

轻量化&紧凑型红外连续变焦镜头 轻量化中波和长波非制冷红外相机解决方案



LightIR 15-75mm f/1.2
为长波10umVGA探测器优化设计



LightIR 16-180mm f/3.6
为中波10um VGA探测器优化设计



LightIR 18-225mm f/4
为中波10um SXGA and 15um VGA
探测器优化设计

Light IR
By Ophir



WHERE MINIMAL IS CRITICAL

简介

轻量化系列 (LightIR) 红外镜头兼顾轻量化和高性能：专为无人机、无人车载荷、飞机视觉系统、手持设备等需要轻量化应用场景设计。

轻量化系列 (LightIR) 其优异的光机设计使其为当今市场上最小、最轻、最紧凑且依然能达到最高水平的红外镜头。

主要特点

- 高MTF性能
- 极紧凑的结构
- 针对吊舱载荷优化设计
- 适用于广泛的轻量化应用场景
- 全程变倍清晰
- 高性价比的设计和架构

LightIR 15-75mm f/1.2



LightIR 16-180mm f/3.6



LightIR 18-225mm f/3.6



LightIR 18-225mm f/4



LightIR 20-275mm f/5.5



■ Identification
■ Recognition
■ Detection

Vehicle size 2.3m x 2.3m

Human size 1.7m X 0.5m

最轻、最紧凑、高性能 连续变焦热成像镜头


Light IR
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LightIR 16-180mm f/3.6, Motorized Continuous Zoom

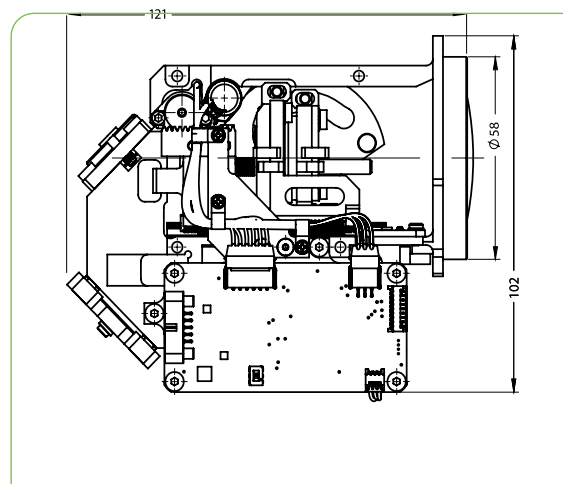
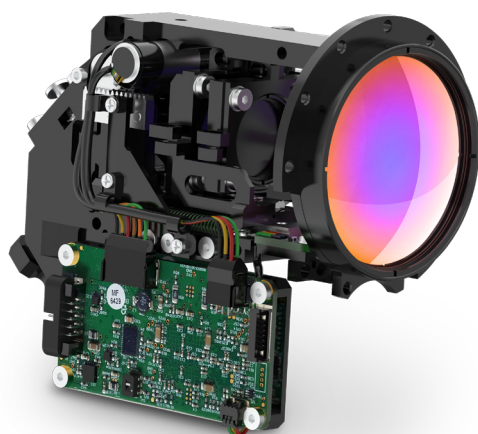
Designed for MWIR 10μm pitch VGA FPA

680389

Cooled MWIR

TYPICAL ICD

NEW



WFOV (16mm)

NFOV (180mm)

HFOV 640x480
10μ 22.6°

HFOV 640x480
10μ 2°

Property	Value	
Optical	WFOV	NFOV
Focal Length	16mm	180mm
F#	3.6	
Average transmission (3.4-4.2μm)	≥80% (LRHC); >82% (HD)	
Cold stop to FPA Distance	12mm	
Cold Stop CA	Ø3.37mm	
Back Focal Length	23.08mm in air	
Distortion (in diagonal)	<2%	
Minimum Focusing Range	5m	50m
Nuc (by defocus)	Blur to 7mm diameter	
Mechanical		
Focus Mechanism	Motorized. Adjustable	
Focus Time (minimum range to ∞)	≤5.5 sec	
Zoom Time (NFOV to WFOV)	≤1 sec	
Max. Dimensions	Length 121mm; Width 70mm; height 102mm	
Weight	460gr	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12V	
Current Consumption	< 0.5A average, 1.0A peak	
Communication Protocol	RS422, RS232	
Environmental		
Operation Temperature	-32°C to +75°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP67 front lens only	
Configurations		
680389-001	HD	
680389-002	LRHC	

