

# Sunex

Excellence in Optical Design and Manufacturing

RGBEIR™ Lenses

25+ year track record of success in taking customer concepts from design through mass production.



# Sunex RGB $\Xi$ IR™ lenses

## IR Corrected

RGBIR is a popular term for lenses optimized for operation in daylight and low-light conditions. Such products require specialized design considerations and specific manufacturing techniques to provide the best possible image quality. Broadband AR coatings (BBAR) with low reflectivity (R%), dual-bandpass filter with high transmissivity (T%) in the visible (VIS) and near-infrared (NIR) bands are required as well to achieve the best performance.

An RGBIR lens can significantly improve focus, brightness, and resolution over conventional lenses if done right.

## Applications

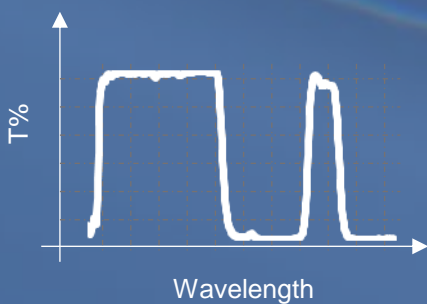
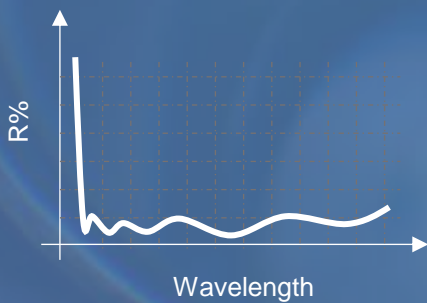
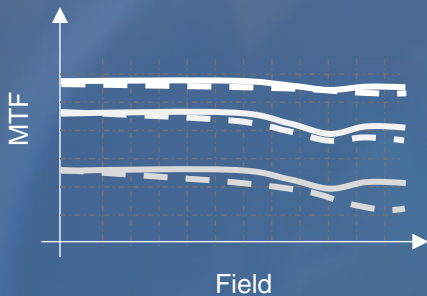
The enhanced infrared sensitivity of RGBIR lenses is often paired with a dedicated infrared illumination source enabling night vision applications and use cases such as biometric authentication, gaze tracking, and gesture recognition.

IR-corrected lenses are used in many applications across different industries and can be referred to as Day/Night (e.g., Security and Surveillance), RGBIR (e.g., automotive In-Cabin), and hyperspectral (e.g., medical imaging).

## Dual-Bandpass Filters

Infrared (IR) is an unwanted component of the light spectrum for many camera applications. It is often blocked using IR cut-off filters that block the infrared transmission while passing the visible (VIS). The Sunex IRC4x family of dual-bandpass filters are specifically designed to allow the visible spectrum and a narrow IR-band to pass through simultaneously.

Typical configurations are VIS+850 and VIS+940. Sunex also offers single-band IR filters and custom filter designs.



All graphs are for illustration purpose only. The individual lens performance can be different.

PN	Format	MP Class	HFOV	F/#	TTL	Features
DSL208	1/1.3"	1.3MP	22°	F/2.0	21.3	All glass, long EFL, RGBIR
DSL240	1/1.3"	1.3MP	71°	F/2.1	25.2	All glass, compact format, RGBIR
DSL392	1/1.27"	2MP	201°	F/2.0	23	All glass, SuperFisheye™, RGBIR, HDR
DSL936	1/1.2"	5MP	52°	F/3.2	16.5	All glass, compact design, RGBIR
DSL973	1/2.5"	5MP	120°	F/2.2	14.3	Hybrid, OMS, compact design, RGBIR
DSL974	1/2.5"	5MP	140°	F/2.2	14.7	Hybrid, OMS, compact design, RGBIR
DSL186	1/1.7"	8MP	140°	F/1.8	25	Hybrid, RGBIR, HDR

Table only shows a selection. Additional RGB $\Xi$ IR™ lens options are available.

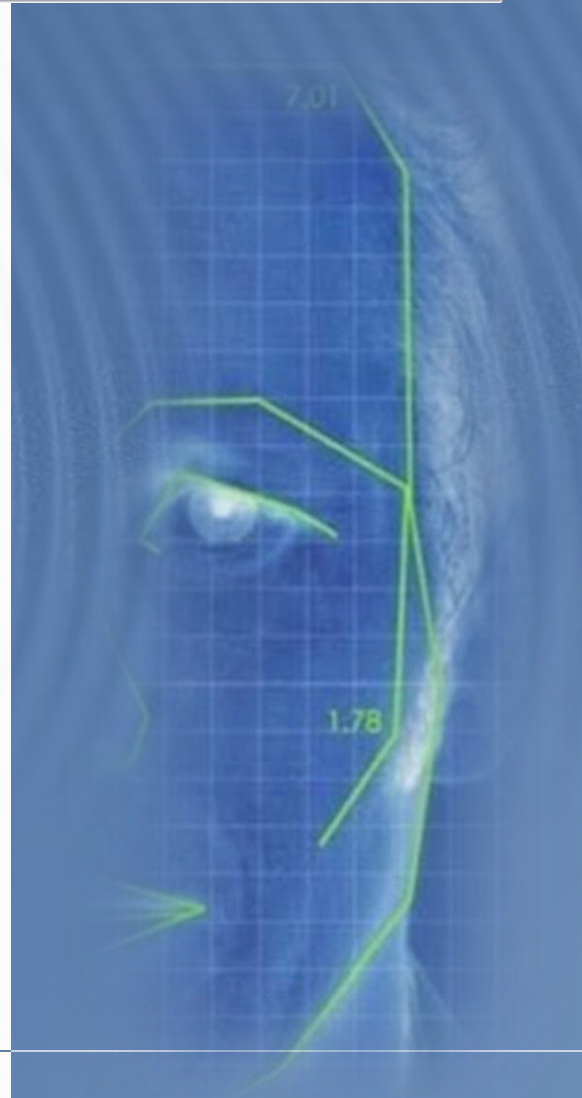
## Sensor Module Capabilities

Depending on the need and expertise of our customers, we provide design and manufacturing services for a complete sensor module. We strive to find the best solution for your needs, from designing the schematic, creating the PCB layout, and sourcing all components to building according to your PCB design and parts consignment.

At Sunex, we have the in-house expertise and capabilities for lens and sensor board design, manufacturing, and testing to deliver a fully tested sensor module.

## Active Alignment Capabilities

To achieve the highest system performance when pairing a high-quality lens with a high-resolution sensor, we recommend that our customers consider an active alignment process. Applying a fully automated 6-axis active alignment in mass production increases yield, shortens cycle times, improves system performance, and lowers part-to-part variance.



Visibility around the clock with

RGB $\Xi$ IR™ lenses



Consulting – Design – Manufacturing - Support

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