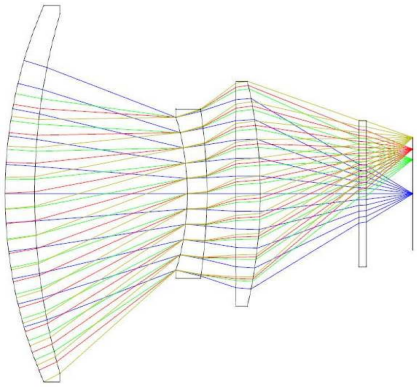
IR Athermal Lens

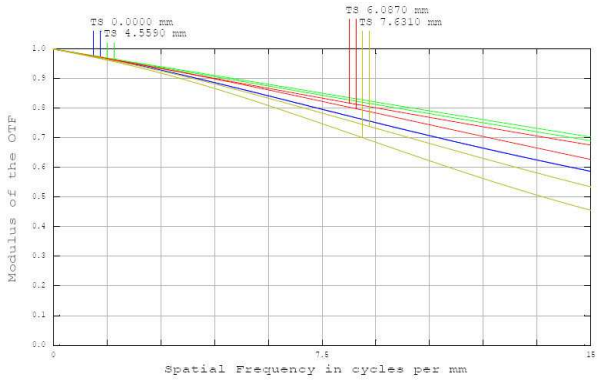
The need to maintain focus over a wide change of environmental temperature is essential to the system performance stability and high quality. So we have added a new series of IR Athermal Lens. It's performance are kept from changing by means of optical passivity, mechanical activity and mechanical passivity in a large temperature range. It's configuration will auto-adjust itself when placed at different temperature.



Every lens will expand or shrink whenever the surrounding temperature is increased or decreased. The design configuration of the lenses enables you to adjust the distance of the lenses to compensate temperature changes. In the end, the Athermal Lenses will give you the same performance in different temperatures.

Our design is developed for long IR region (8-12um). It is design to maintain focus position during changes in the environment temperature between –40 degrees to 85 degrees Celcius.

The outer most lens is coated with Hard Diamond coating suitable for harsh environment conditions. The following is its MTF performance.



MTF Diagram

Our athermal lens design can be customized to meet your requirement.

Applications:

This lenses are commonly used for security applications where system access is limited . It is capable to maintain the focus as environment temperature changes.

IR Athermal Lens

Part no.: IRMA13020320

Opto-Mechanic Property	Specification	Remarks
Focal Length	130mm	
F#	2.0	
Wavelength	3μm—5μm	
Image Diagonal	12mm	
Average Transmission	90%	
Circular FOV	5.29°	
Back Focus Distance	Refer to drawing	
Back Working Distance	30mm	Including 2.5mm Ge window
Dimensions	Length73mm, Φ84mm	
Focus Type	Manual Focus	
Focus Range	-	
Mount Type	M34*0.5	
Detector Type	320*240pixels, 30μm	
Weight	350g	
Environmental		
Operating Temperature	-30°C to +50°C	
Storage Temperature	-40°C to +80°C	
External Coating	AR	Anti-Reflection Coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours	

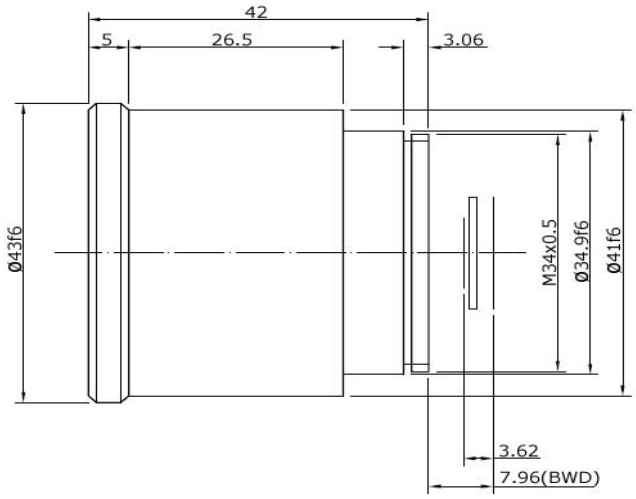
Drawing

IR Athermal Lens

Part no.: IRA03514320

Opto-Mechanic Property	Specification	Remarks
Focal Length	35mm	
F#	1.4	
Wavelength	8μm—12μm	
Image Diagonal	15.2mm	
Average Transmission	>88%	
Circular FOV	24.5°	
Back Focus Distance	11.02mm	
Back Working Distance	7.96mm	
Dimensions	Length42mm, Φ43mm	
Focus Type	Manual Focus	
Focus Range	-	
Mount Type	M34*0.5	
Detector Type	320*240pixels, 38μm	
Weight	100g	
Environmental		
Operating Temperature	-30°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



IR Athermal Lens

NEW

Part no.: IRA07510648

Opto-Mechanic Property	Specification	Remarks
Focal Length	75mm	
F#	1.0	
Wavelength	8μm—12μm	
Image Diagonal	19mm	
Average Transmission	>90%	
Circular FOV	14.44°	
Back Focus Distance	41.92mm	
Back Working Distance	30.19mm	
Dimensions	Length99.45mm, Φ128mm	
Focus Type	Manual Focus	
Focus Range	-	
Mount Type	M107*0.75	
Detector Type	648*488pixels, 23.5μm	
Weight	100g	
Environmental		
Operating Temperature	-30°C to +60°C	
Storage Temperature	-40°C to +80°C	
External Coating	AR	Anti-Reflection coating
Humidity	100%RH at 26°C and 74%RH at 35°C for 24 hours	

Drawing