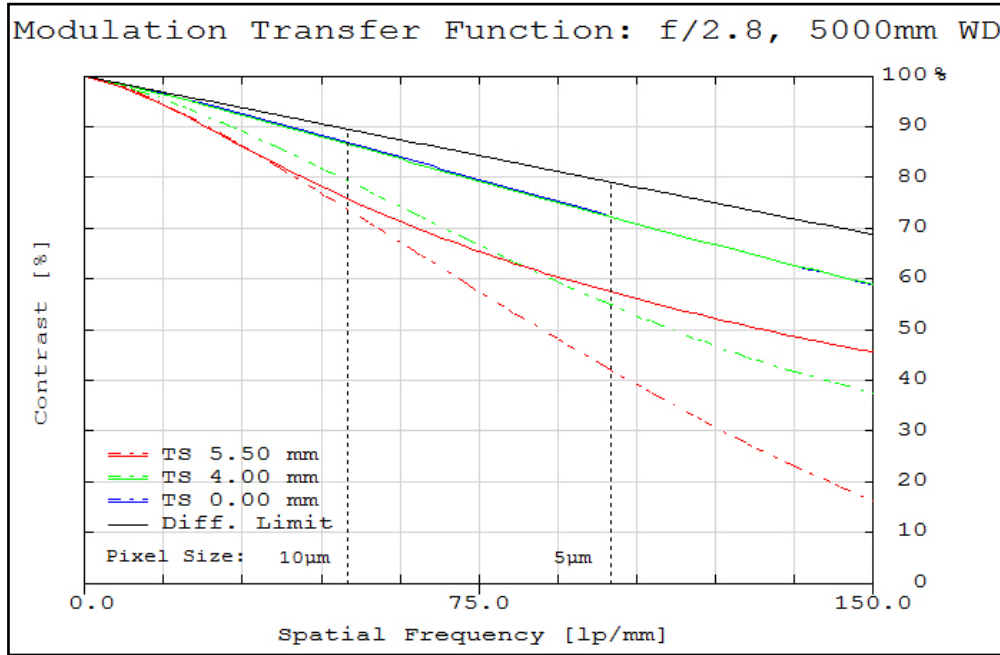


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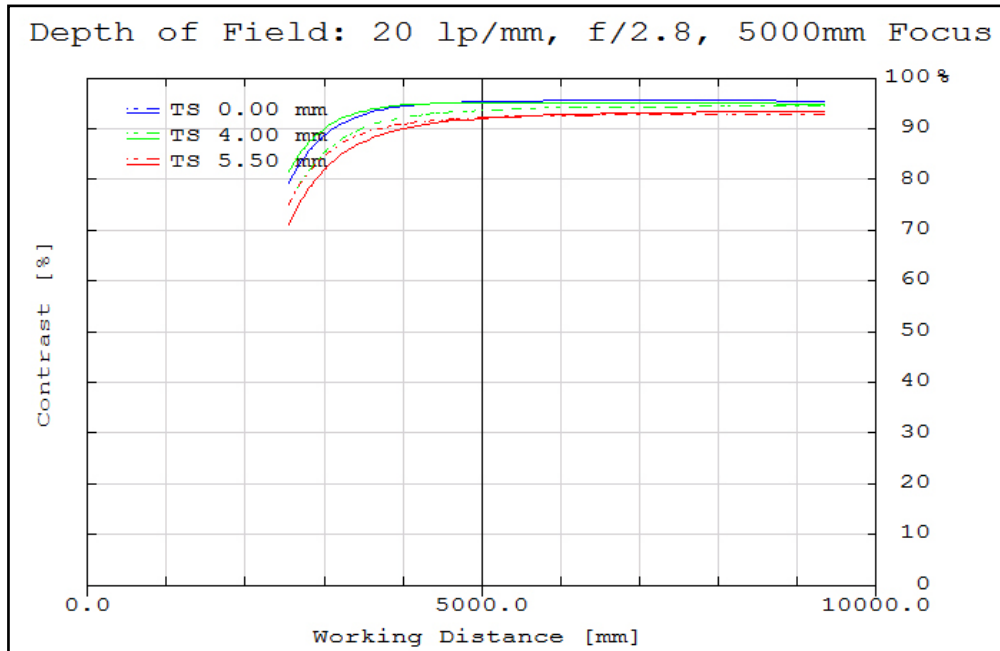


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FIXED FOCAL LENGTH LENS
#63-779 • 12mm FL • f/1.8
PRIMARY WD: 1000mm - ∞**

**MTF & DOF: f/4.0
WD: 2000mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

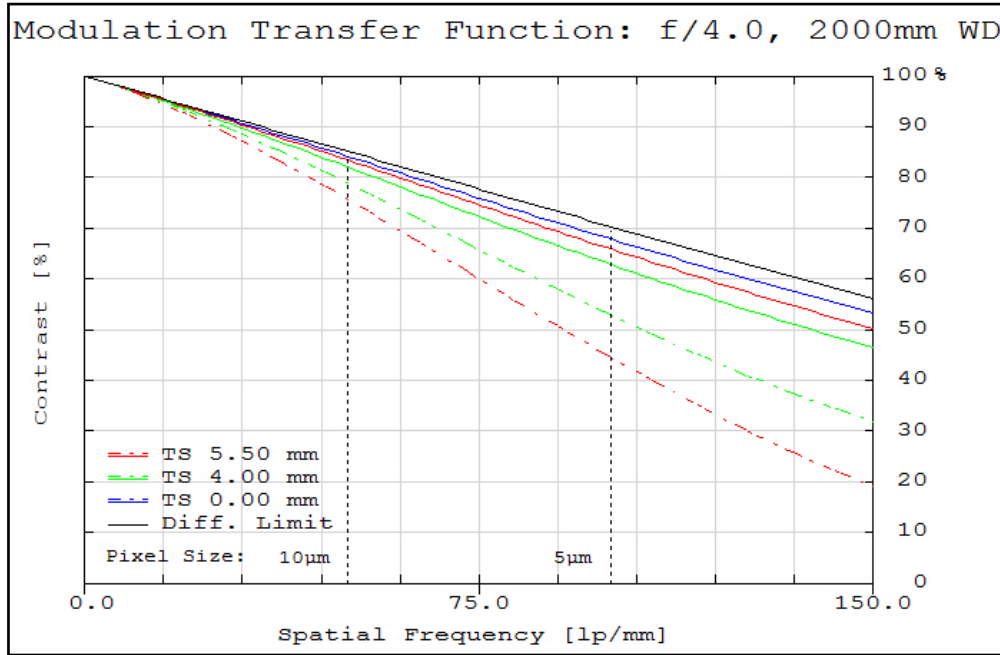


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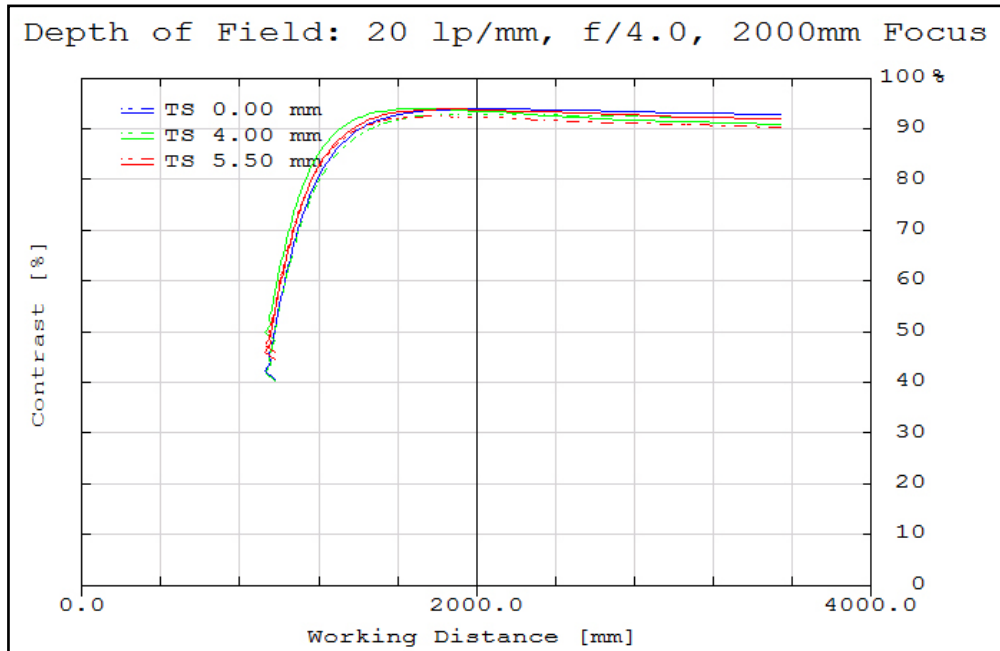


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PRIMARY WD: 1000mm - ∞**

**MTF & DOF: f/4.0
WD: 5000mm**

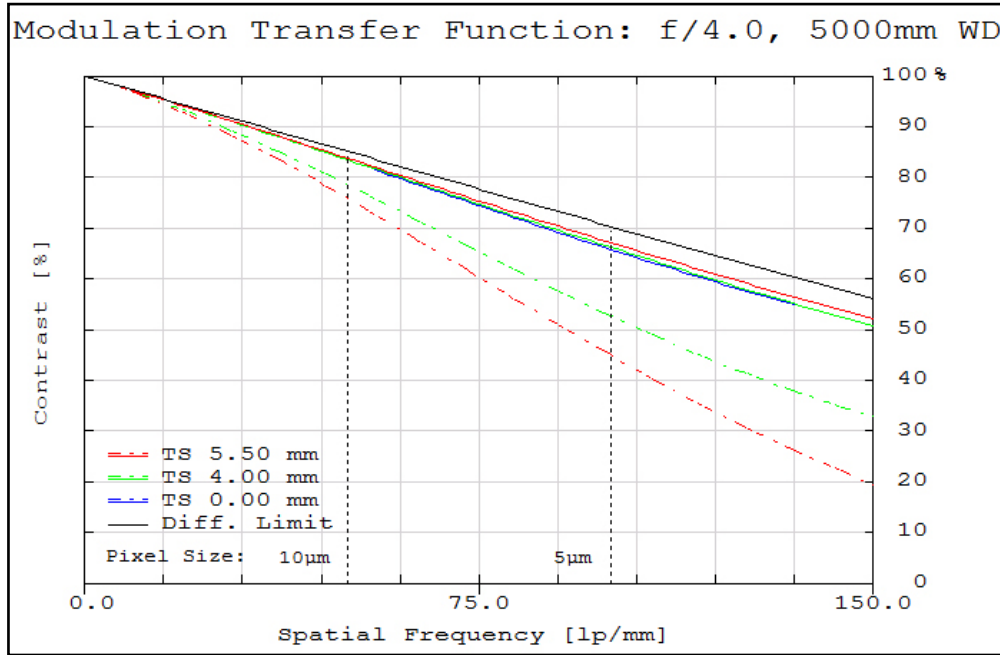


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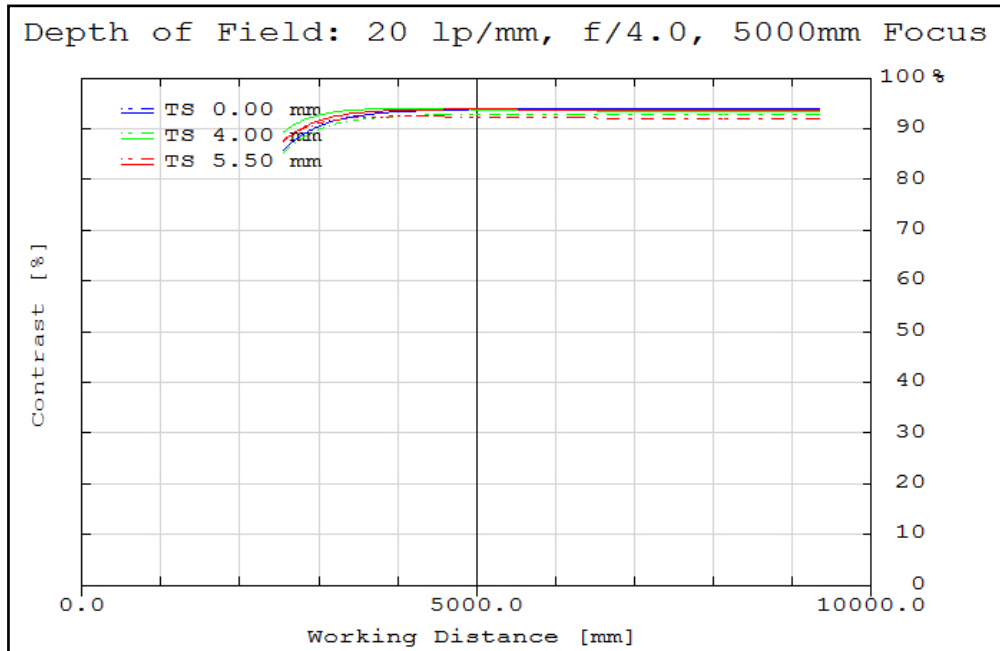


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TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-780 • 25mm FL • f/1.8 PRIMARY WD: 200 – 600mm

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Focal Length:	25mm
Minimum Working Distance¹:	200mm
Focus Range¹:	200mm - ∞
Primary Working Distance Range:	200 - 600mm
Length at Near Focus:	40.1mm
Length at Far Focus:	34.4mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	2.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/22
Magnification Range:	0X - 0.12X
Distortion²:	<0.5%
Object Space NA²:	0.03
Number of Elements (Groups):	9 (6)
AR Coating:	425 - 675nm BBAR
Weight:	96g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	31.4mm - 8.2°	41.9mm - 10.9°	49.8mm - 13.0°	55.9mm - 14.5°	62.9mm - 16.3°	77.0mm - 19.9°	73.9mm - 19.1°	N/A
Field of View^{3,5}	31.4 - 89.0mm	41.9 - 118.7mm	49.8 - 140.9mm	55.9 - 158.2mm	62.9 - 177.9mm	77.0 - 217.3mm	73.9 - 208.6mm	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

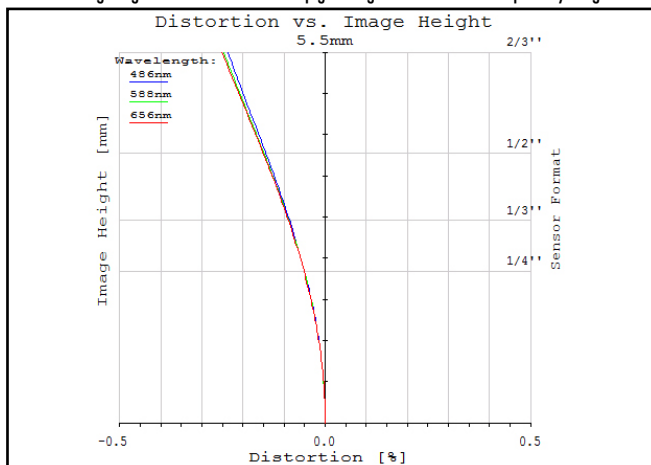


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

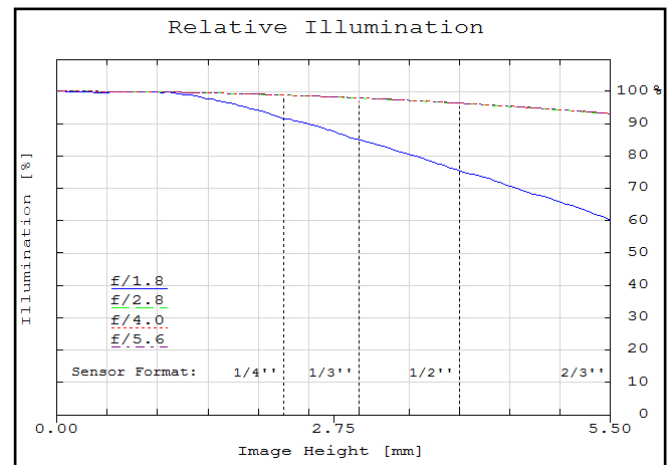


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-780 • 25mm FL • f/1.8
PRIMARY WD: 200 – 600mm**

**MTF & DOF: f/2.8
WD: 200mm**

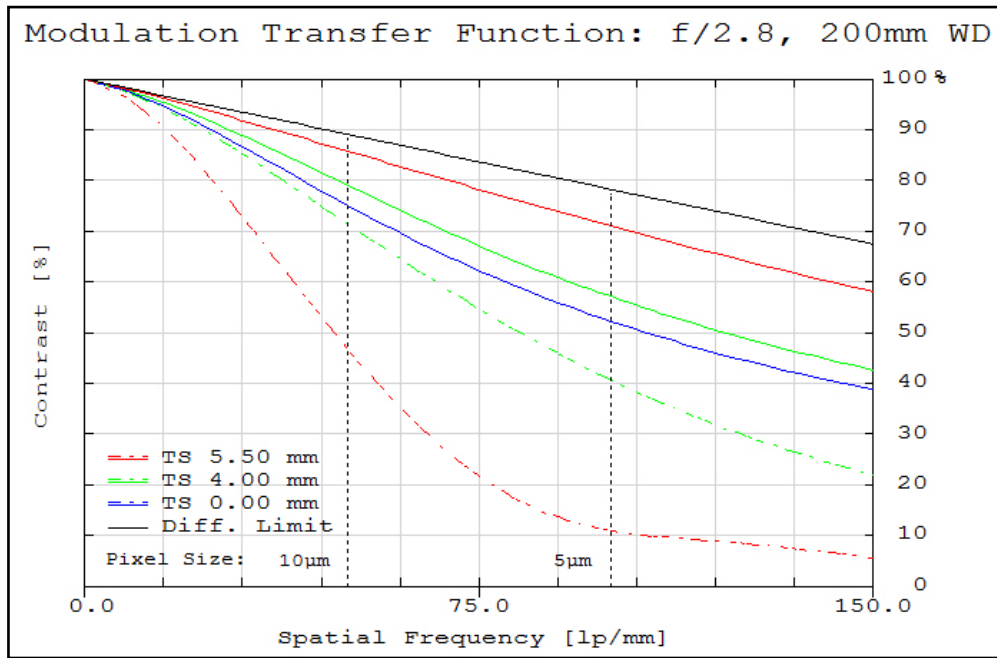


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

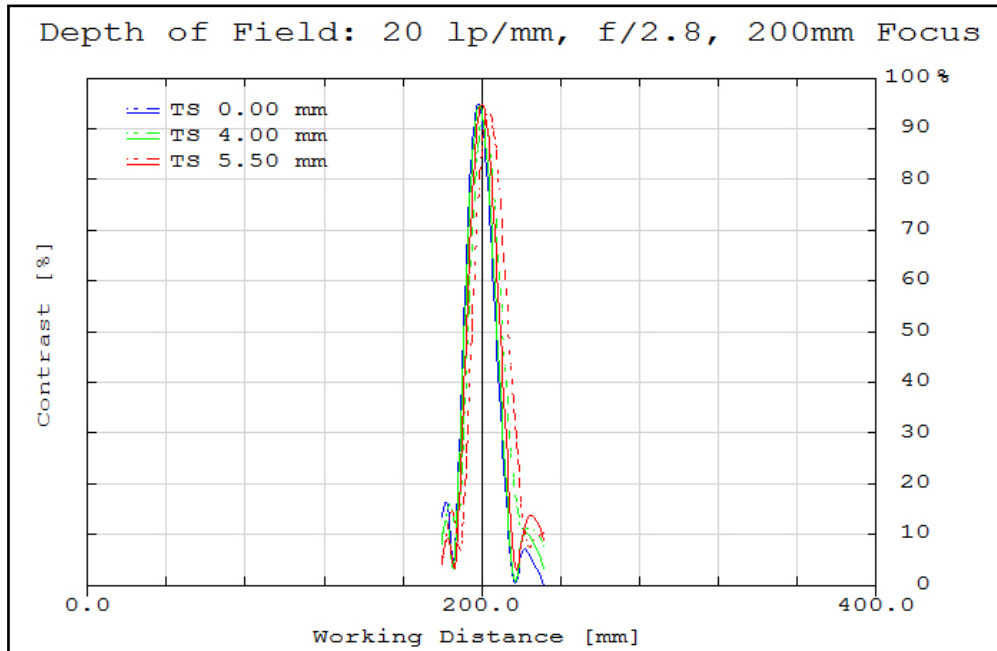


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-780 • 25mm FL • f/1.8
PRIMARY WD: 200 – 600mm**

