

19mm EFL, f/1.1

Part #7100338

Thermal Imaging Lens Assembly

NEW! BD6™ Material
Enabling Optical
Athermalization²



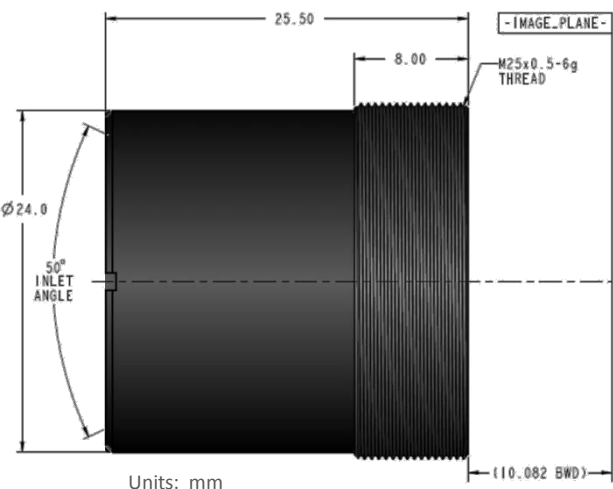
KEY FEATURES

Optical:

- 19mm EFL, f/1.1 Lens
- 33deg HFOV on 640X480/17µm detector¹
- Low-cost dual element design
- Utilizes aspheric and diffractive performance
- High efficiency AR coating for LWIR (8-14µm)
- **Optically Athermalized² using BD6™ material**

Mechanical:

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



Horizontal FOV for Various Detector Sizes

Resolution → Pixel Size ↓	160x120	320x240	384x288	640x480	1024x768
34µm	16°	33°	40°	N/A	N/A
25µm	12°	24°	29°	50°	N/A
17µm	8°	16°	20°	33° Optimal¹	55°
12µm	6°	12°	14°	23°	38°
10µm	5°	10°	12°	19°	31°

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

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Optical Performance for 640x480 / 17 μ m Detector ¹

Parameter	Notes	Design Value	Unit
MTF – Min Sag/Tan at Nyquist (29.4cyc/mm)	Diffraction Limited MTF (<i>Ref. Only</i>)	59	%
	On-axis	58	%
	VFOV	48	%
	HFOV	40	%
	Corner	36	%
EFL	Magnification-based	19	mm
F/#	Aperture-based	1.1	
Field of View	Vertical	25	Deg
	Horizontal	33	Deg
	Diagonal (corner)	42	Deg
Relative Illumination	At HFOV	83	%
	At Corner Field	77	%
Distortion	At HFOV	-4	%
	At Corner Field	-7	%
Fixed Focus Range <i>(Range if used <u>without</u> manual focus, allowing ~10% MTF drop at Nyq/2)</i>	Depth of Field (target range)	8 – Infinity	m
	Athermal Temperature Range ²	-20 to +60	°C
Operational Waveband	LWIR thermal waveband	8 – 14	μ m
Transmission	HEAR coated witness samples (8-12 μ m)	>96	%

Mechanical Parameters

Parameter	Notes	Design Value	Unit
Height	Front to back of lens assembly	25.5	mm
Thread Interface	Lens assembly outer thread (ASME)	M25x0.5-6g	
Working Distance to Image Plane (FPA)	Assumes 0.7mm Si window, nominal focus at infinity	10.08	mm
Max Exposure Temp	Storage / post-processing	140	°C
Internal Seal	Threads must also be sealed at installation	IP67	

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

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