

MWIR F/4.0 ZOOM LENSES FOR LONG RANGE APPLICATIONS

BASED ON THE LEGACY OF THE 15-300MM F/4.0 MWIR,
WITH A VARIETY OF EXTENDERS



SupIR 35-690mm f/4.0
Motorized Continuous Zoom
> 24km detection range



SupIR 45-900mm f/4.0
Motorized Continuous Zoom
> 26km detection range



SupIR 60-1200mm f/4
Motorized Continuous Zoom
> 28km detection range



See the unseen, further than ever before.

Answer your growing DRI range needs with our non-ITAR lens family. Our existing 15-300mm MWIR f/4.0 high performance zoom lens is now offered with a series of extenders, for superior DRI ranges, ideal for long range observations and surveillance systems.

The new SupIR 60-1200mm f/4.0 zoom lens provides the highest focal length, with an impressive detection range exceeding 28km (see below DRI performance).

Three times the performance, with one simple change.

Select one of the lenses to optimize the NFOV/ maximum focal length of your camera system, improving it from 300mm up to an impressive 1200mm, for enhanced FOVs and unbeatable DRI ranges.

The 15-300mm f/4.0 is now offered with a series of extenders, all using the same base system, meaning no need for hardware or software modifications.

These long range zoom lenses use the same base system as the existing 15-300mm f/4.0 zoom lens, so it's simple to upgrade. Complete with our high-end optics, your thermal camera will benefit from maximum performance, with **no compromise on image quality.**

Key features

- Same communication protocol and interface for all zoom lenses
- Designed for long range observation systems
- Easy integration with existing systems
- Narrow FOV of 0.6° with optical zoom*
- High optical performance
- Compatible with HD/SXGA 1280X1024 10µm detectors
- Compatible with leading detector manufacturing
- Cost effective design
- Focus and f# maintained through the entire zoom range
- **All lenses are available with high durability (HD), hard carbon (HC) or low reflection hard carbon (LRHC) coatings.**

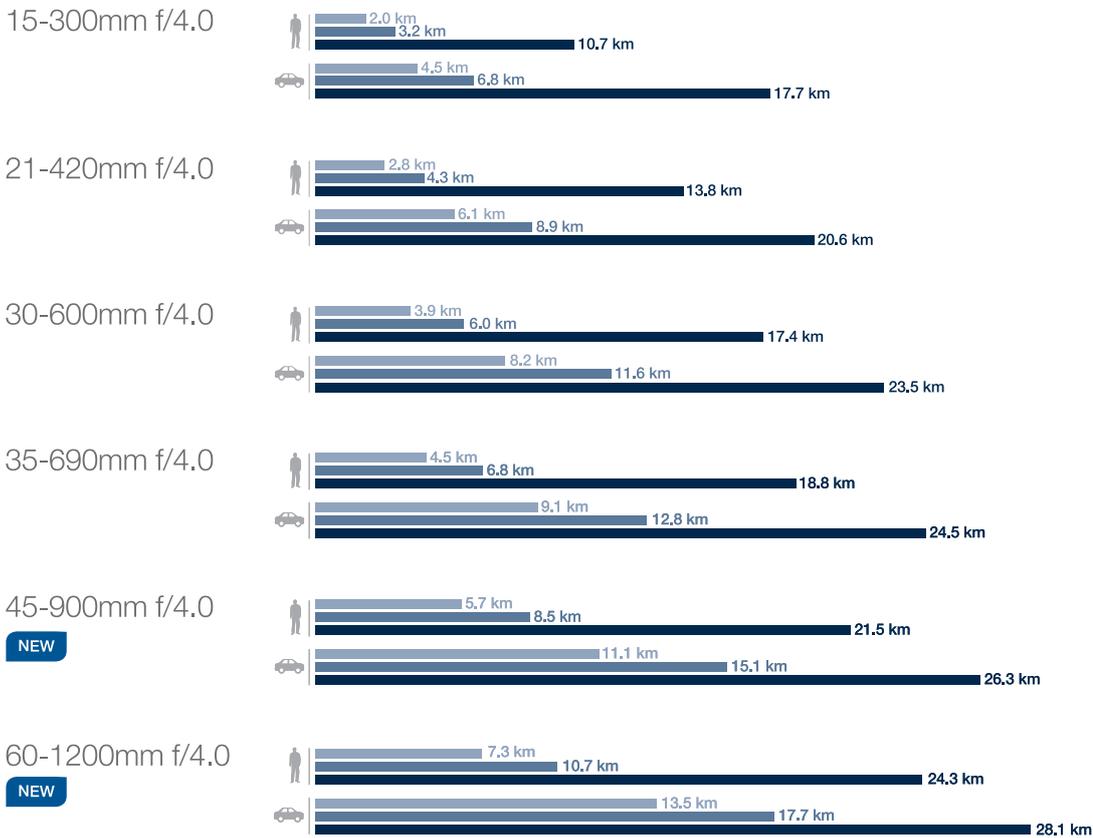
* For 1200mm 10µm 1280X1024 detectors



Image 1: Thermal imaging photo taken with SupIR 40-900mm f/4 embedded in Sierra-Olympic's Ventus 900 thermal core.