**MTF & DOF: f/4.0
WD: 200mm**

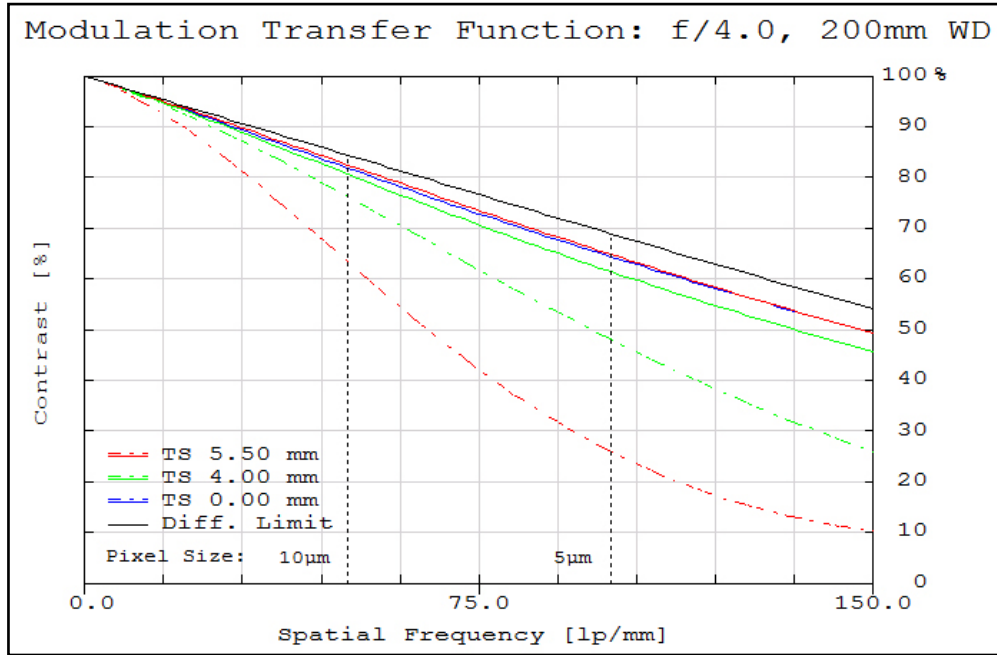


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

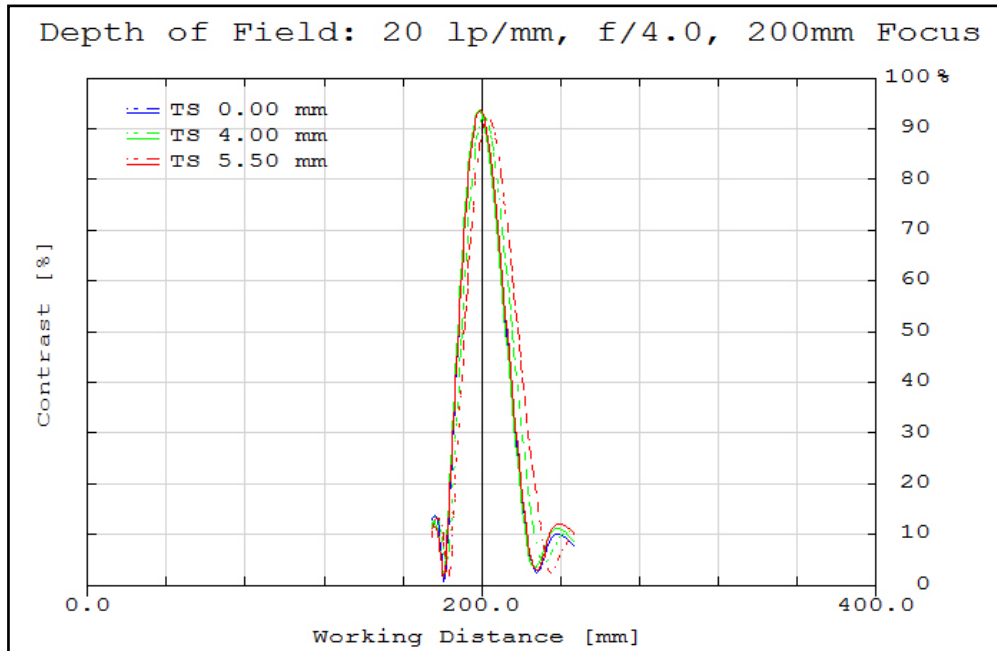


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#63-780 • 25mm FL • f/1.8
PRIMARY WD: 200 – 600mm

**MTF & DOF: f/2.8
WD: 500mm**

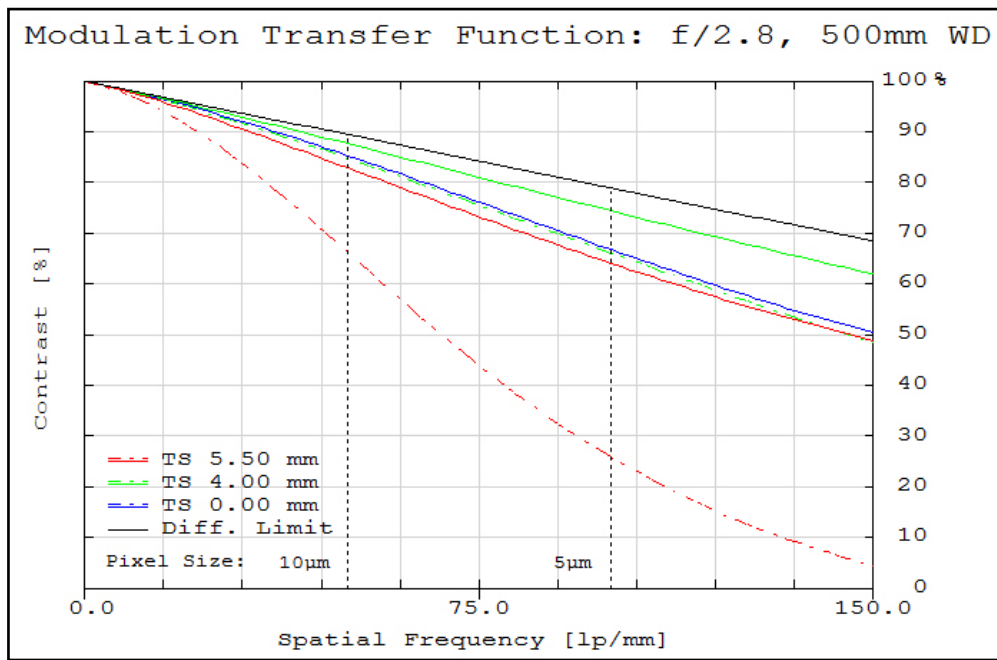


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

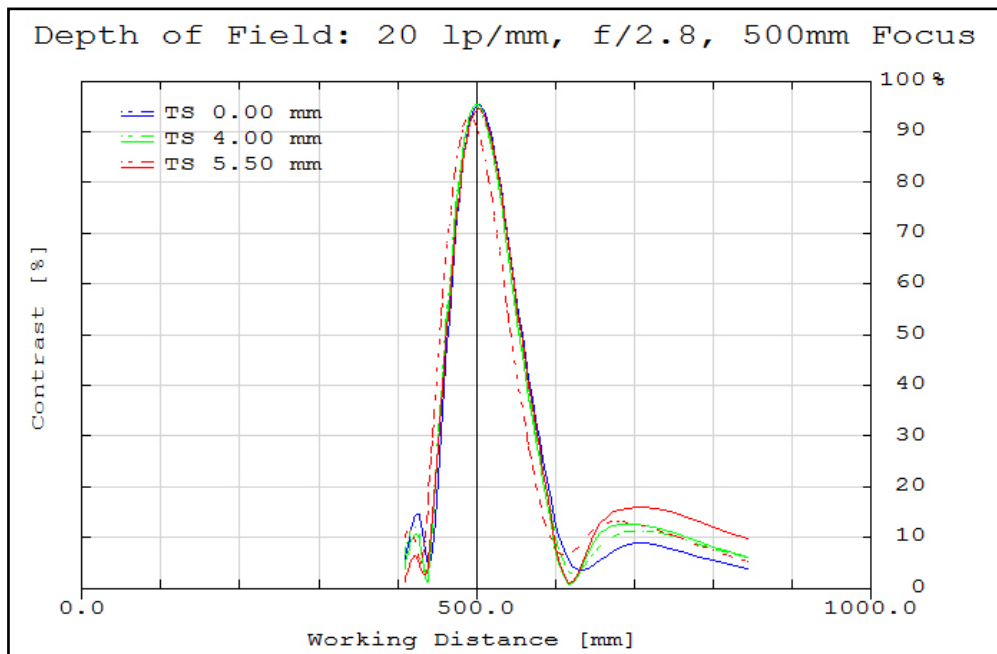


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-780 • 25mm FL • f/1.8
PRIMARY WD: 200 – 600mm**

**MTF & DOF: f/4.0
WD: 500mm**

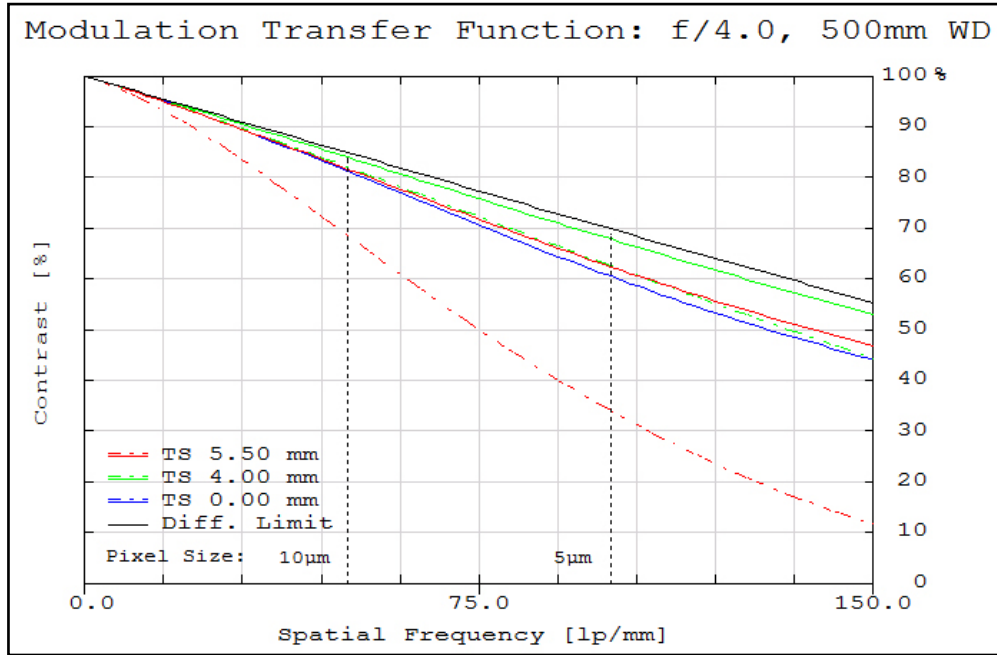


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

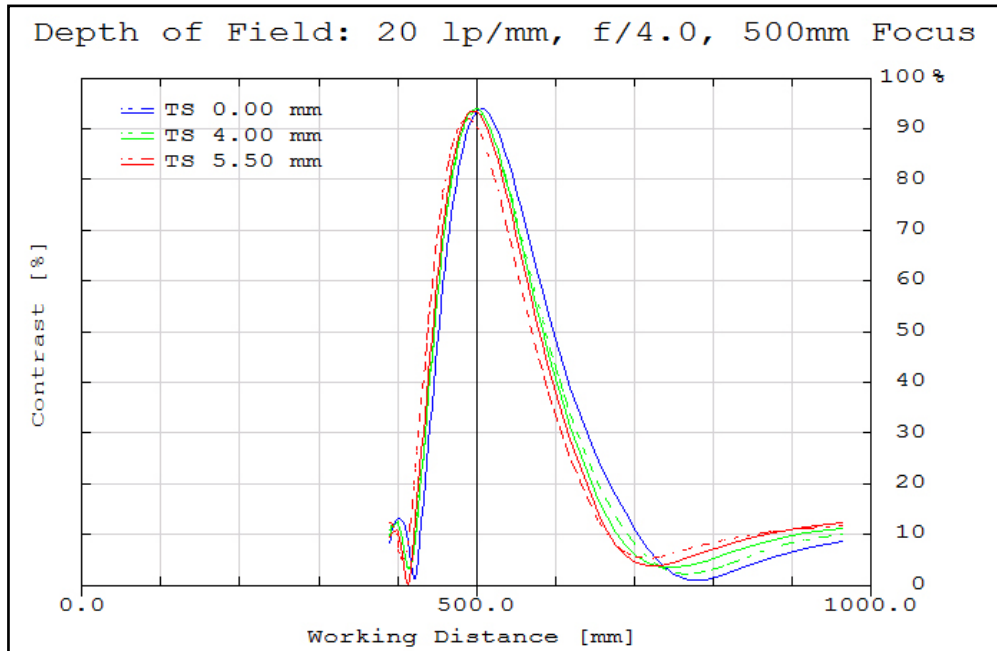


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-781 • 25mm FL • f/1.8 PRIMARY WD: 400 – 2000mm

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:	25mm
Minimum Working Distance¹:	200mm
Focus Range¹:	200mm - ∞
Primary Working Distance Range:	400 - 2000mm
Length at Near Focus:	40.1mm
Length at Far Focus:	34.4mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	2.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/22
Magnification Range:	0X - 0.12X
Distortion²:	<0.5%
Object Space NA²:	0.03
Number of Elements (Groups):	9 (6)
AR Coating:	425 - 675nm BBAR
Weight:	96g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	31.4mm - 8.2°	41.9mm - 10.9°	49.8mm - 13.0°	55.9mm - 14.5°	62.9mm - 16.3°	77.0mm - 19.9°	73.9mm - 19.1°	N/A
Field of View^{3,5}	60.7 - 292.8mm	80.9 - 390.45mm	96.1 - 463.6mm	107.9 - 520.5mm	121.4 - 585.4mm	148.5 - 715.3mm	142.5 - 686.6mm	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

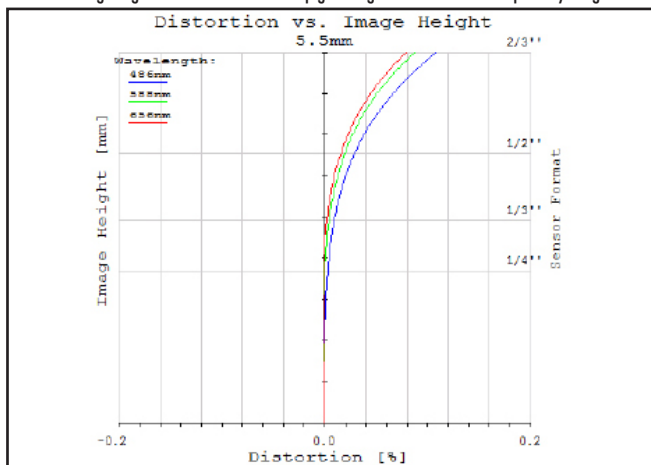


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

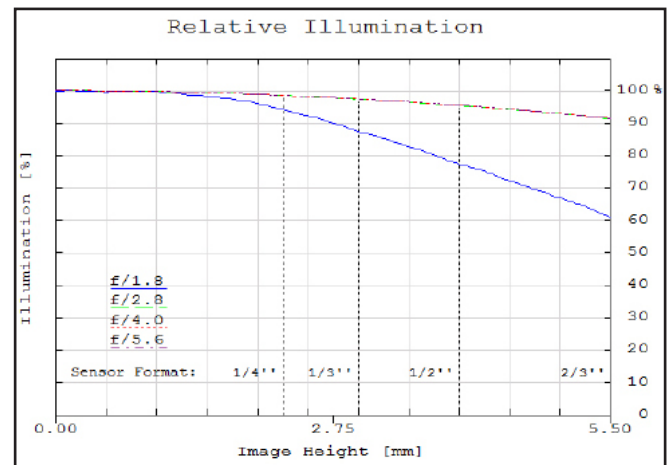


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#63-781 • 25mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/2.8
WD: 1000mm**

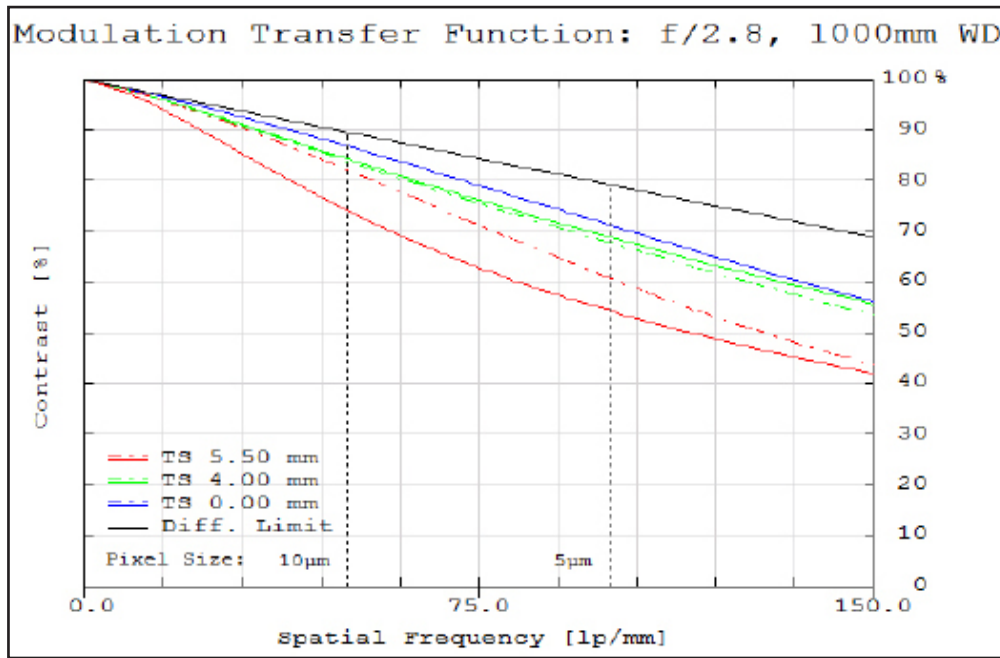


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

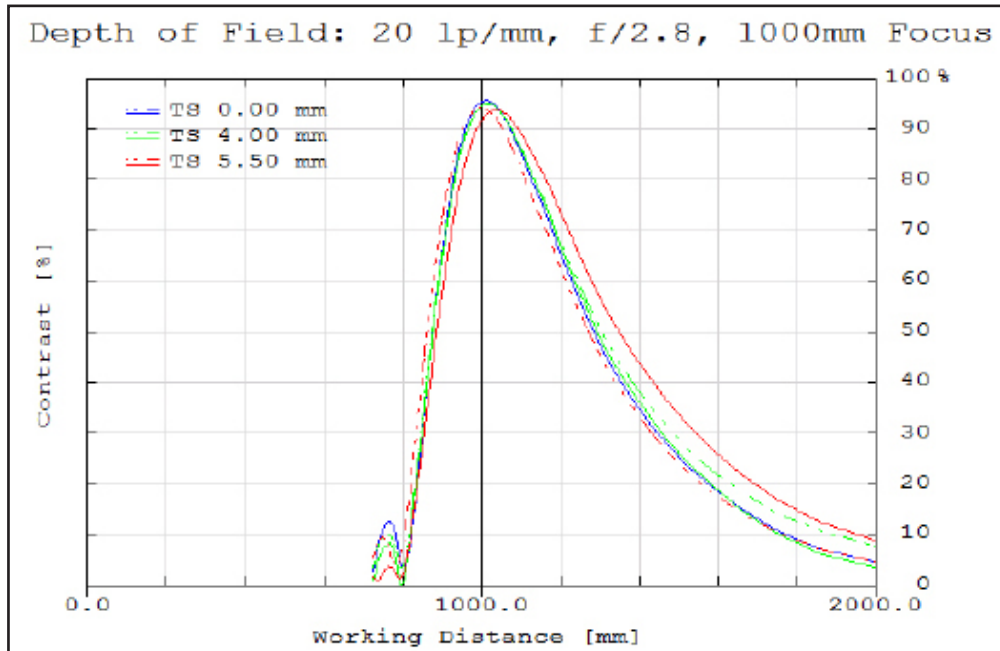


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#63-781 • 25mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/4.0
WD: 1000mm**

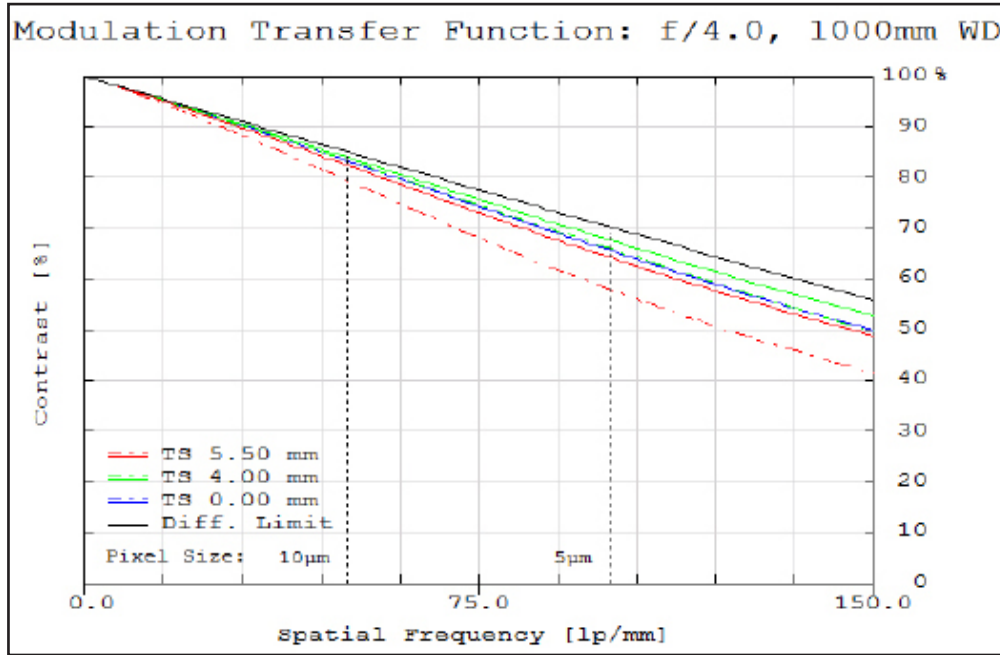


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

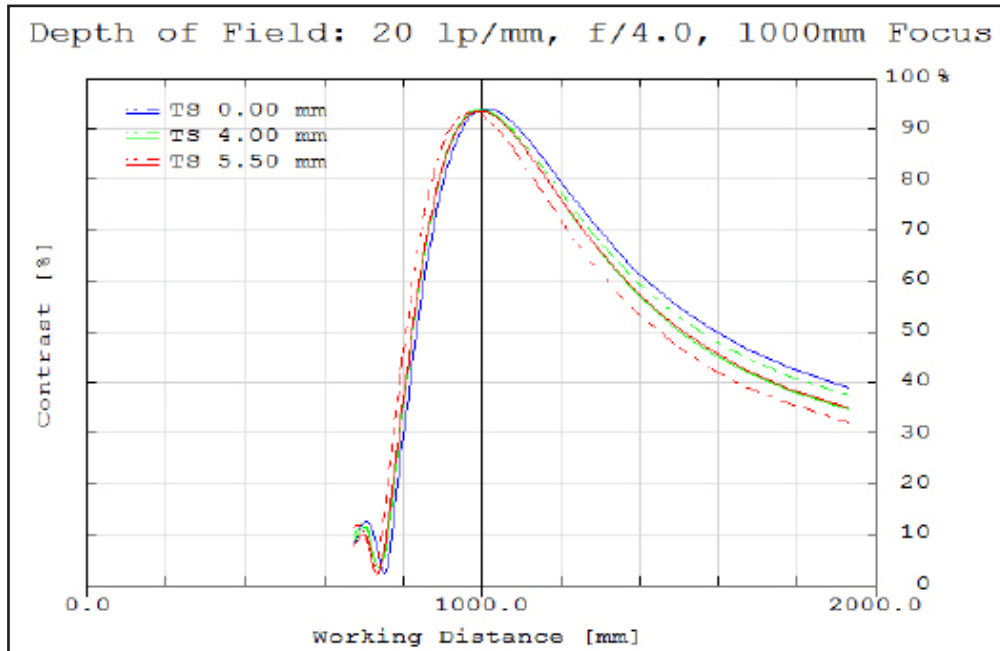


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#63-781 • 25mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/2.8
WD: 2000mm**

