INTRODUCING IR ZOOM LENSES FOR EXTENDED OBSERVATION RANGES

DESIGNED FOR VGA MWIR F/5.5 DETECTORS

SupIR 30-385mm f/5.5
> 17km detection range

SupIR 50-700mm f/5.5
> 22km detection range

SupIR 80-1200 f/5.5
> 26km detection range

HIGH PERFORMANCE, RUGGEDIZED, IR ZOOM LENSES
WITH DISRUPTIVE COST-PERFORMANCE

Long range, high performance

The new 30-385mm, 50-700mm and 80-1200mm f/5.5 lenses enable longer detection, recognition, and identification (DRI) ranges with a compelling combination of performance, reliability and cost, specially designed for anti-drone applications and ideal for long range observation and surveillance systems with vehicle detection range capabilities exceeding 26km.

Ruggedized optical design

The lenses are designed to withstand harsh environmental conditions. They are ruggedized with Ophir's standard, world-renowned coatings, IP 67 sealing, mechanical design to withstand severe shock and vibration.

The lenses are are designed for ease of mechanical integration and include Ophir's standard software for optimal integration, calibration and field operation.

Superior zoom controller features

These lenses are equipped with Ophir's state-of-the-art zoom controller features:

- Continuous zoom with focus retention
- Automatic focus compensation throughout temperature and zoom ranges
- Close objects focus mode
- Focus blurring for NUC calculation
- Full manual / automatic control of zoom and focus positions

Full functionality communication protocol

The communication protocol controls full functionality of lens and full status report of lens, including motor positions, FOV, temperature, built in test status and working hours. Both the controller and communication protocols are fully compatible with all Ophir zoom lenses.

Optimal integration and calibration

For optimal integration and calibration, the lenses are operated with Ophir's standard OphirSim™ software which includes:

- Lens operation testing and evaluation
- Protocol simulation
- Lens customer calibration
- Autofocus calibration

Key features

- Optimized for MWIR VGA 640x480 f/5.5 15µm detectors
- Narrow FOV of 0.5° with optical zoom*
- Ruggedized design to withstand harsh environmental conditions
- Focus and F# maintained through the full zoom range

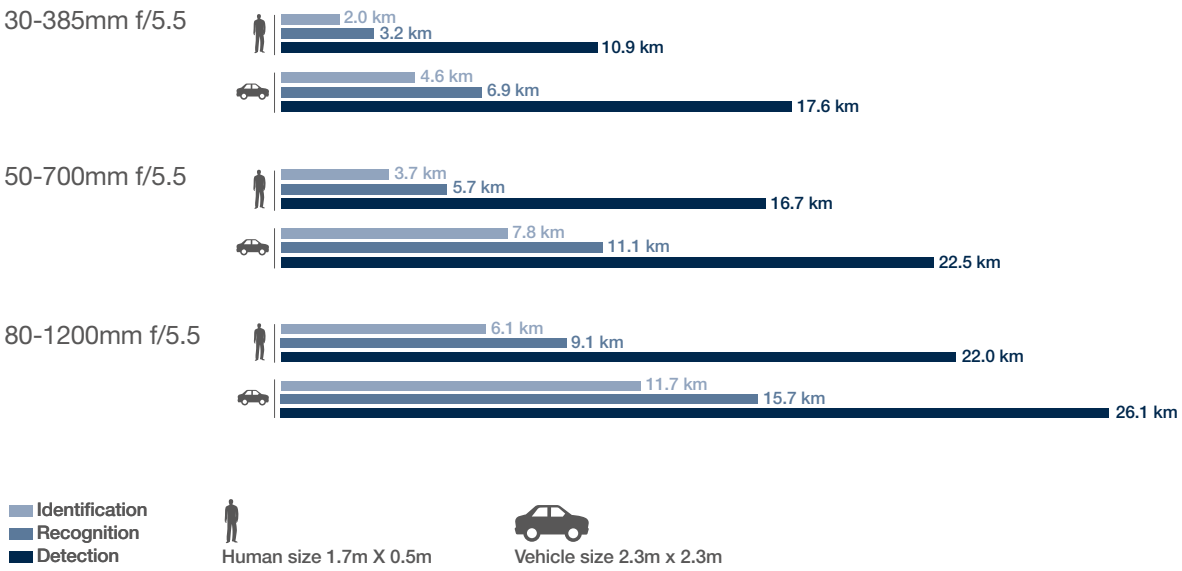
*For 1200mm 15µm 640x512 detectors

Key benefits

- Superb performance-to-cost ratio
- Designed for long range observation systems
- Easy integration with existing systems based on common controller and protocol communication for all our zoom family

