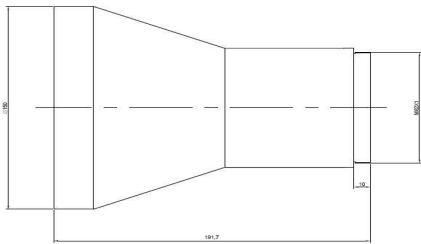


IR2FV Lens Double Field View

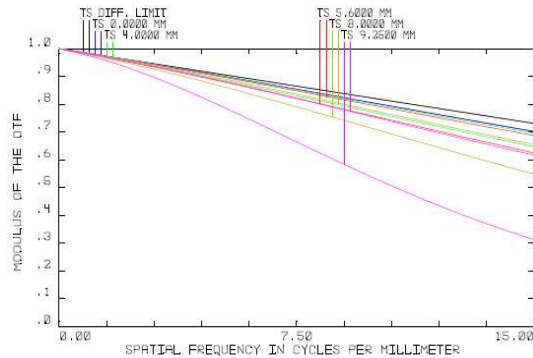
Our Dual Focus IR Imaging lens offers enhancements for obtaining two images of a scene, each image having a different field of view. It's layout is based on four IR lens; a frontal dual focus lens with movable two middle lenses. Our designed is for long IR region (8um - 12um). It is developed to cater a camera with zooming functionality with two distinct fields. This is a superior design that has minimized the size of the mount lenses compared with other type of zooming.



Outline Diagram

The outer surface lens is coated with Hard Diamond coating to resist the various harsh environment conditions. The system it self will be mounted with aluminum mounts for high versatility.

The following is the MTF performance for IR2FV18060

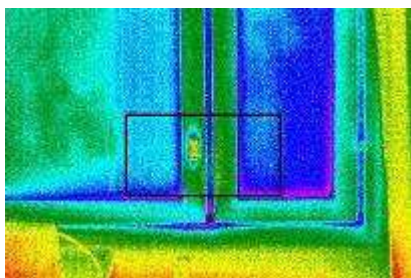


MTF Diagram

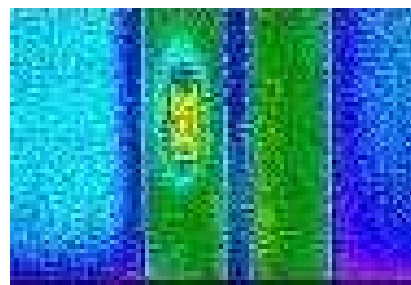
Applications:

This lens are tested for the following parameters: effective focal length, back-working distance, MTF, transmission , and physical conformity in order to meet a set of specifications. Since this is commonly used for security or even military applications.

The following are sample pictures of 2 different zooming fields as shown to focus on certain area of interest.



Original picture at wide FOV



Original picture at narrow

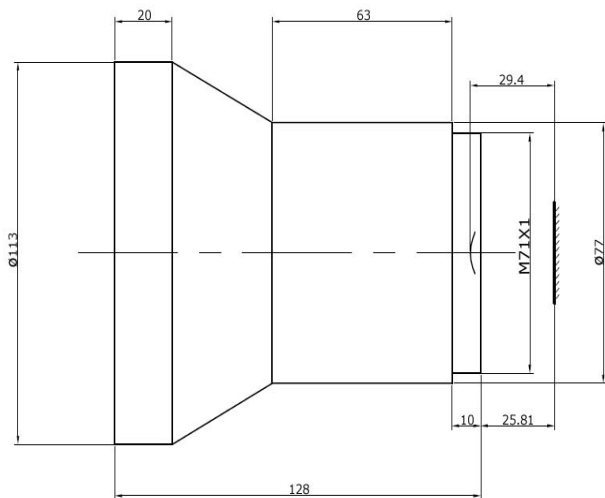
IR2FV Lens Double Field View

IRM2FV Lens Double Field View

Part no.: IRM2FV15050

Opto-Mechanic Property	Specification	Remarks
Focal Length	150mm/50mm	
F#	4.0	
Wavelength	3.6–4.9μm	
Image Diagonal	12mm	
Average Transmission	>80%	
Circular FOV	4.6°/13.8°	
Back Focus Distance	35.81mm	
Back Working Distance	25.81mm	
Dimensions	Length128mm, Φ113mm	
Focus Type	Manual Focus	
Focus Range	2m to infinity	
Mount Type	M71*1	
Detector	320*240pixels, 30μm	
Weight	-	
Environmental		
Operating Temperature	-20°C to +60°C	
Storage Temperature	-40°C to +80°C	
External Coating	DLC	Diamond like coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours	