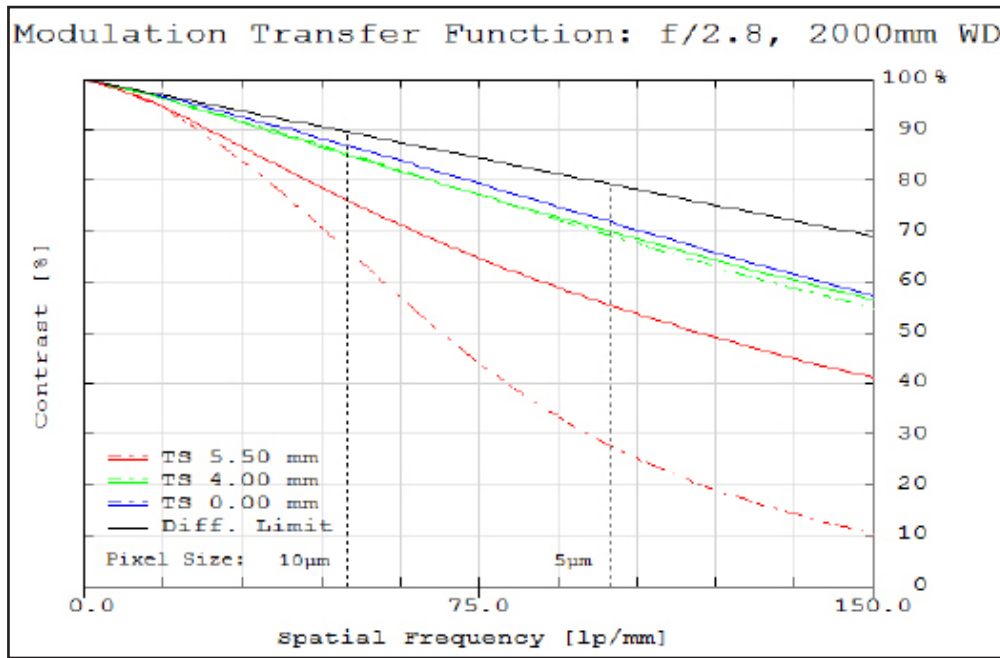


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

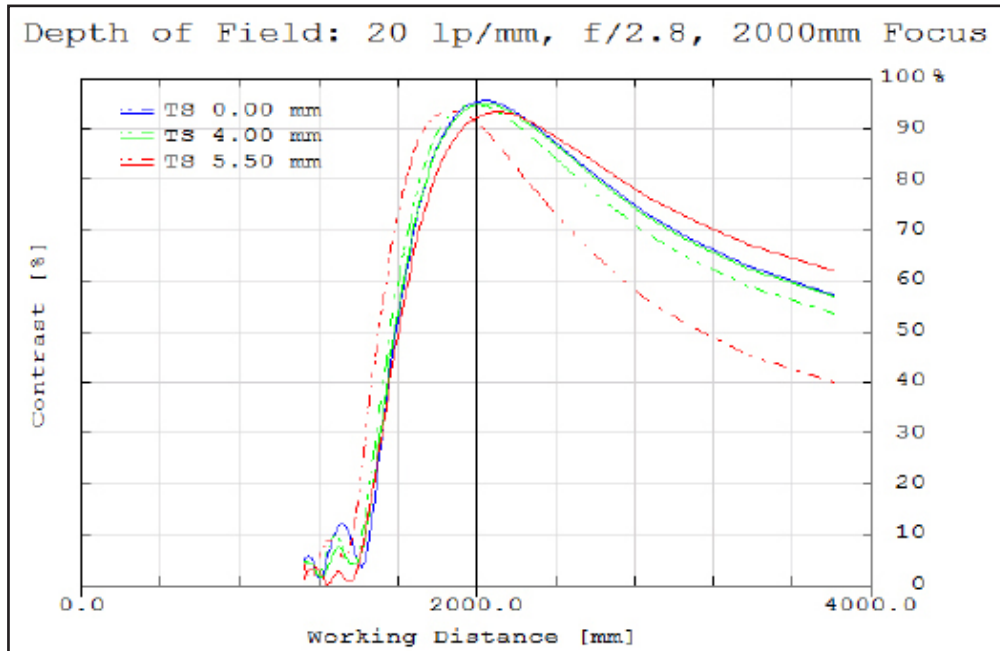


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#63-781 • 25mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/4.0
WD: 2000mm**

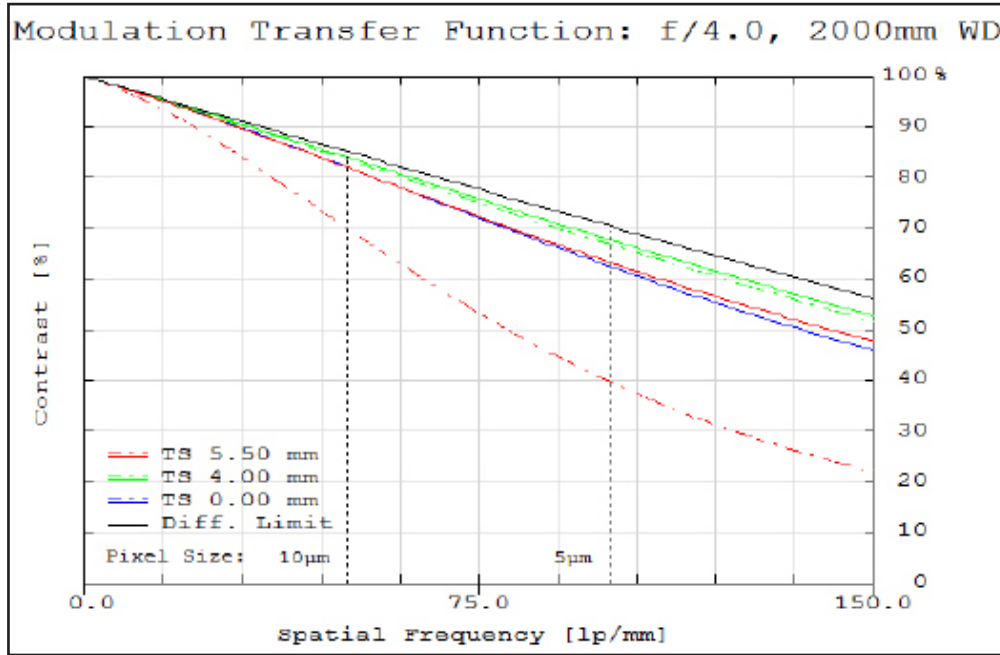


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

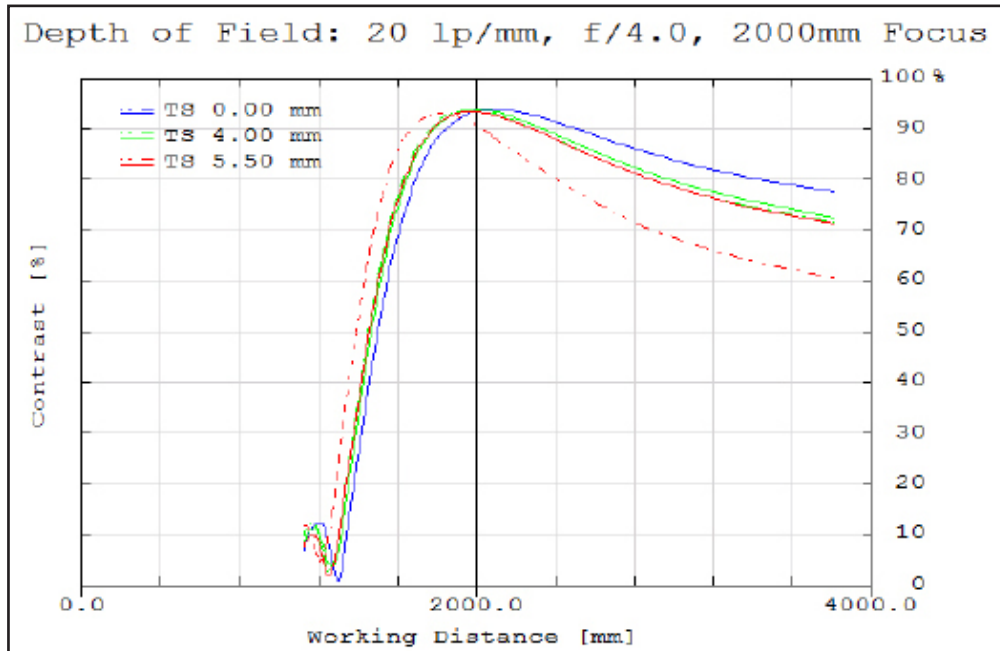


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #63-782 • 25mm FL • f/1.8 PRIMARY WD: 1500mm - ∞

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:	25mm
Minimum Working Distance¹:	200mm
Focus Range¹:	200mm - ∞
Primary Working Distance Range:	1500mm - ∞
Length at Near Focus:	40.1mm
Length at Far Focus:	34.4mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	2.8mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/22
Magnification Range:	0X - 0.12X
Distortion²:	<0.5%
Object Space NA²:	0.03
Number of Elements (Groups):	9 (6)
AR Coating:	425 - 675nm BBAR
Weight:	96g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	31.4mm - 8.33°	41.9mm - 11.1°	49.8mm - 13.1°	55.9mm - 14.8°	62.9mm - 16.6°	77.0mm - 20.2°	73.9mm - 19.4°	N/A
Field of View^{3,5}	221.1mm - 8.33°	294.9mm - 11.1°	350.2mm - 13.1°	393.2mm - 14.8°	442.4mm - 16.6°	540.7mm - 20.2°	519.0mm - 19.4°	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

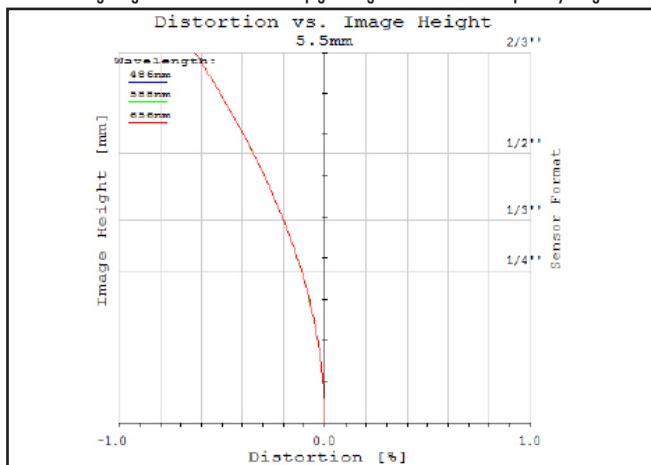


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

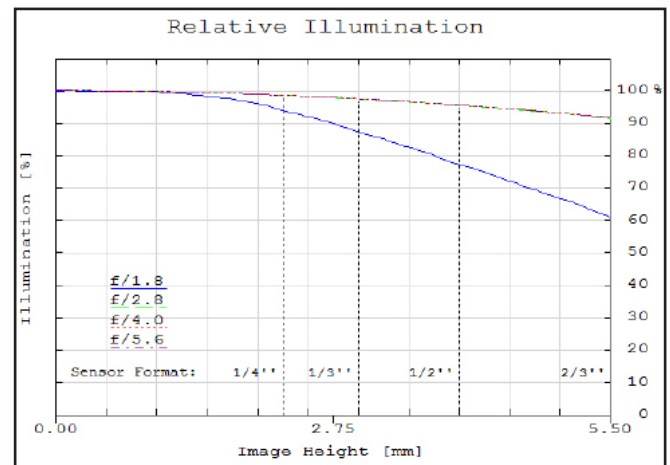


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-782 • 25mm FL • f/1.8
PRIMARY WD: 1500mm - ∞**

**MTF & DOF: f/2.8
WD: 2000mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

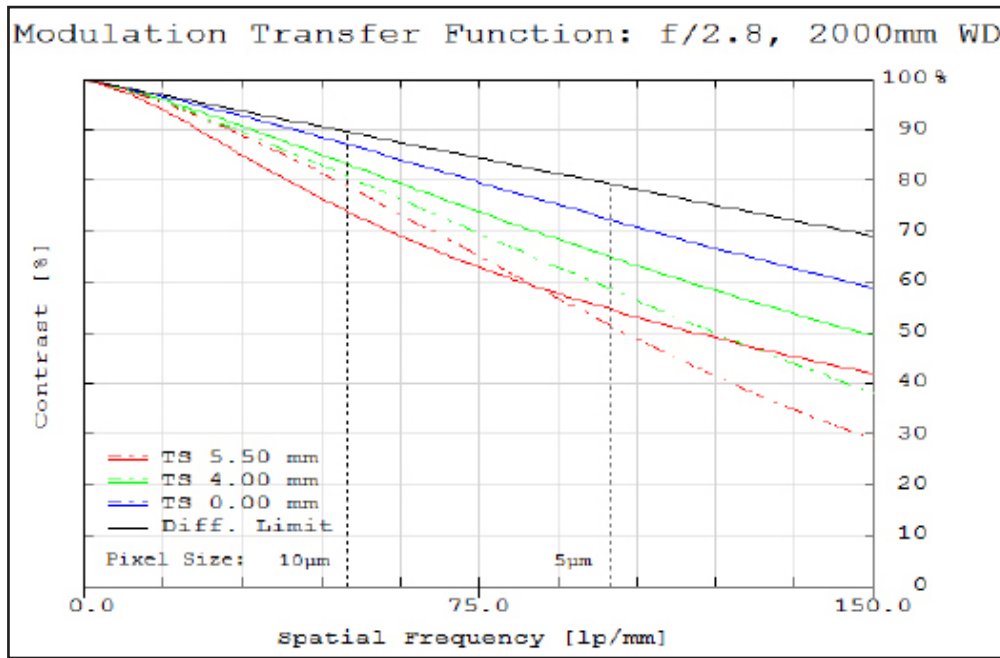


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

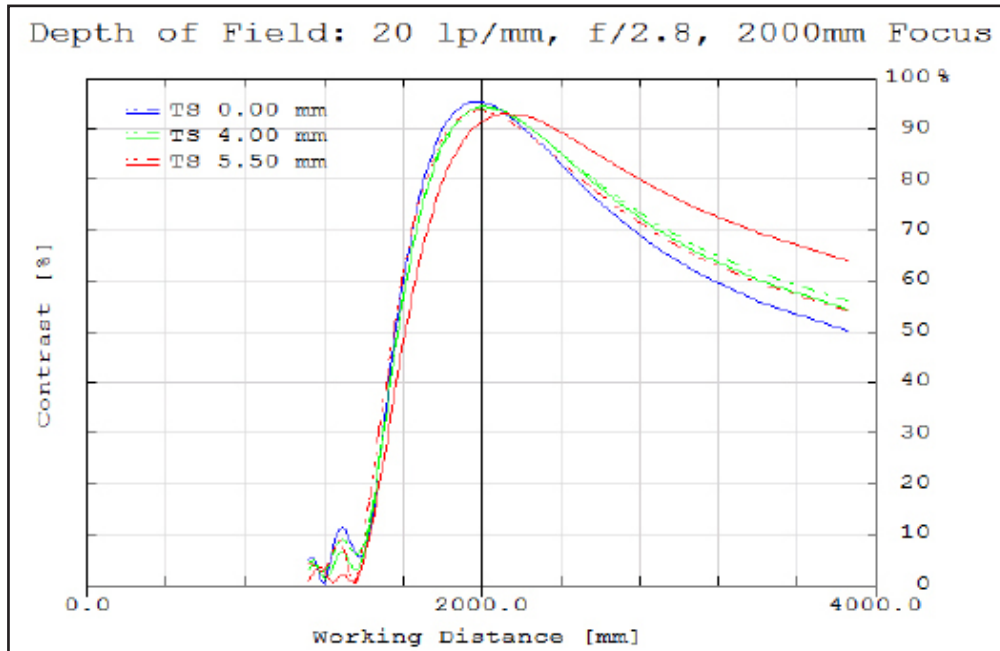


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-782 • 25mm FL • f/1.8
PRIMARY WD: 1500mm - ∞**

**MTF & DOF: f/4.0
WD: 2000mm**

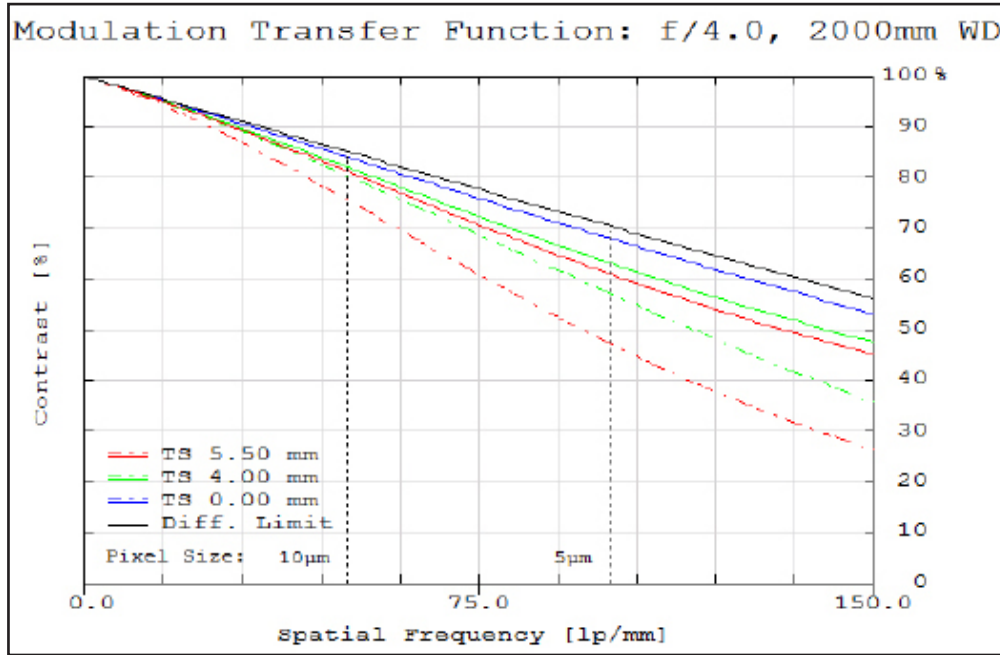


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

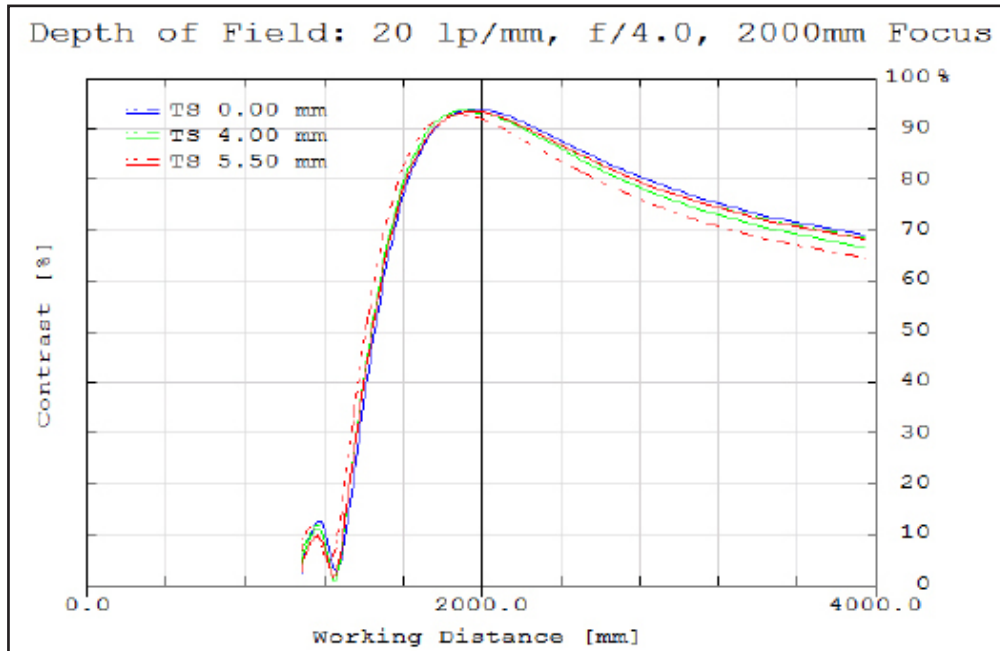


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-782 • 25mm FL • f/1.8
PRIMARY WD: 1500mm - ∞**