LightIR 18-225mm f/3.6 Motorized Continuous Zoom

Designed for MWIR 10μm pitch VGA FPA

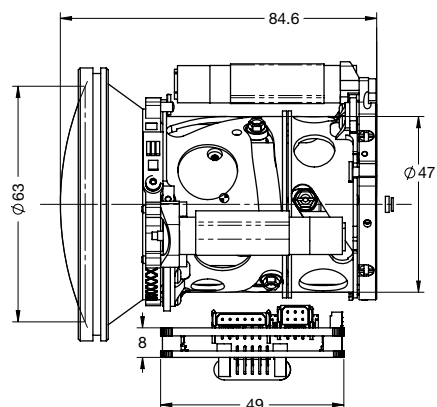
680442

NEW



Cooled MWIR

TYPICAL ICD



WFOV (18mm)

NFOV (225mm)

HFOV	640x512
10μ	20°

HFOV	640x512
10μ	1.6°

Property	Value	
Optical	WFOV	NFOV
Focal Length	18	225
F#	3.6	
Average transmission (3.4-4.2μm)	>87% (HD) / ≥87% (LRHC)	
Cold stop to FPA Distance	12mm	
Cold Stop CA	Ø3.34mm	
Back Focal Length	18.5mm in air	
Distortion	1.9%	4%
Minimum Focusing Range	5m	50m
Nuc (by defocus)	Blur to 7mm diameter	
Mechanical		
Focus Mechanism	Motorized. Adjustable	
Focus Time (minimum range to ∞)	<2 sec.	
Zoom Time (NFOV to WFOV)	<5 sec.	
Max. Dimensions	Ø63mm x 84.6mm	
Weight	<300gr	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12V	
Current Consumption	< 0.5A average, 1.0A peak	
Communication Protocol	RS422	
Environmental		
Operation Temperature	-32°C to +80°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP67 front lens only	
Configurations		
680442-001	High Durability	
680442-002	Low Reflection Hard Carbon	

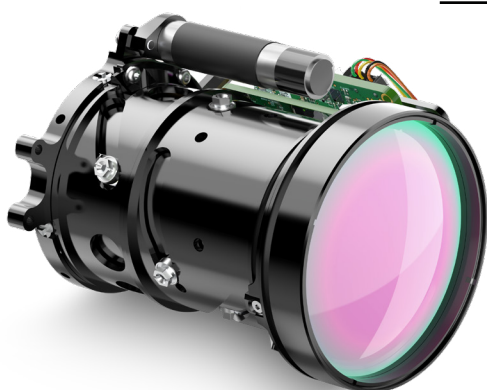
SuplR 18-225mm f/4 Motorized Continuous Zoom

Optimized for 10 μ m SXGA and 15 μ m
VGA detectors

680473

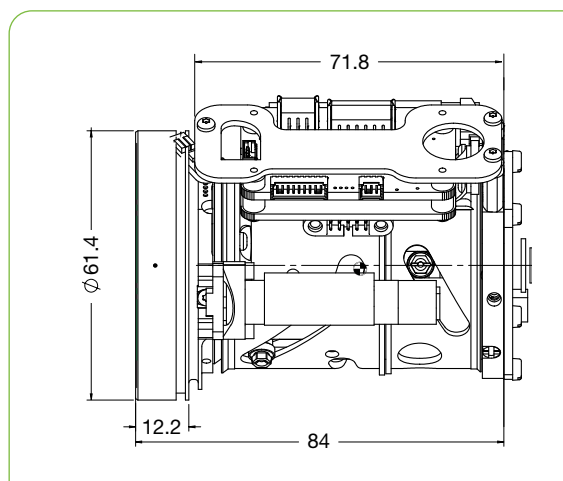
NEW

HD
FORMAT



Cooled MWIR

TYPICAL ICD



WFOV (18mm)

