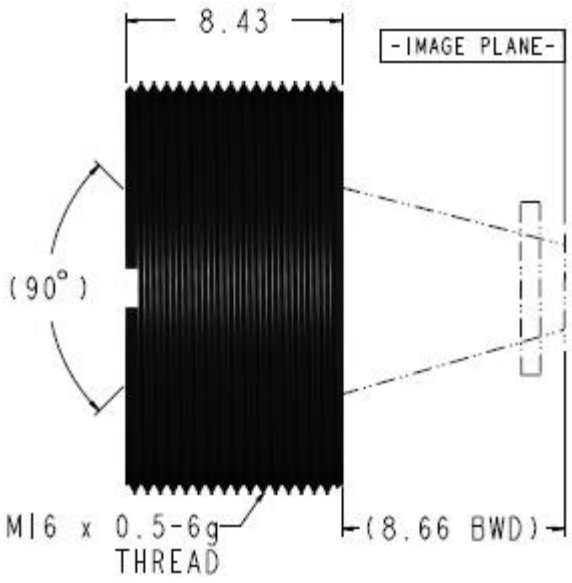
6.3mm EFL, f/1.3

Part #7100306

Thermal Imaging Lens Assembly

NEW! BD6™ Material Enabling Optical Athermalization[2]



Units: mm

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KEY FEATURES

Optical:

- 6.3mm EFL, f/1.3 Lens
- 50deg HFOV on 320x240/17µm detector[1]
- Low-cost singlet design
- Utilizes aspheric and diffractive technologies
- High efficiency AR coating for LWIR (8-14µm)
- **Optically Athermalized[2] using BD6™ material**

Mechanical:

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

Horizontal FOV for Various Detector Sizes

Resolution → / Pixel Size ↓	80x80	160x120	320x240	384x288	640x480
34µm	25°	50°	110°	N/A	N/A
25µm	18°	37°	76°	94°	N/A
17µm	12°	25°	**50°** ***Optimal*** [1]	61°	110°
12µm	9°	17°	35°	42°	73°
10µm	7°	15°	29°	35°	60°

[1]Lens optimized for this format. Data for other formats available upon request.
[2]See performance table on page 2 for MTF change over temperature
[3]Outer threads should also be sealed at installation

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Optical Performance for 320x240 / 17µm Detector [1]

Parameter	Notes	Design Value	Unit
MTF – Min Sag/Tan at Nyquist (29.4cyc/mm)	Diffraction Limited MTF *(Ref. Only)*	52	%
	On-axis	51	%
	VFOV	43	%
	HFOV	30	%
	Corner	22	%
EFL	Magnification-based	6.3	mm
F/#	Aperture-based	1.3	
Field of View	Vertical	37	Deg
	Horizontal	50	Deg
	Diagonal (corner)	63	Deg
Relative Illumination	At HFOV	93	%
	At Corner Field	90	%
Distortion	At HFOV	8	%
	At Corner Field	13	%
Fixed Focus Range *(Range if used without manual focus, allowing ~10% MTF drop at Nyquist)*	Depth of Field	0.5 – *Infinity*	m
	Athermal Temperature Range[2]	-57 to +83	°C
Operating 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	8.43	mm
Thread Interface	Lens assembly outer thread (ASME)	M16x0.5-6g	
Working Distance to Image Plane (FPA)	Assumes 0.7mm Si window, nominal focus at infinity	8.66	mm
Max Exposure Temp	Storage / post-processing	140	°C
Sealing	Assumes threads are 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.*

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