TECHSPEC® LS SERIES
LINE SCAN LENSES
#35-441 • 1.75X • f/3.2 - f/22.0

TECHSPEC® LS Series Line Scan Lenses are designed for 82mm, 16K and 62.5mm, 12K line scan cameras with 5µm pixels. These low distortion lenses feature an attached beamsplitter for coaxial inline illumination. These lenses are available with and without the beamsplitter. The locking iris is adjustable from f3.2 to f/22.0, and the V-Mount provides ease of adjustment and alignment. The uniform and high resolution performance across the entire image makes these lenses ideal for applications such as electronics, flat panel display, and semiconductor wafer inspections.

Magnification:	1.75X
Magnification Range:	1.65X - 1.85X
Focal Length:	99mm
Max. Sensor Format:	82mm
Optimized Sensor Format:	62.5mm
Camera Mount:	V-70 Mount
Aperture (f/#):	f/3.2 - f/22.0
Object Space NA:	0.097
Distortion %:	<0.05%
Beamsplitter Included:	Yes

Working Distance:	65.9mm @ 1.75X
Type:	Line Scan Lens
Total Track:	379.6mm @ 1.75X
Length:	122mm
Front Diameter:	95mm
Diameter:	75mm
AR Coating:	425 - 675nm BBAR
RoHS:	Compliant
Weight:	1122g

At Primary Magnification (1.75X)				
Sensor Size	28.7mm[1]	57.7mm[1]	62.5mm[1]	82mm[1]
Field Of View[1]	16.4mm	33.0mm	35.7mm	46.9mm

1. Linear line scan array

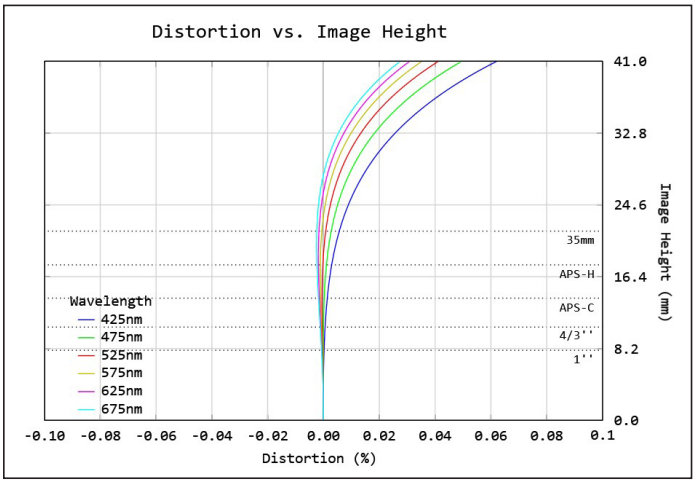

Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

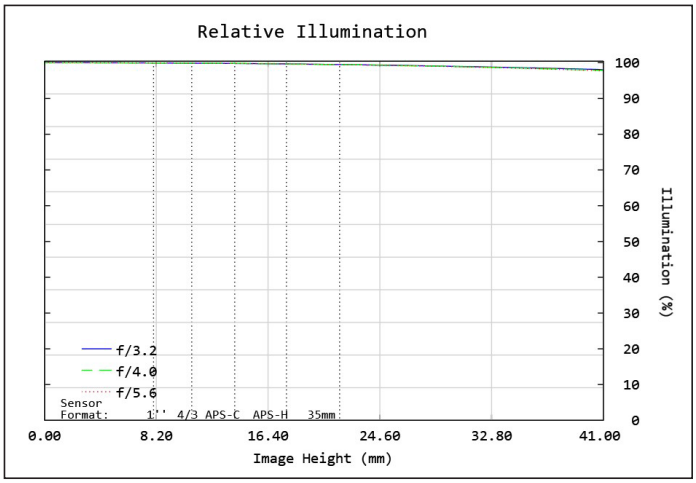

Figure 2: Relative illumination (center to corner)

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/3.2
WD: 65.9mm
HORIZONTAL FOV: 46.8mm