**MTF & DOF: f/2.8
WD: 5000mm**

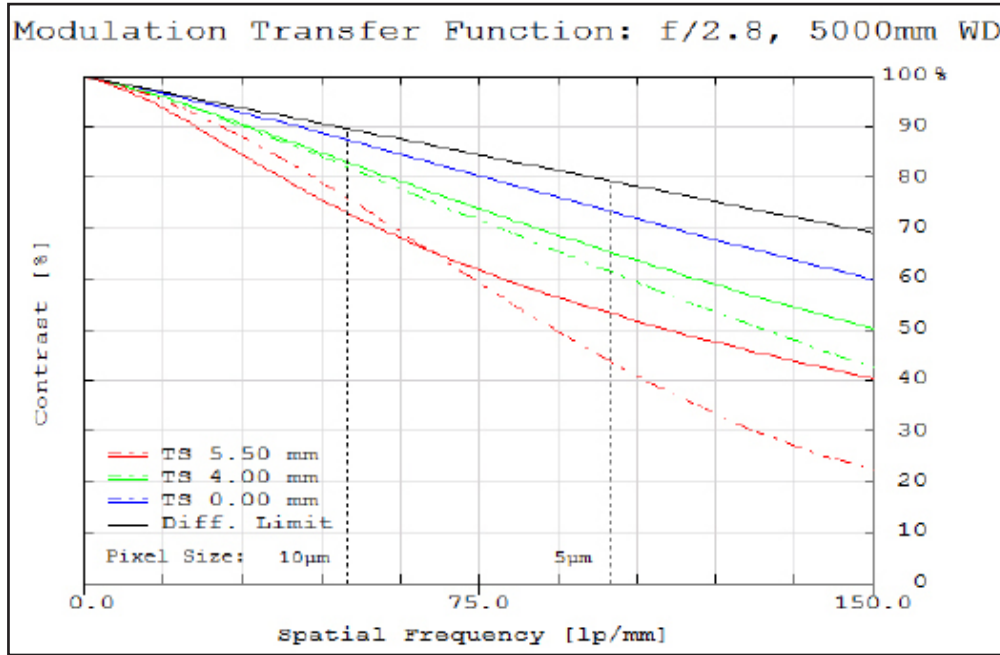


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

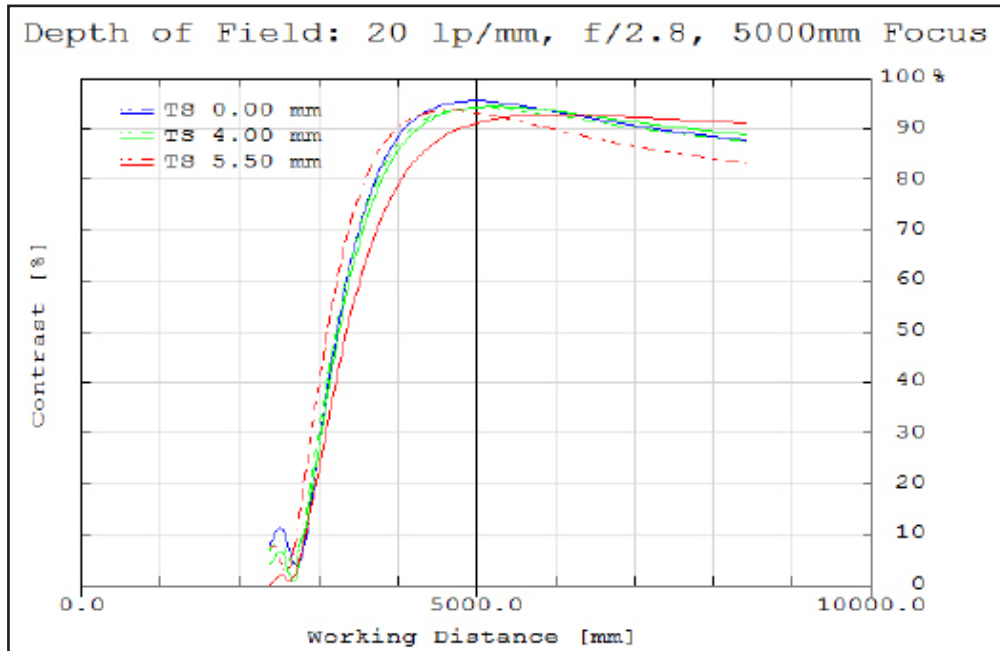


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#63-782 • 25mm FL • f/1.8
PRIMARY WD: 1500mm - ∞**

**MTF & DOF: f/4.0
WD: 5000mm**

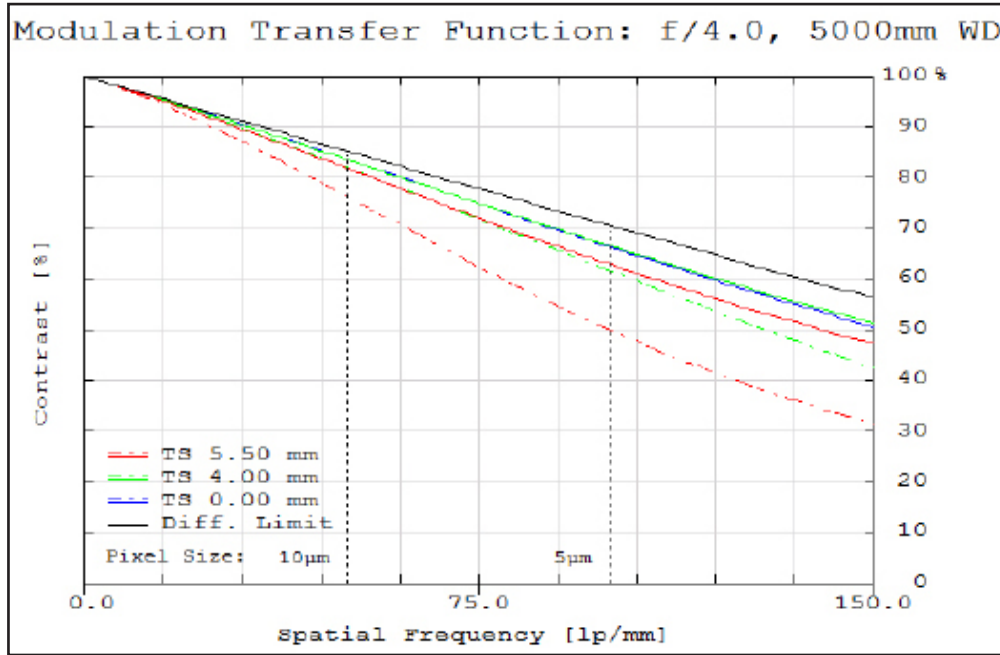


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

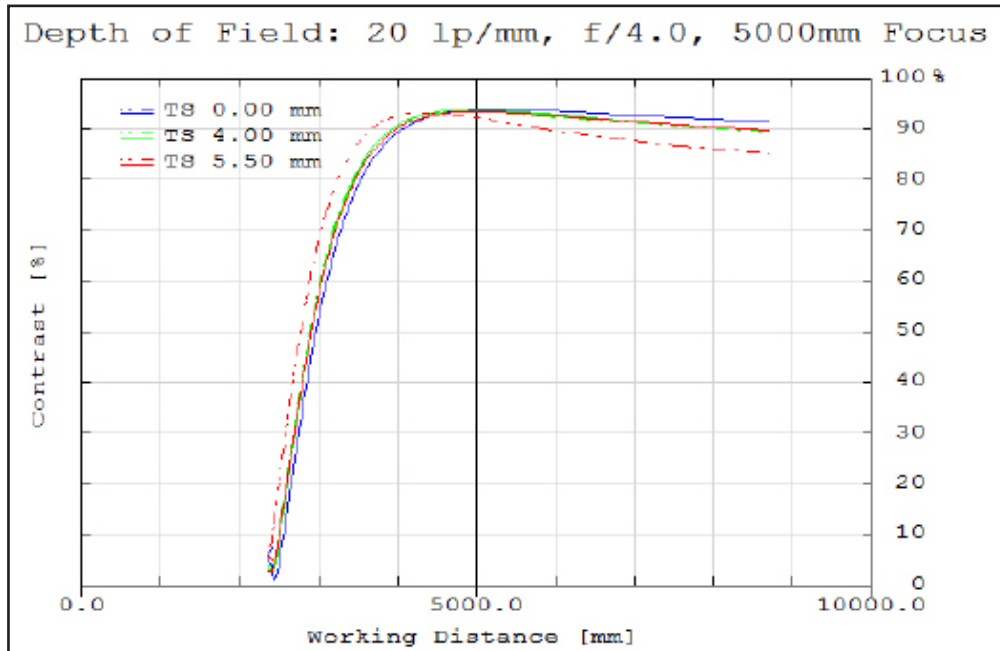


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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

PRIMARY WD: 200MM – ∞



TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

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 Distance¹:	75mm
Focus Range¹:	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:	2/3"
Aperture (f/#) (lockable):	f/1.4 - f/16
Magnification Range:	0X - 0.037X
Distortion²:	<-6.5%
Object Space NA²:	0.0074
Number of Elements (Groups):	9 (8)
AR Coating:	425 - 675nm BBAR
Weight:	120g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	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

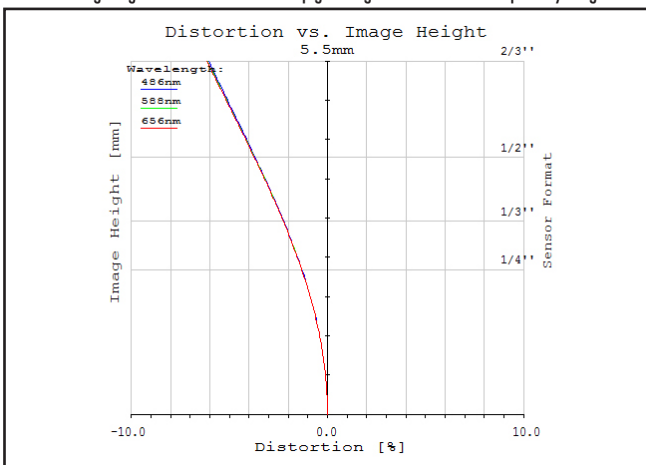


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

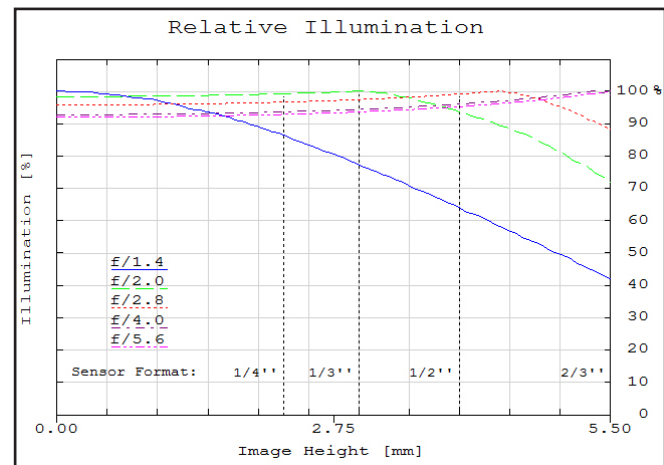


Figure 2: Relative illumination (center to corner)

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.

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

PRIMARY WD: 200MM – ∞

MTF & DOF: f/2.8
WD: 200mm

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

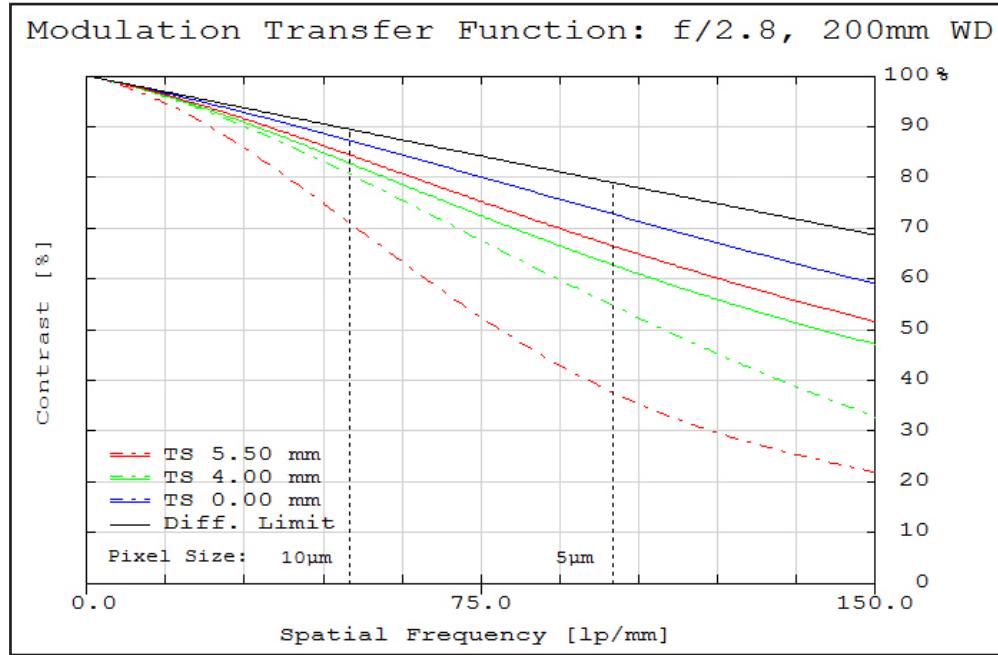


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

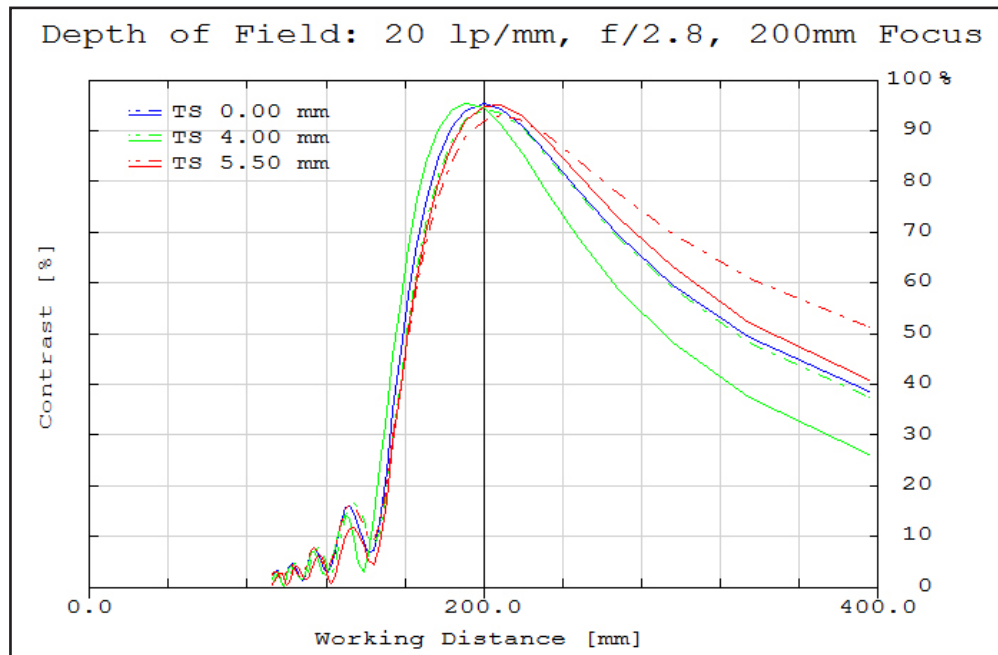


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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

PRIMARY WD: 200MM – ∞

**MTF & DOF: f/4.0
WD: 200mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

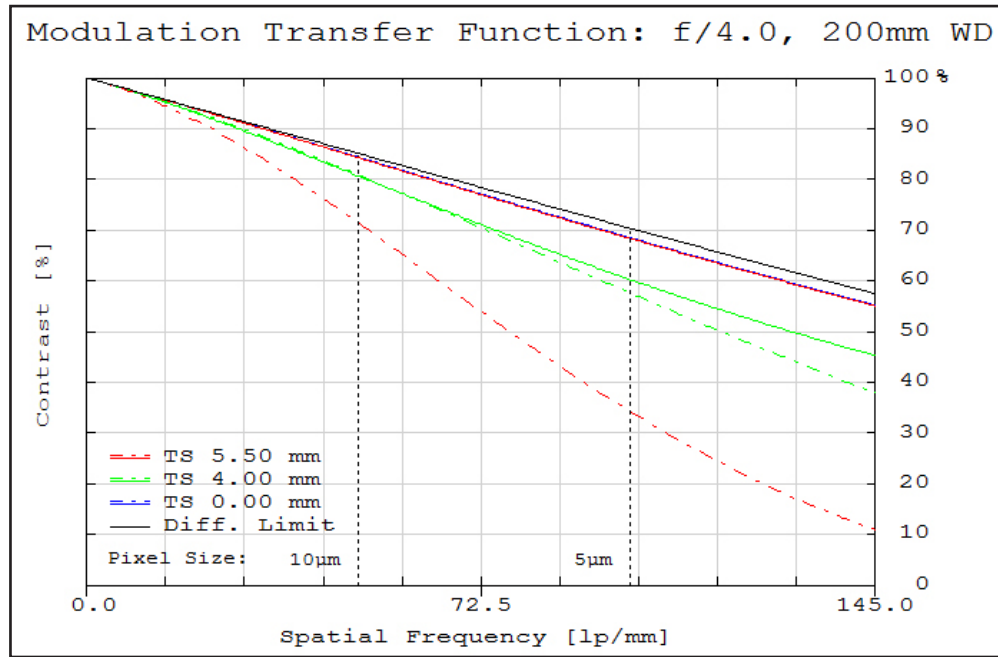


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

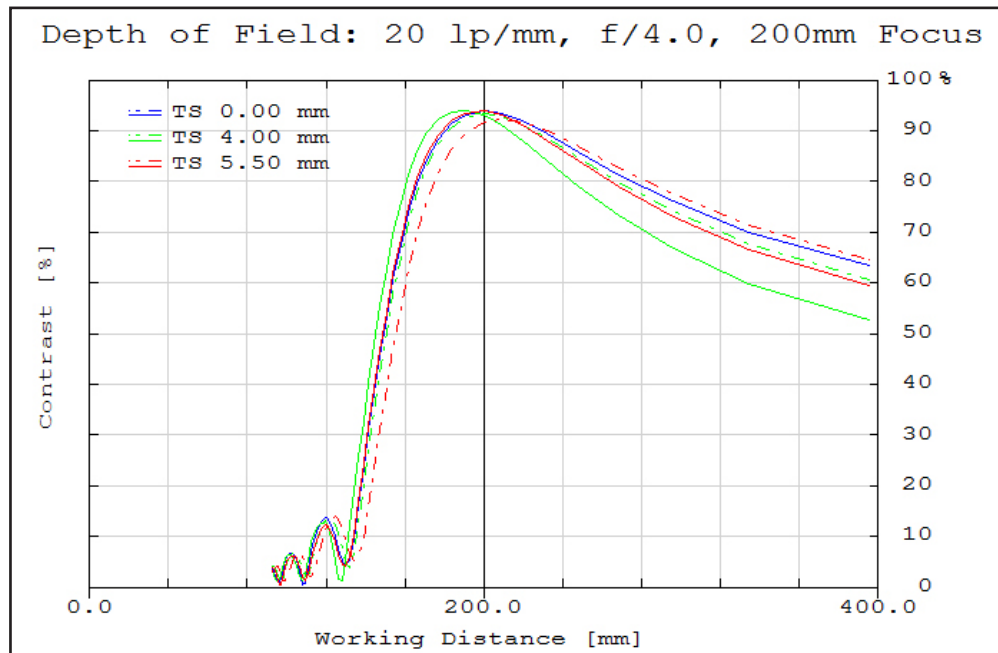


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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

PRIMARY WD: 200MM – ∞

MTF & DOF: f/2.8
WD: 500mm

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

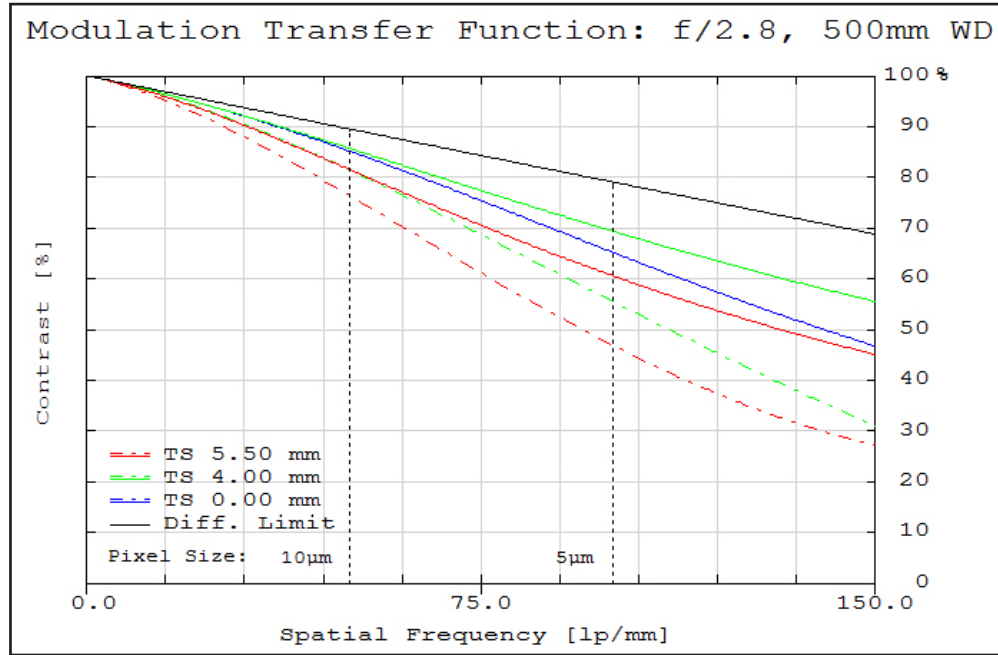


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

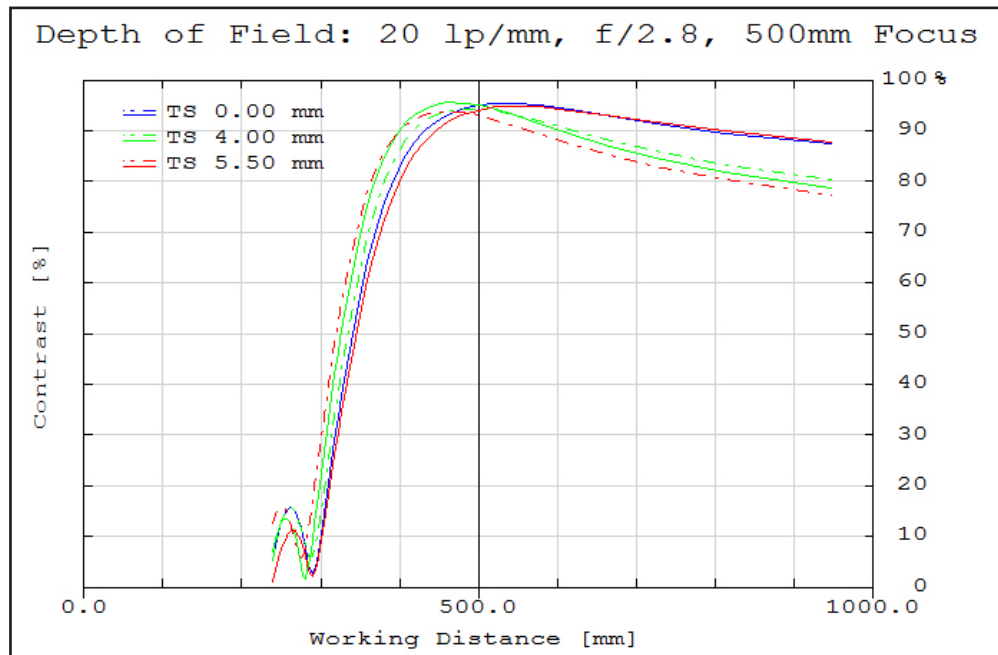


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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

