

LONG RANGE ZOOM LENSES DESIGNED FOR 10 μ M MWIR F/4 HD/ SXGA DETECTORS



SuplR 15-300mm f/4.0
> 17km detection range



SuplR 35/110/450mm f/4.0
> 20km detection range



SuplR 45-900mm f/4.0
> 26km detection range



Cutting edge technologies, meeting the needs of next generation detectors

Modern thermal imaging systems are advancing towards larger formats, enabling a wide Field of View (FOV), with high resolution. Such systems are gaining from the market trend towards smaller, 10µm pixel size detectors, which meet the latest requirements for a wide range of security and surveillance MWIR applications.

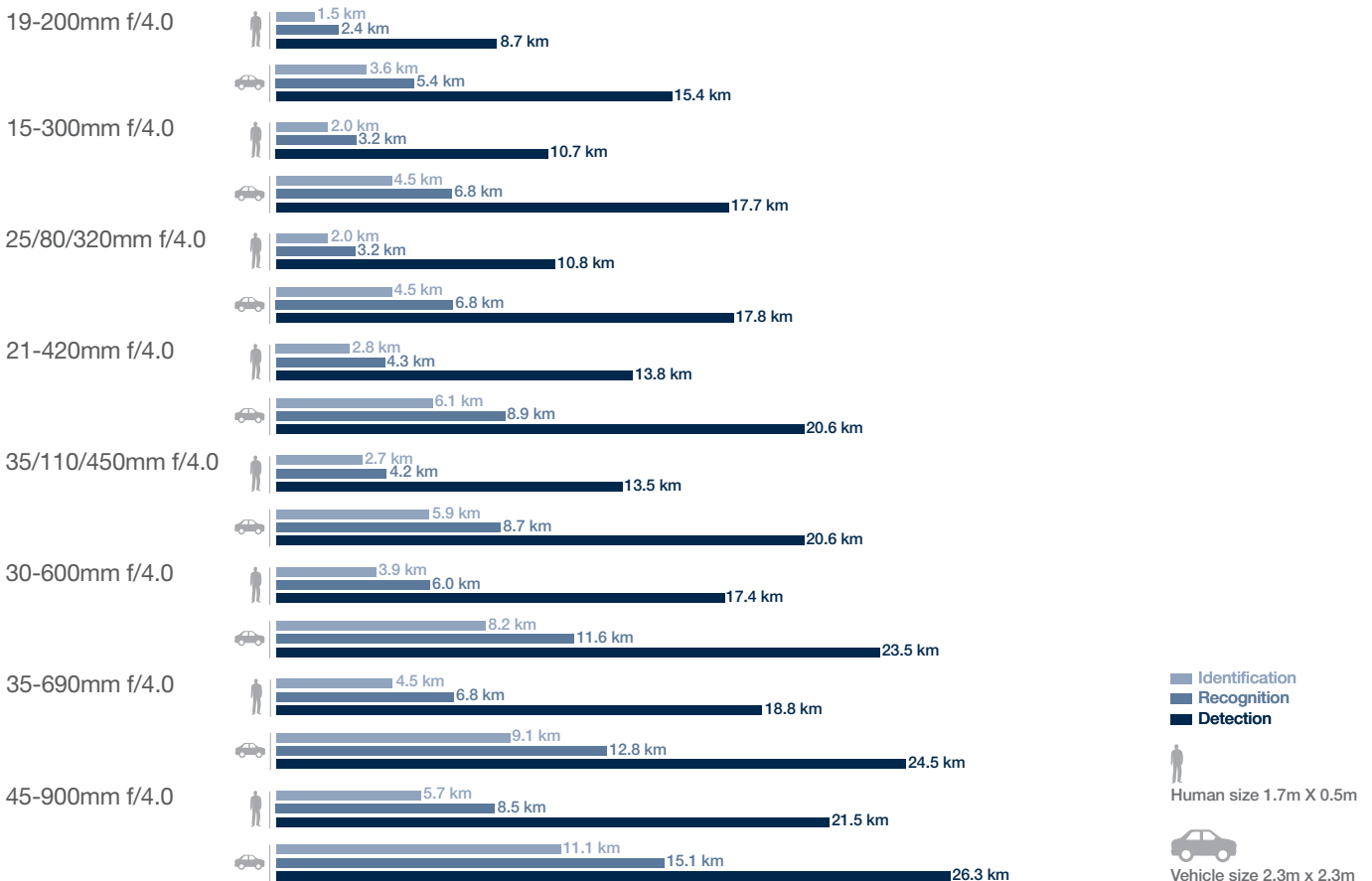
Our new designs address the market trend toward smaller pixels, with a shift to 10µm detectors. These new detectors meet superior SWaP standards, enabling a reduction in the size of the optical system, while also providing a longer detection range.