Drawing

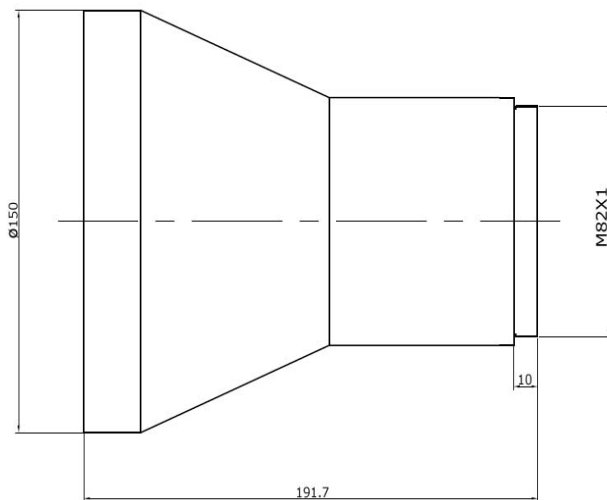


IR2FV Lens Double Field View

Part no.: IR2FV18060

Opto-Mechanic Property	Specification	Remarks
Focal Length	180mm/60mm	
F#	1.4	
Wavelength	8μm—12μm	
Image Diagonal	18mm	
Average Transmission	>95%	
Circular FOV	5.9°/18.5°	
Back Focus Distance	Refer to drawing	
Back Working Distance	10mm	
Dimensions	Length191.7mm, Φ150mm	
Focus Type	Manual Focus	
Focus Range	-	
Mount Type	M82*1	
Detector Type	320*240pixels, 45μm	
Weight	2700g	
Environmental		
Operating Temperature	-20°C to +60°C	
Storage Temperature	-40°C to +80°C	
External Coating	DLC	Diamond like coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours	

Drawing



IR2FV Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV07522

Optical Property	Specification		Remarks
Focal Length	22mm	75mm	Dual Field
F#	1.1	1.2	
Wavelength	7μm—14μm		
Average Transmission	>80% (DLC)		Average
HFOV	25.5° (9.6mm)	7.1° (9.6mm)	
BFL	17mm		Including 1mm Ge Window
Image Format	320x240,38μm; 384*288,25μm; 320x240,25μm		
Focus Range	Min. 3m	Min. 10m	
Distortion	<5%	<2%	
Mechanical			
Mount Type	Flange		Mount Drawing
Focus Type	Motorized Focus		
Dimensions	Length99mm, Φ72mm, Height107mm		
FOV Switch Time	<1s		
Weight	800g		
Electrical			
Lens Control	Designated Lens Controller		
Drive Voltage	12V DC, 1.0A Max		Encoder Motor
Communication Interface	RS422/232		
Communication Protocol	As per attached Document		
Environmental			
Sealing	IP67		
Operating Temperature	-30°C to +60°C		
Storage Temperature	-40°C to +70°C		
External Coating	DLC		Diamond like Coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours		

