TECHSPEC® LARGE FORMAT TELECENTRIC LENS

#62-912 • 175mm WD • 0.5X

Our TECHSPEC® Large Format Telecentric Lenses have been designed to maximize small pixels over a large format area scan sensor or line scan array. These highly telecentric lenses produce unparalleled levels of contrast, yielding maximum image quality with the highest degree of measurement accuracy. Designed with the lowest f/#'s in the industry, these lenses achieve the superior light collection required to solve many of today's applications. A locking iris prevents unintentional lens adjustments in high vibration environments.

Primary Magnification:	0.5X
Working Distance[1]:	175mm
Depth of Field[2]:	±2.05mm at f10 (20% @ 20 lp/mm)
Length:	143mm
Filter Thread:	M86 x 1
Max. Sensor Format:	28.7
Camera Mount:	F-mount

Telecentricity:	<0.1°
Distortion:	<0.05%
Aperture (f/#):	f/6 - f/22, lockable
Object Space NA:	0.041
No. of Elements (Groups):	10 (7)
AR Coating:	425-675nm BBAR
Weight:	1024g

Sensor Size	½.5″	½″	⅓.8″	⅔″	Sony ⅔″ *	1″	1″ Sq †	⅘″	28.7mm**
Field of View[3]	11.5mm	12.9mm	14.5mm	17.7mm	17.0mm	25.8mm	22.63mm	36.42mm	57.73mm

1. From front of housing 2. Image space MTF contrast 3. Horizontal FOV on standard 4:3 sensor format *6:5 aspect ratio † 1:1 aspect ratio **Linear Array
Specifications subject to change

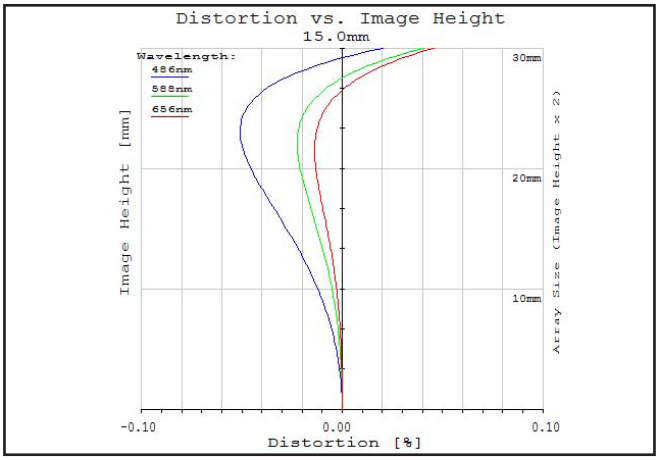

Figure 1: Distortion at the maximum sensor format. Postive values correspond to pincushion distortion, negative values correspond to barrel distortion.

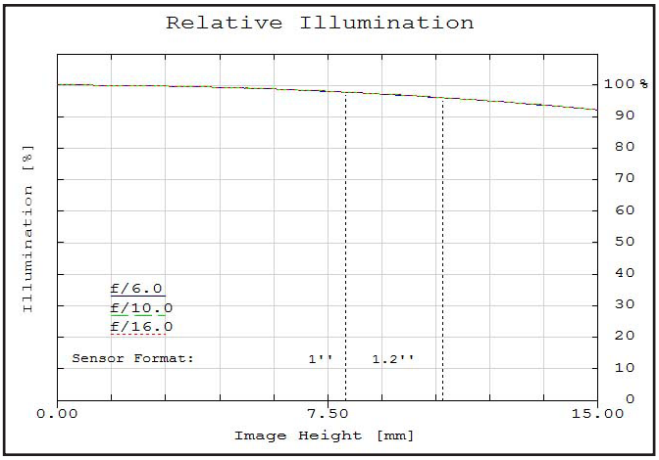

Figure 2: Relative illumination (center to corner)

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.