PRIMARY WD: 200MM – ∞

**MTF & DOF: f/4.0
WD: 500mm**

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

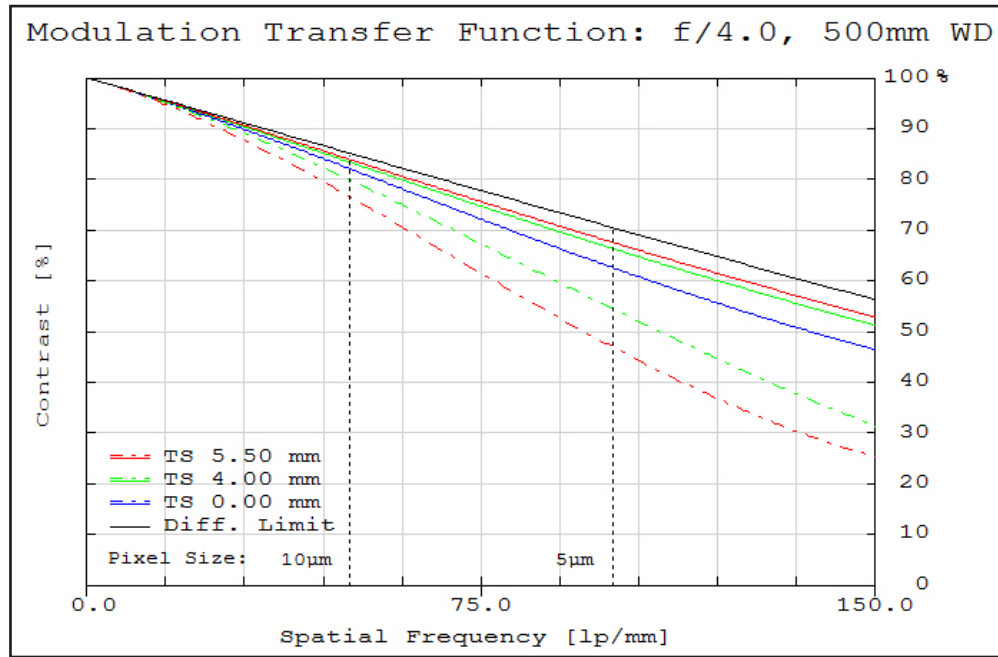


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

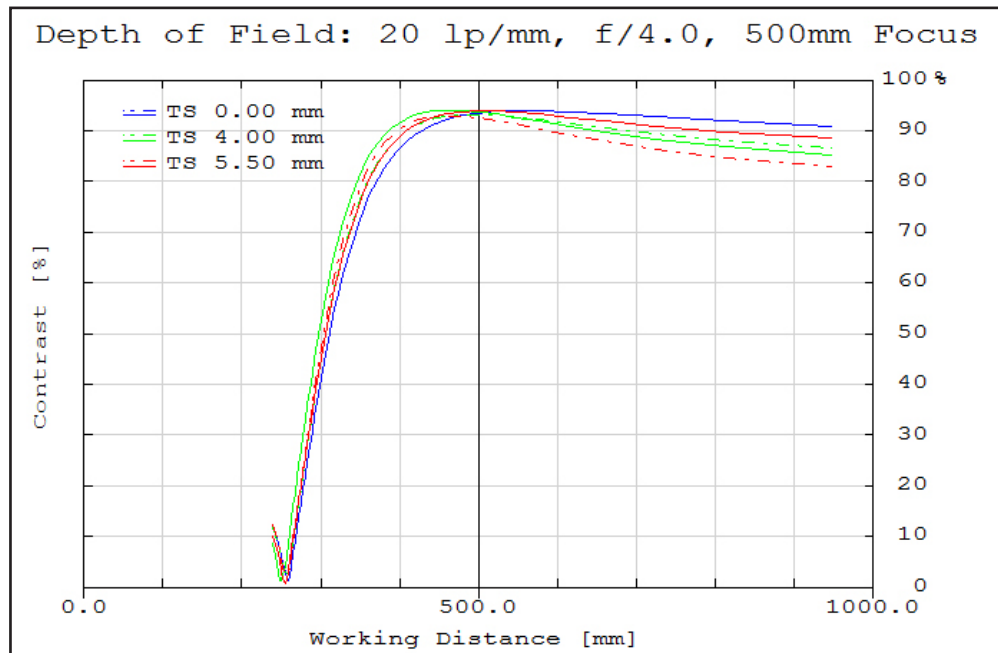


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #85-865 • 16mm FL • f/1.8 PRIMARY WD: 100 – 500mm

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.



TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

Focal Length:	16mm
Minimum Working Distance¹:	100mm
Focus Range¹:	100mm - ∞
Primary Working Distance Range:	100 - 500mm
Length at Near Focus:	43.54mm
Length at Far Focus:	41.17mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	0.46mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.077X
Distortion²:	<3%
Object Space NA²:	0.008
Number of Elements (Groups):	9 (7)
AR Coating:	425 - 675nm BBAR
Weight:	77.5g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	24.3mm - 12.83°	32.5mm - 17.09°	38.6mm - 20.28°	43.5mm - 22.76°	49.0mm - 25.58°	60.3mm - 29.96°	57.8mm - 31.21°	N/A
Field of View^{3,5}	24.3 - 114.3mm	32.5 - 152.7mm	38.6 - 181.8mm	43.5 - 204.5mm	49.0 - 230.7mm	60.3 - 283.8mm	57.8 - 571.9mm	N/A

1. From front of housing 2. At 500mm 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

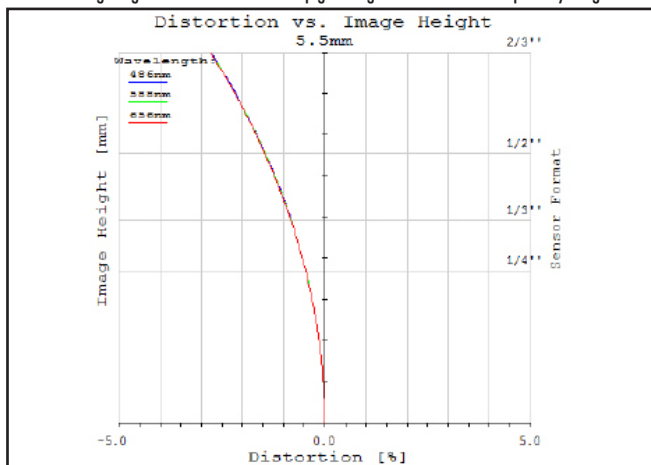


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

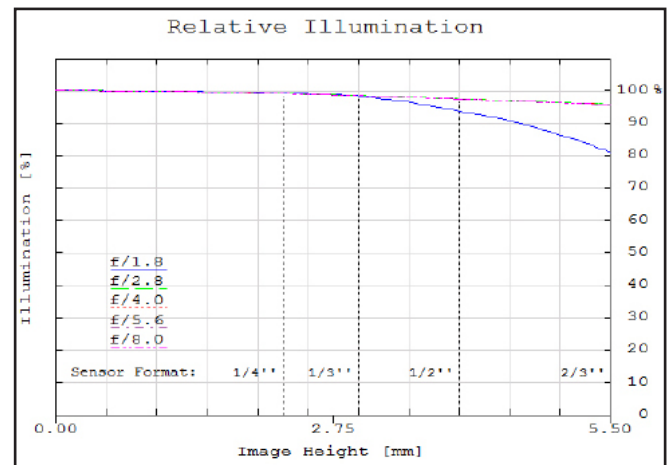


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-865 • 16mm FL • f/1.8
PRIMARY WD: 100 – 500mm

**MTF & DOF: f/2.8
WD: 150mm**

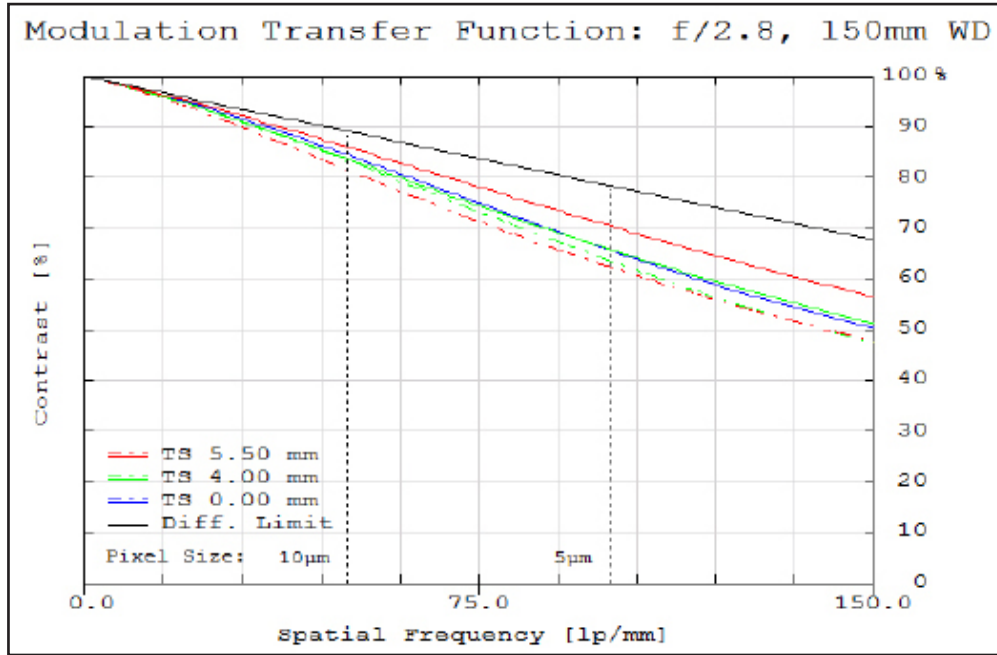


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

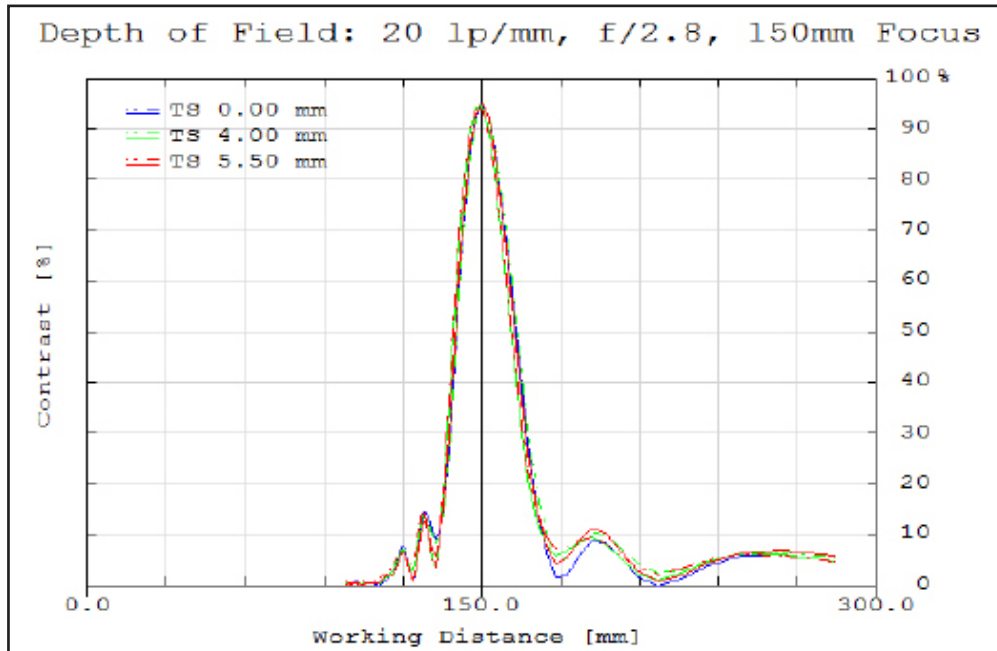


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-865 • 16mm FL • f/1.8
PRIMARY WD: 100 – 500mm

**MTF & DOF: f/2.8
WD: 500mm**

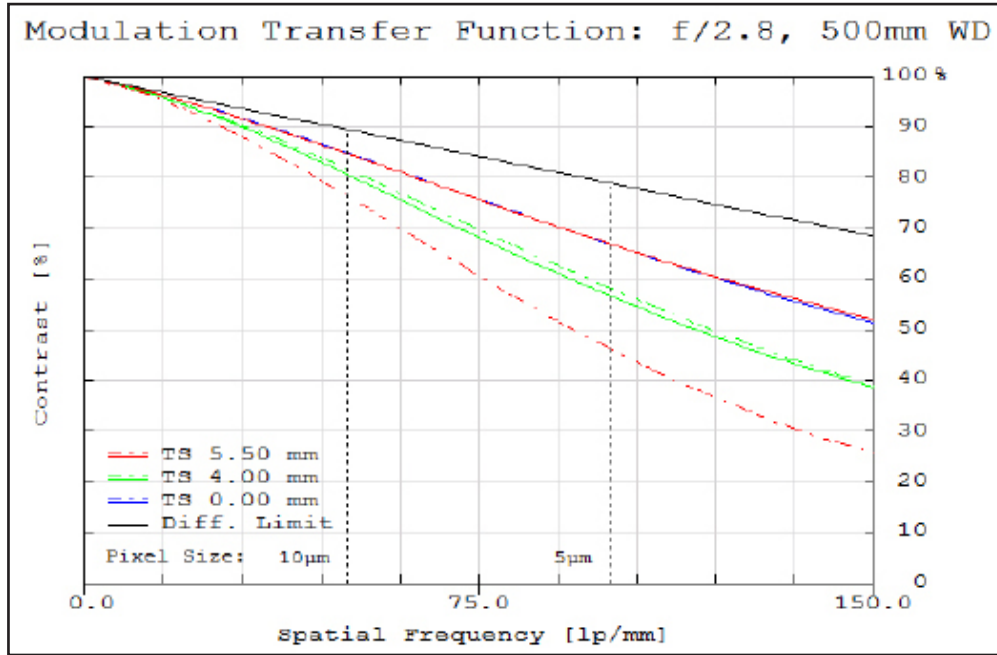


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

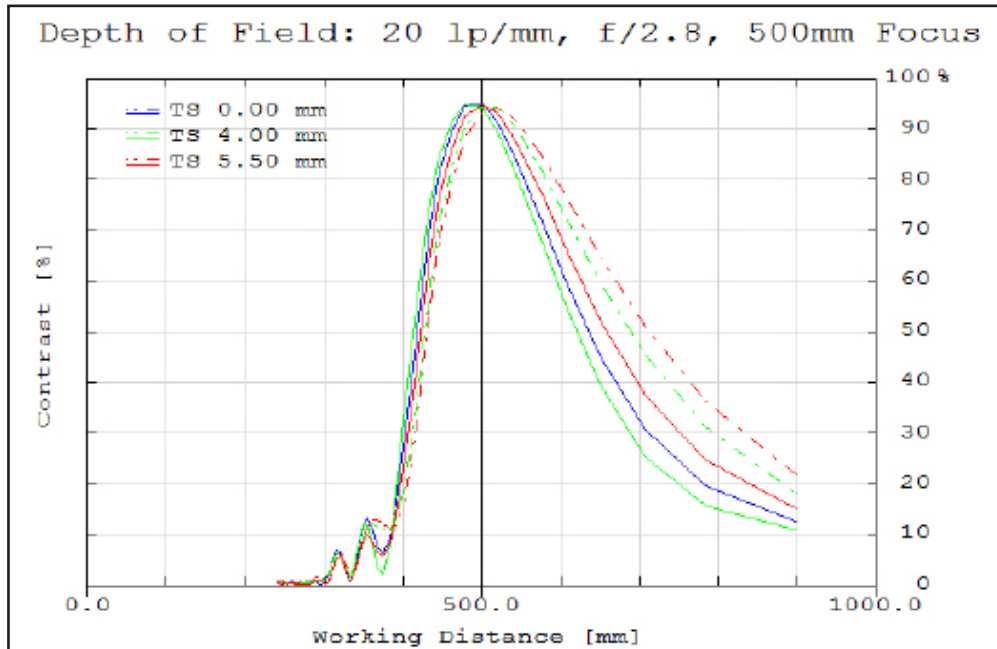


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-865 • 16mm FL • f/1.8
PRIMARY WD: 100 – 500mm

**MTF & DOF: f/4.0
WD: 150mm**

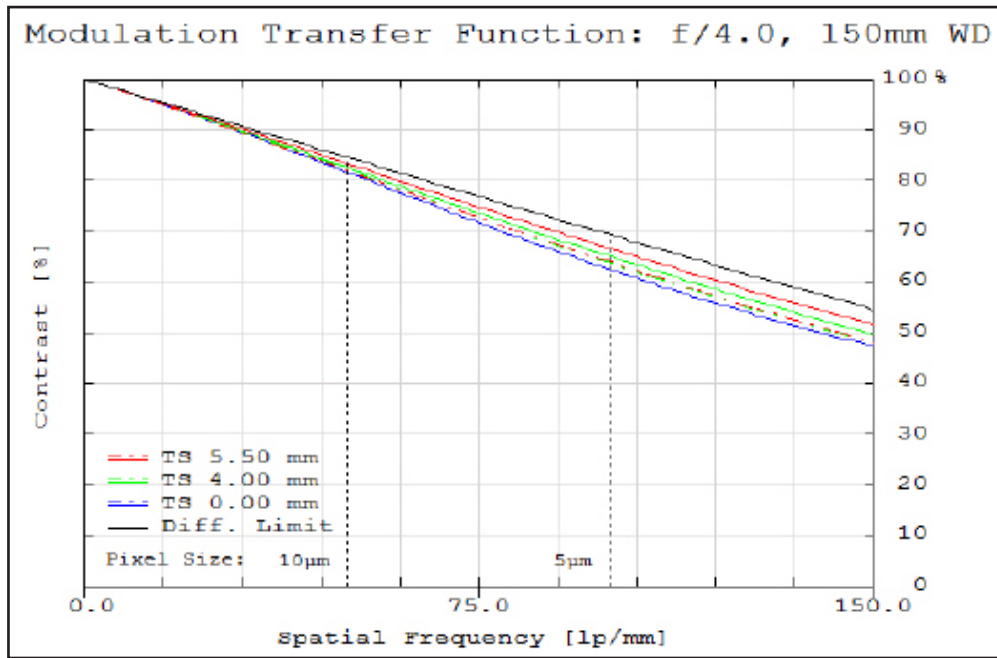


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

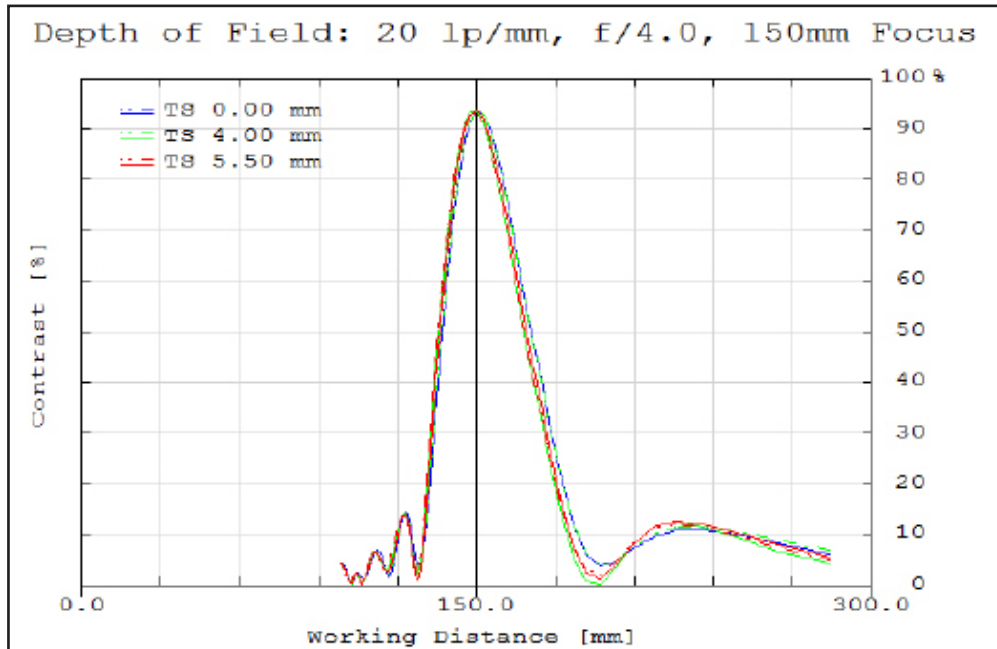


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-865 • 16mm FL • f/1.8
PRIMARY WD: 100 – 500mm