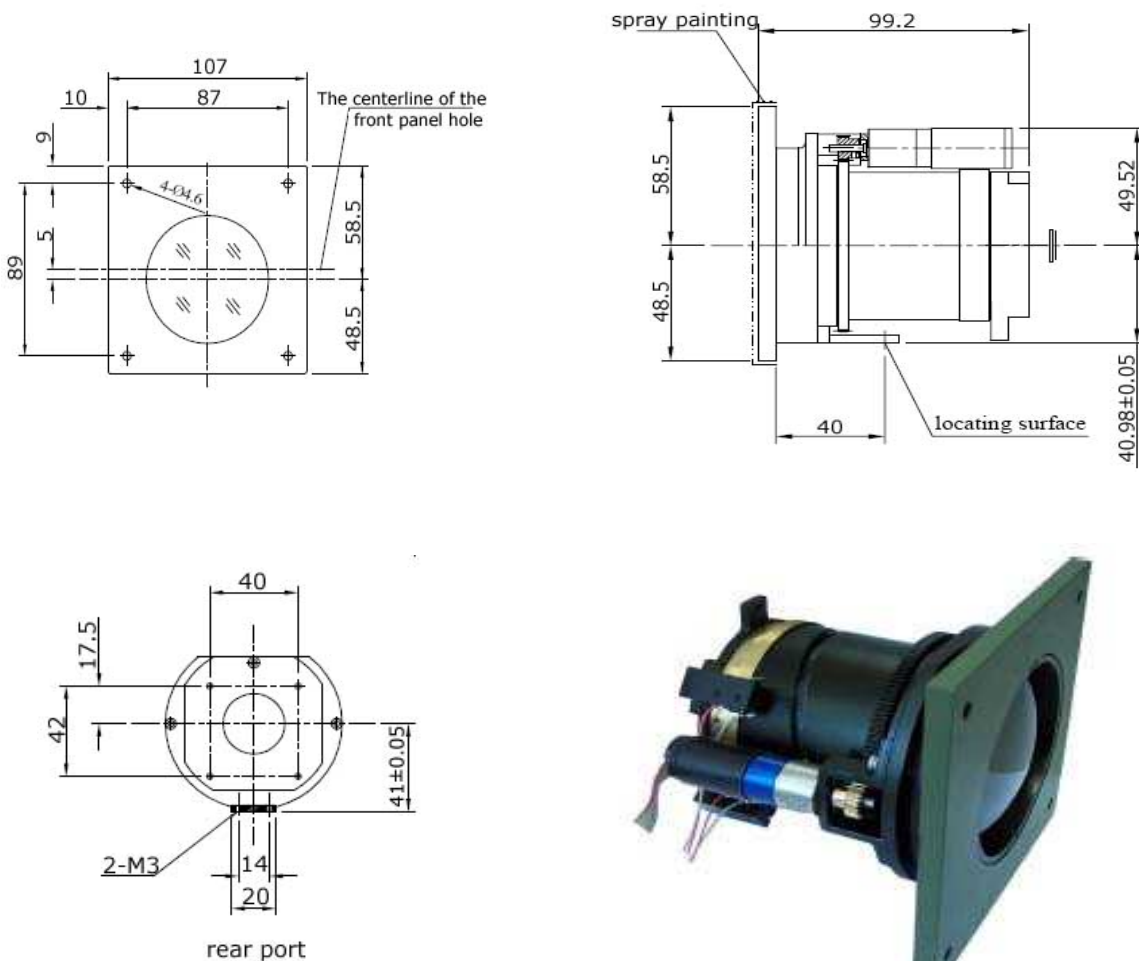
IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV07522

	HFOV	160x120	320x240	384x288	640x480
WFOV (22mm)	38μm				
	30μm	12.4°	25.5°		
	25μm	10.5°	21°	25.5°	
NFOV (75mm)	38μm				
	30μm	3.6°	7.1°		
	25μm	3.0°	6.0°	7.1°	

Drawing



IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV15050

Optical Property	Specification		Remarks
Focal Length	50mm	150mm	Dual Field
F#	1.4	1.4	
Wavelength	7μm—14μm		
Average Transmission	>80% (DLC)		Average
HFOV	14.3° (12.16mm)	4.6° (12.16mm)	
BFL	66mm		Including 1mm Ge Window
Image Format	320*240,38μm; 384*288,25μm; 320*240,25μm		
Focus Range	Min. 5m	Min. 30m	
Distortion	<5%	<2%	
Mechanical			
Mount Type	Flange		Mount Drawing
Focus Type	Motorized Focus		
Dimensions	Length218mm, Φ134mm		
FOV Switch Time	<2s		
Weight	2700g		
Electrical			
Lens Control	Designated Lens Controller		
Drive Voltage	12V DC 1.0A Max		Encoder Motor
Communication Interface	RS422/232		
Communication Protocol	As per attached Document		
Environmental			
Sealing	IP67		
Operating Temperature	-30°C to +60°C		
Storage Temperature	-40°C to +70°C		
External Coating	DLC		Diamond like Coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours		