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MTF & DOF: f/6.0
WD: 175mm

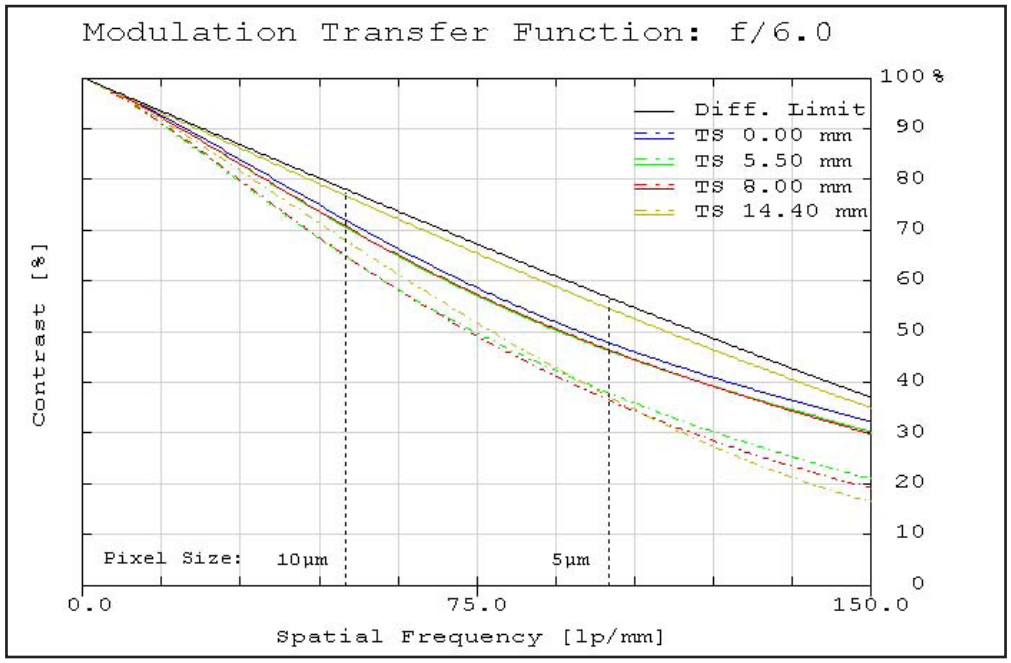

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

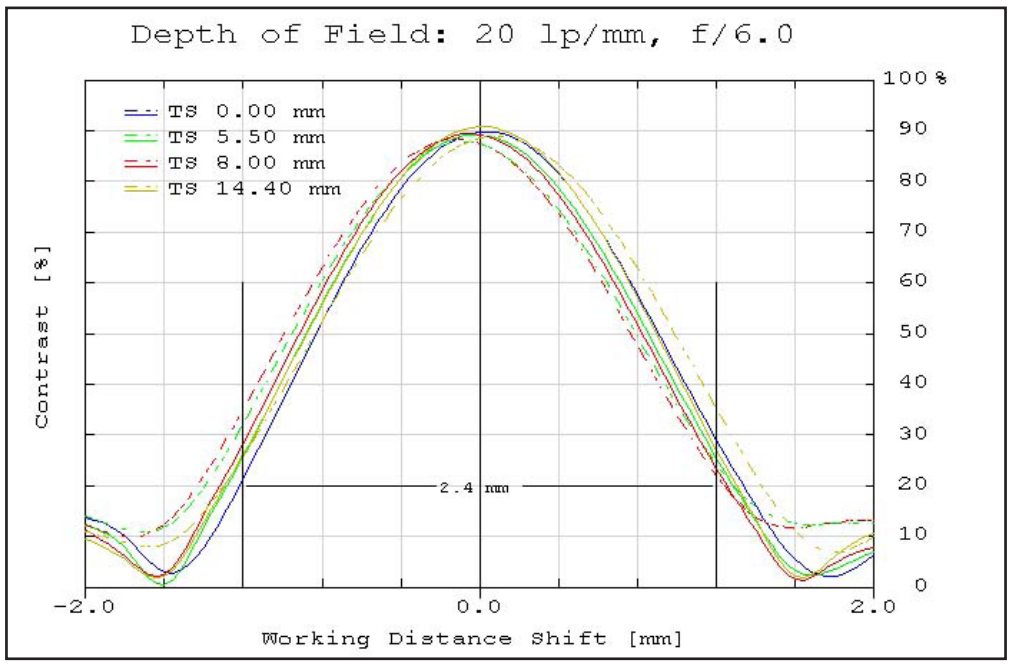

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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

