

# LightIR 18-225mm f/4

Designed for Reduced SWaP MWIR 10 $\mu$ m SXGA and 15 $\mu$ m VGA Detectors  
PN 680473



The Ophir LightIR 18-225mm MWIR f/4 continuous zoom lens is a compact thermal imaging lens, optimized for 10 $\mu$ m SXGA and 15 $\mu$ m VGA FPA (focal plane array) detectors. It weighs only 326gr, which makes it 19% lighter than existing similar lenses.

It features a compact optics design, with reduced optical elements that significantly decrease the length and weight of the lens, and therefore, the overall size and weight of the optical system in which it is incorporated.

With its disruptive combination of SWaP capabilities, detection range exceeding 16km, rugged design, and cost-effective pricing, the LightIR 18-225mm f/4 continuous zoom lens is an enabler for advanced drone, tactical UAV IR cameras, and micro-/mini-tactical payloads in the commercial, homeland security, and defense markets.

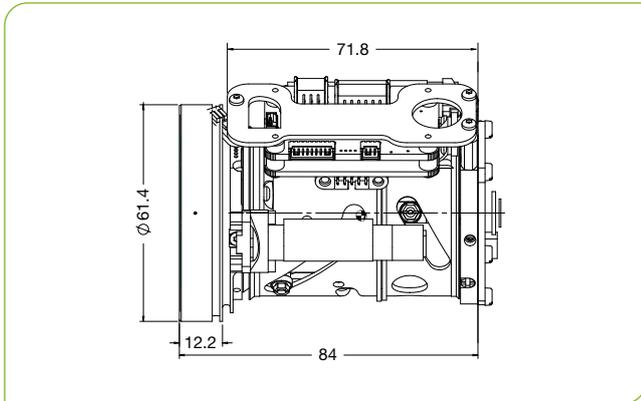
## KEY PRODUCT FEATURES

- Meets low SWaP demand with long EFL
- Efficient compact optics design for max. volume use
- Designed for MWIR 10 $\mu$ m SXGA and 15 $\mu$ m VGA Detectors
- Ideal for mini/micro tactical payloads
- Detection range exceeds 16km



Assumptions: 10 $\mu$  pixel pitch | 3.6 $\mu$ -4.9 $\mu$  spectral band | 23mK NETD | 30Hz frame rate | 0.2km<sup>-1</sup> atmospheric attenuation coefficient | 50% detection probability | Human target – 1.7x0.5m size, 5°C  $\Delta$ T | Vehicle target – 2.3x2.3m size, 2°C  $\Delta$ T.

TYPICAL ICD



**WFOV (18mm)**

HFOV	320x240	480x384	640x512	1280x1024
15μ	15.2°	22.6°	29.9°	
10μ	10.2°	15.2°	20.2°	39.1°

**NFOV (225mm)**

HFOV	320x240	480x384	640x512	1280x1024
15μ	1.2°	1.8°	2.4°	
10μ	0.8°	1.2°	1.6°	3.3°

Property	Value	
<b>Optical</b>	WFOV	NFOV
Focal Length	18mm	225mm
F#	4.0	
Average transmission (3.4-4.9μm)	≥80% (HCLR) / ≥87% (HD)	
Cold stop to FPA Distance	19.4-20.5mm	
Cold Stop CA	Ø4.88mm (for 19.2-20.5mm CSH)	
Back Focal Length	26.9mm in air (with 1+0.5mm Ge windows)	
Distortion in diagonal	< 2.5%	
Minimum Focusing Range	5m	50m
Nuc (by defocus)	Yes	
<b>Mechanical</b>		
Focus Mechanism	Motorized. Adjustable	
Focus Time (minimum range to ∞)	<2 sec.	
Zoom Time (NFOV to WFOV)	<5 sec.	
Max. Dimensions	Ø61.4 x 84mm	
Weight	326gr	
<b>Electrical</b>		
Lens Control	Designated lens controller	
Drive Voltage	6-12VDC	
Current Consumption	< 0.5A average, 1.0A peak	
Communication Protocol	RS422	
<b>Environmental</b>		
Operation Temperature	-32°C to +75°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP67 front element only	
<b>Configurations</b>		
680473-001	High Durability	
680473-002	Hard Carbon Low Reflection	

