OPTO ENGINEERING LASER & INFRARED OPTICS DIVISION

Infrared optics | **Short wave**

SW 05020

50 mm Short wave infrared lens

Optical specifications

Focal length	mm	50,00
F-Number		2,0
Wavelenght	micron	0,9 - 1,7
Average transmission	%	90,0
Circular FOV (1)	deg	23,7
Working Distance	mm	500/∞
Image Diagonal	mm	21,0
Distortion (2)	%	-0,41
CTF @ 30 lp/mm (3)	%	43,09
Image Side N.A.		0,243
Back Focal Length	mm	14,1

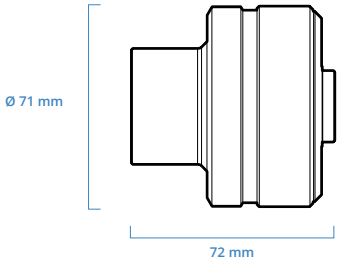
Mechanical specifications

Mount Type (4)	C Custom
Focus Type	Manual
Locking Screw	Yes

1. Based on the listed image diagonal
2. Maximum value at central wavelength
3. Mean value at all the different fields
4. Any custom mount is available at no additional cost. C = Standard C-mount type
5. Given with no mount attached. See layout drawings

Dimensions

Length	mm	72
Diameter	mm	71
Weight (5)	g	400



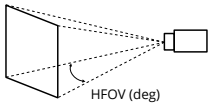
HFOV (deg)	number of pixels				
pixel pitch (µm)	160x120	320x240	384x288	640x480	1024x768
50	9,2	18,2			
38	7,0	13,9			
30	5,5	11,0			
28	5,1	10,3			
25	4,6	9,2	11,0	18,2	
17	3,1	6,2		12,5	

Horizontal fields of view (HFOV), in degrees, for several common detectors.
Actual FOV's may vary ±5% from the nominal value.

Legend

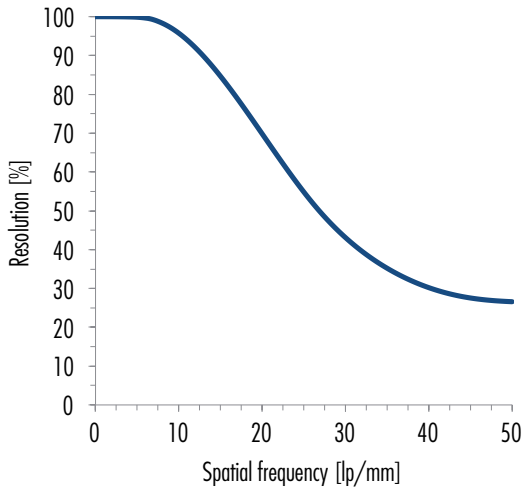
No detector of such form

Not optimized for this detector.
Vignetting may occur at image corners



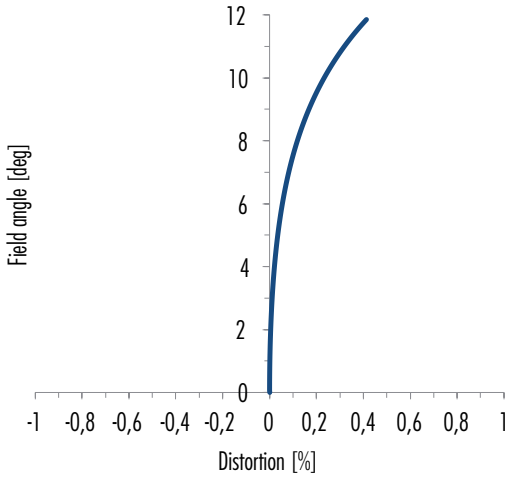
Nominal Optical Performance

CTF SW05020



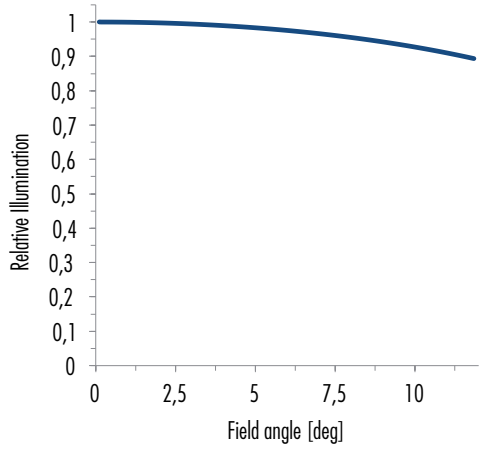
Contrast Transfer Function (CTF) is reported as the mean value at all different fields

