TECHSPEC® TitanTL™ TELECENTRIC LENSES #34-033 • f/16.0

TECHSPEC® TitanTL™ Telecentric Lenses are designed for machine vision systems and metrology applications that require a large field of view. These lenses feature large maximum sensor formats, a variety of working distance and magnification options, and a rear filter holder on the back of the lenses to allow for easy filter integration. On our 118mm, 182mm and 242mm FOV versions, the integrated mounting flange allows for ease of securing each lens without requiring an additional mount and provides an easy to locate reference plane.

Primary Magnification:	0.179X
Working Distance[1]:	351mm
Depth of Field[2]:	±25.0mm (20% @ 20 lp/mm, f/16)
Max. Sensor Format:	35mm
Camera Mount:	M58 x 0.75
Aperture (f/#):	f/16.0
Distortion %:	<0.106%
Object Space NA:	0.0056

Telecentricity:	<0.1°
Type:	Telecentric Lens
Length:	630.74mm
Front Diameter:	266mm
Weight:	10.04kg
RoHS:	Compliant
Number of Elements (Groups):	7 (5)
AR Coating:	MgF_2 (400-700nm)

1. From front housing 2. Image space MTF contrast

At 351mm W.D.												
Sensor Size	1/4"	1/3"	1/2.5"	1/2"	1/1.8"	2/3"	1"	1.1"	4/3"	APS-C	APS-H	35mm
Field Of View[3]	20.2mm	26.9mm	32.5mm	35.8mm	40.3mm	49.3mm	71.7mm	79.5mm	96.9mm	125.4mm	163.5mm	201.6mm

3. Horizontal FOV on Standard (4:3) sensor format.

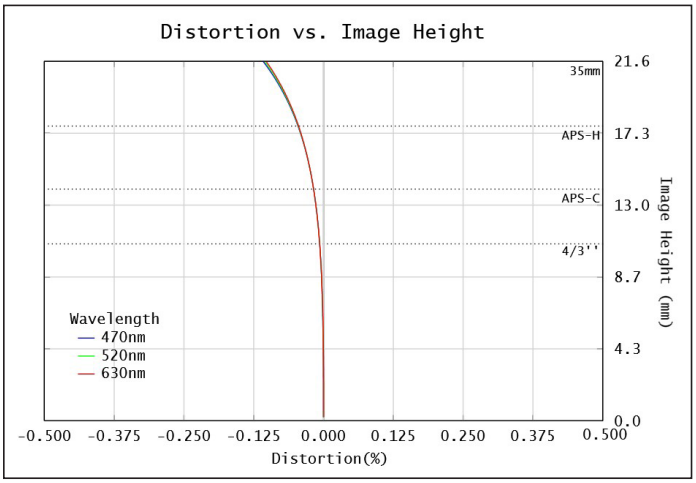

Figure 1: Distortion at the maximum sensor format. Positive values correspond to pincushion distortion, negative values correspond to barrel distortion.

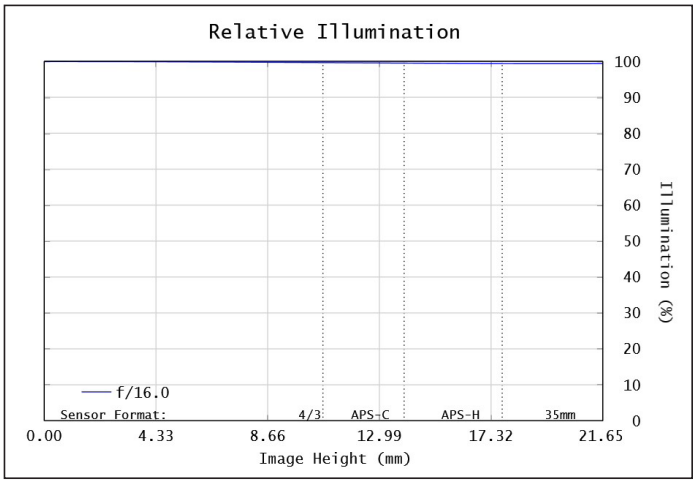

Figure 2: Relative illumination (center to corner)

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/16.0
WD: 351mm
HORIZONTAL FOV: 201.6mm

