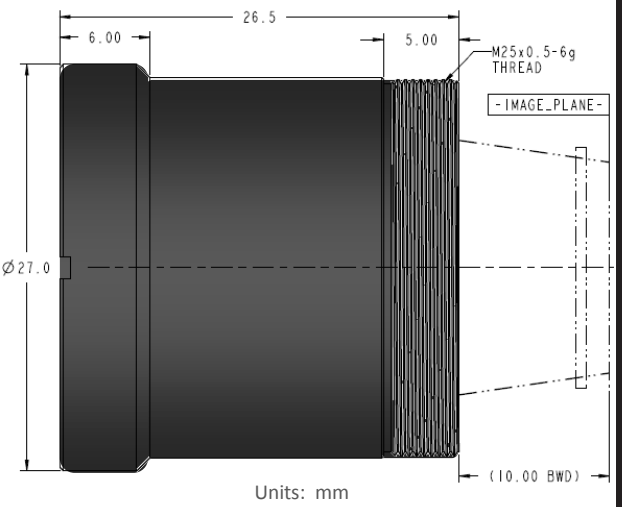
24mm EFL, f/1.2

Part #7100346

Thermal Imaging Lens Assembly

NEW! BD6™ Material Enabling Optical Athermalization[2]



Units: mm

KEY FEATURES

Optical:

- 24mm EFL, f/1.2 Lens
- 26deg HFOV on 640X480/17µm detector[1]
- Low-cost dual element design
- Utilizes aspheric and diffractive performance
- High efficiency AR coating for LWIR (8-14µm)
- **Optically Athermalized[2] using BD6™ material**

Mechanical:

- Small size and weight
- Precision molded chalcogenide lens material
- Black anodized aluminum housing
- Threaded interface for adjustable focus
- Internally sealed to IP67 standard[3]

Horizontal FOV for Various Detector Sizes

Resolution → / Pixel Size ↓	160x120	320x240	384x288	640x480	1024x768
34µm	13°	26°	31°	51°	N/A
25µm	10°	19°	23°	38°	59°
17µm	7°	13°	16°	**26° *Optimal*[1]**	41°
12µm	5°	9°	11°	18°	29°
10µm	4°	8°	9°	15°	24°

[1]Lens optimized for this format. Data for other formats available upon request.
[2]See optical performance table on page 2 for athermal temperature range
[3]Outer threads must also be sealed at installation

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Optical Performance for 640x480 / 17µm Detector [1]

Parameter	Notes	Design Value	Unit
MTF – Min Sag/Tan at Nyquist (29.4cyc/mm)	Diffraction Limited MTF *(Ref. Only)*	54	%
	On-axis	53	%
	VFOV	44	%
	HFOV	35	%
	Corner	30	%
EFL	Magnification-based	24	mm
F/#	Aperture-based	1.2	
Field of View	Vertical	19	Deg
	Horizontal	26	Deg
	Diagonal (corner)	32	Deg
Relative Illumination	At HFOV	93	%
	At Corner Field	88	%
Distortion	At HFOV	-1	%
	At Corner Field	-2	%
Fixed Focus Range *(Range if used without manual focus, allowing ~10% MTF drop at Nyq/2)*	Depth of Field (target range)	10 – *Infinity*	m
	Athermal Temperature Range[2]	-20 to +60	°C
Operational Waveband	LWIR thermal waveband	8 – 14	µm
Transmission	HEAR coated witness samples (8-12µm)	>96	%

Mechanical Parameters

Parameter	Notes	Design Value	Unit
Height	Front to back of lens assembly	26.5	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	10.0	mm
Max Exposure Temp	Storage / post-processing	140	°C
Internal Seal	Threads must also be sealed at installation	IP67	

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[1] *Performance data for nominal design on specified detector over 8-12µm 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.*