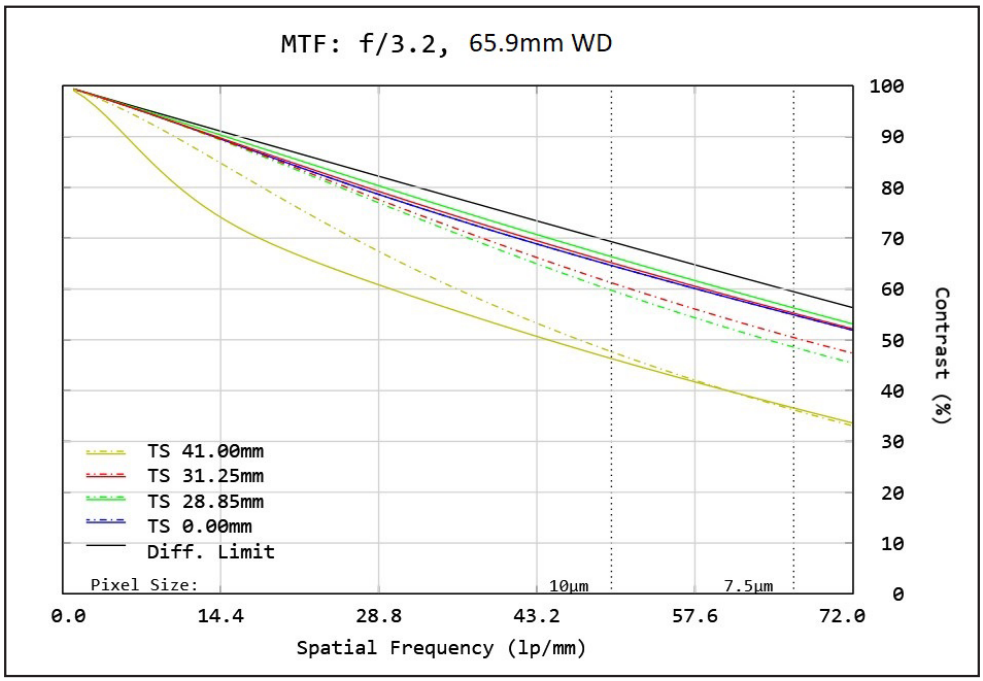

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 425nm to 675nm. Included are Tangential and Sagittal values for field points on center, 57.7mm, 62.5mm, and 82mm sensor size. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequences corresponding to the Nyquist resolution limit of pixel sizes are indicated.

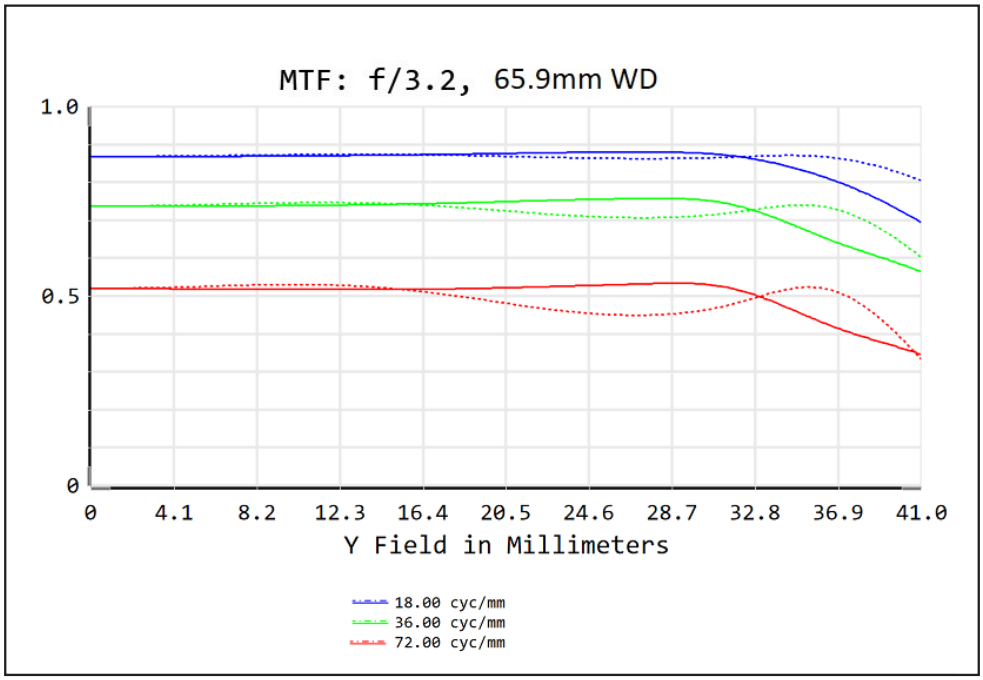

Figure 4: Image space polychromatic FFT Modulation Transfer Function MTF vs. Field for λ = 425nm to 675nm. Included are Tangential and Sagittal values for 72, 36 and 18 linepairs/mm (image space).

