

## Specim SWIR3 OLES15 lens specifications

### 1. Technical specifications

#### 1.1. General information

Spectral camera	Specim SWIR3
Wavelength range ( $\mu\text{m}$ )	1.0 - 2.5
Product code	06FOB00180

#### 1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	34	Nominal value
Entrance pupil position (mm)	29.2	From the first lens surface
Working distance (mm)	300 - $\infty$	Distance from the object to the first lens surface
Minimum object length (mm)	204	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	M41 x 0.5	
Lens mount	C-mount	
Resolution (pix)	1.3	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	29	
Maximum distortion (%)	-0.7	
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)	15.1	15.1	At infinite working distance; tolerance $\pm 1\%$
Working F-number	2.0	2.0	
Average transmission (%)	79	-	
Dimensions (mm)	44 x 56	-	Diameter x Length

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

## 2. Figures

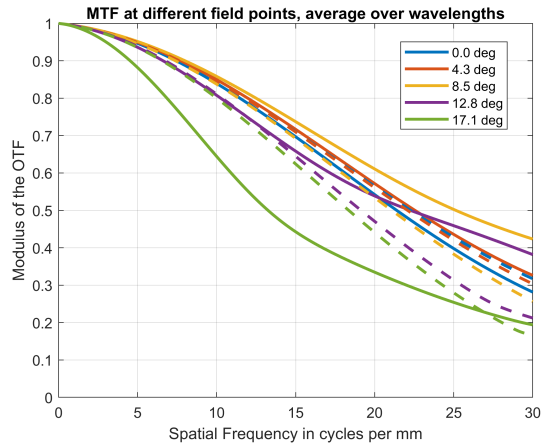


Figure 1. MTF averaged over wavelengths as a function of frequency.

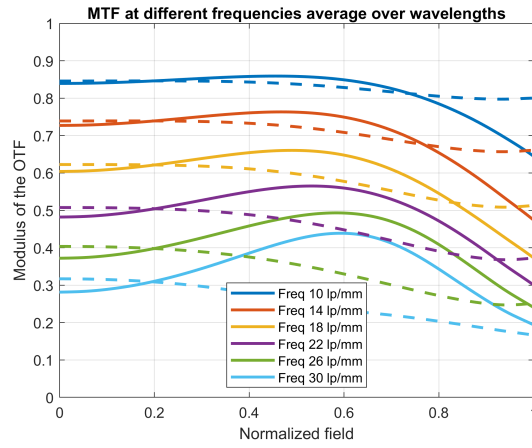


Figure 2. MTF averaged over wavelengths as a function of normalized field.

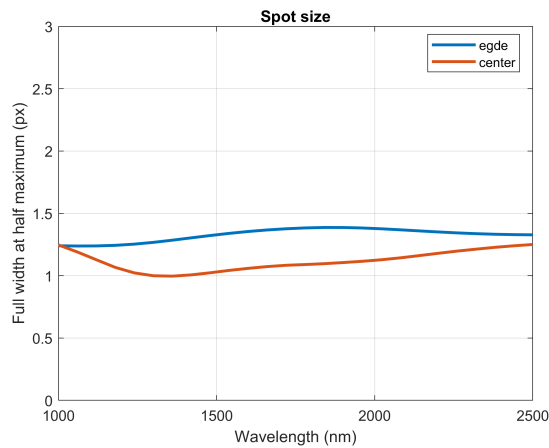


Figure 3. Full width at half maximum of the spatial spot as a function of wavelength.

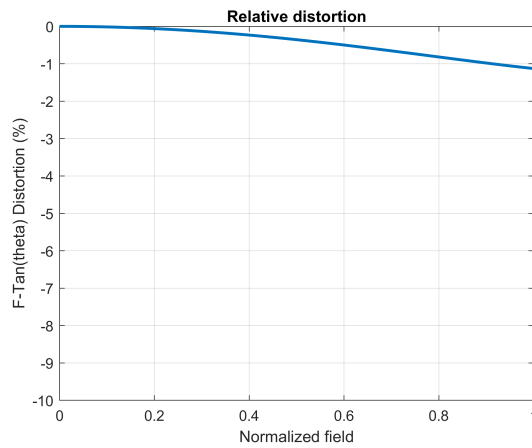


Figure 4. Relative distortion as a function of normalized field.

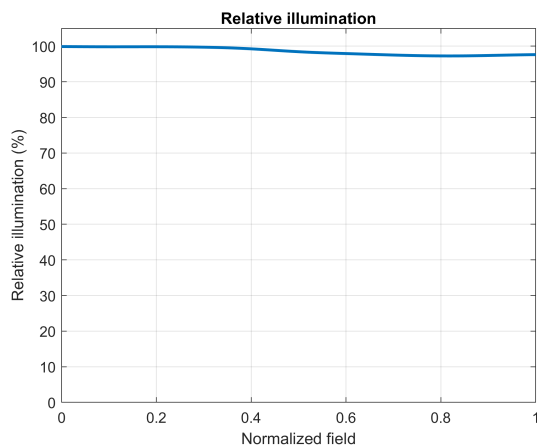


Figure 5. Relative illumination as a function of normalized field.

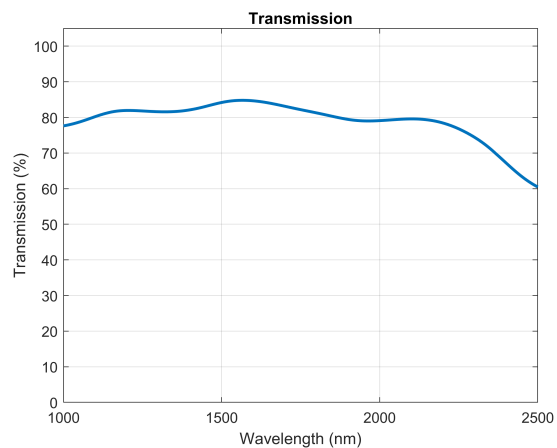


Figure 6. Transmission as a function of wavelength (lens only).

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	204	0.7	40
40	266	0.9	70
50	327	1.1	110
60	388	1.3	160
70	450	1.4	220
80	511	1.6	280
90	573	1.8	360
100	634	2.0	450
150	941	3.0	1100
200	1250	4.0	2100
300	1860	6.0	6300
500	3090	10.0	∞