HFOV	320x256	480x384	640x512	1280x1024
15 μ	15.2°	22.6°	29.9°	
10 μ	10.2°	15.2°	20.2°	39.1°

NFOV (225mm)

HFOV	320x256	480x384	640x512	1280x1024
15 μ	1.2°	1.8°	2.4°	
10 μ	0.8°	1.2°	1.6°	3.3°

Property	Value	
Optical	WFOV	NFOV
Focal Length	18	225
Average transmission (3.4-4.9 μ m)	$\geq 80\%$ (HCLR) / $\geq 87\%$ (HD)	
Cold stop to FPA Distance	19.4-20.5mm	
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	
Mechanical		
Focus Mechanism	Motorized. Adjustable	
Focus Time (minimum range to ∞)	<2 sec.	
Zoom Time (NFOV to WFOV)	<5 sec.	
Max. Dimensions	$\varnothing 61.4 \times 84$ mm	
Weight	326gr	
Electrical		
Lens Control	Designated lens controller	
Drive Voltage	12V	
Current Consumption	< 0.5A average, 1.0A peak	
Communication Protocol	RS422	
Environmental		
Operation Temperature	-32°C to +75°C	
Storage Temperature	-54°C to +85°C	
Sealing	IP67 front element only	
Configurations		
680473-001	High Durability	
680473-002	Hard Carbon Low Reflection	

LightIR 20-275mm f/5.5, Motorized Continuous Zoom 680314

Cooled MWIR



WFOV (EFL 20mm)

HFOV[deg]	480x384	640x512
20μ	28.0°	
15μ	20.9°	28.0°

NFOV (EFL 275mm)

HFOV[deg]	480x384	640x512
20μ	1.9°	
15μ	1.5°	1.9°

Property	Value	
Optical	WFOV	NFOV
Focal Length	20mm	275mm
F#	5.5	
Back Focal Length	23.52	
Cold stop to FPA distance	19.7mm	
Minimum Focusing Range	5m	50m
Mechanical		
Max. Dimensions	Ø58 X 67.1mm	
Weight	264 gr	
Electrical		
Drive Voltage	12V	
Current Consumption	0.2A average, 1.0A peak	
Communication Interface	RS485, RS422	

LightIR 15-75mm f/1.2, Motorized Continuous Zoom Designed and optimized for 10-12μm pixel pitch camera 680386

Uncooled LWIR



WFOV(15mm)

HFOV[deg]	480x384	640x512
25μ	37.9°	
17μ	25.3°	43.4°
12μ	17.7°	29.9°
10μ		24.8°

NFOV(75mm)

HFOV[deg]	480x384	640x512
25μ	7.3°	
17μ	5°	8.2°
12μ	3.5°	5.8°
10μ		4.9°

Property	Value	
Optical	WFOV	NFOV
Focal Length	15mm	75mm
F/#	1.2	
Back focal length	20.76mm in air	24.28mm in air
Mechanical		
Max. Dimensions	Ø75 X 88mm	
Weight	320 gr	
Electrical		
Drive voltage	12V	
Current consumption	<0.15A average, 0.3A peak	
Communication interface	RS 485, RS 422, RS 232	



About Ophir IR Optics

Ophir Optronics Solutions LTD. 是MKS公司 (NASDAQ:MKSI) 的子公司，其拥有数十年的知识和经验，是世界领先的设计和和生产高性能短波红外、中波红外和长波红外镜头和光学元件的公司。Ophir利用先进的技术、创新的工艺和设计为国土安全、监视、国防、汽车和商业应用提供了一个全球性的解决方案：从红外光学元件到复杂的定焦，电动调焦，连续变焦镜头组件。

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

CHINA Wuhan Dongchangli Technology Co., Ltd.

No. 120 guanggu Ave
Wuhan
China 430223
Tel: +86 15802765529
E-mail: liumc@ophircn.com
www.ophiropt.com/infrared/zh-hans