Detection, Recognition & Identification (DRI) performance

Cooled MWIR, 15µm pixel size detector*



*Note:
1. Calculated values real world performance may vary depending on the weather conditions.
2. Assumptions: 15µ pixel pitch | 23mK NETD (f/5.5) | 30Hz frame rate | 50% detection probability

Image 1: left to right: SupIR 50-700mm f/5.5, SupIR 30-385mm f/5.5 and the SupIR 80-1200mm f/5.5

SupIR 30-385mm f/5.5, Motorized Continuous Zoom 680459

WFOV(30mm)

HFOV	320x240	480x384	640x512
20µ	12.5°	18.6°	
15µ	9.4°	14.0°	18.6°

NFOV(385mm)

HFOV	320x240	480x384	640x512
20µ	0.9°	1.4°	1.8°
15µ	0.7°	1.0°	1.4°

Property	Value	
Optical	WFOV	NFOV
Cold Stop to FPA Distance	19.7mm	
Cold Stop CA	Ø3.52mm	
Back Focal Length	23.7mm in air	
Minimum Focus Range	5m	70m
Mechanical		
Focus Mechanism	Motorized	
Focus Time (minimum range to ∞)	≤8 sec.	
Zoom Mechanism	Motorized	
Zoom Time (NFOV to WFOV)	≤5 sec.	
Weight	740gr	
Max. Dimensions	Ø98 X 137.9mm	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12VDC	
Current Consumption	0.5A average, 1.0A peak at T= -32°C; 0.2A average, 1.0A peak at T ≥ 20°C	
Communication Protocol	RS458, RS422	

SupIR 50-700mm f/5.5, Motorized Continuous Zoom 680472

WFOV(50mm)

HFOV	320x240	480x384	640x512
20µ	7.6°	9.1°	
15µ	5.7°	6.8°	11.4°

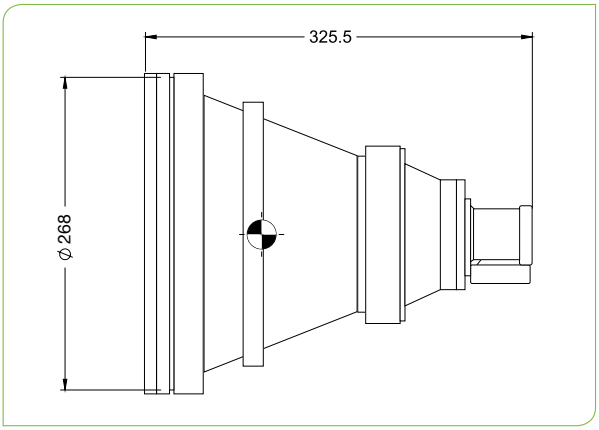
NFOV(700mm)

HFOV	320x240	480x384	640x512
20µ	0.5°	0.6°	
15µ	0.4°	0.5°	0.8°

Property	Value	
Optical	WFOV	NFOV
Cold Stop to FPA Distance	19.7mm	
Cold Stop CA	Ø3.52mm	
Back Focal Length	23.52mm in air	
Minimum Focus Range	1m	33m
Mechanical		
Focus Mechanism	Motorized	
Focus Time (minimum range to ∞)	≤8 sec.	
Zoom Mechanism	Motorized	
Zoom Time (NFOV to WFOV)	≤5 sec.	
Weight	≤2.5 kg	
Max. Dimensions	Ø156.2 x 176.7mm	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12VDC	
Current Consumption	0.5A average, 1.0A peak at T= -32°C; 0.2A average, 1.0A peak at T ≥ 20°C	
Communication Protocol	RS458, RS422	

