Designed for use in machine vision applications, our TECHSPEC® Compact Fixed Focal Length Lenses are ideal for use in factory automation, inspection or qualification. These machine vision lenses have been optically designed with the working distance and resolution requirements of factory automation and inspection in mind. Featuring large maximum apertures, these high performance lenses can be used in even the most restrictive lighting conditions. Each lens has a broadband antireflection coating, which increases transmission by up to 12 percent over the standard MgF2 coating on competitive lenses.



Focal Length:	25mm			
Minimum Working Distance ¹ :	100mm			
Focus Range ¹ (Lockable):): 100mm - ∞			
Length at Near Focus:	30.43mm			
Length at Far Focus:	30.43mm			
Filter Thread:	M25.5 x 0.5			
Max. Sensor Format:	2⁄3″			
Camera Mount:	C-Mount			

TECHSPEC® COMPACT FIXED FOCAL LENGTH LENS

Aperture (f/#):	f/1.4 - f/17			
Magnification Range:	0X - 0.025X			
Distortion ² :	<0.7%			
Object Space NA ² :	0.023			
Number of Elements (Groups):	7 (6)			
AR Coating:	425 - 675nm BBAR			
Weight:	48g			

Sensor Size	1⁄4"	1⁄3″	1⁄2.5″	1⁄2″	1⁄1.8″	2⁄3″]″	4⁄3″
Field of View ³	14.2mm - 8.2°	19.0mm - 10.9°	22.6mm - 12.9°	25.4mm - 14.5°	28.5mm - 16.1°	35.0mm - 19.8°	N/A	N/A
1. From front of housing 2. At 200mm W.D. 3. Horizontal FOV on standard 4:3 sensor format. Min. W.D angular FOV at infinite conjugate					Specifica	tions subject to change		

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

Distortion vs. Image Height 5.5mm 2/311 Wavele 40622 500m 55520 [KALKA] 1/2 cmat Height 2 1/3 1/4 ... 00 Cmage 0.0 Distortion [%] -1.01.0

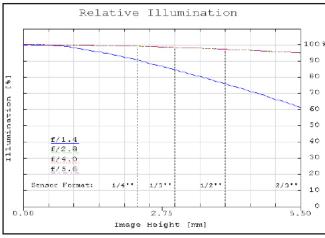


Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

Figure 2: Relative illumination (center to corner)

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



MTF & DOF: f/2.8 WD: 200mm

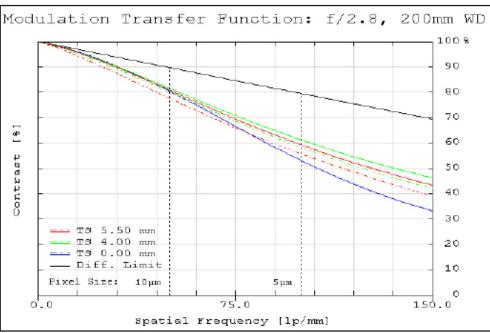


Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

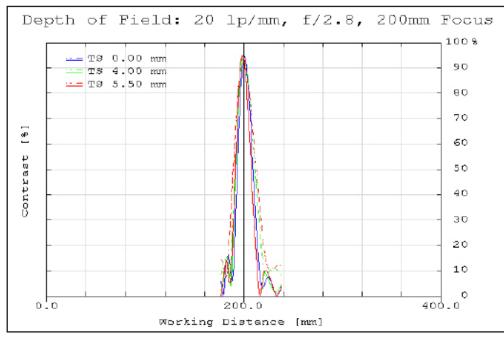


Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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



MTF & DOF: f/4.0 WD: 200mm

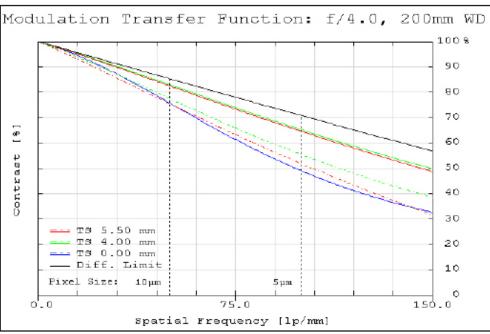


Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

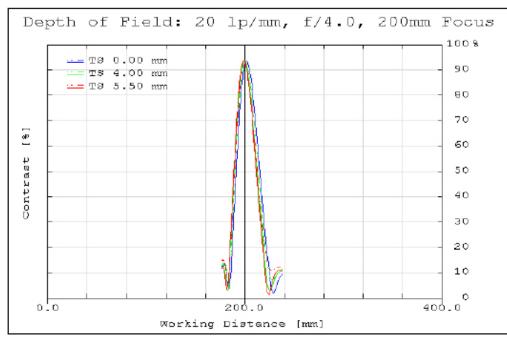


Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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



MTF & DOF: f/2.8 WD: 500mm

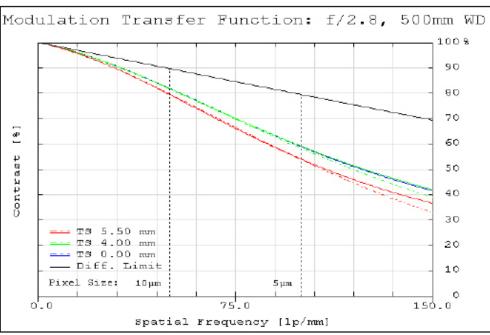


Figure 7: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

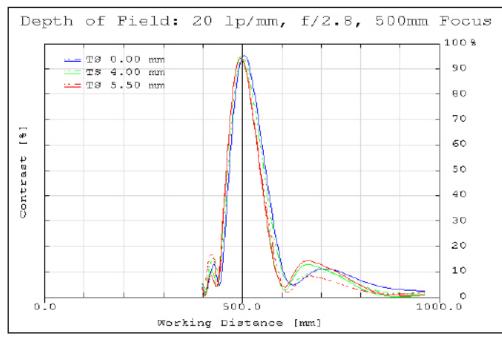


Figure 8: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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



MTF & DOF: f/4.0 WD: 500mm

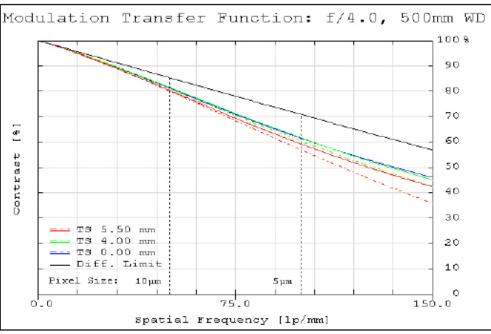


Figure 9: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

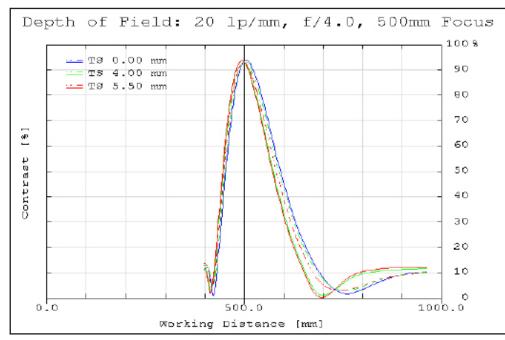


Figure 10: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

