TECHSPEC® LS SERIES
LINE SCAN LENSES
#35-443 • 2.5X • f/2.9 - f/22.0

TECHSPEC® LS Series Line Scan Lenses are designed for 82mm, 16K 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 f/2.9 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:	2.5X
Magnification Range:	2.35X - 2.65X
Focal Length:	117mm
Max. Sensor Format:	82mm
Camera Mount:	V-70 Mount
Aperture (f/#):	f/2.9 - f/22.0
Object Space NA:	0.11
Distortion %:	<0.05%
Beamsplitter Included:	Yes

Working Distance:	62.7mm @ 2.5X
Type:	Line Scan Lens
Total Track:	529mm @ 2.5X
Length:	157.5mm
Front Diameter:	95mm
Diameter:	75mm
AR Coating:	425 - 675nm BBAR
RoHS:	Compliant
Weight:	1308g

At Primary Magnification (2.5X)				
Sensor Size	28.7mm[1]	57.7mm[1]	62.5mm[1]	82mm[1]
Field Of View[1]	11.5mm	23.1mm	25.0mm	32.8mm

1. Linear line scan array

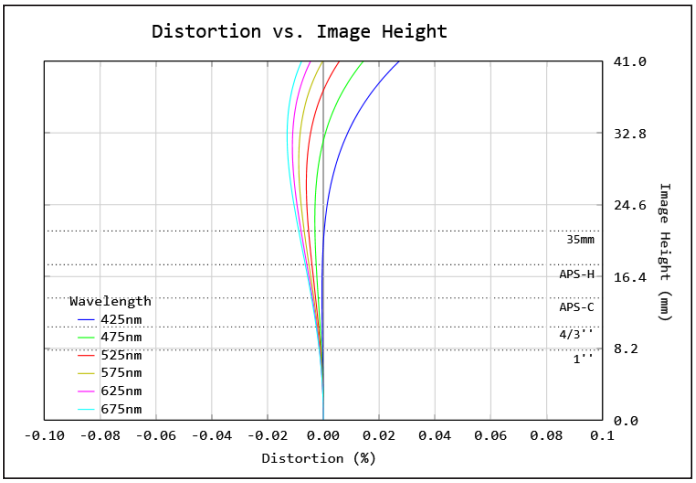

Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

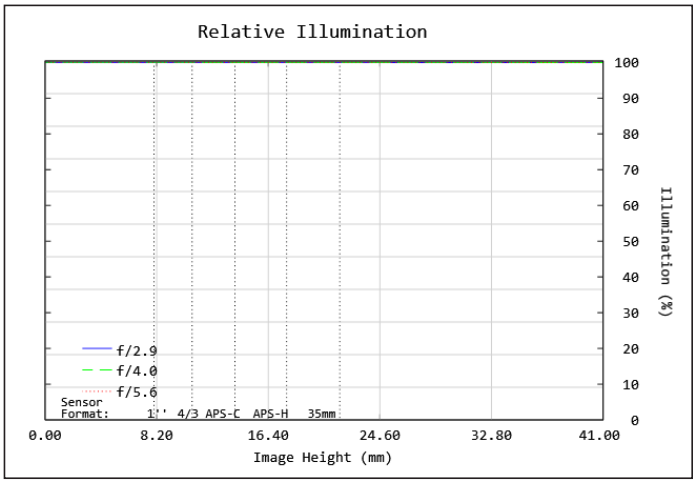

Figure 2: Relative illumination (center to corner)

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/2.9
WD: 62.7mm
HORIZONTAL FOV: 32.8mm