SupIR 80-1200mm f/5.5 Motorized Continuous Zoom
680478

TYPICAL ICD



WFOV(80mm)	
HFOV	640x512
15µ	7.1°

NFOV(1200mm)	
HFOV	640x512
15µ	0.5°

Property	Value	
Optical	Narrow FOV	Wide FOV
Focal length	1200	80
F/#	5.5	
Average Transmission (3.4-5.0µm)	≥80% (LRHC) / ≥85% (HD)	
Cold Stop to FPA Distance	19.7mm	
Cold Stop CA	Ø3.52mm	
Back Focal Length	23.52mm in air	
Distortion	<5%	
Minimum Focus Range	220m	5m
Nuc (by defocus)	Yes	
Mechanical		
Focus Mechanism	Motorized	
Focus Time (minimum range to ∞)	≤8 sec.	
Zoom Mechanism	Motorized	
Zoom Time (NFOV to WFOV)	≤5 sec.	
Weight	7.4kg	
Max. Dimensions	Ø268mm x 325.5mm	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12VDC	
Current Consumption	0.5A average, 1.0A peak at T= -32°C; 0.2A average, 1.0A peak at T ≥ 20°C	
Communication Protocol	RS458, RS422	
Environmental		
Operation Temperature	-32ºC to +70ºC	
Storage Temperature	-54ºC to +85ºC	
Sealing	IP67 front element only	
Configurations		
680478-001	High Durability	
680478-002	Low Reflection Hard Carbon	

About Ophir Infrared Optics

With decades worth of knowledge and experience, Ophir Optronics Solutions LTD., Infrared Optics, an MKS Company (NASDAQ: MKSI), is a world-leading designer and manufacturer of high-performance IR thermal lenses and optical elements for SWIR, MWIR & LWIR imaging. Using advanced technologies, innovative engineering, and design configurations, Ophir provides a global solution for homeland security, surveillance, defense, automotive and commercial applications: IR Components and complex lens assemblies with fixed or motorized focus and zoom lenses.

International Headquarters
Ophir Optronics Solutions Ltd.
Science based industrial park
Har hotzvim P.O.B 45021
Jerusalem, 9145001 Israel
Tel. 972-2-5484444
Fax. 972-2-5822338
E-mail: mktg@mksinst.com
www.ophiropt.com/infrared

JAPAN
Ophir Japan Ltd.
Kudan First Place 6F,
4-1-28 Kudan-kita, Chiyoda-ku,
Tokyo 102-0073 Japan
Tel. +81-33-556-2791
Fax. +81-33-556-2790
E-mail: oj.optics@mksinst.com

USA
MKS Instruments Inc.
1791 Deere Avenue
Irvine, CA 92606
USA
Tel. 520-260-9305
E-mail: USA.ophiroptics@mksinst.com
www.ophiropt.com/infrared

AUSTRALIA
AIS (Applied Infrared Sensing)
Level 1, 16-18 Carlotta street,
Artmon, NSW 2064,
Australia
Tel. 1300-557-205 Australia
Tel. 09-889-2477 New Zealand
E-mail: Dmitri.l@applied-infrared.com.au
www.ophiropt.com

EUROPE
Ophir optronics solutions Ltd.
La chenevarie 42140
Virigneux, France
Tel. 33-9-7785 3478
Fax. 972-2-5822 338
E-mail: Europe.ophiroptics@mksinst.com
www.ophiropt.com/infrared

KOREA
Unetware Inc.
3F, 287-31, Jegi-dong,
Dongdaemun-gu,
Seoul, Korea 130-060
Tel. 82-(0)2-790-7830/1
Fax. 82-(0)2-790-0780
E-mail: ysmo53@unetware.com
www.ophiropt.com/infrared/ja

INDIA
MKS Instruments
Atotech Products
Plot No. 446 G & H,
Sector 8, Phase IV, IMT
Manesar-122050
Gurugram - Haryana
Tel. +91 124 6447900
Indiasales@atotech.com

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

Ophir IR Optics_MWIR f/5.5 lens series_082021