**MTF & DOF: f/4.0
WD: 500mm**

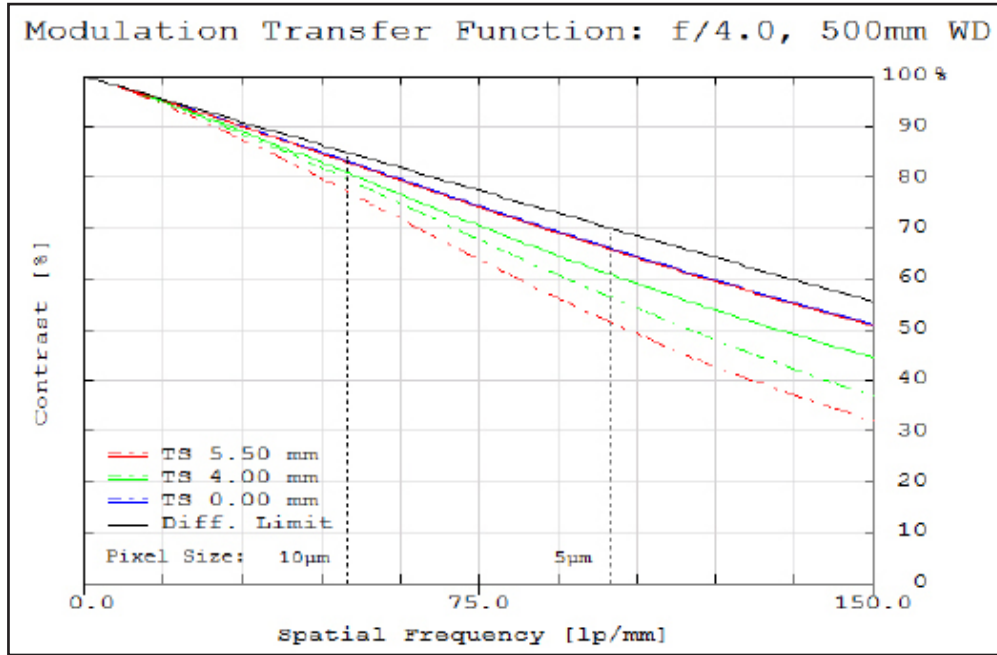


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

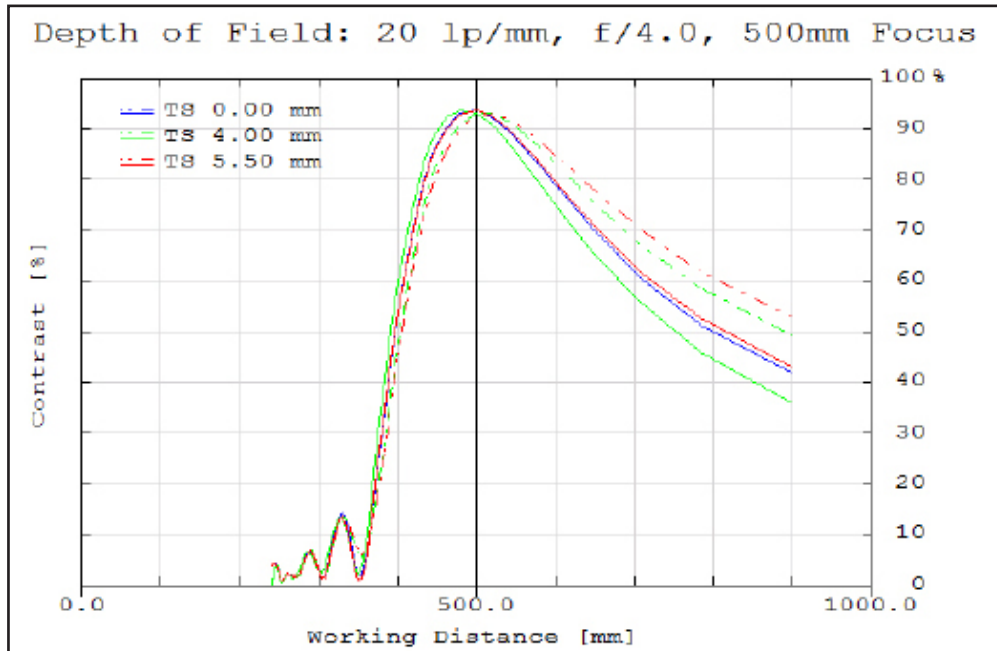


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #85-866 • 16mm FL • f/1.8 PRIMARY WD: 300 – 2000mm

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.



TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

Focal Length:	16mm
Minimum Working Distance¹:	100mm
Focus Range¹:	100mm - ∞
Primary Working Distance Range:	300 - 2000mm
Length at Near Focus:	43.38mm
Length at Far Focus:	41.02mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	0.45mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f1.8 - f16
Magnification Range:	0X - 0.077X
Distortion²:	<3%
Object Space NA²:	0.008
Number of Elements (Groups):	9 (7)
AR Coating:	425 - 675nm BBAR
Weight:	77.5g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	24.3mm - 12.83°	32.5mm - 17.09°	38.6mm - 20.28°	43.5mm - 22.76°	49.0mm - 25.58°	60.3 - 29.96	57.8mm - 31.21°	N/A
Field of View^{3,5}	69.4 - 452.9mm	92.8 - 605.3mm	110.4 - 720.4mm	124.2 - 810.5mm	140.1 - 914.1mm	172.3 - 1124.4mm	165.4 - 1077.5mm	N/A

1. From front of housing 2. At 500mm 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

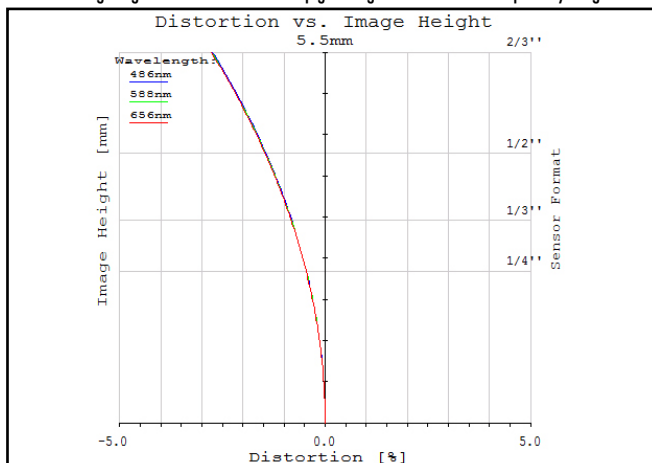


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

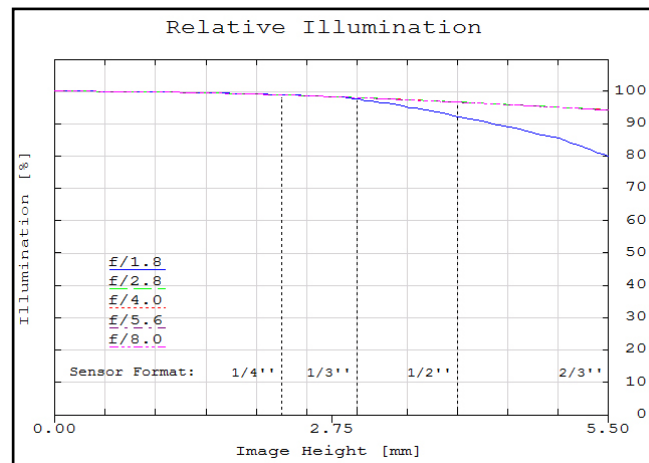


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-866 • 16mm FL • f/1.8
PRIMARY WD: 300 – 2000mm

**MTF & DOF: f/2.8
WD: 500mm**

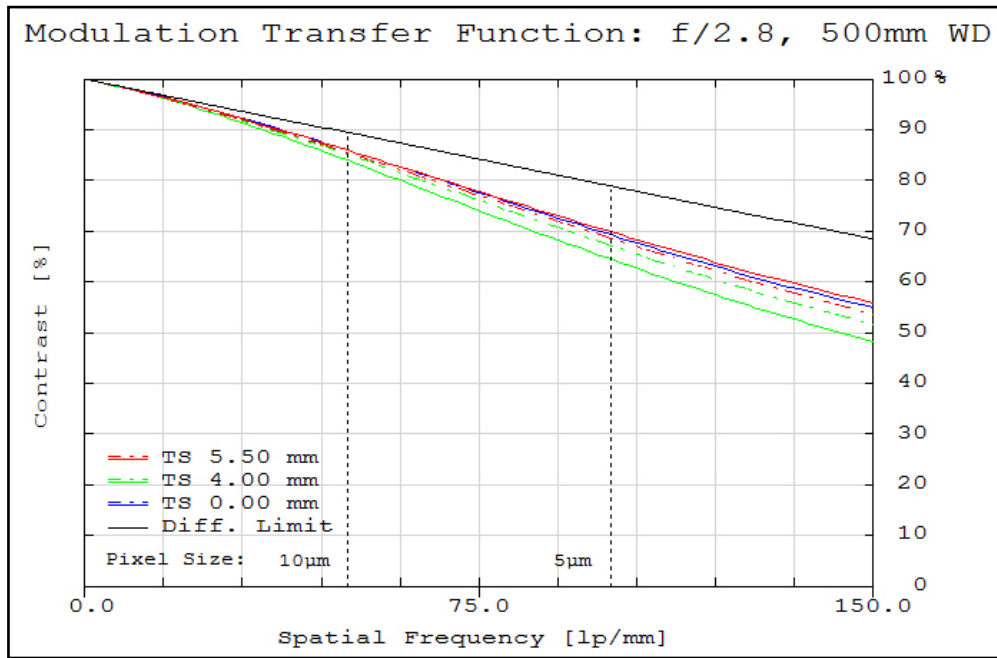


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

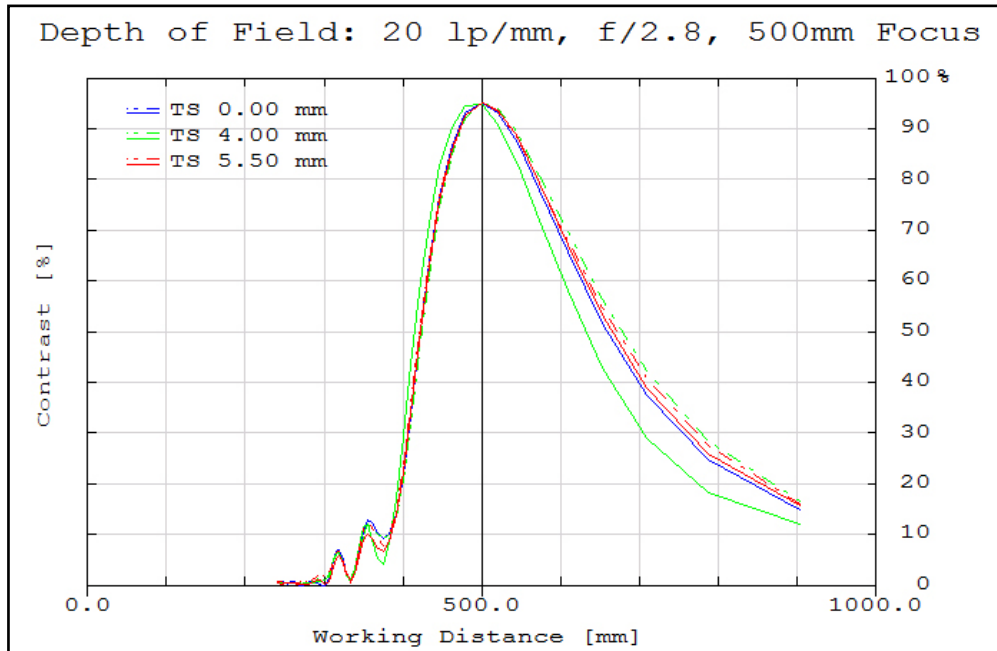


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-866 • 16mm FL • f/1.8
PRIMARY WD: 300 – 2000mm

**MTF & DOF: f/2.8
WD: 2000mm**

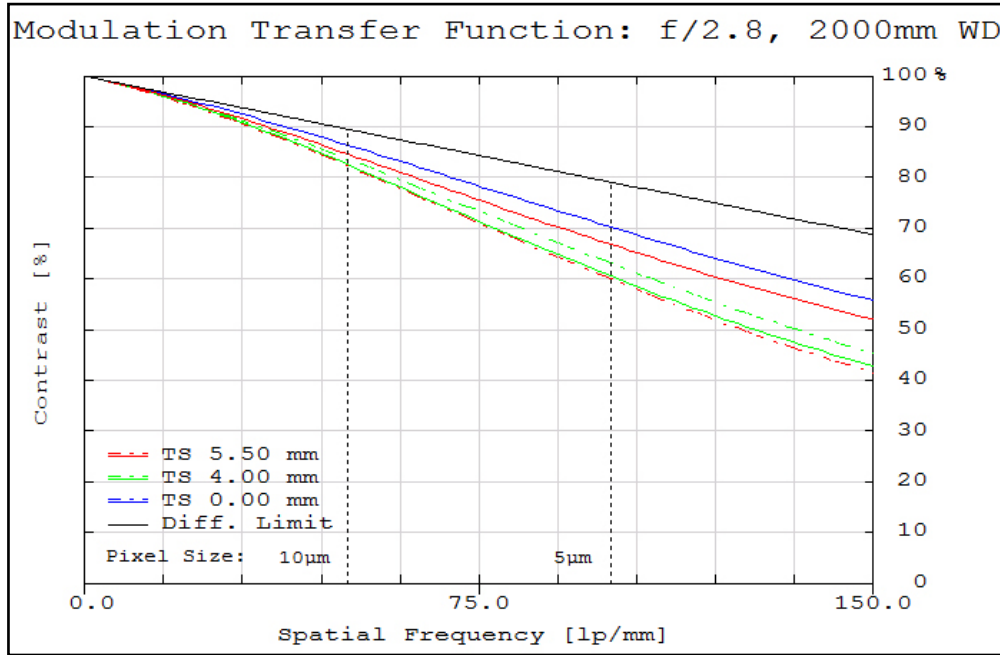


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

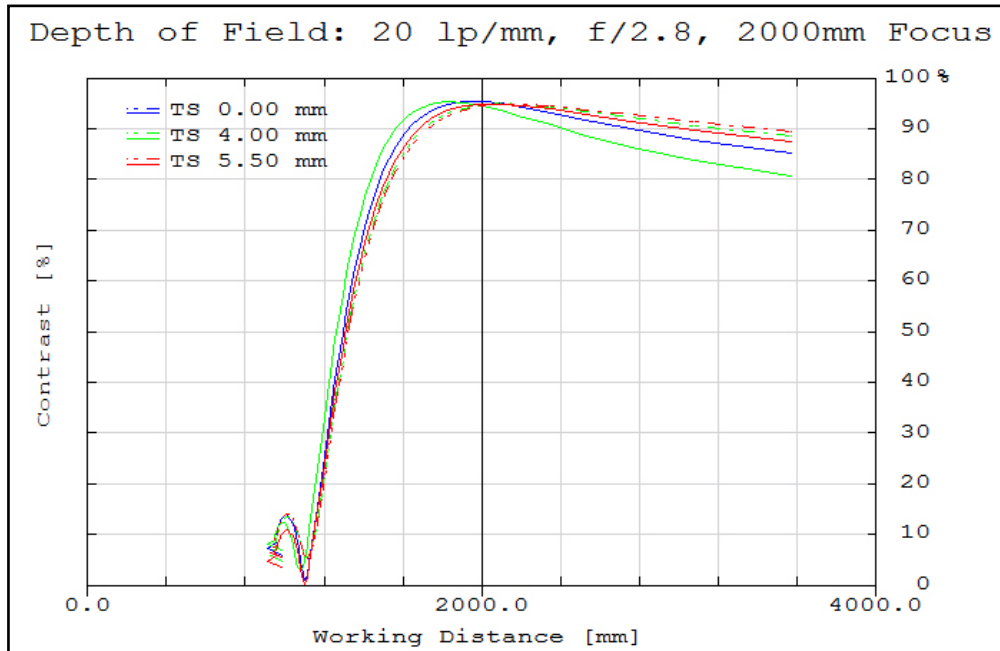


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-866 • 16mm FL • f/1.8
PRIMARY WD: 300 – 2000mm

**MTF & DOF: f/4.0
WD: 500mm**

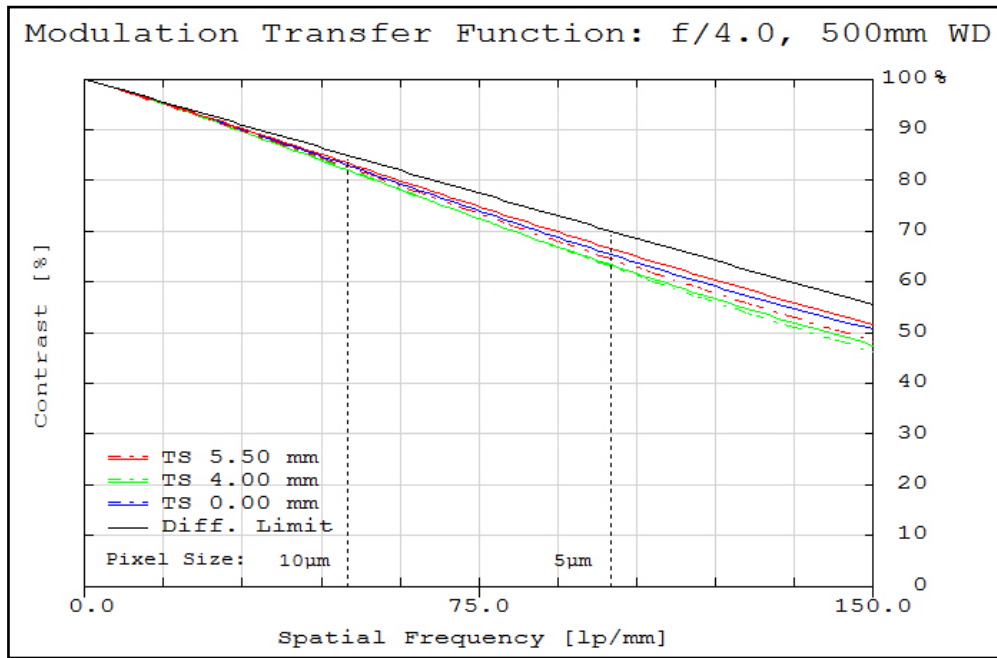


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

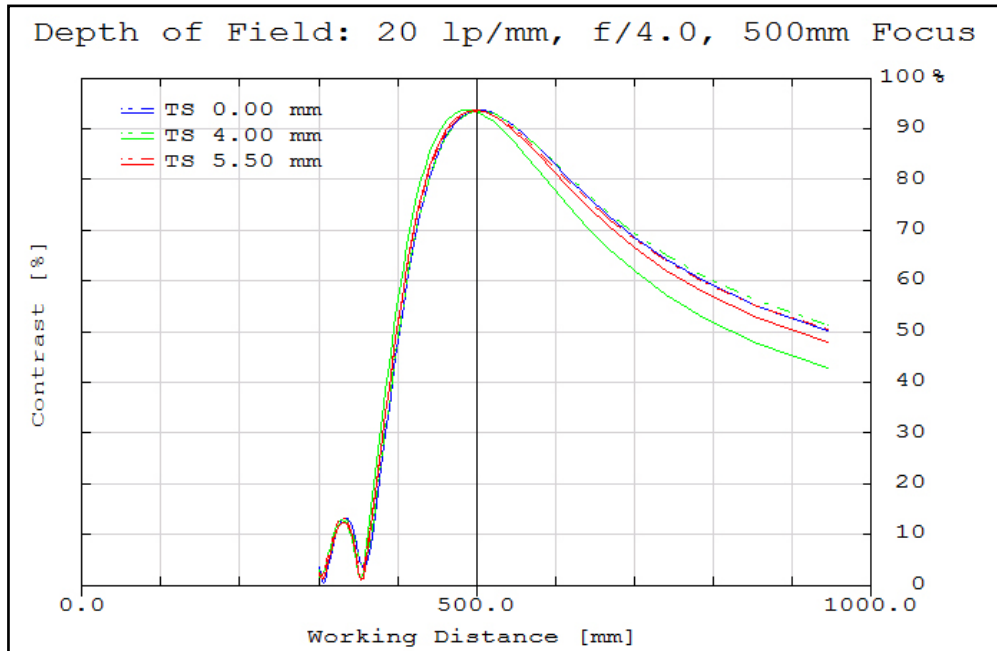


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS
#85-866 • 16mm FL • f/1.8
PRIMARY WD: 300 – 2000mm**

**MTF & DOF: f/4.0
WD: 2000mm**

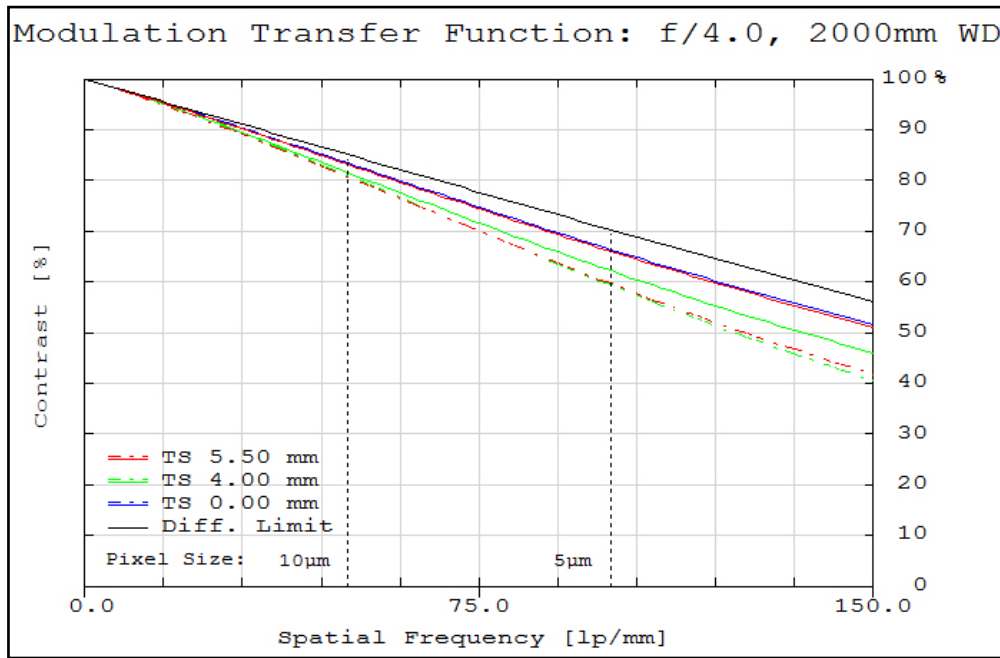


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

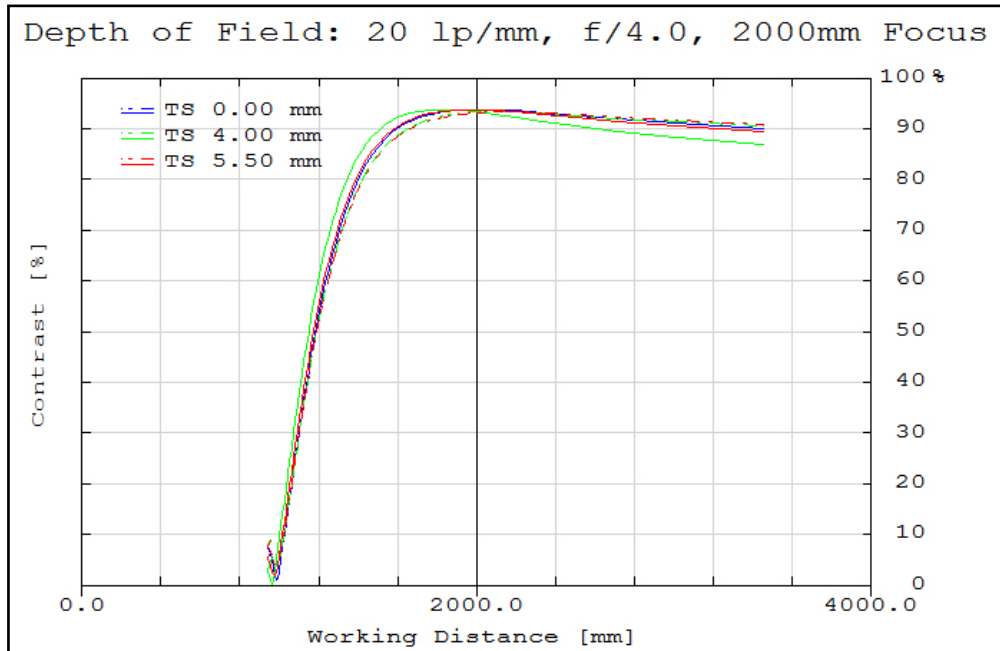


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #85-868 • 35mm FL • f/1.8 PRIMARY WD: 125 – 600mm

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.



TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS

Focal Length:	35mm
Minimum Working Distance¹:	100mm
Focus Range¹:	100mm - ∞
Primary Working Distance Range:	125 - 600mm
Length at Near Focus:	44.46mm
Length at Far Focus:	39.0mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	1.51mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.33X
Distortion²:	<1%
Object Space NA²:	0.018
Number of Elements (Groups):	8 (7)5
AR Coating:	425 - 675nm BBAR
Weight:	69.5g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	10.9mm - 5.9°	14.6mm - 7.8°	17.3mm - 9.3°	19.5mm - 10.4°	21.9mm - 11.69°	26.84mm - 14.3°	25.75mm - 13.7°	N/A
Field of View^{3,5}	13.5 - 62.0mm	18.0 - 82.7mm	21.4 - 98.2mm	24.0 - 110.3mm	27.1 - 124.2mm	33.2 - 151.9mm	31.8 - 145.7mm	N/A

1. From front of housing 2. At 500mm 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

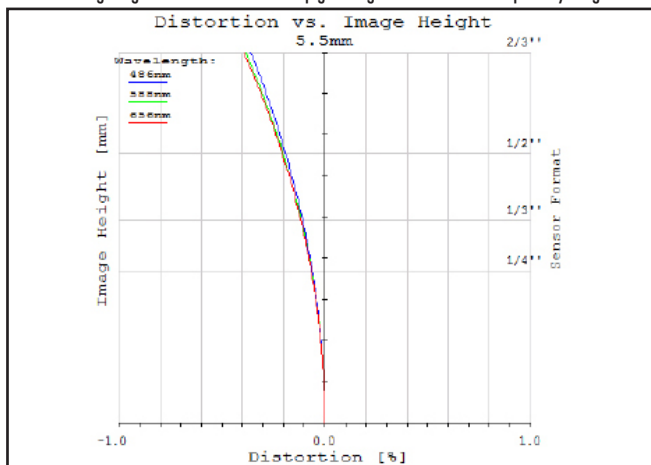


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

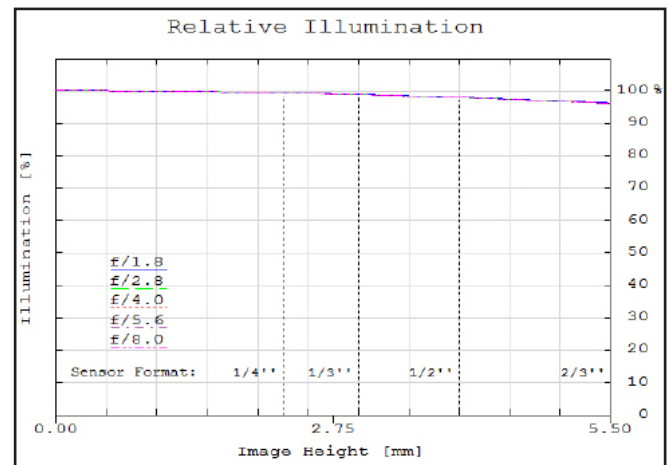


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-868 • 35mm FL • f/1.8
PRIMARY WD: 125 – 600mm

**MTF & DOF: f/2.8
WD: 200mm**

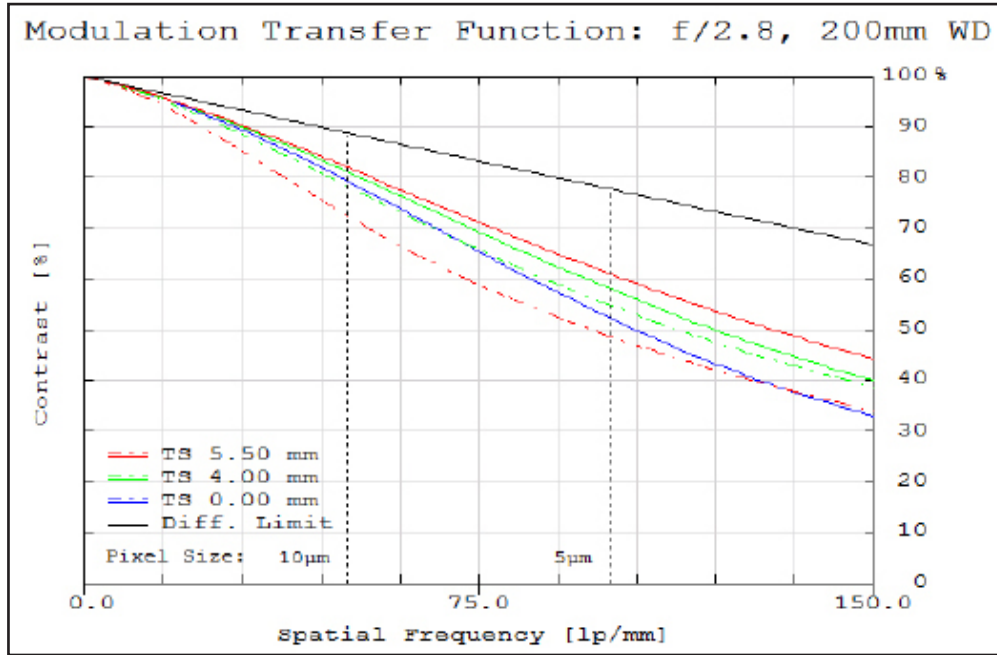


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

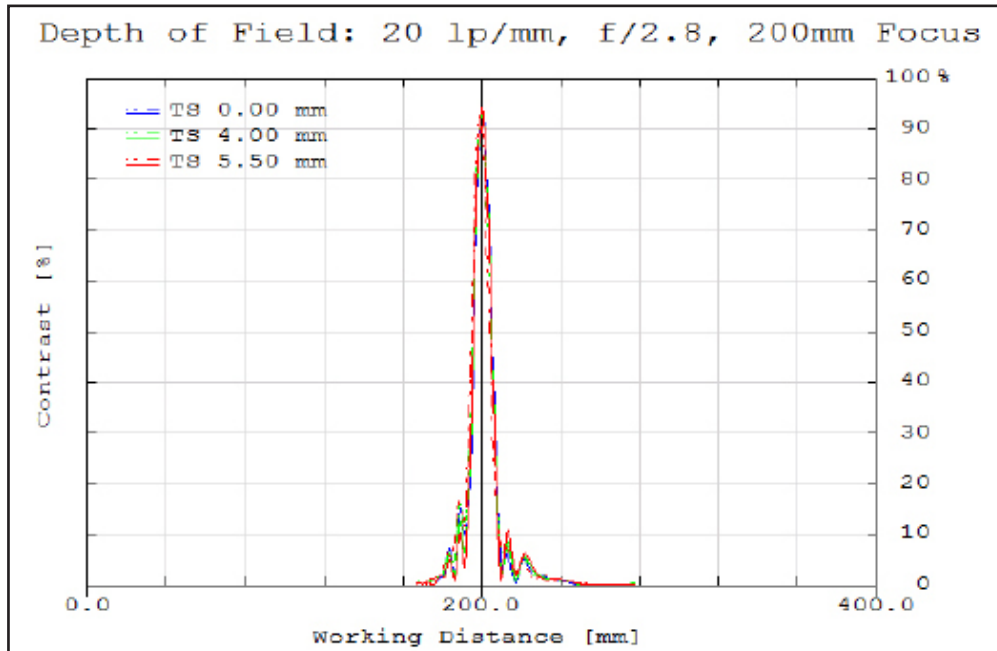


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-868 • 35mm FL • f/1.8
PRIMARY WD: 125 – 600mm

**MTF & DOF: f/2.8
WD: 500mm**

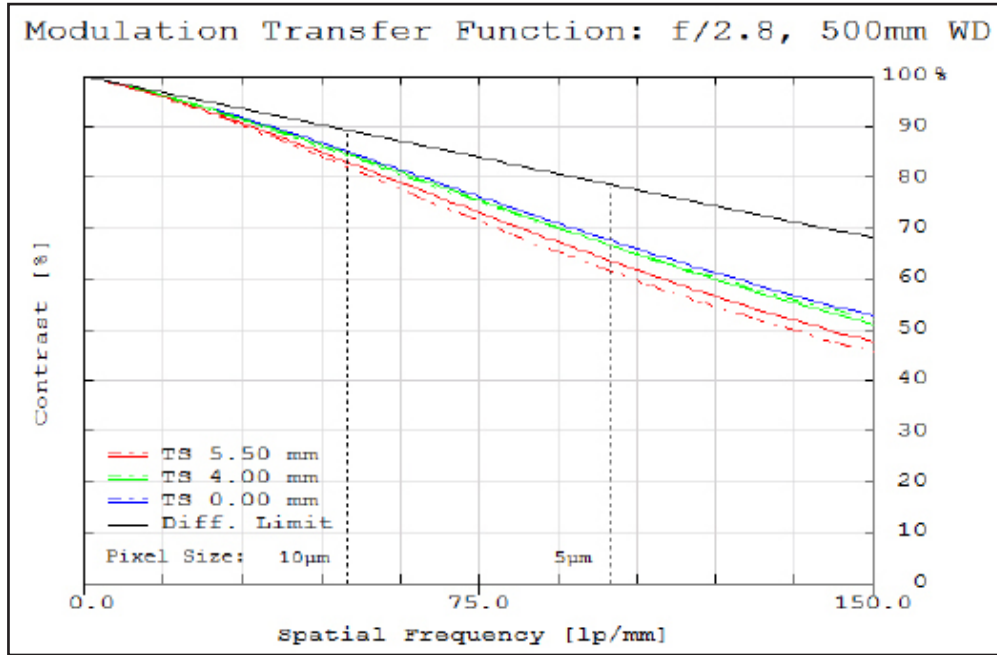


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

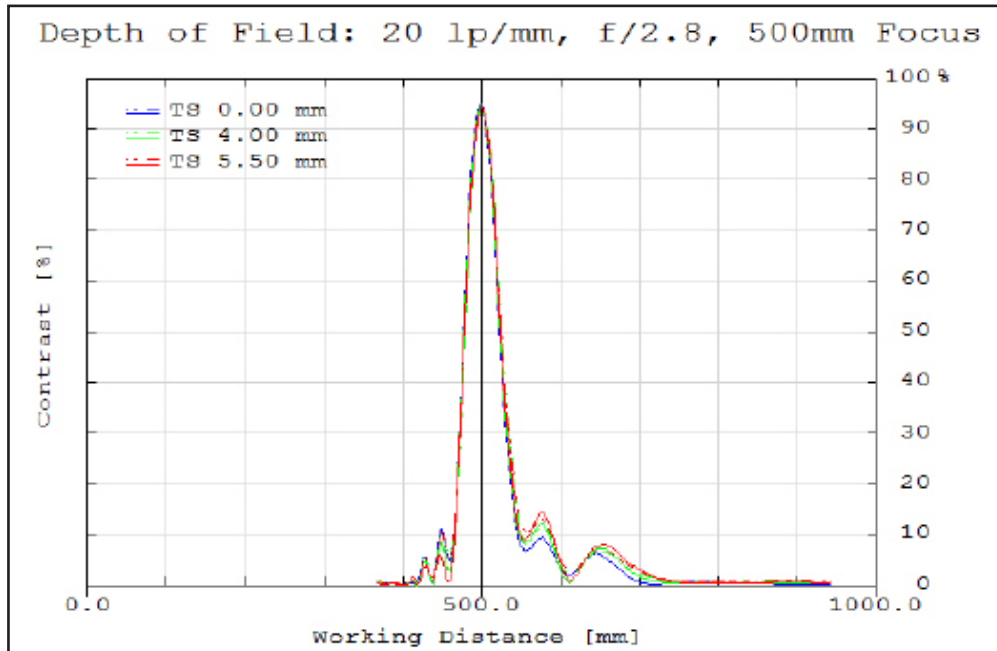


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-868 • 35mm FL • f/1.8
PRIMARY WD: 125 – 600mm

**MTF & DOF: f/4.0
WD: 200mm**

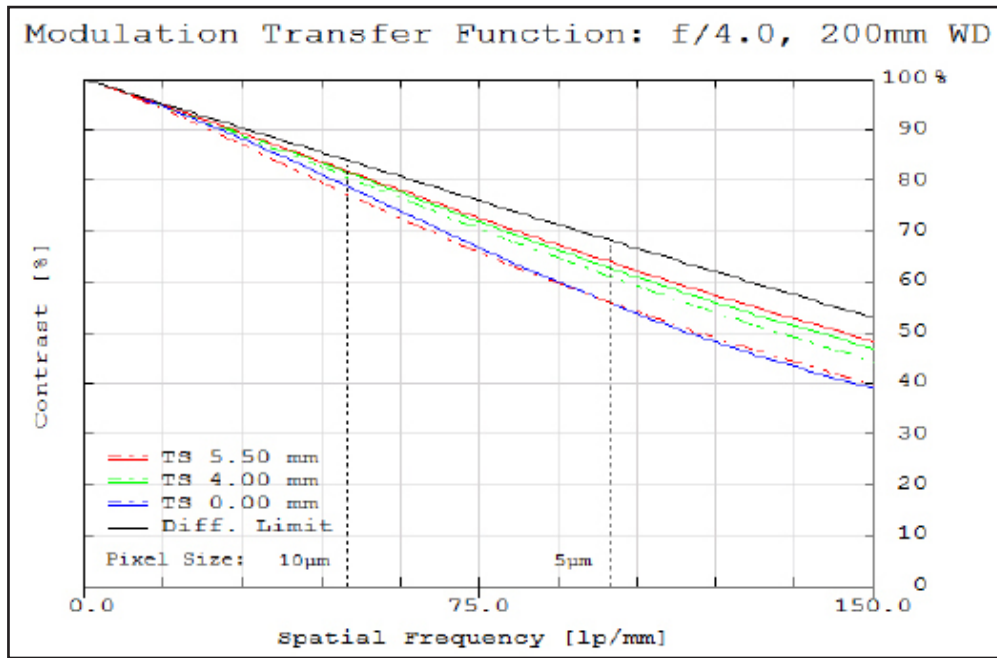


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

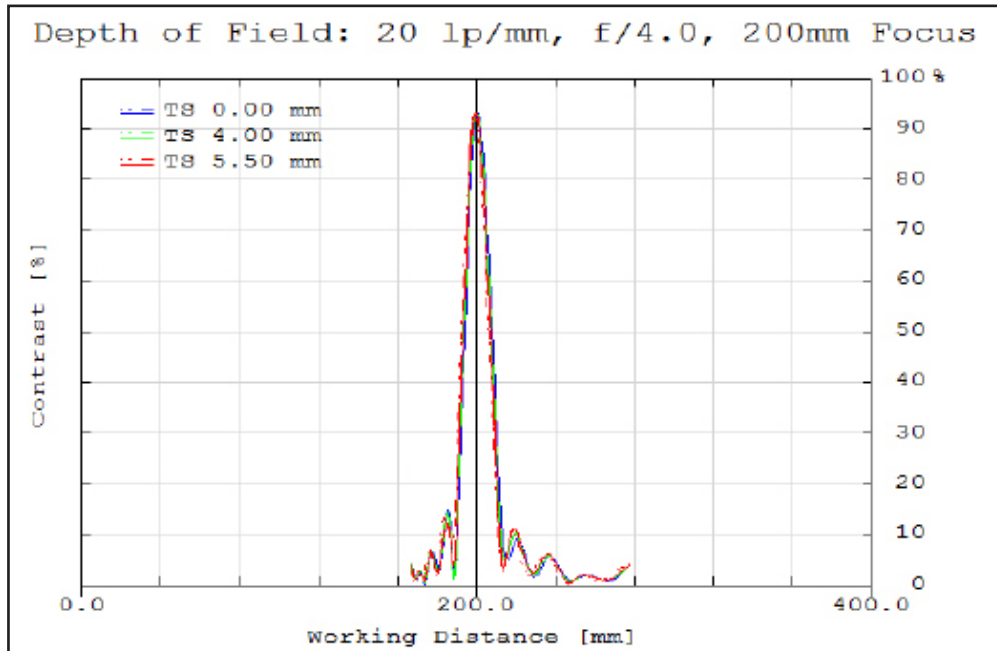


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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FIXED FOCAL LENGTH LENS**
#85-868 • 35mm FL • f/1.8
PRIMARY WD: 125 – 600mm

MTF & DOF: f/4.0
WD: 500mm

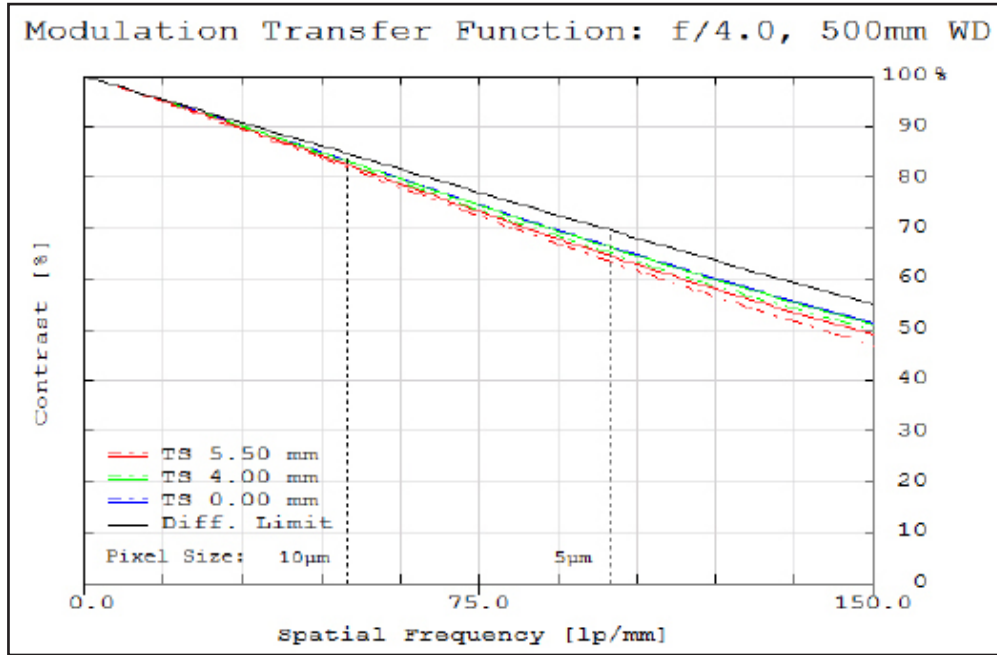


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

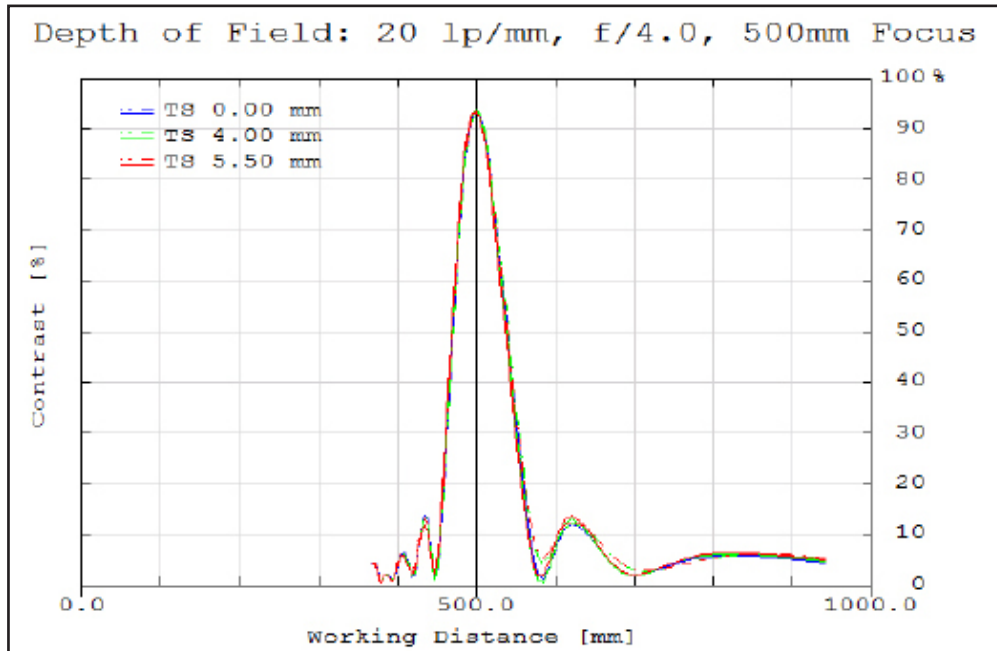


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® HIGH RESOLUTION FIXED FOCAL LENGTH LENS #85-869 • 35mm FL • f/1.8 PRIMARY WD: 400 – 2000mm

