

Specim SWIR3 OLES9 lens specifications

1. Technical specifications

1.1. General information

Spectral camera	Specim SWIR3
Wavelength range (µm)	1.0 - 2.5
Product code	0600911

1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	52	Nominal value
Entrance pupil position (mm)	24.8	From the first lens surface
Working distance (mm)	300 - ∞	Distance from the object to the first lens surface
Minimum object length (mm)	314	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	M58 x 0.75	
Lens mount	Custom	
Resolution (pix)	1.5	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	26	
Maximum distortion (%)	-5.5	
Minimum relative illumination (%)	98	

1.3. Specifications for lens only (A) and lens with spectral camera (B)

PARAMETER	A	B	COMMENT
Image width (mm)	9.2	9.2	
Effective focal length (mm)	10.1	10.1	At infinite working distance; tolerance ± 1%
Working F-number	2.0	2.0	
Average transmission (%)	70	-	
Dimensions (mm)	60 x 108	-	Diameter x Length

All specification values given above are valid at the nominal working distance if not stated otherwise.

2. Figures

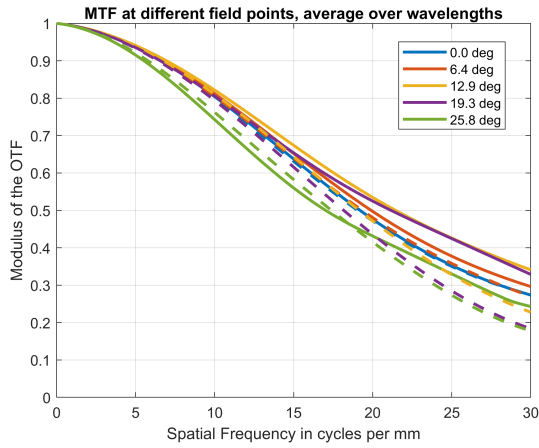


Figure 1. MTF averaged over wavelengths as a function of frequency.

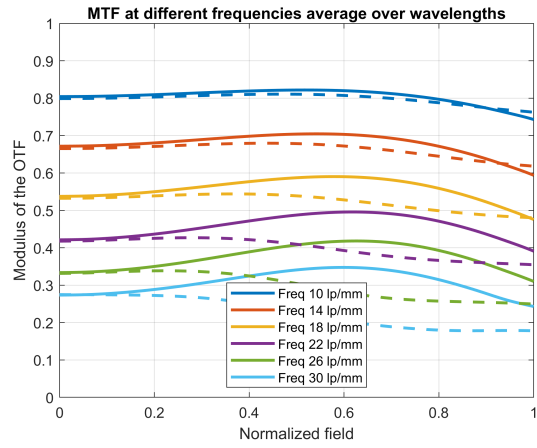


Figure 2. MTF averaged over wavelengths as a function of normalized field.

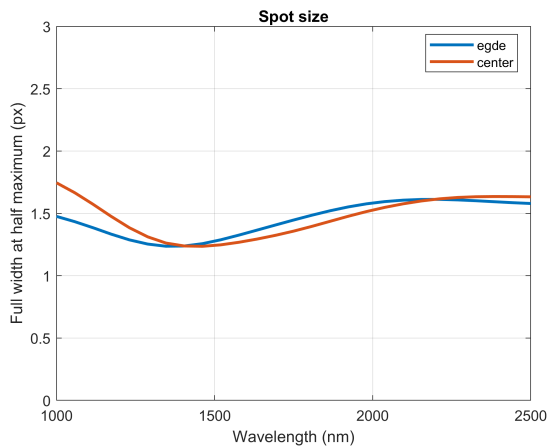


Figure 3. Full width at half maximum of the spatial spot as a function of wavelength.

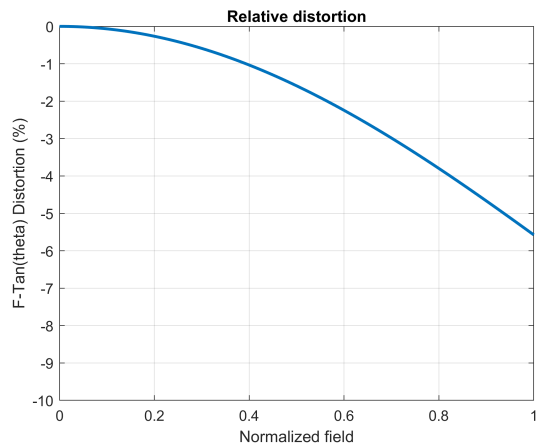


Figure 4. Relative distortion as a function of normalized field.

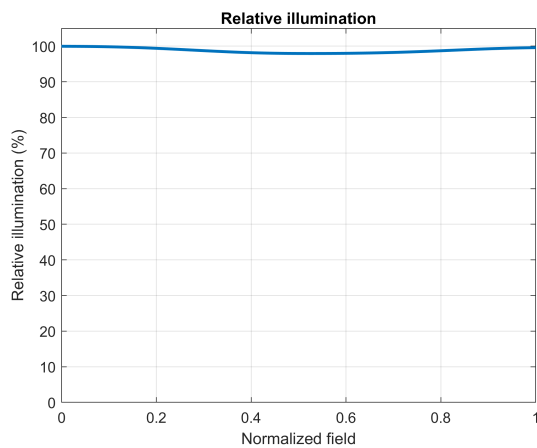


Figure 5. Relative illumination as a function of normalized field.

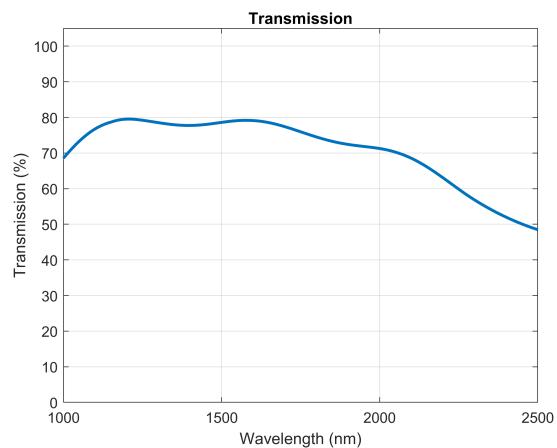


Figure 6. Transmission as a function of wavelength (lens only).

All specification values given above are valid at the nominal working distance if not stated otherwise.

3. Object dimensions and depth of field at different working distances

WORKING DISTANCE (CM)	NOMINAL OBJECT DIMENSIONS		DEPTH OF FIELD (MM)
	ACROSS TRACK / LENGTH (MM)	ALONG TRACK / WIDTH (MM)	
30	314	1.0	90
40	411	1.3	160
50	508	1.6	260
60	604	1.9	380
70	701	2.2	530
80	797	2.5	720
90	894	2.7	950
100	991	3.0	1200
150	1470	4.5	4400
200	1960	6.0	40000
300	2920	9.0	∞
500	4860	14.9	∞