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

MTF & DOF: f/4.0
WD: 65.9mm
HORIZONTAL FOV: 46.8mm

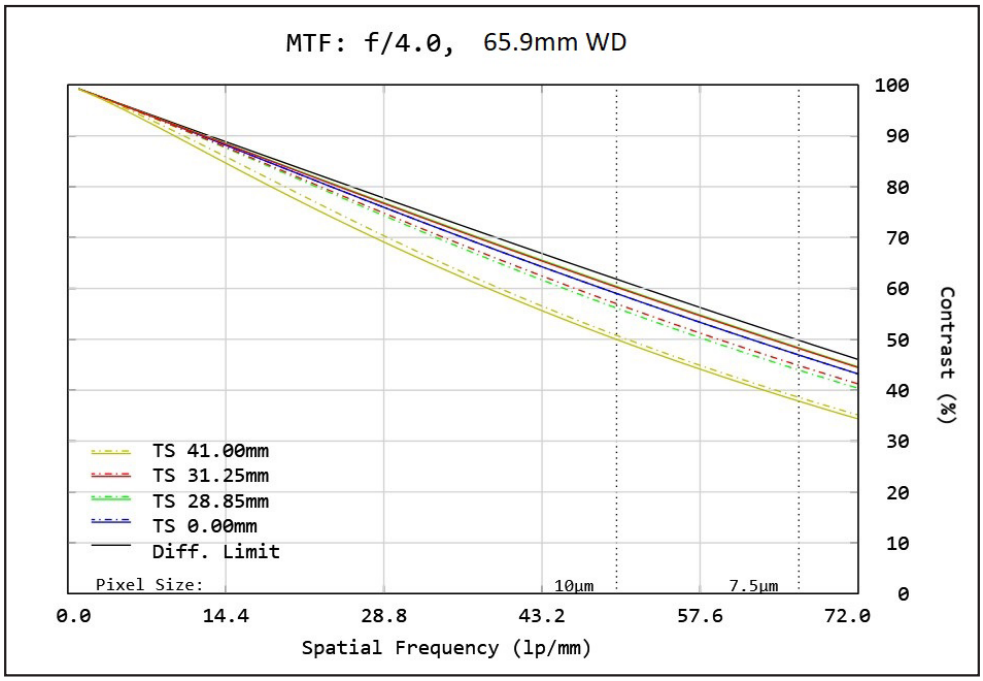

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 425nm to 675nm. Included are Tangential and Sagittal values for field points on center, 57.7mm, 62.5mm, and 82mm sensor size. Solid black line indicates diffraction limit determined by f/#-defined aperture. Frequences corresponding to the Nyquist resolution limit of pixel sizes are indicated.

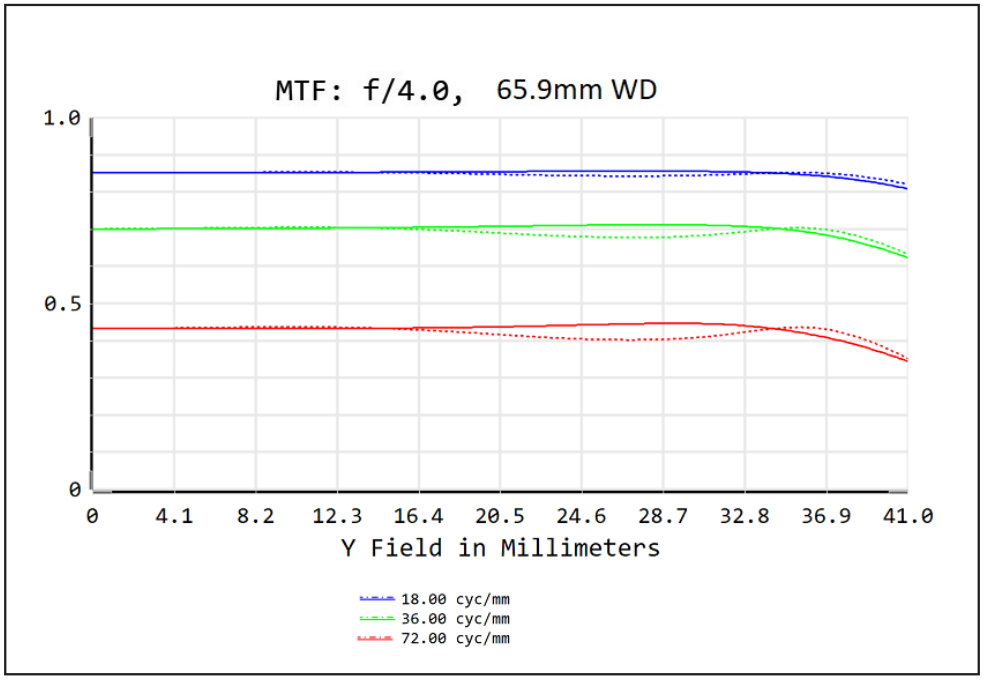

Figure 6: Image space polychromatic FFT Modulation Transfer Function MTF vs. Field for λ = 425nm to 675nm. Included are Tangential and Sagittal values for 72, 36 and 18 linepairs/mm (image space).

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