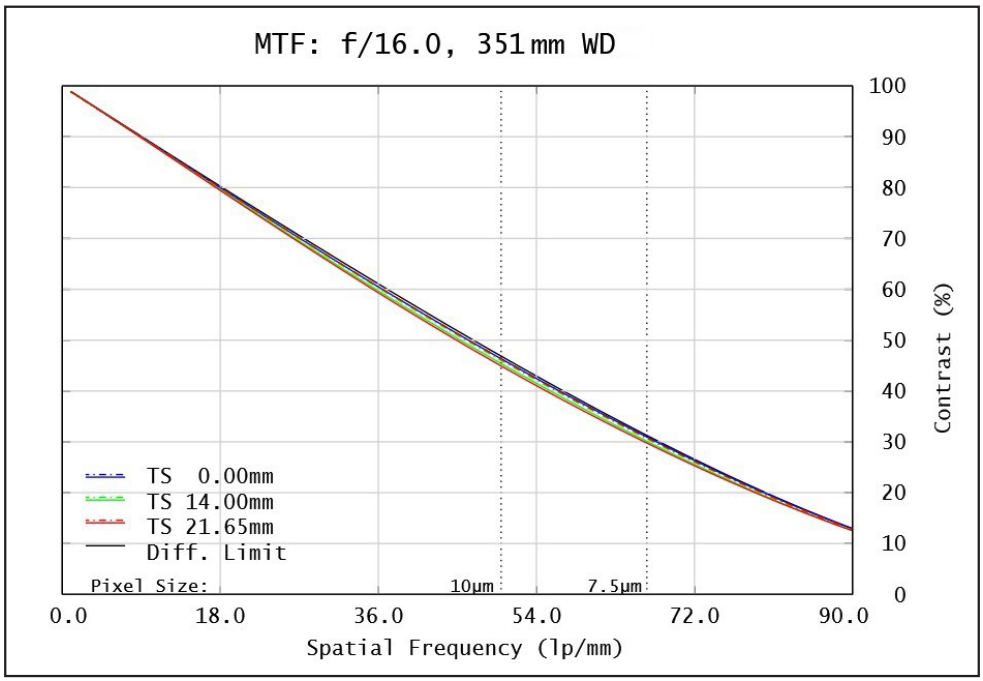

Figure 3: Image space polychromatic diffraction FFT Modulation Transfer Function (MTF) for λ = 486nm to 656nm. Included are the Tangential and Sagittal values for field points on center, at 70% of full field and the maximum sensor format. Solid black line indicates diffraction limit determined by f/#-defined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

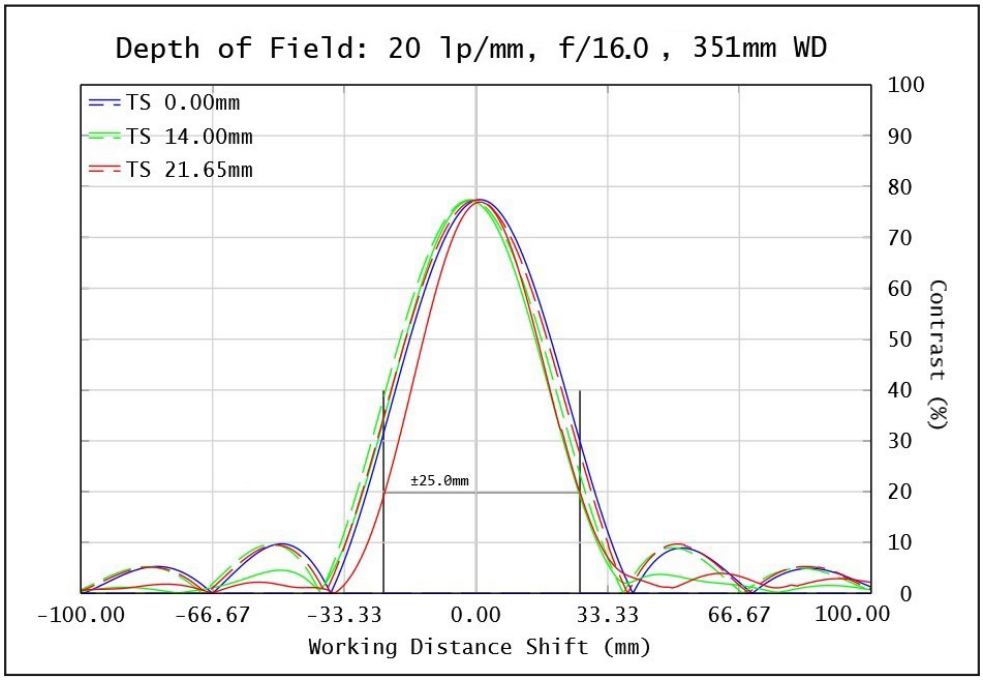

Figure 4: Polychromatic diffraction through-focus MTF at 20 linepairs/mm (image space). Contrast is plotted to two times the focus distance. Note object spatial frequency changes with working distance.

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