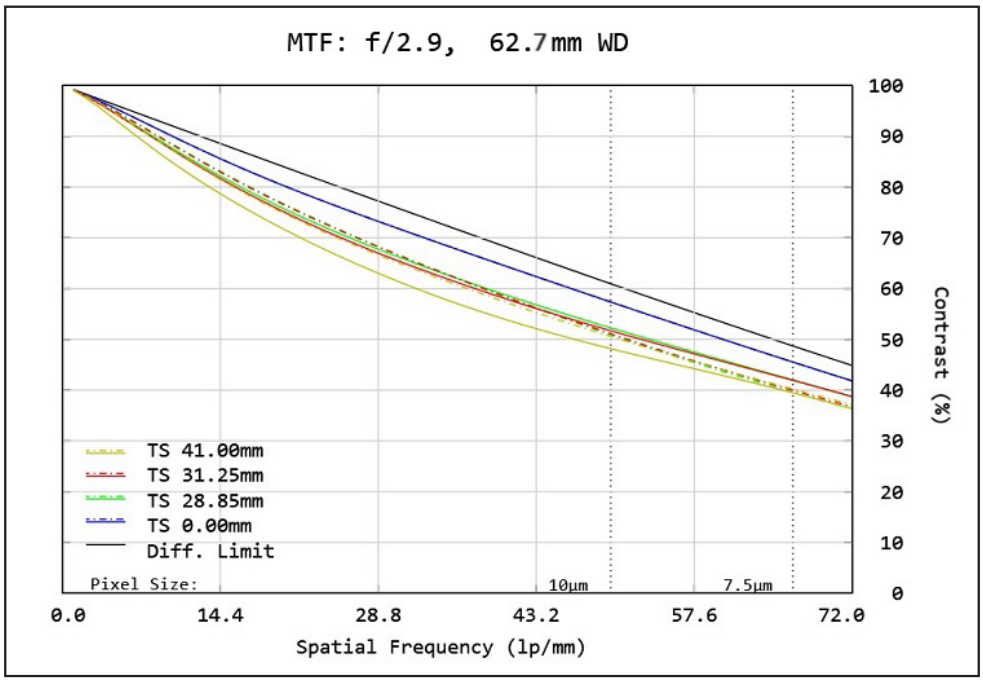

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 425nm to 675nm. Included are Tangential and Sagittal values for field points on center, 57.7mm, 62.5mm, and 82mm sensor size. Solid black line indicates diffraction limit determined by f/#-defined aperture.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

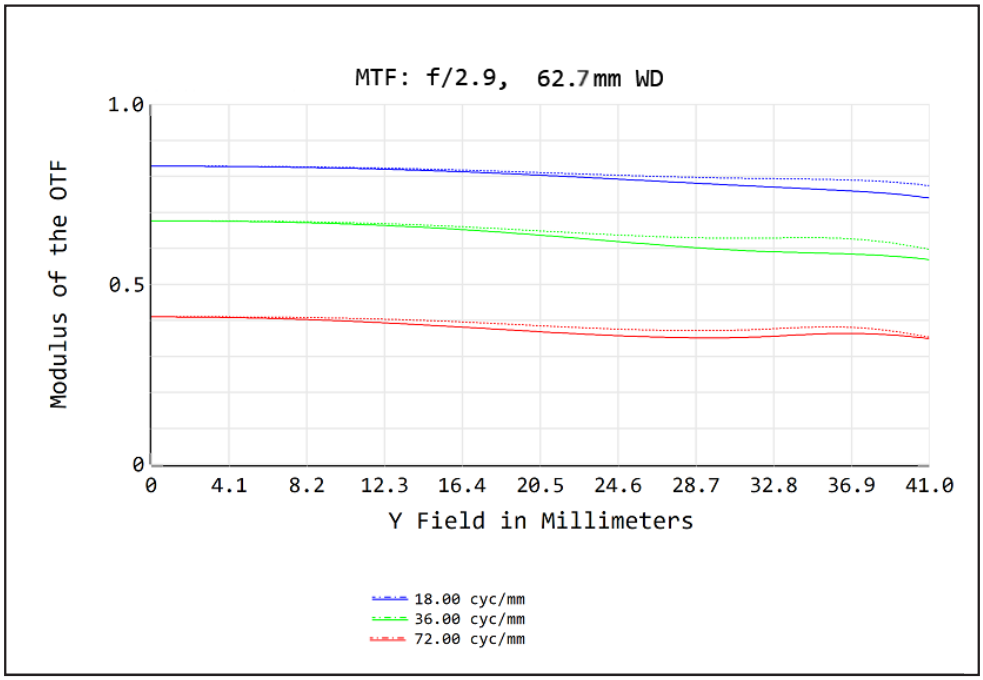

Figure 4: Image space polychromatic FFT Modulation Transfer Function MTF vs. Field for λ = 425nm to 675nm. Included are Tangential and Sagittal values for 72, 36 and 18 linepairs/mm (image space).

