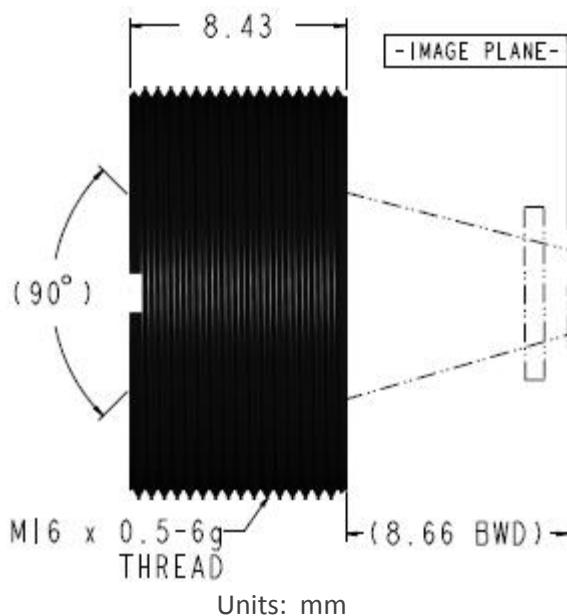


6.3mm EFL, f/1.3

Part #7100306

Thermal Imaging Lens Assembly

NEW! BD6™ Material
Enabling Optical
Athermalization²



KEY FEATURES

Optical:

- 6.3mm EFL, f/1.3 Lens
- 50deg HFOV on 320x240/17μm detector¹
- Low-cost singlet design
- Utilizes aspheric and diffractive technologies
- High efficiency AR coating for LWIR (8-14μm)
- **Optically Athermalized² 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 standard³

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° Optimal¹ | 61° | 110° |
| 12μm | 9° | 17° | 35° | 42° | 73° |
| 10μm | 7° | 15° | 29° | 35° | 60° |

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

²See performance table on page 2 for MTF change over temperature

³Outer threads should also be sealed at installation

LightPath®
TECHNOLOGIES

Optical Performance for 320x240 / 17μm Detector ¹

| Parameter | Notes | Design Value | Unit |
|---|--|----------------|------|
| MTF – Min Sag/Tan at Nyquist (29.4cyc/mm) | Diffraction Limited MTF (<i>Ref. Only</i>) | 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 <i>(Range if used without manual focus, allowing ~10% MTF drop at Nyquist)</i> | 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 | |

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.