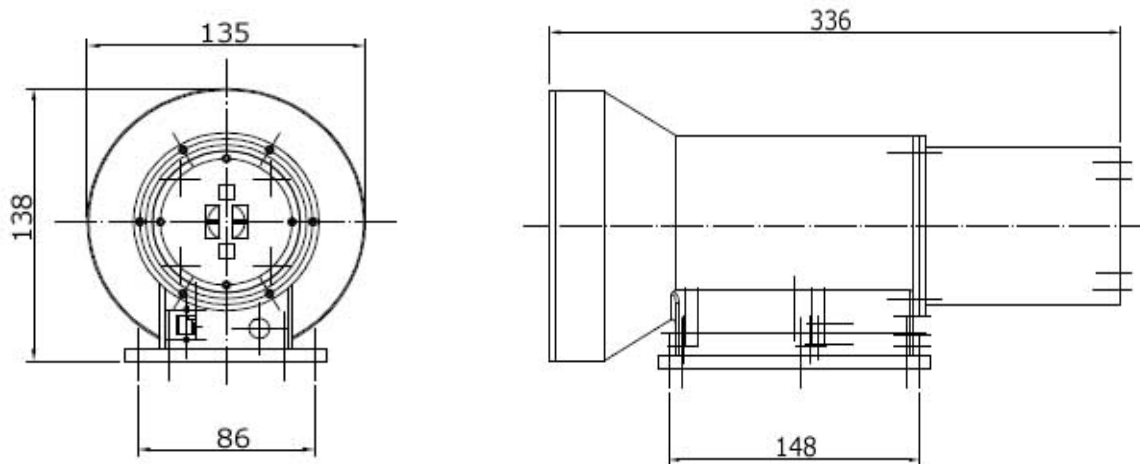
IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV15050

	HFOV	160x120	320x240	384x288	640x480
WFOV (50mm)	38µm	7.0°	14.3°		
	30µm	5.6°	11.2°		
	25µm	4.6°	9.3°	11.2°	
NFOV (150mm)	38µm	2.3°	4.6°		
	30µm	1.8°	3.7°		
	25µm	1.5°	3.1°	3.7°	

Drawing



IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV17644

Optical Property	Specification		Remarks
Focal Length	44mm	176mm	Dual Field
F#	1.0	1.2	
Wavelength	7μm—14μm		
Average Transmission	>80% (DLC)		Average
HFOV	15.8° (12.16mm)	4.0° (12.16mm)	
BFL	27.1mm		Including 1mm Ge Window
Image Format	320*240,38μm; 384*288,25μm; 320*240,25μm; 640*240,25μm		
Focus Range	Min. 5m	Min. 30m	
Distortion	<5%	<2%	
Mechanical			
Mount Type	Flange		Mount Drawing
Focus Type	Motorized Focus		
Dimensions	Length171mm, Φ222mm, Height178mm		
FOV Switch Time	<2s		
Weight	3500g		
Electrical			
Lens Control	Designated Lens Controller		
Drive Voltage	12V DC, 1.0A Max		Encoder Motor
Communication Interface	RS422/232		
Communication Protocol	As per attached Document		
Environmental			
Sealing	IP67		
Operating Temperature	-30°C to +60°C		
Storage Temperature	-40°C to +70°C		
External Coating	DLC		Diamond like Coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours		

