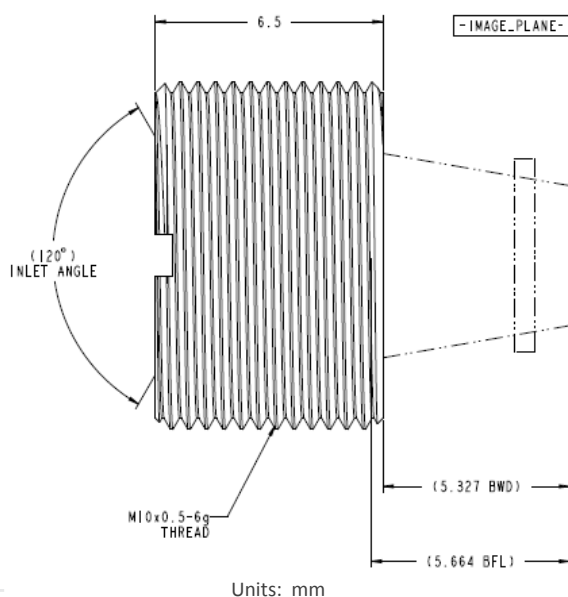


4.0mm EFL, f/1.2

Part #7100410

Thermal Imaging Lens Assembly

**BD6™ Material
Enabling Optical
Athermalization²**



Units: mm

LightPath®
TECHNOLOGIES

KEY FEATURES

Optical:

- 4.0mm EFL, f/1.2 Lens
- 56deg HFOV on 320x240/12μm detector¹
- Low-cost singlet design
- Utilizes aspheric performance
- High efficiency AR coating for LWIR (8-12μm)
- *Optically Athermalized² 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 standard³

Horizontal FOV for Various Detector Sizes

Resolution → Pixel Size ↓	80x80	160x120	320x240	384x288	640x480
34μm	39°	83°	N/A	N/A	N/A
25μm	29°	59°	N/A	N/A	N/A
17μm	20°	39°	83°	102°	N/A
12μm	14°	28°	56° Optimal¹	69°	N/A
10μm	11°	23°	47°	56°	100°

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

4.0mm EFL, f/1.2

Part #7100410

Thermal Imaging Lens Assembly

Optical Performance for 320x240 / 12 μ m Detector ¹

Parameter	Notes	Design Value	Unit
MTF – Min Sag/Tan at Nyquist (41.7cyc/mm)	Diffraction Limited MTF (<i>Ref. Only</i>)	38	%
	On-axis	36	%
	VFOV	24	%
	HFOV	16	%
	Corner	10	%
EFL	Magnification-based	4.0	Mm
F/#	Aperture-based	1.2	
Field of View	Vertical	42	Deg
	Horizontal	56	Deg
	Diagonal (corner)	72	Deg
Relative Illumination	At HFOV	85	%
	At Corner Field	75	%
Distortion	At HFOV	-11	%
	At Corner Field	-17	%
Fixed Focus Range (Range if used <u>without</u> manual focus, allowing ~10% MTF drop at Nyquist/2)	Depth of Field	0.4 – Infinity	m
	Athermal Temperature Range ²	-40 to +85	°C
Operational Waveband	LWIR thermal waveband	8 – 14	μ m
Transmission	HEAR coated witness samples (8-12 μ m)	>95	%

Mechanical Parameters

Parameter	Notes	Design Value	Unit
Height	Front to back of lens assembly	6.5	mm
Thread Interface	Lens assembly outer thread (ASME)	M10 x 0.5-6g	
Working Distance to Image Plane (FPA)	Assumes 0.7mm Si window, nominal focus at infinity	5.33	mm
Max Exposure Temp	Long-term / Short-term (<30min)	<100 / <130	°C
Internal Seal	Threads must also be sealed at installation	IP67	