Distortion SW05020



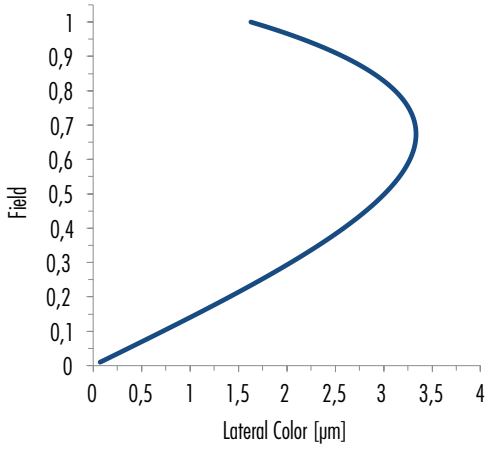
Distortion is shown at central wavelength

Relative Illumination SW05020



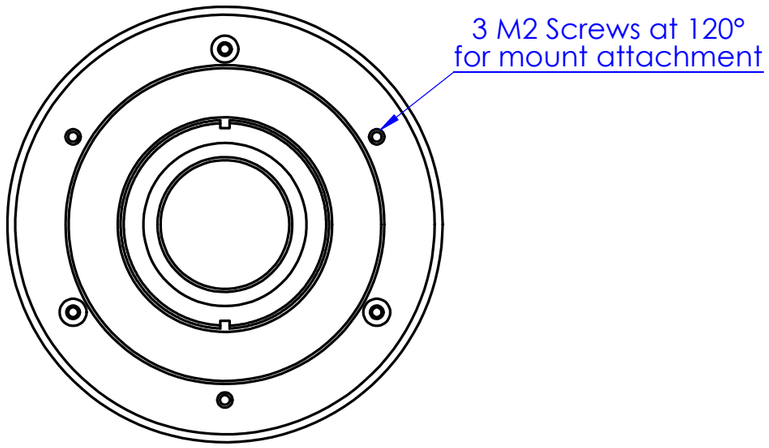
Relative Illumination is shown at central wavelength

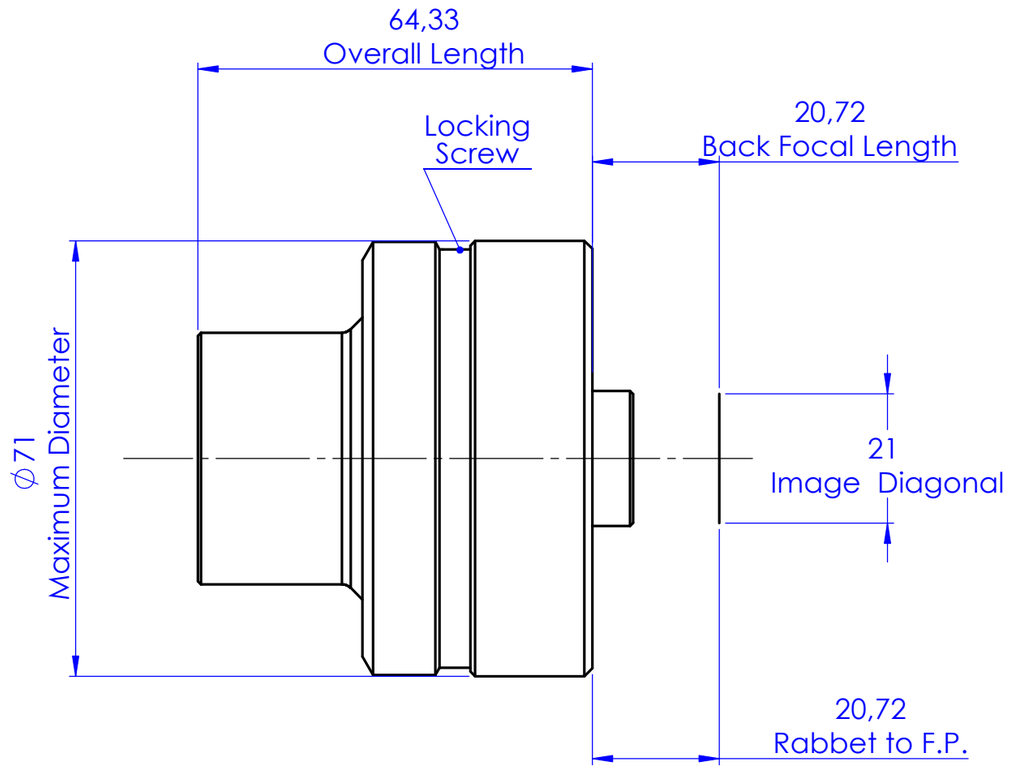
Lateral Color SW05020



Short wavelength = 0.9 µm, Long wavelength = 1.7 µm

Rev No.	Description	Date	Name
A	Nuovo pezzo	17/07/12	A.Vismara





Material: N.A.										Mass: 400 g	Scale: 1:1
Surface treatment: N.A.										Project-Prod.item/Instrument: SW05020	
Geometrical tolerance (ISO 2768-2)							Class	K	Undimensioned bevels	1x45°	Description: LAYOUT SW05020 BASE
Linear tolerance (ISO 2768-2)							Class	m			
0.5 ÷3	>3÷ 6	>6÷ 30	>30÷ 120	>120 ÷400	>400÷ 1000	>1000 ÷2000	>2000 ÷4000	Undimensioned radii	R 0.5		
±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2				