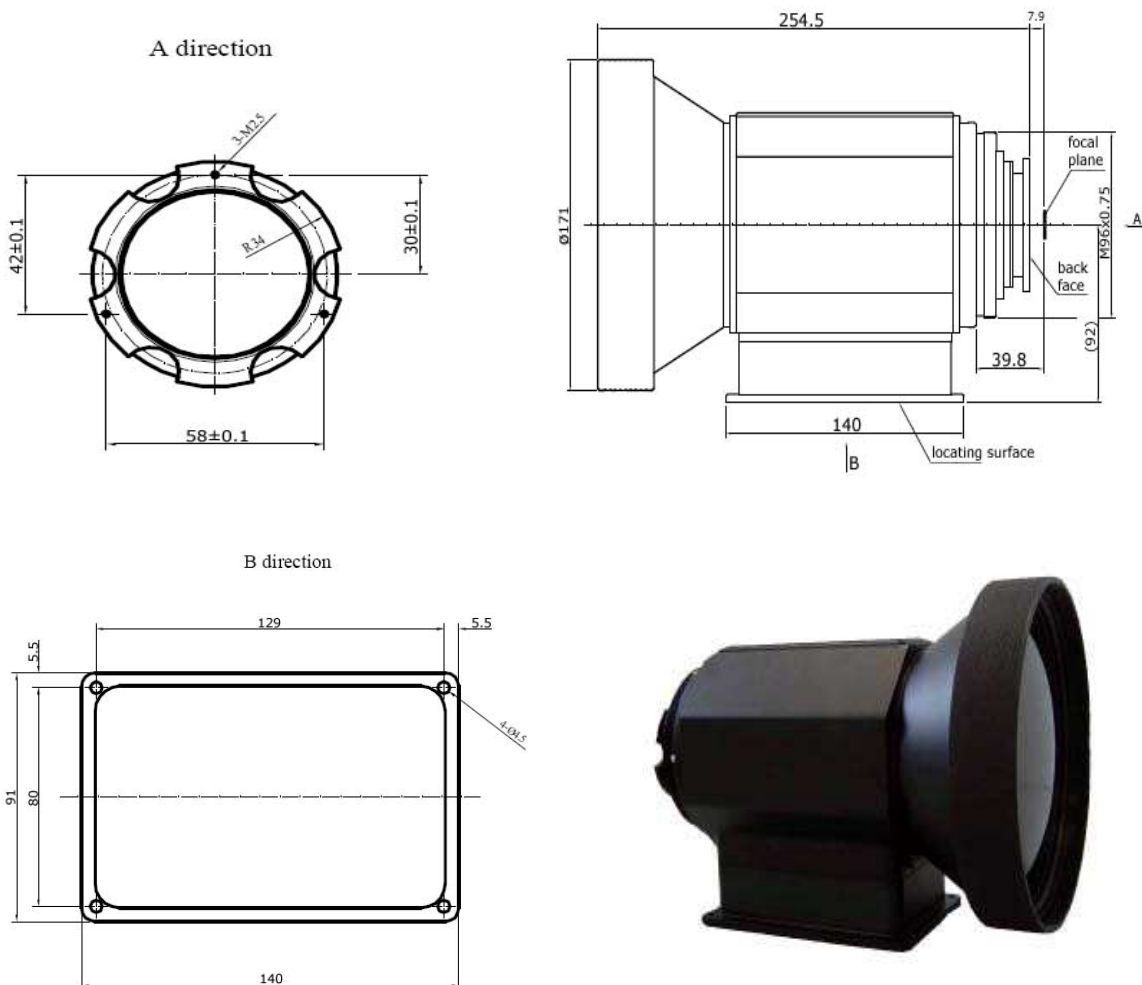
IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV17644

	HFOV	160x120	320x240	384x288	640x480
WFOV (44mm)	38µm	7.9°	15.8°		
	30µm	6.2°	12.5°		
	25µm	5.2°	10.4°	12.5°	21°
NFOV (176mm)	38µm	2.4°	4.9°		
	30µm	1.9°	3.8°		
	25µm	1.6°	3.2°	3.8°	5.2°

Drawing



IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV143-35.75-384

Optical Property	Specification		Remarks
Focal Length	35.75mm	143mm	Dual Field
F#	1.0	1.1	
Wavelength	7μm—14μm		
Average Transmission	>80%		Average
Horizontal FOV	15.4° (9.6mm)	3.8° (9.6mm)	
BFL	18.7mm	18.7mm	Including 1mm Ge Window
Image Format	320x240,38μm; 384*288,25μm; 320*240,25μm		
Focus Range	Min. 5m	Min. 30m	
Distortion	<5%	<2%	
Mechanical			
Mount Type	Flange		Mount Drawing
Focus Type	Motorized Focus		
Dimensions	Length169mm, Φ145mm, Height151mm		
FOV Switch Time	<2s		
Weight	2100g		
Electrical			
Lens Control	Designated lens controller		
Power Input	12V DC, 1.0A Max		Encoder Motor
Communication Interface	RS422/232		
Communication Protocol	As per attached document		
Environmental			
Sealing	IP67		
Operating Temperature	-30°C to +55°C		
Storage Temperature	-40°C to +70°C		
External Coating	DLC		Diamond like coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours		