Based on decades of design and production experience, Ophir manufactures long-range lenses that support the latest state-of-the-art MWIR sensors, producing the clearest images when paired with 10µm HD/ SXGA (1280X1024) MWIR f/4 sensors.

Key features

- Dual, triple, or continuous zoom FOV's
- 15mm to 900mm focal lengths
- Up to x27 zoom
- Ideal for long range observation systems
- Compatible with leading detector manufacturing
- Available with HD, HC or LRHC coatings
- Designed and tested to eliminate narcissus and vignetting
- Consistent controls to simplify integration in current and future systems
- All lenses are available with HD, HC, or LRHC coatings.

DETECTION, RECOGNITION, AND IDENTIFICATION (DRI) PERFORMANCE RANGES FOR COOLED MWIR, 10µM HD DETECTOR



Note: Calculation used are based on "Johnson Criteria" | Real world performance may vary depending on the weather conditions | Assumptions: 23mK NETD (f/4); 30Hz frame rate; 50% detection probability.

SupIR 19-200mm f/4.0, Motorized Continuous Zoom* 680209



WFOV(19mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	19.6°	29.7°		
15μ	14.6°	22.1°	29.7°	
10μ			19.6°	25.6°

NFOV(200mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	1.9°	2.8°	3.8°	
15μ	1.4°	2.1°	2.8°	
10μ			1.9°	3.8°

Property	Value	
Optical	WFOV	NFOV
Focal length	19mm	200mm
F/#	4.0	
Back focal length	25.1mm in air (assuming 1.5mm Ge window & filter)	
Cold stop to FPA distance	19.4mm	
Minimum focus range	5m	50m
Mechanical		
Max. Dimensions	Ø65 X 74.3mm	
Weight	400gr	
Electrical		
Drive voltage	6-12VDC	
Current consumption	< 0.5A average, 1.0A peak	

*Requires export license

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



WFOV(15mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	24.0°	35.1°	44.9°	
15μ	18.2°	26.8°	35.1°	
10μ			24.0°	44.9°

NFOV(300mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	1.2°	2.8°	2.4°	
15μ	0.9°	2.1°	1.8°	
10μ			1.2°	2.4°

Property	Value	
Optical	WFOV	NFOV
Focal length	15mm	300mm
F/#	4.0	
Back focal length	24.4mm in air (through 1.5mm Ge window & filter)	
Cold stop to FPA distance 680084	19.4mm	
Cold stop to FPA distance 680204	20.5mm	
Minimum focusing range	5m	50m
Mechanical		
Max. Dimensions	Ø96 X 130mm	
Weight	965gr	
Electrical		
Drive voltage	12VDC	
Current consumption	≤ 0.5A average, 1.0A peak	

SupIR 25/80/320mm f/4.0, Motorized Focus 680024

WFOV(25mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	14.5°	21.6°	28.4°	
15μ	10.9°	16.3°	21.6°	
10μ			14.5°	28.4°

MFOV(80mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	4.6°	6.8°	9.0°	
15μ	3.4°	5.1°	6.8°	
10μ			4.6°	9.0°



NFOV(320mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	1.1°	1.7°	2.2°	
15μ	0.9°	1.3°	1.7°	
10μ			1.1°	2.2°

Property	Value		
Optical	WFOV	MFOV	NFOV
Focal length	25mm	80mm	320mm
F/#	4.0		
Back focal length	26.5mm in air		
Cold stop to FPA distance 680024-001-4 / 680024-005-6	19.4mm / 25.4mm		
Minimum focus range	5m	10m	50m
Mechanical			
Max. Dimensions	Ø134 X 165.5mm		
Weight	1.52kg		
Electrical			
Drive voltage	7.5V per motor		
Current consumption	155mA		

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



WFOV(21mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	17.1°	25.1°		
15μ	13.0°	19.1°	25.1°	
10μ			17.1°	20.0°*

*for 33mm EFL

NFOV(420mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	1.2°	1.3°	1.7°	
15μ	0.7°	1.0°	1.3°	
10μ			1.2°	1.7°

