SWIR & NIR 25-250mm f/5.5 (NFOV) f/4.0 (WFOV) Continuous Zoom Lens

Low SWaP design for 5µm, 10µm SXGA & 15µm VGA SWIR detectors (PN 680471)

NEW

mks | Ophir®

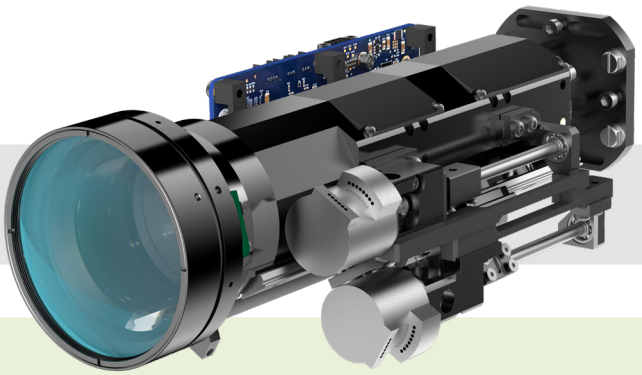
The Ophir SWIR & NIR 25-250mm f/5.5 (NFOV) f/4.0 (WFOV) continuous zoom lens is a first to market low-Size, Weight, and Power (SWaP), compact lens, for the newly introduced 5µm SXGA, as well as for 10µm SXGA, and 15µm VGA SWIR detectors.

The SWIR & NIR zoom lens employs a unique mechanical and optical design, resulting in an all-around smaller and lighter unit with only 860gr in weight, and 224mm in length, making it approximately 60% lighter than similar existing SWIR lenses.

The lens is also chromatically corrected to support a broader short-wave IR wavelength regime from 0.7-1.7µm and operates with minimal distortion.

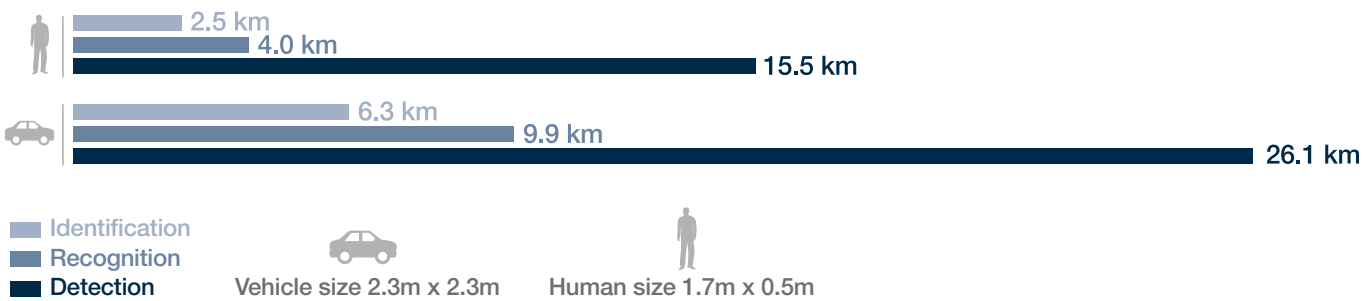
The SWIR & NIR 25-250mm f/5.5 (NFOV) f/4.0 (WFOV) continuous zoom lens presents an unrivaled combination of SWaP capabilities, detection range exceeding 26km, rugged design, and a unique coating able to withstand harsh, humid, and salty environments. All these features make this lens a game changer for advanced drones, coastal guard search and rescue, tactical UAV IR cameras, and micro / mini tactical payloads in the commercial, homeland security, and defense markets.

The specialized materials and coatings of the lens maximize transmission and chromatic performance, outpacing the rest of the industry's baseline in SWIR offerings.



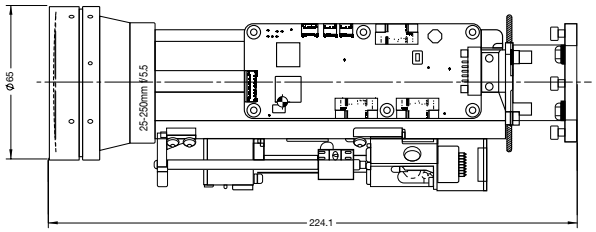
KEY PRODUCT FEATURES

- Continuous zoom in the 0.7-1.7 nm SWIR regime
- Designed for 5µm, 10µm SXGA & 15µm VGA SWIR detectors
- Lightweight (<860 gr)
- High spatial resolution and low distortion with detection range exceeding 26 km
- Designed to withstand harsh environmental conditions



Assumptions: 1280 detector | TRM4 model | Day mode | 0.7µm to 1.7µm spectral range | 25Hz frame rate | Overcast daylight irradiance | 0.2 path radiance factor | 0.2km^{-1} atmospheric attenuation coefficient | 50% detection probability | Human and vehicle target 50% reflectivity | 15% background reflectivity

TYPICAL ICD



WFOV (25mm)

HFOV	320x240	480x384	640x512	1280x1024
15µ	11.0°	16.4°	21.7°	
10µ	7.3°	11.0°	14.6°	28.7°
5µ	3.7°	5.5°	7.3°	14.6°

NFOV (250mm)

HFOV	320x240	480x384	640x512	1280x1024
15µ	1.1°	1.7°	2.2°	
10µ	0.7°	1.1°	1.5°	2.9°
5µ	0.4°	0.6°	0.7°	1.5°

Property	Value	
Optical	WFOV	NFOV
Focal Length	25mm	250mm
F#	4.0	5.5
Average transmission (0.7-1.7µm / 1.1-1.7µm)	85%	
Back Focal Length	34.47mm in air (±0.1)	
Distortion in diagonal	<4%	<4%
Minimum Focusing Range	2m	20m
Mechanical		
Focus Mechanism	Motorized. Adjustable	
Focus Time (minimum range to ∞)	≤1sec.	
Zoom Time (NFOV to WFOV)	≤5sec.	
Max. Dimensions	Ø65mm x 224.1mm	
Weight	860gr	
Electrical		
Lens Control	Designated lens controller	
Supply Voltage	12V	
Current Consumption	<0.8A	
Communication Protocol	RS422 or RS232	
Environmental		
Operation Temperature	-32ºC to +75ºC	
Storage Temperature	-40ºC to +80ºC	
Sealing	IP67 front element only	

www.ophiropt.com/infrared | MKTG@mksinst.com

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