Detection, Recognition & Identification (DRI) performance

Cooled MWIR, 10µm pixel size detector*



Identification
 Recognition
 Detection



Human size 1.7m X 0.5m



Vehicle size 2.3m x 2.3m

Note: 1. Calculated values real world performance may vary depending on the weather conditions.
 2. Assumptions: 23mK NETD f/4 | 30Hz frame rate | 50% detection probability | based of FLIR 92 simulation.

SupIR 15-300mm f/4.0, Motorized Continuous Zoom 680084/680204

Cooled
MWIR

HD
FORMAT



WFOV (15mm)

HFOV	320x240	480x384	640x512	1280x1024	
30μ	35.1°				
20μ	24.0°	35.1°	44.9°		
15μ	18.2°	26.8°	35.1°		
10μ				24.0°	44.9°

NFOV (300mm)

HFOV	320x240	480x384	640x512	1280x1024	
30μ	1.8°				
20μ	1.2°	1.8°	2.4°		
15μ	0.9°	2.1°	1.8°		
10μ				1.2°	2.4°

Property	Value	
Optical	WFOV	NFOV
Back focal length	25.1mm in air (680084) / 27.1mm in air (680204)	
Cold stop to FPA distance	19.4mm (680084)/ 20.5mm (680204)	
Minimum focusing range	5m	50m
Mechanical		
Max. Dimensions	Ø96mm X 130mm	
Weight	965gr	
Electrical		
Drive voltage	12VDC	
Current consumption	0.5A average, 1.0A peak	
Communication interface	RS422	

SupIR 21-420mm f/4.0, Motorized Continuous Zoom 680160

Cooled
MWIR

HD
FORMAT



WFOV (21mm)

HFOV	320x240	480x384	640x512
30μ	24.1°		
20μ	17.1°	25.1°	
15μ	13.0°	19.1°	25.1°
10μ			17.1°

WFOV (33mm)

HFOV	1280x1024
10μ	20.0°

NFOV (420mm)

HFOV	320x240	480x384	640x512	1280x1024	
30μ	1.3°				
20μ	1.2°	1.3°	1.7°		
15μ	0.6°	1.0°	1.3°		
10μ				1.2°	1.7°

Property	Value	
Optical	WFOV	NFOV
Back focal length	≥ 24.4mm in air	
Cold stop to FPA distance	19.4mm / 20.5mm for config. 005/006/011/012	
Minimum focus range	10m	100m
Mechanical		
Max. Dimensions	Ø132mm X 200.5mm	
Weight	1.6kg	
Electrical		
Drive voltage	12VDC	
Current consumption	0.5A average, 1.0A peak	
Communication interface	RS422	

SupIR 30-600mm f/4.0, Motorized Continuous Zoom 680384/5

Cooled
MWIR

HD
FORMAT



WFOV (30mm)

HFOV	320x240	480x384	640x512
30μ	17.2°	23.6°	
20μ	11.9°	17.2°	21.7°
15μ	9.0°	13.3°	17.2°
10μ			11.9°

WFOV (60mm)

HFOV	1280x1024
10μ	11.4°

NFOV (600mm)

HFOV	320x240	480x384	640x512	1280x1024
30μ	0.9°	1.3°		
20μ	0.6°	0.9°	1.2°	
15μ	0.5°	0.7°	0.9°	
10μ			0.6°	1.2°

Property	Value	
Optical	WFOV	NFOV
Back focal length	25.1mm in air (680384) / 27.1mm in air (680385)	
Cold stop to FPA distance	19.4mm (680384) / 20.5mm (680385)	
Minimum focus range	5m	200m
Mechanical		
Max. Dimensions	Ø173mm X251.9mm	
Weight	3.1kg	
Electrical		
Drive voltage	6-12VDC	
Current consumption	0.5A average, 1.0A peak	
Communication interface	RS422	

SupIR 35-690mm f/4.0, Motorized Continuous Zoom 680294/5

Cooled
MWIR

HD
FORMAT



WFOV (35mm)

HFOV	320x240	480x384	640x512
30μ	15.2°		
20μ	10.4°	15.2°	
15μ	7.9°	11.6°	15.2°
10μ			10.4°

WFOV (60mm)