	Date	Name	Drawing No.	Sheet
Designed	17/07/12	A.Vismara	16159-1-A	1/2
Drawn	07/08/12	Angelosante		
Checked	X	C. Sedazzari		

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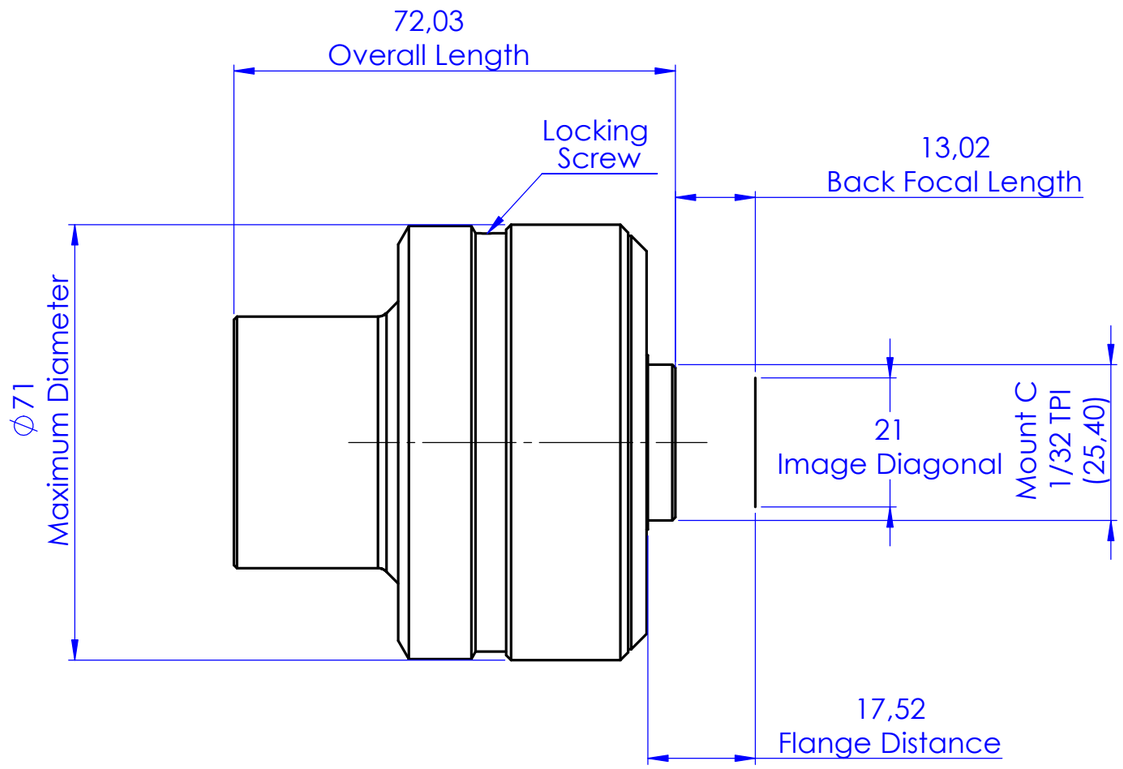
A	Nuovo pezzo	17/07/12	A.Vismara



Material: N.A.										Mass: 460 g — Scale: 1:1
Surface treatment: N.A.										Project-Prod.item/Instrument: SW05020-SC00MNT175
Geometrical tolerance (ISO 2768-2)								Class K	Undimensioned bevels	1x45°
Linear tolerance (ISO 2768-2)								Class m	Undimensioned radii	R 0.5
0.5 ÷3	>3÷ 6	>6÷ 30	>30÷ 120	>120 ÷400	>400÷ 1000	>1000 ÷2000	>2000 ÷4000			Description: LAYOUT SW05020 - C MOUNT SC00MNT175
±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2			

	Date	Name	Drawing No.	Sheet
Designed	17/07/12	A.Vismara	16159-2-A	2/2
Drawn	07/08/12	Angelosante		
Checked	X	C. Sedazzari		

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