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:	35mm
Minimum Working Distance¹:	100mm
Focus Range¹:	100mm - ∞
Primary Working Distance Range:	400 - 2000mm
Length at Near Focus:	44.46mm
Length at Far Focus:	39.0mm
Filter Thread:	M25.5 x 0.5
Maximum Rear Protrusion:	0.7mm
Camera Mount:	C-Mount

Maximum Sensor Format:	2/3"
Aperture (f/#) (lockable):	f/1.8 - f/16
Magnification Range:	0X - 0.33X
Distortion²:	<1%
Object Space NA²:	0.018
Number of Elements (Groups):	8 (5)
AR Coating:	425 - 675nm BBAR
Weight:	69.5g

Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	Sony 2/3"	1"
Field of View^{3,4}	10.9mm - 5.9°	14.6mm - 7.8°	17.3mm - 9.3°	19.5mm - 10.4°	21.9mm - 11.69°	26.84mm - 14.3°	25.75mm - 13.7°	N/A
Field of View^{3,5}	41.6 - 205.6mm	55.6 - 274.1mm	66.0 - 325.5mm	74.1 - 365.6mm	83.4 - 411.3mm	102.1 - 508.8mm	98.0 - 482.6mm	N/A

1. From front of housing 2. At 500mm 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

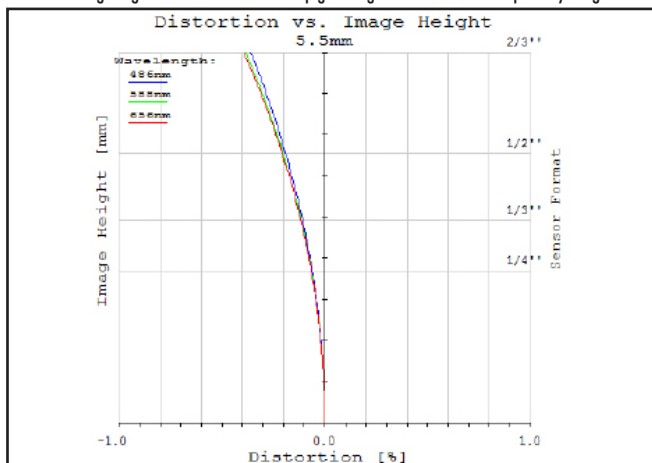


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

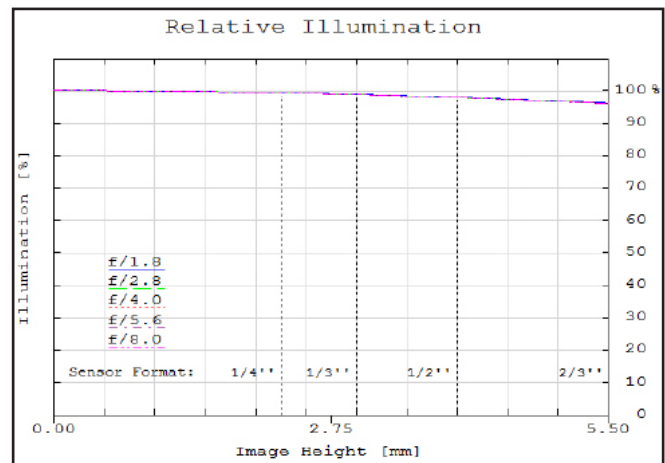


Figure 2: Relative illumination (center to corner)

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.

**TECHSPEC® HIGH RESOLUTION
FIXED FOCAL LENGTH LENS**
#85-869 • 35mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/2.8
WD: 500mm**

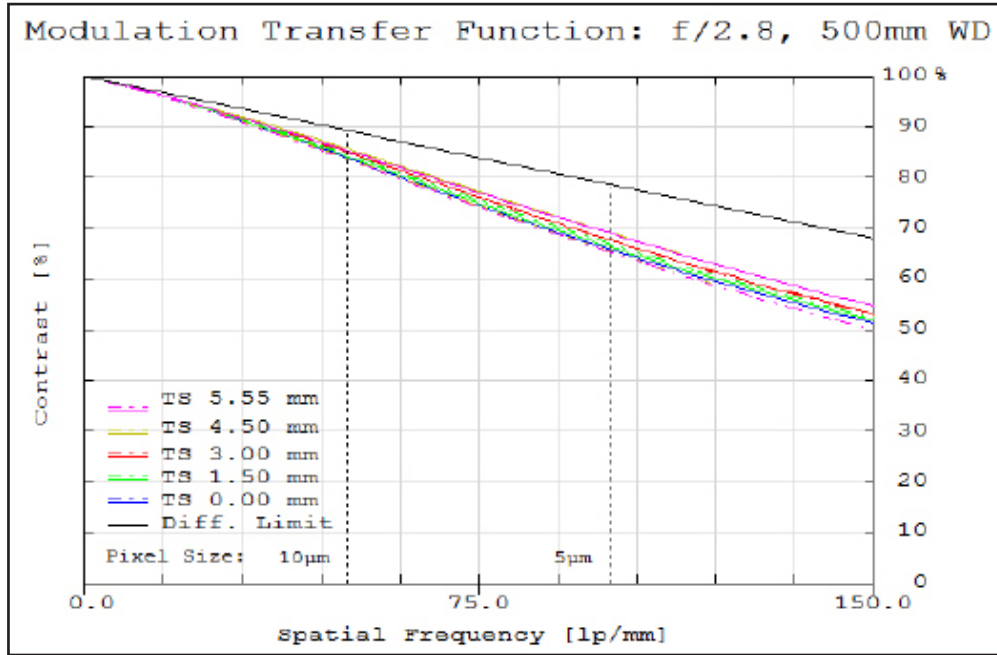


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for $\lambda = 486\text{nm}$ to 656nm . Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined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

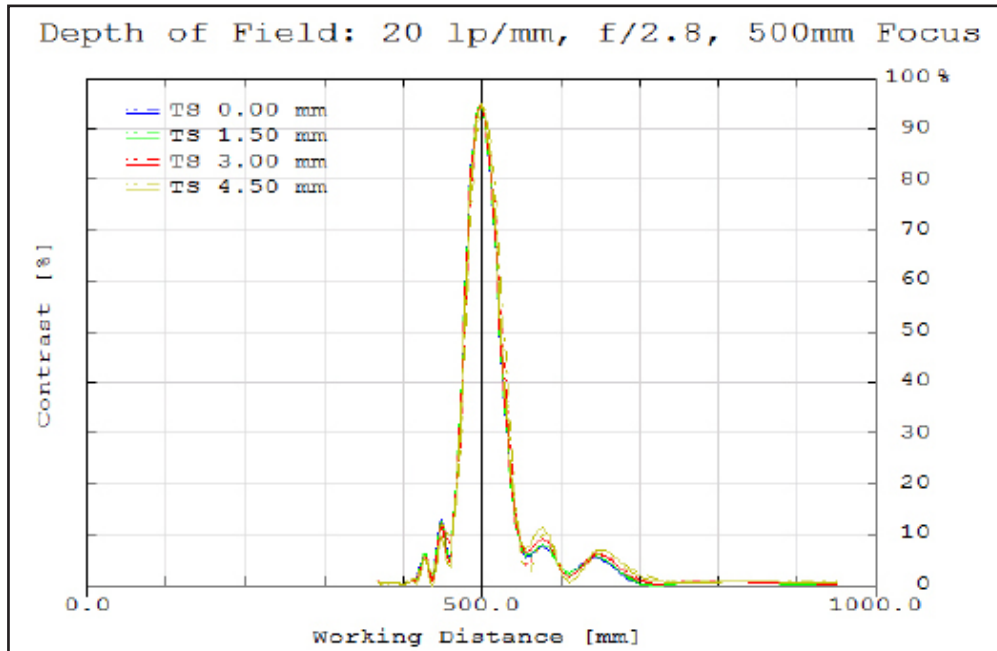


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/2.8
WD: 2000mm**

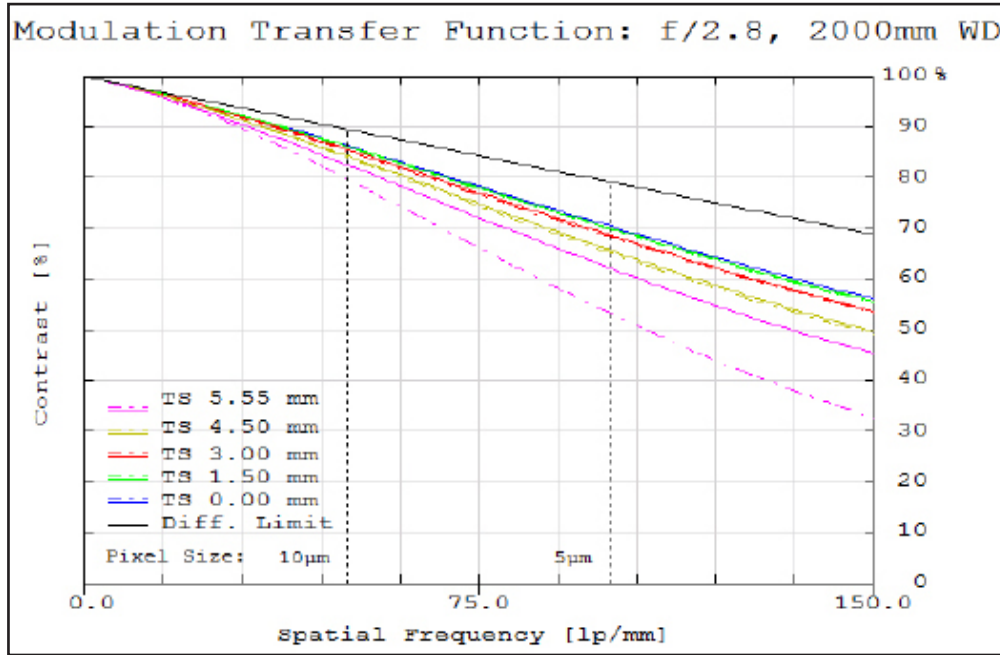


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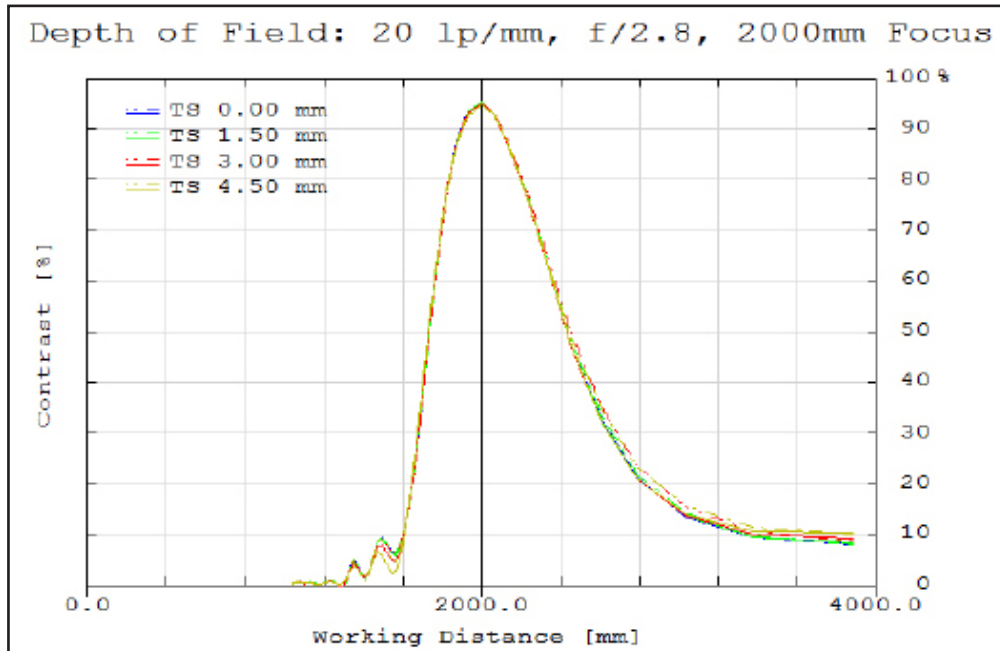


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#85-869 • 35mm FL • f/1.8
PRIMARY WD: 400 – 2000mm

**MTF & DOF: f/4.0
WD: 500mm**

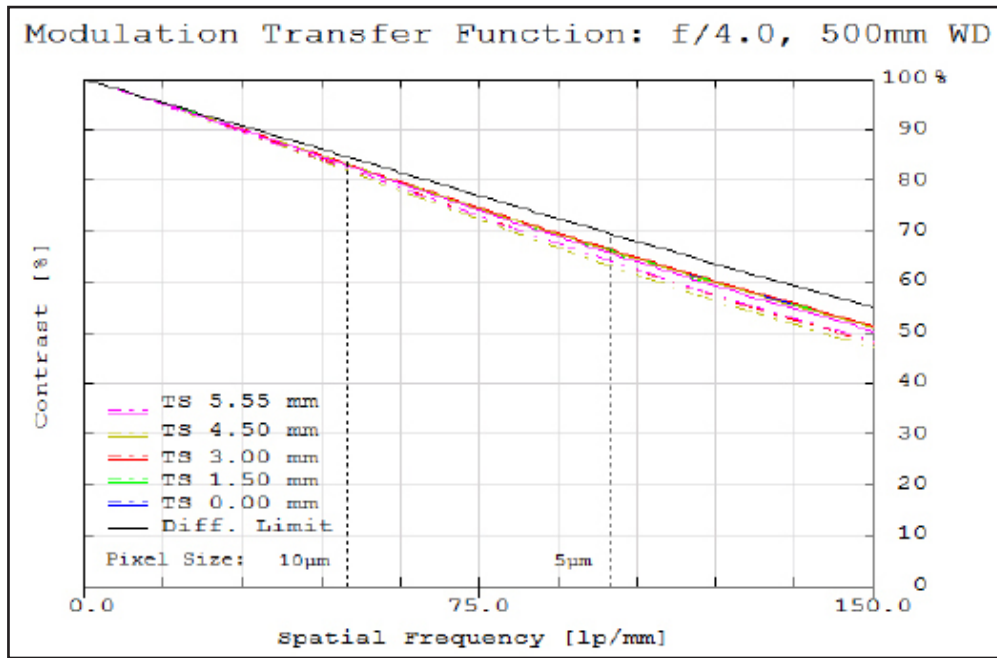


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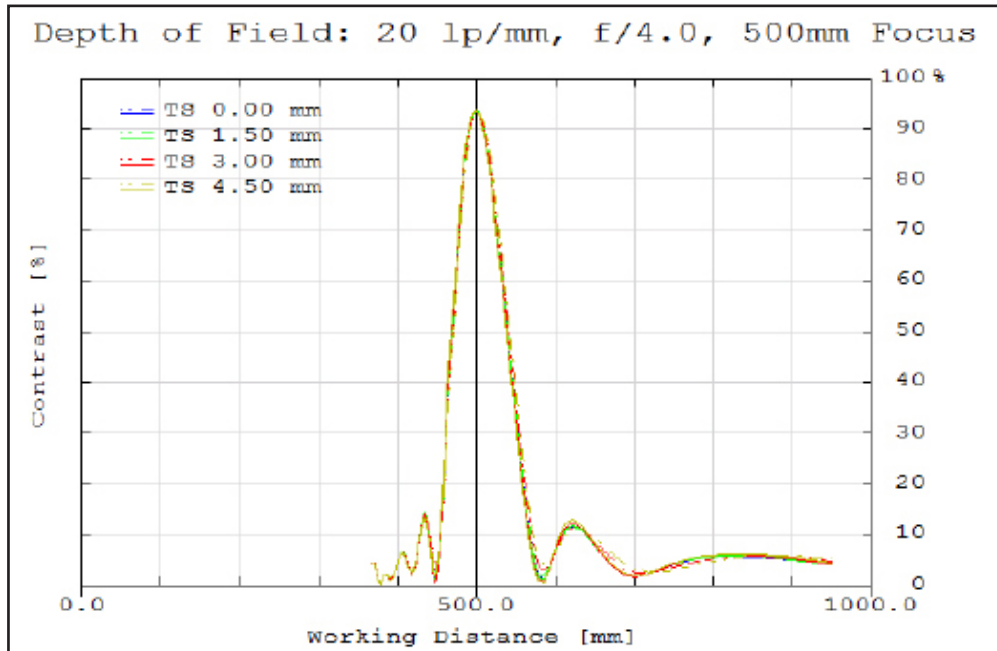


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**MTF & DOF: f/4.0
WD: 2000mm**

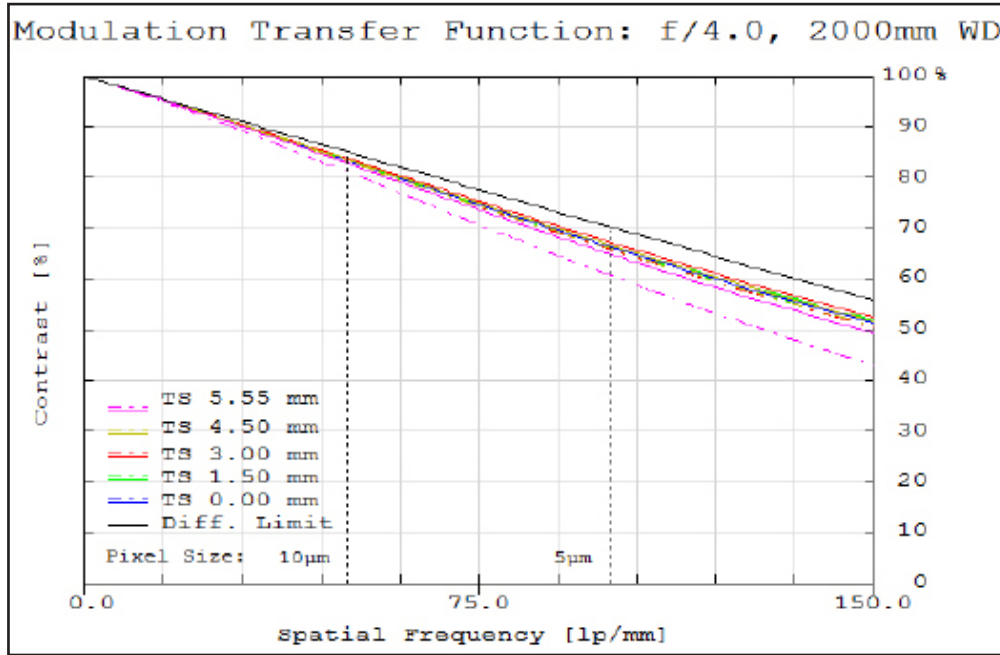


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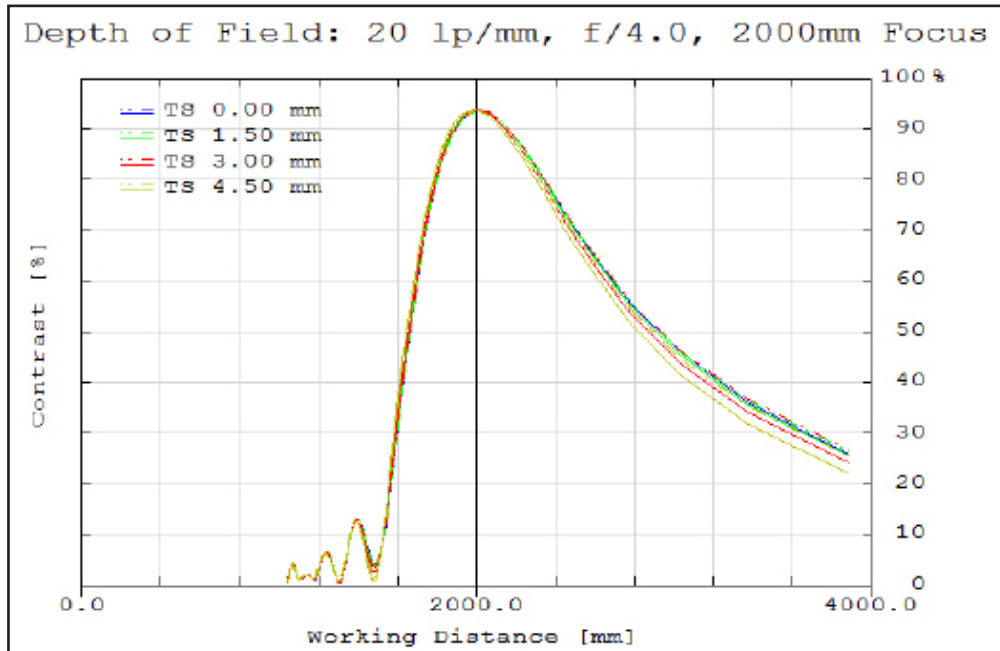


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