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	OLE18.5	OLE23	OLE140
Focal length	9 mm	18.5 mm	23 mm	140 mm
F-number	2.4	2.4	2.4	2.8
Spatial image size (max)	14.4 mm	12.4 mm	14.4 mm	12.4 mm
Spectral range	Corrected for the full 400 - 1000 nm range Multilayer AR -coated for 400 - 1000 nm			
Optical output	Telecentric			
RMS Spot diameter *	14.8 µm	17.4 µm	15.4 µm	10 µm
Transmission	> 85%			
Minimum working distance	50 cm (30 cm)			10 cm
Mechanical characteristics				
Dimensions	(L) 49 x diam. 47 mm	(L) 48 diam. 53 mm	(L) 43 x diam. 41 mm	(L) 162 x diam. 65 mm
Body	Anonized aluminium			
Mount	Standard C-mount			

* Average over image and all wavelengths.

** 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 dependes on the spatial image size (detector size) used. The spatial distortion can be calibrated and corrected in image processing.

For more information please contact Specim.

OLE9 fore lens

OLE18.5 fore lens

OLE23 fore lens

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NIR 900 - 1700 nm and SWIR 900 - 2500 nm

Optical characteristics					
Fore lens	OLES15	OLES22	OLES30	OLES56	OLESMacro
Focal length	15 mm	22.5 mm	30.7 mm	56 mm	73.3 mm **
F-number	2.1	2.0	2.0	2.0	4.0
Spatial image size (max)	9.6 mm	12.8 mm	12.8 mm	9.6 mm	10.0 mm
Spectral range	Corrected for the full 900 - 2500nm range Multilayer AR -coated for 900 - 2500 nm				
Optical output	Telecentric				
RMS Spot diameter *	10.1 µm	17.6 µm	16.8 µm	12.9 µm	25.4 µm
Transmission	> 82%				
Minimum working distance	50cm (30 cm)				-
Mechanical characteristics					
Dimensions	(L) 60 x diam. 45 mm	(L) 48.5 x diam. 47 mm	(L) 41.6 x diam. 53 mm	(L) 84 x diam. 53 mm	(L) 173 x diam. 46 mm
Body	Anonized aluminium				
Mount	Standard C-mount				

* Average over image and all wavelengths.

** OLESMarcro images the target with the camera in 1:1 ratio.

OLES22 fore lens

OLES30 fore lens

OLESMacro

MWIR 3000 - 5000 nm and LWIR 8000 - 12000 nm

Optical characteristics				
Fore lens	OLEM23	OLEM43	OLEL43	OLEL62
Focal length	23.4 mm	43 mm	43 mm	61.7 mm
F-number	3.0	3.8	3.8	2.5
Spatial image size	19.5 mm	18.3 mm	18.4 mm	33.5 mm
Spectral range	Corrected and multilayer AR -coated for the full 3000 - 5000 nm		Corrected and multilayer AR -coated for the full 8000 - 12000 nm	
RMS Spot diameter *	11.5 µm **	19.0 µm	34.5 µm **	23.7 µm **
Transmission	> 94%			
Minimum working distance	50 cm (30 cm)			
Mechanical characteristics				
Dimensions	(L) 29 x diam. 28 mm	(L) 50 x diam. 33 mm	(L) 50 x diam. 33 mm	(L) 56.5 x diam. 46 mm
Body	Stainless steel/anonized aluminium			
Mount	custom mount			

* Average over image and all wavelengths.

** Diffraction limited.

L43 fore lens