TECHSPEC® COMPACT INSTRUMENTATION IMAGING LENS

#86-607 • 12mm FL • f/1.8

Featuring low lens-to-lens variation and a broadband anti-reflection (AR) coating for maximum light transmission, TECHSPEC® Compact Instrumentation Imaging Lenses are ideal for a wide range of applications. An adjustable, lockable focus enables setting the best focus position prior to integrating into instrumentation, avoiding future adjustments. The wide range of fixed aperture options ensures maximum flexibility of resolution, throughput, and depth of field. These compact lenses are designed specifically for volume integration into applications such as analytical medical devices, including benchtop-based blood analyzers. For customized f/# versions to best suit your instrumentation application needs and to discuss volume requirements, please contact us.

Focal Length:	12mm
Minimum Working Distance[1]:	200mm
Focus Range[1]:	200mm - ∞
Length at Near Focus:	26.1mm
Length at Far Focus:	24.9mm
Filter Thread:	M22 x 0.75
Max Sensor Format:	⅔"
Camera Mount:	C-mount

Aperture (f/#):	f/1.8, Fixed
Magnification Range:	0X - 0.055X
Distortion[2]:	<2.5%
Object Space NA[2]:	0.01
No. of Elements (Groups):	7 (7)
AR Coating:	425-675nm BBAR
Weight:	31g

Sensor Size	¼"	⅓"	½.5"	½"	⅓.8"	⅔"	1"	4/3"
Field of View[3]	64.4mm - 17.2°	85.9mm - 22.9°	102.4mm - 27.0°	115mm - 30.3°	130mm - 33.5°	159.4mm - 41.1°	NA	NA

1. From front of housing 2. Fig 1 Distance: 300mm 3. Horizontal FOV on standard 4:3 sensor format Specifications subject to change

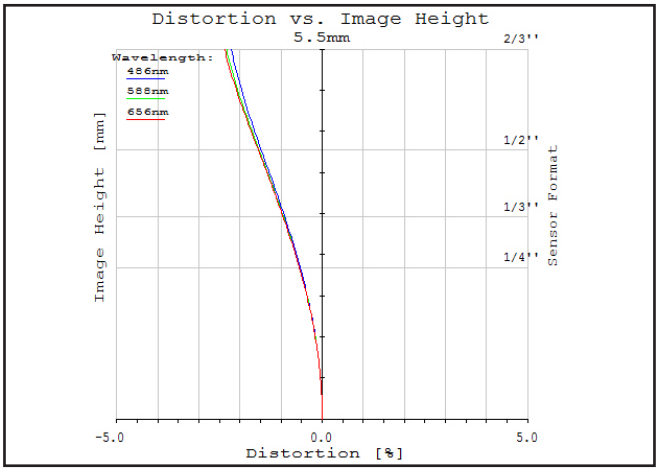

Figure 1: Distortion at the maximum sensor format. Postive values correspond to pincushion distortion, negative values correspond to barrel distortion.

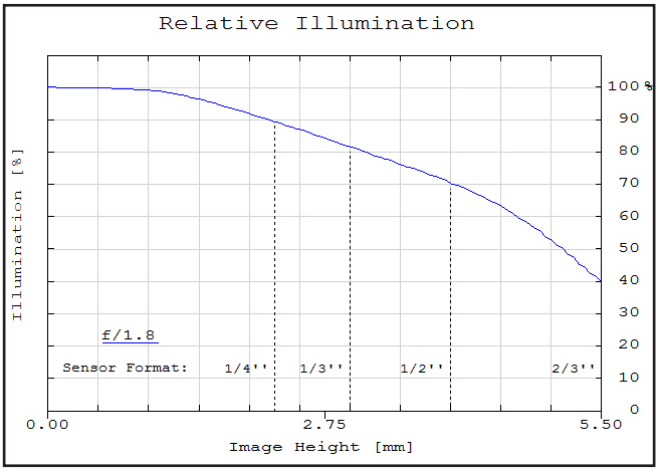

Figure 2: Relative illumination (center to corner)

