Specim FX17 FOV75 lens specifications

1. Technical specifications

1.1. General information

Spectral camera	Specim FX17
Wavelength range (µm)	0.9 - 1.7
Product code	06FOB10090

1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	74	Nominal value
Entrance pupil position (mm)	17.9	From the first lens surface
Working distance (mm)	100 - ∞	Distance from the object to the first lens surface
Minimum object length (mm)	178	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	M55 x 0.75	
Lens mount	C-mount	Adapter to custom mount required (Product No 0106193)
Resolution (pix)	2.1	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	26	
Maximum distortion (%)	-7.6	
Minimum relative illumination (%)	96	

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

PARAMETER	A	B	COMMENT
Image width (mm)	12.0	9.6	
Effective focal length (mm)	8.6	6.9	At infinite working distance; tolerance ± 1%
Working F-number	2.1 - closed	1.7 - closed	Setting lens F-number below 2.1 does not increase the throughput
Average transmission (%)	85	-	
Dimensions (mm)	57 x 65	-	Diameter x Length

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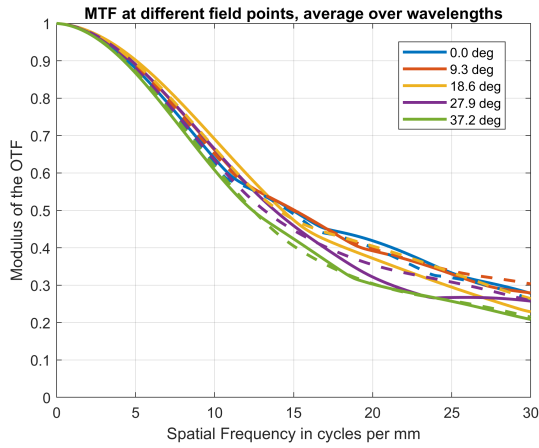
2. Figures

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

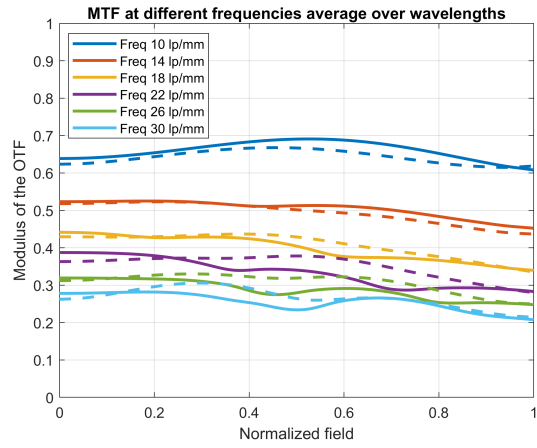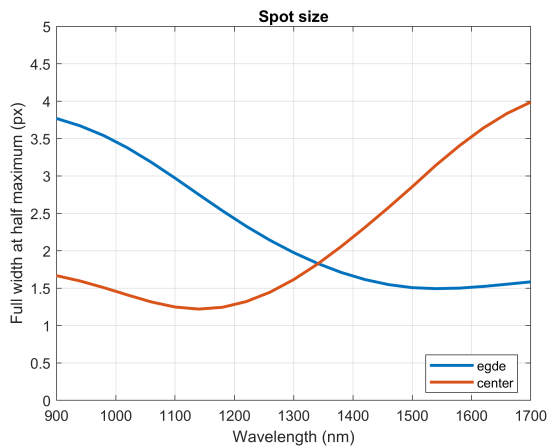Figure 2. MTF averaged over wavelengths as a function of normalized field.

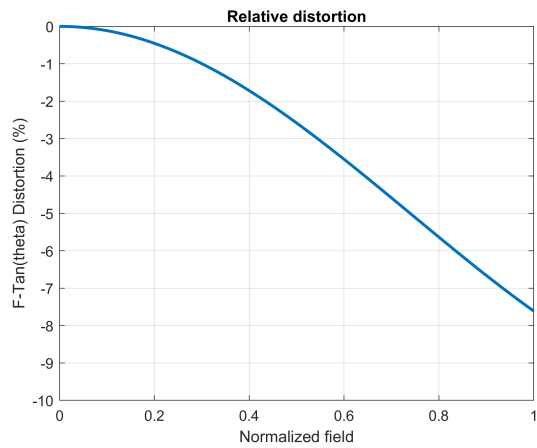Figure 3. Full width at half maximum of the spatial spot as a fuction of wavelength.

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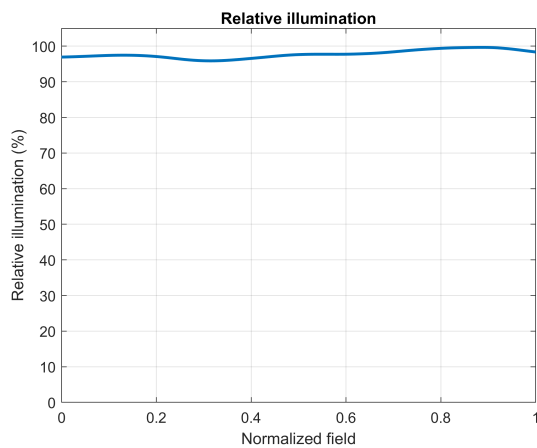

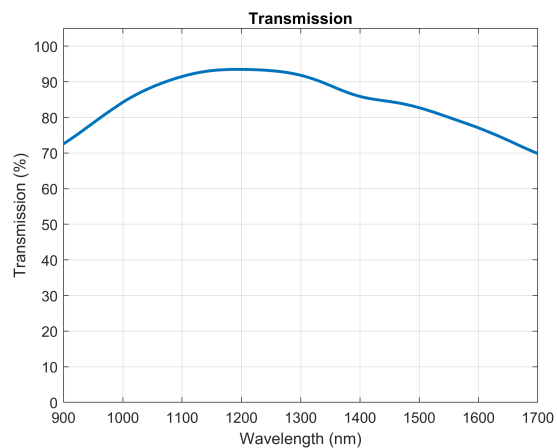Figure 5. Relative illumination as a function of normalized field.

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.

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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)	
10	178	0.6	12
20	330	1.1	46
30	482	1.6	100
40	634	2.0	190
50	786	2.5	300
60	938	3.0	440
70	1090	3.5	630
80	1240	4.0	870
90	1390	4.5	1200
100	1550	5.0	1600
150	2310	7.4	7500
200	3070	9.9	∞
300	4580	14.7	∞
500	7620	24.5	∞