Property	Value	
Optical	WFOV	NFOV
Focal length	21mm	420mm
F/#	4.0	
Back focal length	≥ 24.4mm in air (through 1.5mm Ge Window & Filter)	
Cold stop to FPA distance	19.4mm / 20.5mm*	
Minimum focusing range	10m	100m
Mechanical		
Max. Dimensions	Ø132 X 200.5mm	
Weight	1.6kg	
Electrical		
Drive voltage	12VDC	
Current consumption	≤ 0.5A average, 1.0A peak	

SupIR 35/110/450mm f/4.0, Motorized Focus 680374

WFOV(35mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	10.3°	15.2°	20.0°	
15μ	7.8°	11.5°	15.2°	
10μ			10.3°	20.0°

MFOV(110mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	3.3°	4.9°	6.4°	
15μ	2.4°	3.7°	4.9°	
10μ			3.3°	6.4°

NFOV(450mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	0.8°	1.2°	1.6°	
15μ	0.6°	0.9°	1.2°	
10μ			0.8°	1.6°



Property	Value		
Optical	WFOV	MFOV	NFOV
Focal length	35mm	110mm	450mm
F/#	4.0		
Back focal length	26.53mm in air		
Cold stop to FPA distance	19.4mm		
Minimum focus range	5m	10m	50m
Mechanical			
Max. Dimensions	Ø133 X 218.6mm		
Weight	2.42kg		
Electrical			
Drive voltage	7.5V per motor		
Current consumption	155mA		

*Product delivered does not include cover

SupIR 30-600mm f/4.0, Motorized Continuous Zoom 680384 & 680385

WFOV(30mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	11.9°	17.2°		
15μ	9.0°	13.3°	17.2°	
10μ			11.9°	11.4°*

*for 60mm EFL

NFOV(600mm)

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	0.6°	0.9°	1.2°	
15μ	0.5°	0.7°	0.9°	
10μ			0.6°	1.2°



Property	Value	
Optical	WFOV	NFOV
Focal length	30mm	600mm
F/#	4.0	
Back focal length 680384	25.1mm in air	
Back focal length 680385	27.12mm in air	
Cold stop to FPA distance 680384	19.4mm	
Cold stop to FPA distance 680385	20.47mm	
Minimum focus range	5m	200m
Mechanical		
Max. Dimensions	Ø173 X 251.9mm	
Weight	~3.1kg	
Electrical		
Drive voltage	6-12VDC	
Current consumption	<0.5A average, 1.0A peak	

SupIR 35-690mm f/4.0, Motorized Continuous Zoom 680294 & 680295



WFOV(35mm)

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

HFOV[deg]	320x256	480x384	640x512	1280x1024
20 μ	10.4°	15.2°		
15 μ	7.9°	11.6°	15.2°	
10 μ			10.4°	13.5°*

*for 60mm EFL

NFOV(690mm)

all configurations

HFOV[deg]	320x256	480x384	640x512	1280x1024
20 μ	0.6°	0.9°	1.0°	
15 μ	0.5°	0.7°	0.9°	
10 μ			0.5°	1.0°

Property	Value	
Optical	WFOV	NFOV
Focal length	35mm	690mm
F/#	4.0	
Back focal length 680294	25.1mm (assuming 1.5mm Ge window & filter)	
Back focal length 680295	27.12mm (assuming 1mm Si window & 0.3mm Ge cold filter)	
Cold stop to FPA distance 680294	19.4mm	
Cold stop to FPA distance 680295	20.47mm	
Minimum focus range	5m	200m
Mechanical		
Max. Dimensions	Ø210 x 264mm	
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 & 680426



WFOV(45mm)

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

HFOV[deg]	320x256	480x384	640x512	1280x1024
20μ	7.9°	11.4°	14.3°	
15μ	6.0°	8.8°	11.4°	
10μ			7.9°	14.3°

WFOV(72mm)

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

HFOV[deg]	320x256	480x384	640x512	1280x1024
15μ	5.0°	7.3°	9.3°	
10μ			5.0°	9.3°

NFOV(900mm)

all configurations

HFOV[deg]	320x256	480x384	640x512	1280x1024
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	
Back focal length 680425	25.1mm in air	
Back focal length 680426	27.12mm in air	
Cold stop to FPA distance 680425	19.4mm	
Cold stop to FPA distance 680426	20.47mm	
Minimum focus range	5m	200m
Mechanical		
Max. Dimensions	Ø286 X 343.mm	
Weight	~8kg	
Electrical		
Drive voltage	6-12VDC	
Current consumption	<0.5A average, 1.0A peak	



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

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