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

TECHSPEC® COMPACT INSTRUMENTATION IMAGING LENS

#86-607 • 12mm FL • f/1.8

MTF & DOF: f/1.8
WD: 300mm

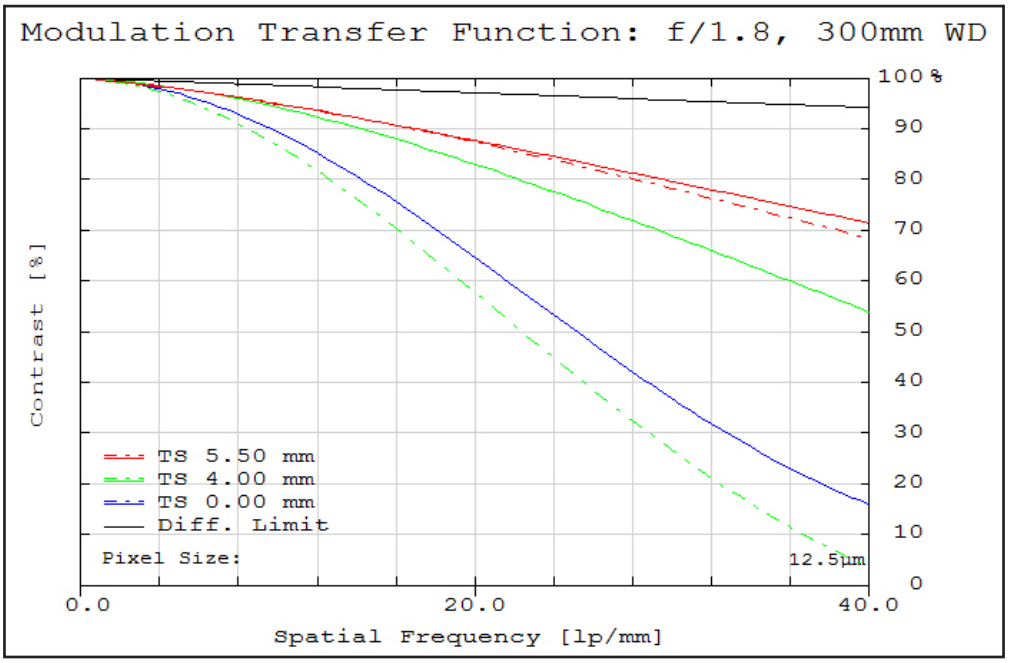

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

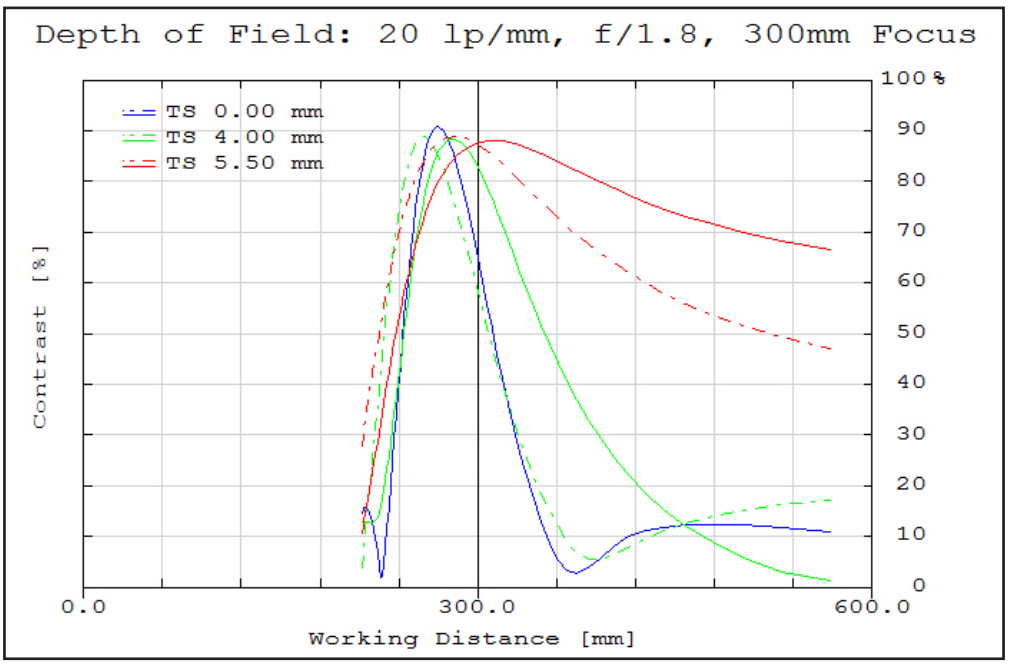

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

