Specim SWIR3 OLES30 lens specifications

1. Technical specifications

1.1. General information

Spectral camera	Specim SWIR3
Wavelength range (µm)	1.0 - 2.5
Product code	06FOB00070

1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	17	Nominal value
Entrance pupil position (mm)	14.6	From the first lens surface
Working distance (mm)	300 - ∞	Distance from the object to the first lens surface
Minimum object length (mm)	95	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	M37.5 x 0.75	
Lens mount	C-mount	
Resolution (pix)	1.8	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	30	
Maximum distortion (%)	-0.2	
Minimum relative illumination (%)	97	

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)	30.8	30.8	At infinite working distance; tolerance ± 1%
Working F-number	2.0	2.0	
Average transmission (%)	83	-	
Dimensions (mm)	41 x 42	-	Diameter x Length

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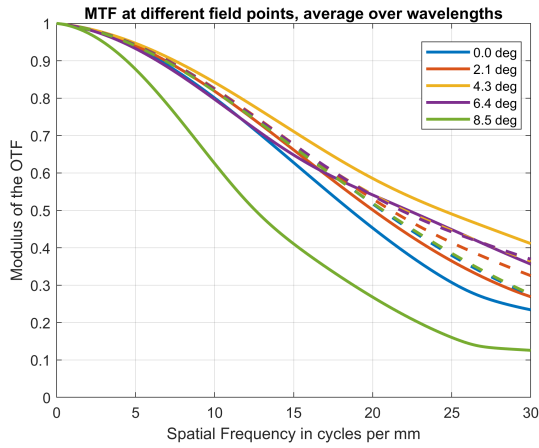
2. Figures

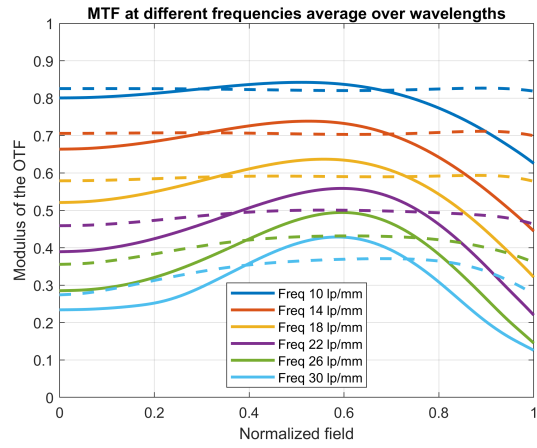Figure 1. MTF averaged over wavelengths as a function of frequency.

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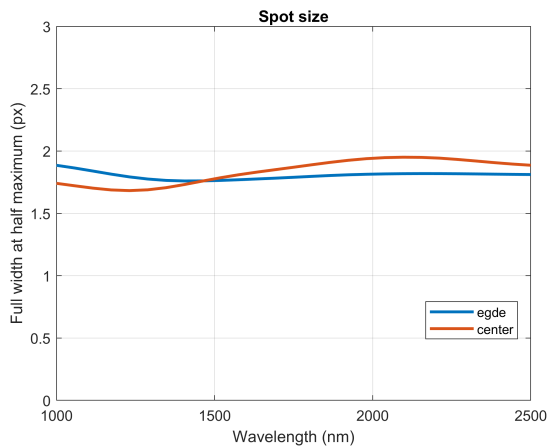

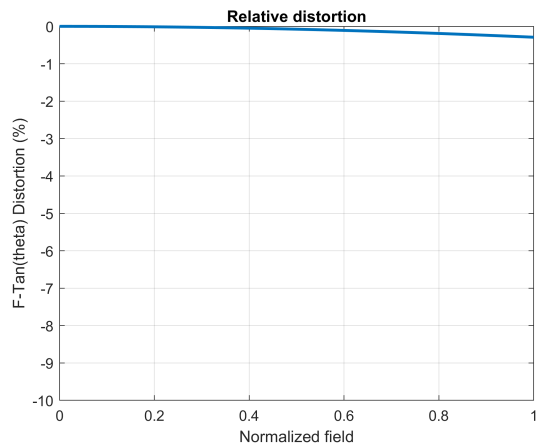Figure 3. Full width at half maximum of the spatial spot as a function of wavelength.

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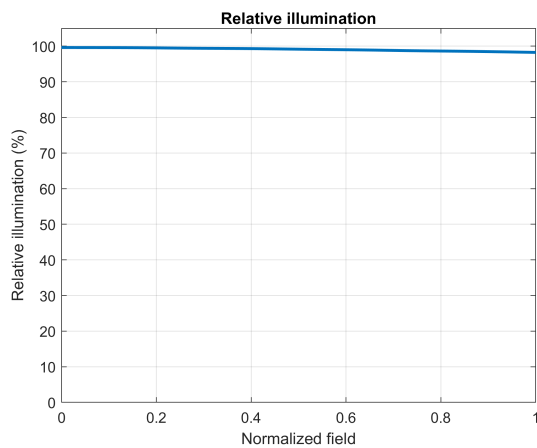

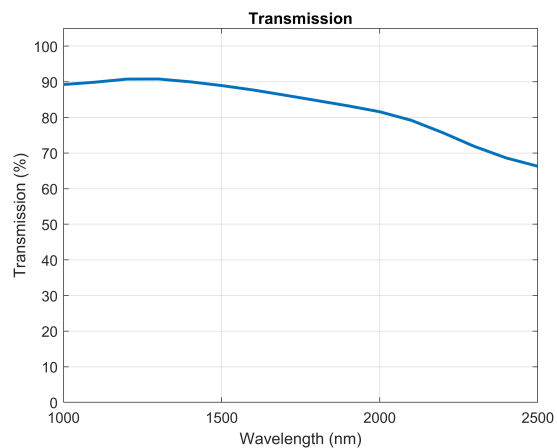Figure 5. Relative illumination as a function of normalized field.

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	95	0.3	10
40	125	0.4	18
50	155	0.5	27
60	185	0.6	38
70	215	0.7	52
80	245	0.8	68
90	276	0.9	85
100	306	1.0	110
150	456	1.5	230
200	606	2.0	420
300	907	2.9	950
500	1510	4.9	2700