Specim FX10 FOV83 lens specifications

1. Technical specifications

1.1. General information

Spectral camera	Specim FX10
Wavelength range (µm)	0.4 - 1.0
Product code	06FOB00310

1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	83	Nominal value
Entrance pupil position (mm)	18.8	From the first lens surface
Working distance (mm)	100 - ∞	Distance from the object to the first lens surface
Minimum object length (mm)	210	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)	2.2	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	36	
Maximum distortion (%)	-7.9	
Minimum relative illumination (%)	81	

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

PARAMETER	A	B	COMMENT
Image width (mm)	10.2	8.2	
Effective focal length (mm)	6.3	5.0	At infinite working distance; tolerance ± 1%
Working F-number	2.1 - closed	1.7 - closed	
Average transmission (%)	74	-	
Dimensions (mm)	54 x 57	-	Diameter x Length

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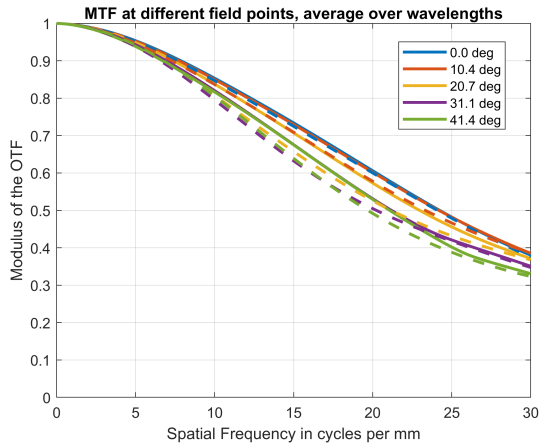
2. Figures

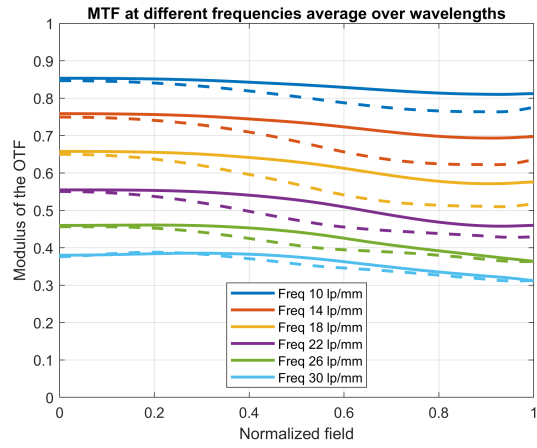Figure 1. MTF averaged over wavelengths as a function of frequency.

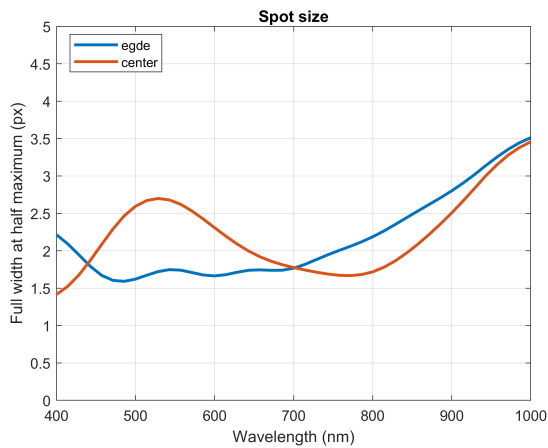Figure 2. MTF averaged over wavelengths as a function of normalized field.

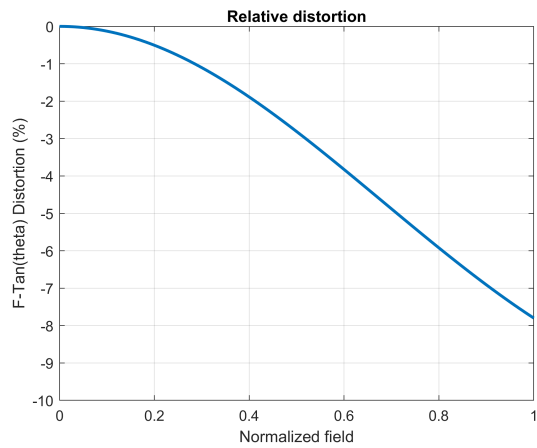Figure 3. Full width at half maximum of the spatial spot as a fuction of wavelength.

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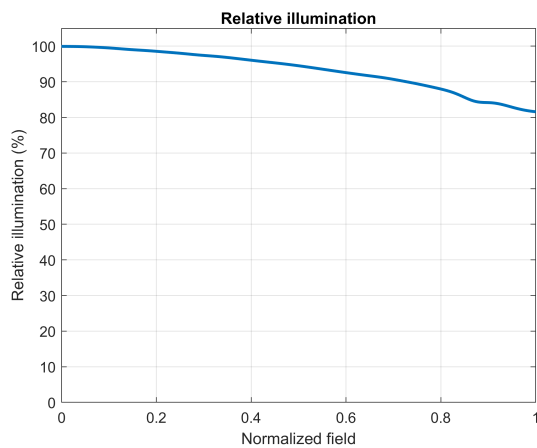

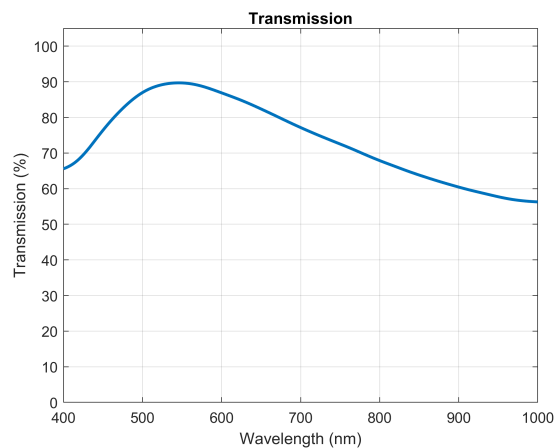Figure 5. Relative illumination as a function of normalized field.

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

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)	
10	210	0.8	11
20	387	1.5	45
30	565	2.1	100
40	742	2.8	180
50	919	3.5	290
60	1100	4.1	440
70	1270	4.8	620
80	1450	5.5	850
90	1630	6.1	1200
100	1810	6.8	1500
150	2690	10.1	7100
200	3580	13.5	∞
300	5350	20.1	∞
500	8890	33.5	∞