

HYPERSPECTRAL FORE LENSES

SPECIM provides specifically designed, high quality fore lenses, optimized to produce uniform and high performance images in the broad spectral ranges covered by hyperspectral imaging systems. All the lenses employ broadband AR coatings to minimize stray light and flare. Lens adjustments are locked to withstand harsh operating environments.

VNIR 400 - 1000 nm

OPTICAL CHARACTERISTICS					
Fore lens	OLE9	OLE17	OLE18.5	OLE23	OLE140
Focal length	9 mm	17 mm	18.5 mm	23 mm	140 mm
Spectral range	Corrected for the full 400 - 1000nm range Multilayer AR -coated for 400 - 1000 nm				
Optical output	Telecentric				
Spatial image size (max)	14.4 mm	12.4 mm	12.4 mm	14.4 mm	12.4 mm
Geo. spot diameter (RMS)	18 μm	20 μm	11 μm	17 μm	10 μm
MTF (10 lp/mm)	89%	90%	95%	90%	97%
MTF (20 lp/mm)	63%	72%	85%	74%	90%
MTF (40 lp/mm)	22%	35%	63%	40%	71%
F-number	2.4	2.4	2.4	2.4	2.8
Transmission	> 85%				
Minimum working distance	30cm (10 cm with extension ring)				
MECHANICAL CHARACTERISTICS					
Dimensions	(L) 49 x diam. 47mm	(L) 40 x diam. 53mm	(L) 48 diam. 53mm	(L) 43 x diam. 41mm	(L) 162 x diam. 65mm
Body	Anonized aluminium				
Mount	Standard C-mount, flange back disance 17.5 mm				

In this wide field-of-view lens the pixel size on the target increases towards the edges of the field of view due to spatial distortion, and thus the effective focal length depends on the spatial image size (detector size) used. The spatial distortion can be calibrated and corrected in image processing.



OLE9 fore lens



OLE18.5 fore lens



OLE23 fore lens

NIR 900 - 1700 nm and SWIR 900 - 2500 nm

OPTICAL CHARACTERISTICS				
Fore lens	OLES15	OLES22	OLES30	OLES56
Focal length	15 mm	22.5 mm	30.7 mm	56 mm
Spectral range	Corrected for the full 900 - 2500nm range Multilayer AR -coated for 900 - 2500 nm			
Optical output	Telecentric			
Spatial image size (max)	9.6 mm	12.8 mm	12.8 mm	9.6 mm
Geo. spot diameter (RMS)	10 μ m	16 μ m	18 μ m	17 μ m
MTF (10 lp/mm)	97%	90%	88%	87%
MTF (20 lp/mm)	85%	76%	70%	66%
MTF (40 lp/mm)	65%	48%	45%	35%
F-number	2.0	2.0	2.0	2.0
Transmission	> 82%			
Minimum working distance	30cm (10 cm with extension ring)			
MECHANICAL CHARACTERISTICS				
Dimensions	(L) 60 x diam. 45 mm	(L) 48.5 x diam. 47mm	(L) 41.6 x diam. 53mm	(L) 84 x diam. 53mm
Body	Anonized aluminium			
Mount	Standard C-mount			



OLES22 fore lens



OLES30 fore lens



OLES30 and OLE23 fore lenses

LWIR 8000 - 12000 nm

OPTICAL CHARACTERISTICS	
Fore lens	L43
Focal length	43mm
Spectral range	Corrected for the full 8000 - 12000 nm range AR -coated for 8000 - 12000 nm
Spatial image size	Max. 26.8 mm
Spatial resolution	rms spot radius < 100 μ m
F-number	4
MECHANICAL CHARACTERISTICS	
Dimensions	(L) 52 x diam. 33 mm
Body	Stainless steel/anonized aluminium
Mount	custom mount



L43 fore lens