Specim FX17 FOV90 lens specifications

1. Technical specifications

1.1. General information

Spectral camera	Specim FX17
Wavelength range (µm)	0.9 - 1.7
Product code	0606181

1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	90	Nominal value
Entrance pupil position (mm)	23.6	From the first lens surface
Working distance (mm)	100 - ∞	Distance from the object to the first lens surface
Minimum object length (mm)	252	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	-	
Lens mount	C-mount	Adapter to custom mount required (Product No 0106193)
Resolution (pix)	1.9	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	25	
Maximum distortion (%)	-6.7	
Minimum relative illumination (%)	69	

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)	6.4	5.1	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 (%)	86	-	
Dimensions (mm)	65 x 57	-	Diameter x Length

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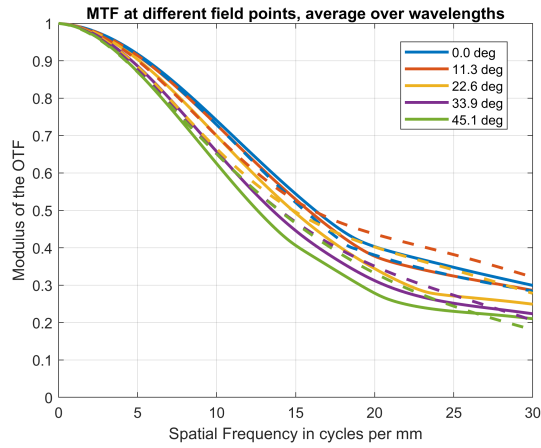
2. Figures

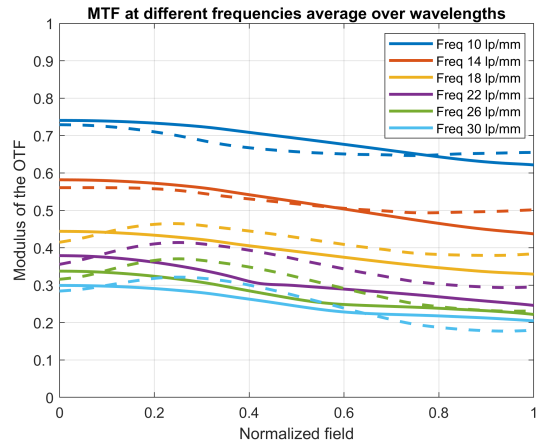Figure 1. MTF averaged over wavelengths as a function of frequency.

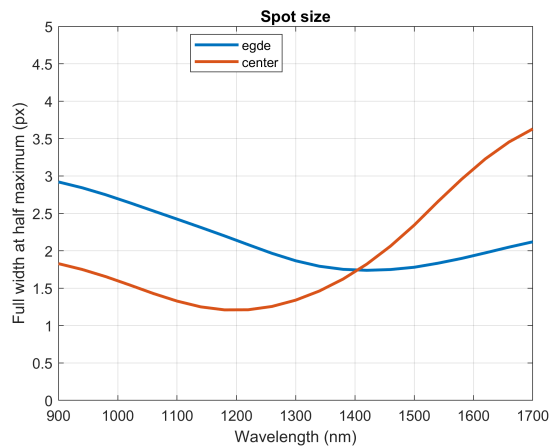Figure 2. MTF averaged over wavelengths as a function of normalized field.

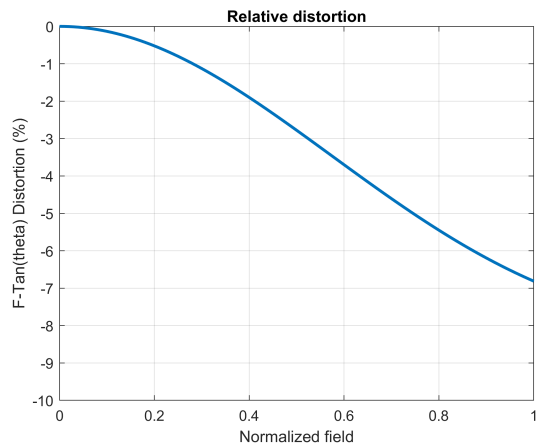Figure 3. Full width at half maximum of the spatial spot as a fuction of wavelength.

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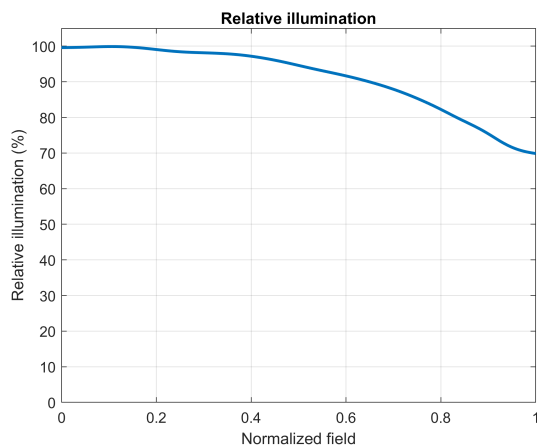

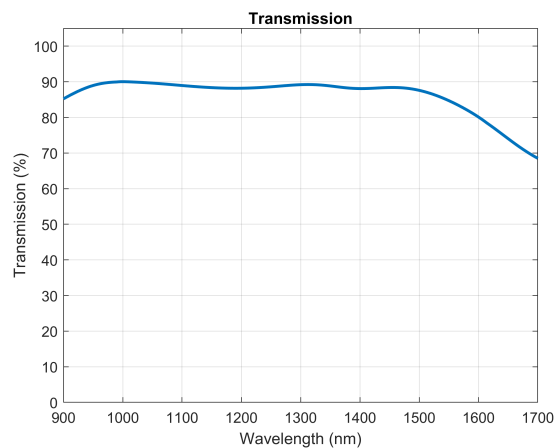Figure 5. Relative illumination as a function of normalized field.

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

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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	252	0.8	21
20	453	1.5	83
30	654	2.1	200
40	856	2.8	380
50	1060	3.4	650
60	1260	4.1	1100
70	1460	4.7	1800
80	1660	5.4	3300
90	1860	6.1	7300
100	2060	6.7	53000
150	3070	10.0	∞
200	4070	13.3	∞
300	6080	19.8	∞
500	10100	33.0	∞