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MTF & DOF: f/10.0
WD: 175mm

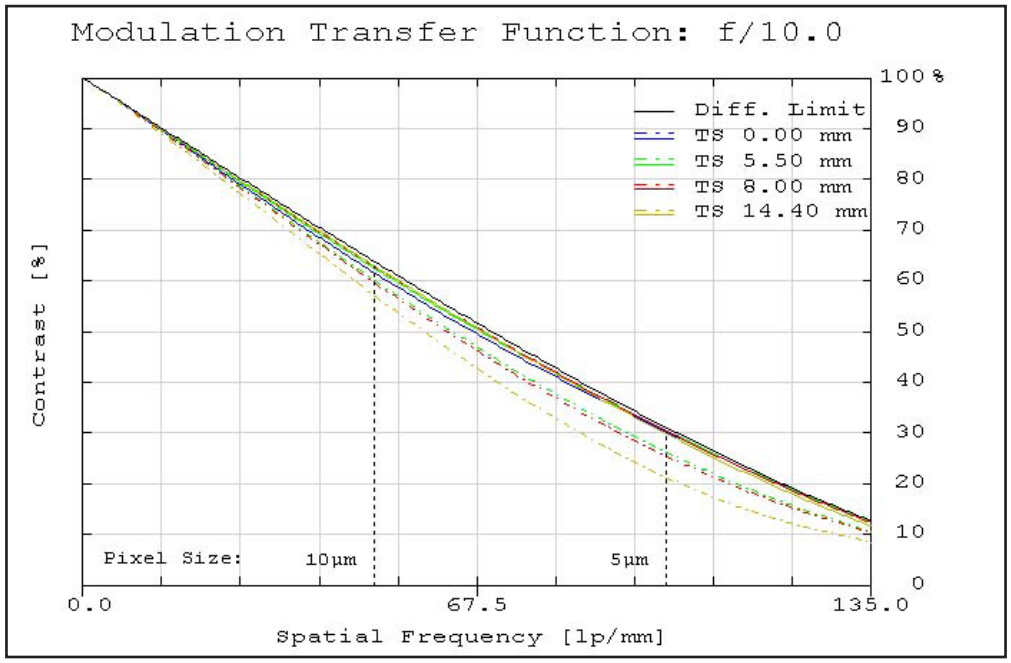

Figure 5: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are Tangential and Sagittal values for field points on center, at 70% of full field and at the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

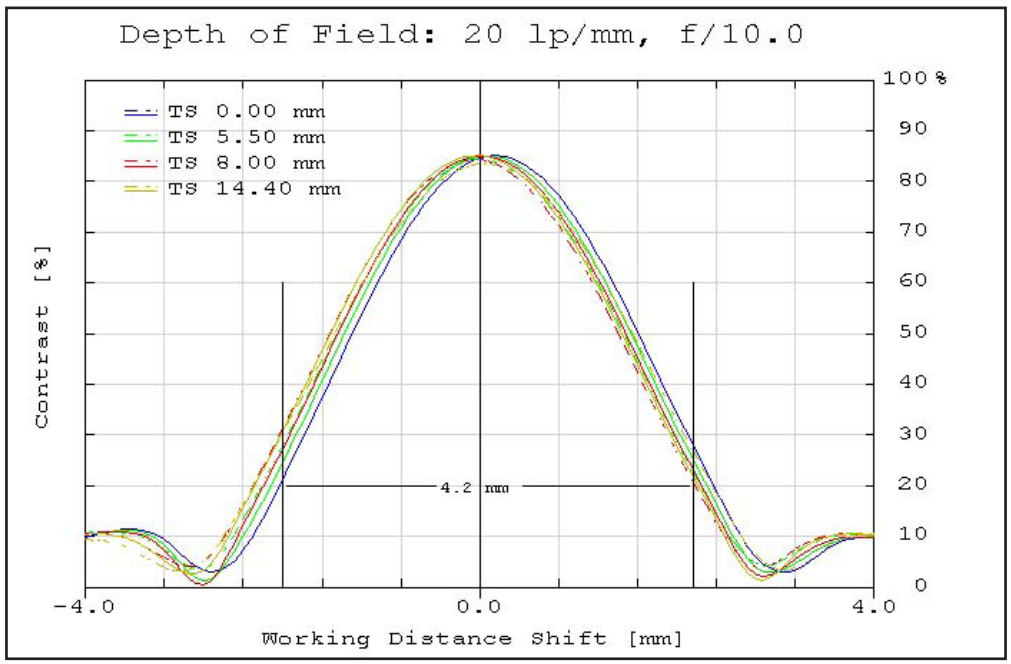

Figure 6: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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