

1.5mm EFL, f/1.3 Thermal Imaging Assembly

PART #7100333

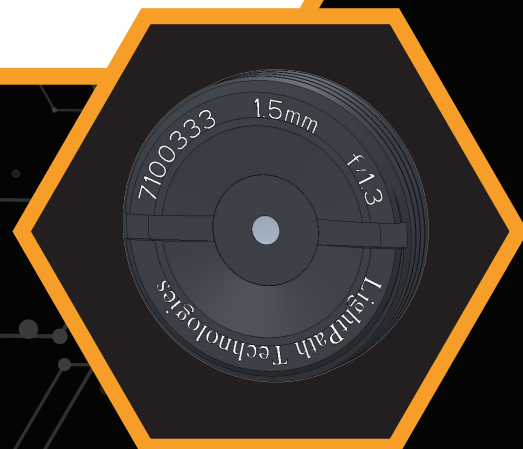
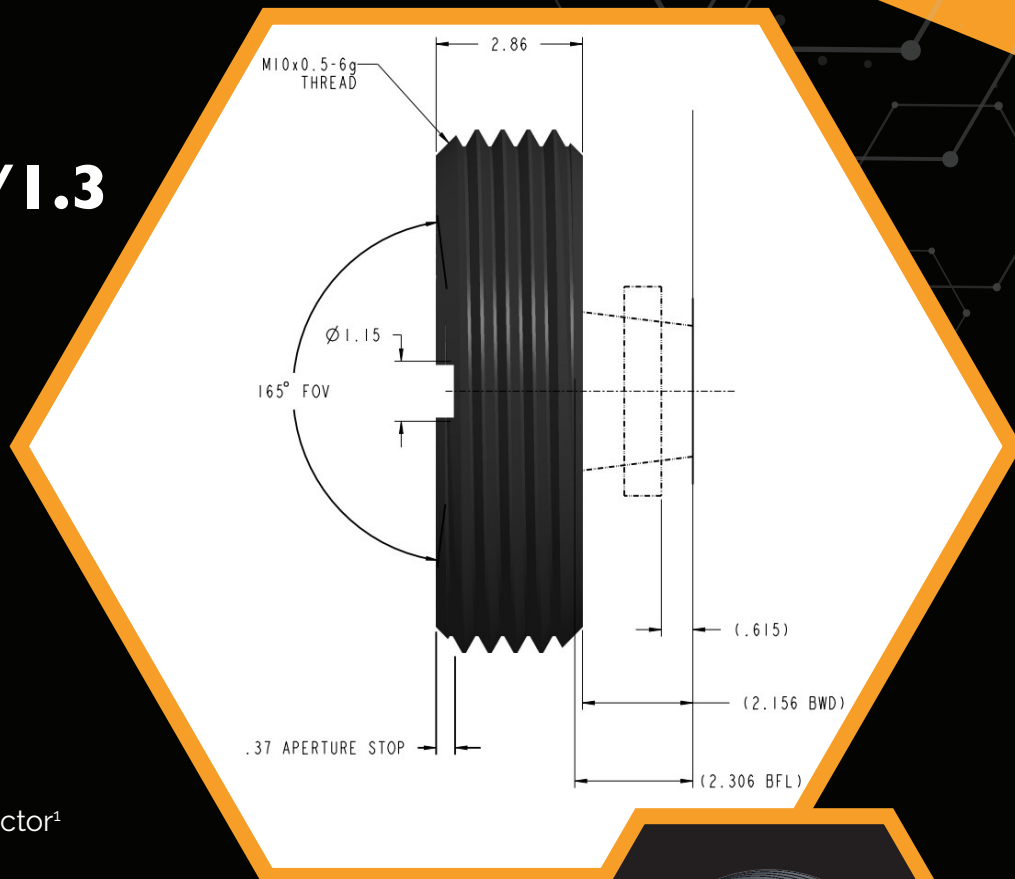
KEY FEATURES

OPTICAL:

- 1.5mm EFL, f/1.3 Lens
- 120° HFOV on 80x80/34μm detector¹
- Singlet design
- Utilizes aspheric
- High efficiency AR coating for LW/IR (8-12μm)
- Optically Athermalized² using BD6™ material

MECHANICAL:

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



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.



Horizontal FOV for Various Detector Sizes					
Resolution → Pixel Size ↓	80x80	160x120	320x240	384x288	640x480
34μm	120° Optimal ¹	N/A	N/A	N/A	N/A
25μm	81°	N/A	N/A	N/A	N/A
17μm	54°	120°	N/A	N/A	N/A
12μm	37°	78°	N/A	N/A	N/A
10μm	31°	64°	N/A	N/A	N/A

Optical Performance for 80x80 / 34μm Detector¹

Parameter	Notes	Design Value	Unit
MTF - Min Sag/Tan at Nyquist (15cyc/mm)	Diffraction Limited MTF (Ref. Only)	75	%
	On-axis	74	%
	VFOV	55	%
	HFOV	55	%
	At Image Circle Diameter (Not Corner)	52	%
EFL	Magnification-based	1.5	mm
F/#	Aperture-based	1.3	
Image Circle	<i>Distortion prevents image from extending to corner of detector</i>	3.16	
Field of View	Vertical	120	Deg
	Horizontal	120	Deg
	At Image Circle Diameter (Not Corner)	160	Deg
Relative Illumination	At HFOV	83	%
	At Image Circle Diameter (Not Corner)	64	%
Distortion	At HFOV	-48	%
	At Image Circle Diameter (Not Corner)	-81	%
Fixed-Focus Object Range	Depth of Field	0.05 - Infinity	m
Athermal Temp Range ²	Range for 10% MTF drop w/o refocus	-40 to +85	°C
Operating Waveband	LWIR thermal waveband ¹	8—14	μm

Mechanical Parameters

Parameter	Notes	Design Value	Unit
Height	Front to back of lens assembly	2.9	mm
Thread Interface	Lens assembly outer thread (ASME)	M10/M12x0.5-6g	
Working Distance to Image Plane (FPA)	Assumes 0.7mm Si window, nominal focus at infinity	2.2	mm
Max Exposure Temp	Storage/post-processing	140	°C
Internal Seal	Threads must also be sealed at installation	IP67	

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

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