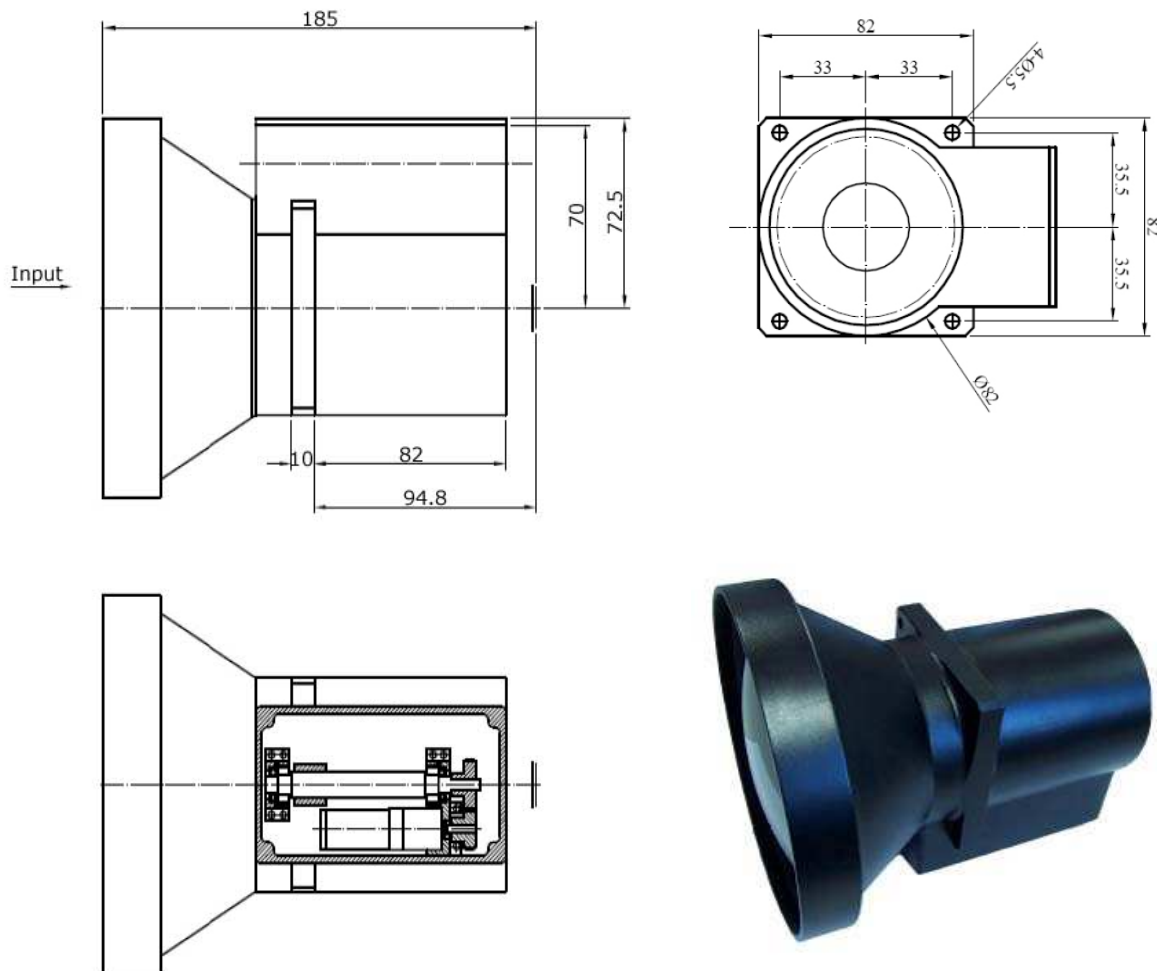
IR2F Lens Double Field View

IR2FV Lens Double Field View

Part no.: IR2FV143-35.75-384

	HFOV	160x120	320x240	384x288	640x480
WFOV (35.75mm)	38µm	9.6°	19.6°		
	30µm	7.6°	15.4°		
	25µm	6.3°	12.8°	15.4°	
NFOV (143mm)	38µm	2.4°	4.9°		
	30µm	1.9°	3.8°		
	25µm	1.6°	3.2°	3.8°	

Drawing



IR2F Lens Double Field View