HFOV	1280x1024
10μ	13.5°

NFOV (690mm)

HFOV	320x240	480x384	640x512	1280x1024
30μ	0.9°			
20μ	0.6°	0.9°	1.0°	
15μ	0.5°	0.7°	0.9°	
10μ			0.5°	1.0°

Property	Value	
Optical	WFOV	NFOV
Back focal length	25.1mm in air (680294) / 27.1mm in air (680295)	
Cold stop to FPA distance	19.4mm (680294) / 20.5mm (680295)	
Minimum focus range	5m	200m
Mechanical		
Max. Dimensions	Ø210mm X264mm	
Weight	~4.3kg	
Electrical		
Drive voltage	6-12VDC	
Current consumption	0.5A average, 1.0A peak	
Communication interface	RS422	

SupIR 45-900mm f/4.0, Motorized Continuous Zoom 680425/6

Cooled
MWIR

HD
FORMAT



NEW

WFOV (45mm)

for configuration 680425-001/2 & 680426-001/2

HFOV	320x240	480x384	640x512
30μ	11.4°		
20μ	7.9°	11.4°	14.3°
15μ	6.0°	8.8°	11.4°
10μ	7.9°		

WFOV (72mm)

for configuration 680425-003/4 & 680426-003/4

HFOV	320x240	480x384	640x512	1280x1024
15μ	3.8°	5.6°	7.3°	
10μ	5.0°			9.3°

NFOV (900mm) all configurations

HFOV	320x240	480x384	640x512	1280x1024
30μ	0.6°	0.9°		
20μ	0.4°	0.6°	0.8°	
15μ	0.3°	0.5°	0.6°	
10μ	0.4°			0.8°

Property	Value	
Optical	WFOV	NFOV
Focal Length	45mm/72mm*	900mm
F/#	4.0	
Average transmission (3.4-5.0μm)	70% (LRHC)	
Back focal length	25.1mm in air (680425) / 27.1mm in air (680426)	
Cold stop to FPA distance	19.4mm (680425) / 20.5mm (680426)	
Cold Stop CA	Ø4.85mm (680425) / Ø5.1mm (680426)	
Distortion (in diagonal)	<7%	<5%
Minimum focus range	5m	200m
Nuc (by defocus)	Yes	
Mechanical		
Focus Mechanism	Motorized	
Focus Time (minimum range to ∞)	≤1 sec.	
Zoom Mechanism	Motorized	
Zoom Time (NFOV to WFOV)	≤7 sec. at -32°C; ≤5 sec. at T ≥ 0°C	
Through-zoom boresight	Within a radius of 0.22 mm at the focal plane along the full zoom range	
Max. Dimensions	Ø286mm x 343.6mm	
Weight	~8kg	
Electrical		
Lens Control	Designated lens controller	
Drive voltage	6-12VDC	
Current consumption	0.5A average, 1.0A peak	
Communication interface	RS422	
Environmental		
Operation Temperature	-32°C to +75°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP 67 front element only	

*For configurations 680425-003/4 & 680426-003/4

SupIR 60-1200mm f/4 Motorized Continuous Zoom 680475/6

Cooled
MWIR

HD
FORMAT



NEW

WFOV (60mm)

HFOV	640x512
15μ	8.6°
10μ	5.9°

WFOV (100mm)

HFOV	640x512	1280x1024
15μ	5.3°	
10μ	3.6°	6.8°

NFOV (1200mm)

HFOV	640x512	1280x1024
15μ	0.5°	
10μ	0.3°	0.6°

Property	Value	
Optical	Narrow FOV	Wide FOV
Focal Length	1200	60
F#	4.0	
Average transmission (3.4-5.0μm)	≥ 70% (LRHC)	
Cold stop to FPA Distance	19.4mm (680475) / 20.5mm (680476)	
Cold Stop CA	4.85mm (680475) / 5.125mm (680476)	
Back Focal Length	24.4mm in air (680475) / 25.1mm in air (680476)	
Distortion (in diagonal)	<5%	<7%
Minimum Focusing Range	<200m	<5m
Nuc (by defocus)	Yes	
Mechanical		
Focus Mechanism	Motorized	
Focus Time (minimum range to ∞)	≤1 sec.	
Zoom mechanism	Motorized	
Zoom Time (NFOV to WFOV)	≤ 8 sec at -32°C; ≤ 5 sec. at T≥20°C (at max. speed)	
Max. Dimensions	Ø388mm x 409.2mm	
Weight	14.6kg	
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	RS422	
Environmental		
Operation Temperature	-32°C to +75°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP67 front element only	



About Ophir IR 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, commercial and defense applications: IR Components and complex lens assemblies with fixed or motorized focus and zoom lenses.

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