

1.9mm EFL, f/1.3 Thermal Imaging Assembly

PART #7100327

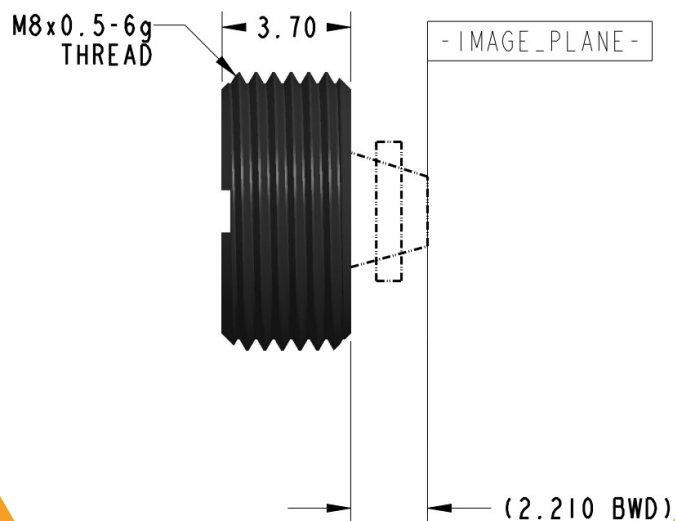
KEY FEATURES

OPTICAL:

- 1.9mm EFL, f/1.3 Lens
- 90° HFOV on 80x80/34μm detector¹
- Singlet design
- Utilizes aspheric
- High efficiency AR coating for LW/IR (8-12μm)
- Optically Athermalized² using BD6™ material

MECHANICAL:

- Small size and weight
- Precision molded chalcogenide lens
- Matte black anodized aluminum housing
- Threaded interface for adjustable focus
- Internally sealed to IP67 standard³



¹Lens optimized for this format. Data for other formats available upon request.

²See optical performance table on page 2 for athermal temperature range.

³Outer threads must also be sealed at installation.



Horizontal FOV for Various Detector Sizes					
Resolution → Pixel Size ↓	80x80	160x120	320x240	384x288	640x480
34μm	35° Optimal ¹	N/A	N/A	N/A	N/A
25μm	64°	N/A	N/A	N/A	N/A
17μm	43°	90°	N/A	N/A	N/A
12μm	30°	61°	148°	N/A	N/A
10μm	25°	50°	110°	148°	N/A

Optical Performance for 80x80 / 34μm Detector¹

Parameter	Notes	Design Value	Unit
MTF - Min Sag/Tan at Nyquist (15cyc/mm)	Diffraction Limited MTF (Ref. Only)	73	%
	On-axis	72	%
	VFOV	68	%
	HFOV	68	%
	Corner	47	%
EFL	Magnification-based	1.9	mm
F/#	Aperture-based	1.3	
Field of View	Vertical	90	Deg
	Horizontal	90	Deg
	Diagonal (corner)	149	Deg
Relative Illumination	At HFOV	94	%
	At Corner Field	92	%
Distortion	At HFOV	-6	%
	At Corner Field	-9	%
Fixed-Focus Object Range	Range for 10% MTF drop w/o refocus	0.1 - Infinity	m
Athermal Temp Range ²	Range for 10% MTF drop w/o refocus	-40 to +85	°C
Operating Waveband	LWIR thermal waveband ¹	8—14	μm
Transmission ³	HEAR coated witness samples (8-12μm)	>95	%

Mechanical Parameters

Parameter	Notes	Design Value	Unit
Height	Front to back of lens assembly	3.65	mm
Thread Interface	Lens assembly outer thread (ASME)	M10/M12x0.5-6g	
Working Distance to Image Plane (FPA)	Assumes 0.7mm Si window, nominal focus at infinity	2.2	mm
Max Exposure Temp	Storage/post-processing	140	°C
Internal Seal	Threads must also be sealed at installation	IP67	

¹Performance data for nominal design on specified detector over 8-12 μm waveband. Data for other detector formats available upon request.

²Assumes aluminum mount used between lens and detector FPA. Additional passive athermalization available in specialized housing.