

## Specim FX17 FOV53 lens specifications

### 1. Technical specifications

#### 1.1. General information

Spectral camera	Specim FX17
Wavelength range ( $\mu\text{m}$ )	0.9 - 1.7
Product code	0607085

#### 1.2. Specifications with spectral camera

PARAMETER	VALUE	COMMENT
Nominal working distance (mm)	1000	Working distance used for all specifications
Field of view (deg)	54	Nominal value
Entrance pupil position (mm)	27.9	From the first lens surface
Working distance (mm)	100 - $\infty$	Distance from the object to the first lens surface
Minimum object length (mm)	129	Object length at minimum working distance
Adjustable focus	Yes	Focus can be adjusted and locked
Filter thread	M43 x 0.75	
Lens mount	Custom	
Resolution (pix)	1.6	Average over all field points and wavelengths
MTF (%) at 30 lp/mm	39	
Maximum distortion (%)	-4.3	
Minimum relative illumination (%)	95	

#### 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)	12.3	9.9	At infinite working distance; tolerance $\pm 1\%$
Working F-number	2.1	1.7	
Average transmission (%)	90	-	
Dimensions (mm)	55 x 91	-	Diameter x Length

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

## 2. Figures

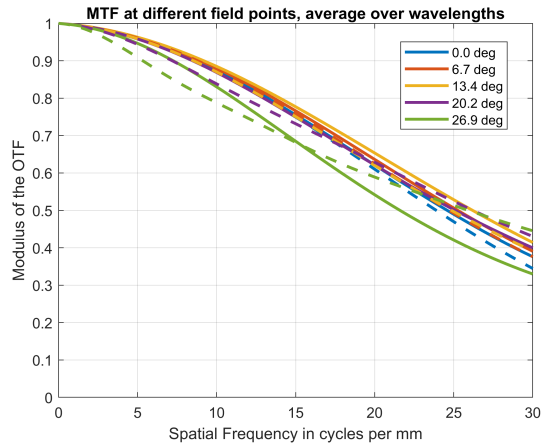


Figure 1. MTF averaged over wavelengths as a function of frequency.

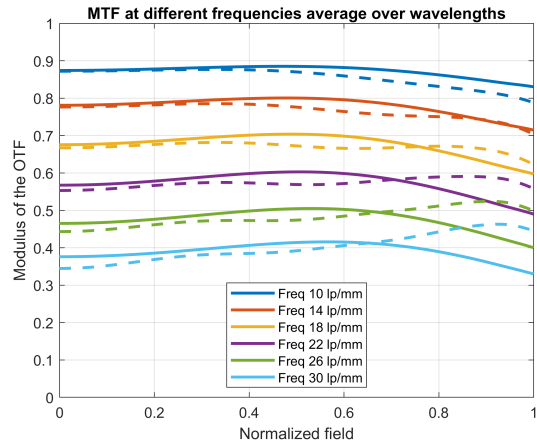


Figure 2. MTF averaged over wavelengths as a function of normalized field.

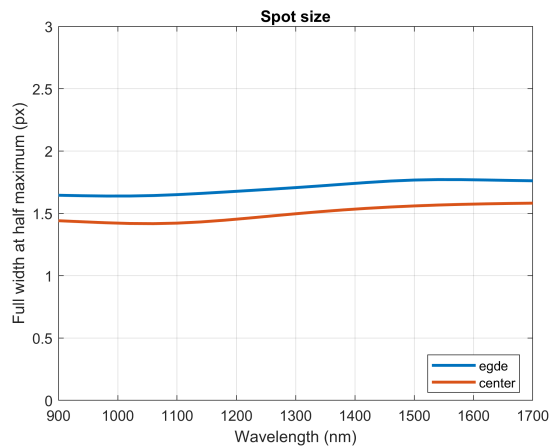


Figure 3. Full width at half maximum of the spatial spot as a function of wavelength.

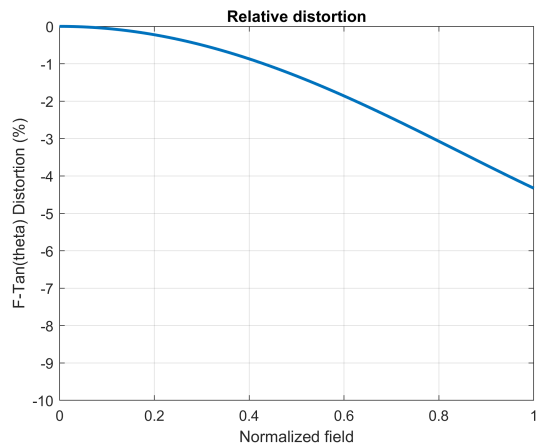


Figure 4. Relative distortion as a function of normalized field.

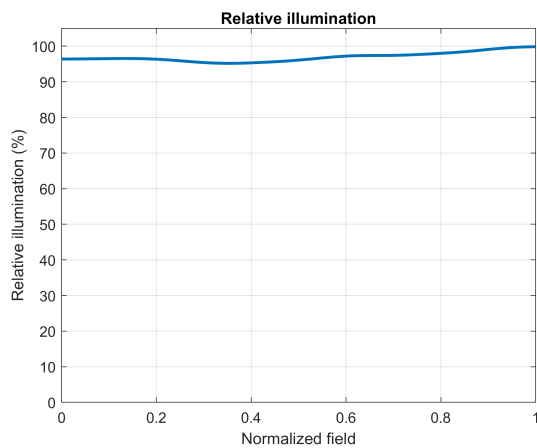


Figure 5. Relative illumination as a function of normalized field.

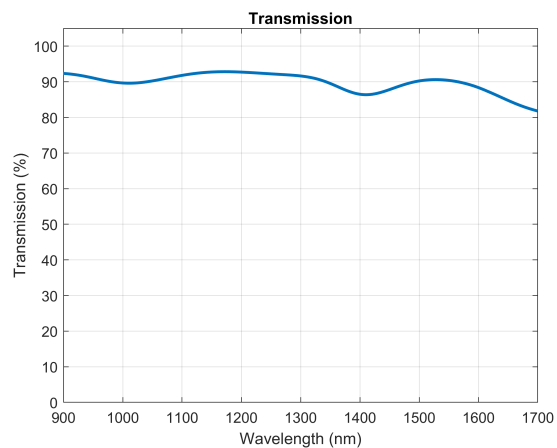


Figure 6. Transmission as a function of wavelength (lens only).

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)	
10	129	0.4	6
20	231	0.8	22
30	332	1.1	49
40	434	1.5	87
50	536	1.8	140
60	637	2.1	200
70	739	2.5	270
80	840	2.8	350
90	942	3.2	450
100	1040	3.5	570
150	1550	5.2	1400
200	2060	6.9	2900
300	3070	10.3	12000
500	5110	17.2	∞