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

MTF & DOF: f/4.0
WD: 62.7mm
HORIZONTAL FOV: 32.8mm

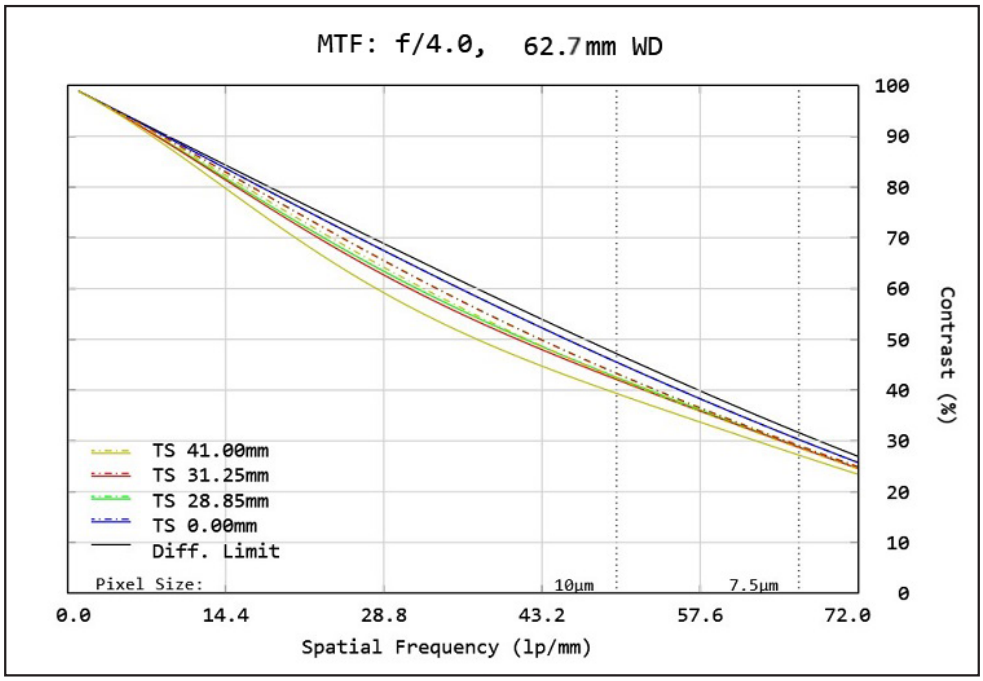

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 425nm to 675nm. Included are Tangential and Sagittal values for field points on center, 57.7mm, 62.5mm, and 82mm sensor size. Solid black line indicates diffraction limit determined by f/#-defined aperture.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

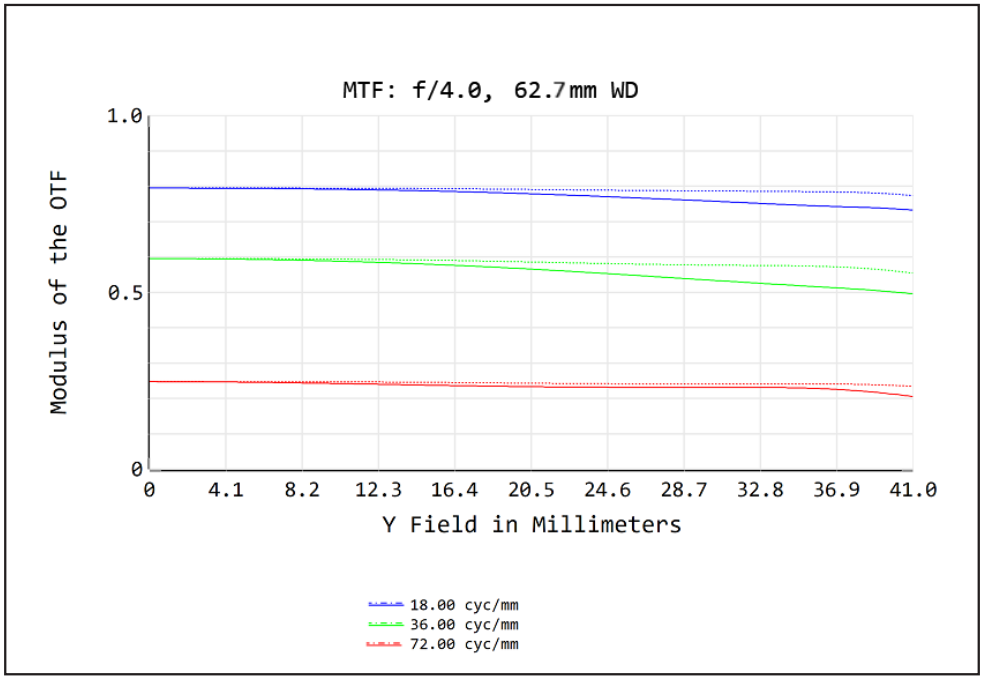

Figure 6: Image space polychromatic FFT Modulation Transfer Function MTF vs. Field for λ = 425nm to 675nm. Included are Tangential and Sagittal values for 72, 36 and 18 linepairs/mm (image space).

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