TECHSPEC® COMPACT INSTRUMENTATION IMAGING LENS

#86-607 • 12mm FL • f/1.8

MTF & DOF: f/1.8
WD: 750mm

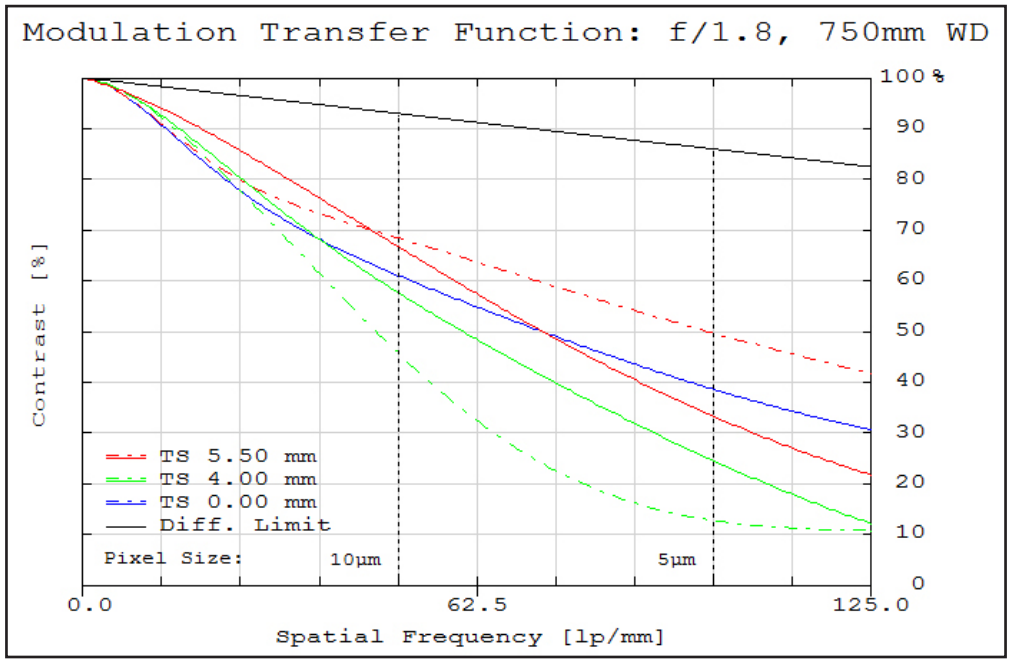

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

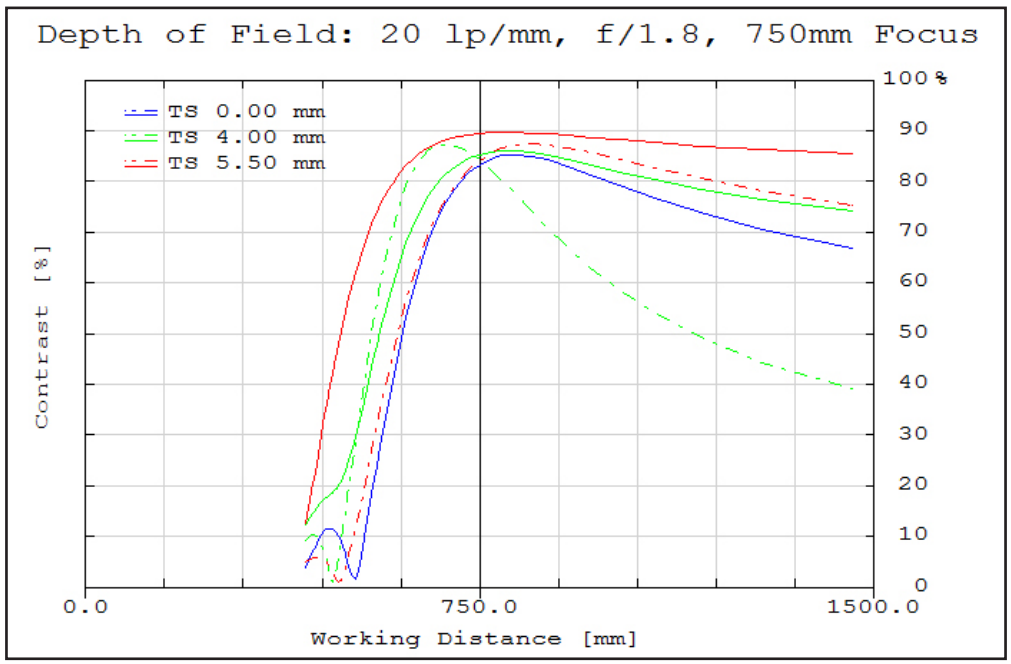

Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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