

IR optical module



Summary of Content

An IR optical module is a device that uses infrared light and specialized optical components to emit, detect, and process IR signals for sensing or communication purposes.

Definition and Components

An IR optical module typically combines an infrared light source (such as an IR LED or laser diode), a photodetector (like a photodiode or avalanche photodiode), and optical elements such as lenses, filters, or mirrors that focus or filter the IR light for specific applications . The module also includes control circuitry and a power supply to manage signal emission and detection . These components work together to transmit and receive infrared signals, either for detecting objects or for wireless communication.

How It Works

The module operates by emitting infrared light pulses that are either reflected by objects or received by a paired device. The photodetector captures incoming IR radiation and converts it into electrical signals, which are then processed to extract information such as distance, motion, or encoded data . Optical elements like lenses and filters enhance the module's sensitivity and selectivity, allowing it to focus on specific IR wavelengths and reduce interference from ambient IR sources .

Applications

IR optical modules are widely used in:

- Remote controls for TVs and appliances, transmitting encoded signals wirelessly .

Article Content

Ophir IR Imaging Lenses

Explore Ophir industry-leading IR thermal imaging lenses for SWIR, MWIR, and LWIR systems. Trusted worldwide for defense,

IR Cameras | SWIR, MWIR, & LWIR Imaging | Axiom Optics

We offer a curated range of industry-leading IR Cameras including SWIR, MWIR, and LWIR) including cooled and uncooled solutions.

Optical Sensors | Sensors & MEMS | ROHM Semiconductor

ROHM manufactures light emitting devices with various wavelengths such as infrared light emitting diodes and VCSELs, high

Infrared Optics | Precision Optics & Assembly | Syntec Optics

Syntec Optics offers design, development, manufacturing, and assembly services for infrared optics components and sub-systems.

HIGHLIGHTS

Die AIM Infrarot-Module GmbH entwickelt, fertigt und vertreibt hochwertige Infrarotdetektoren und Wärmebildgeräte sowie Stirling

HIGHLIGHTS

AIM Infrarot-Module GmbH develops, manufactures and sells premium infrared detectors and thermal sights as well as Stirling

IR Sensor Module Pinout, Features & Datasheet

The IR sensor module consists mainly of the IR Transmitter and Receiver, Opamp, Variable Resistor (Trimmer pot),

Infrared Receiver Module | A Leader in LED Industry | EVERLIGHT

Infrared Receiver Module This product range features multiple communication protocols and anti-interference capability for clients to

Infrared Optics (IR) | Edmund Optics

Edmund Optics® offers a vast selection of lenses, windows, mirrors, assemblies, and other optics tailored for infrared (IR)

Lenses and optical modules for the IR

JENOPTIK is able to capitalize on a broad range of know-ledge and many years of practical experience in developing, manufacturing

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Learn how to use the Infrared Slotted Optical Optocoupler Module with detailed documentation, including pinouts, usage guides, and

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IrDA Transceiver Modules | Sensors, Transducers | DigiKey

IrDA Transceiver Modules Infrared transceivers incorporate an infrared emitter, a photodiode and control circuitry in a single device

Infrared (IR) Laser Diode Modules

IR laser modules are available at a range of power levels and with a number of optical options. See the product ranges available in

Infrared Modules Manufacturer | LWIR & MWIR Lenses

From optical design and prototyping to precision manufacturing, coatings, assembly, and volume production, we support customers

Lenses and optical modules for the IR

Our infrared optical products are tested and gauged to your specifications in a real operating environment. The aim of

Ambient Light, IR, UV Sensors | Sensors, Transducers | DigiKey

Ambient Light, IR, UV Sensors Ambient light, IR and Ultraviolet optical sensors convert their respective light and/or heat inputs into

Near-IR & Mid-IR Silicon Photonics Modulators

As the silicon photonics field matures and a data-hungry future looms ahead, new technologies are required to keep up

IR Lenses – IR Lens – Infrared Lenses – Infrared Lens

IR Lenses are optical lenses that use specific substrates or anti-reflection coatings to maximize performance for applications

ADPD144RI (Rev. A)

OPTICAL COMPONENTS The ADPD144RI is a highly integrated, optical module designed for reflective PPG measurements. The

ADPD144RI Datasheet and Product Info | Analog Devices

ADPD144RI NOT RECOMMENDED FOR NEW DESIGNS PPG Optical Sensor Module with Integrated Red/IR

Ophir IR Imaging Lenses

Infrared Thermal Imaging With five decades worth of knowledge and experience, Ophir Infrared Optics is a world-leading designer

About IRmodules | IRmodules

IRmodules is a leading Chinese manufacturer of infrared and electro-optical imaging modules, located in Wuhan. Supplying EO/IR

Products | IRmodules

Professional infrared and electro-optical imaging modules for EO/IR system integrators. Cooled MWIR, uncooled LWIR, SWIR,

Teyleten Robot IR Infrared Slotted Optical Optocoupler

Teyleten Robot IR Infrared Slotted Optical Optocoupler Module Speed Measuring Sensor 3.3V to 5V Photo

Optical module

An optical module is a typically hot-pluggable optical transceiver used in high-bandwidth data communications applications. Optical

Interface TCRT5000 – Reflective Infrared Optical Sensor With Arduino

The TCRT5000 is a compact infrared (IR) reflective sensor module designed for detecting objects based on their reflectivity. It

Infrared detectors | Hamamatsu Photonics

Sensors and modules for infrared light detection. Thermopile detectors Low-cost sensors that generate thermoelectromotive force in

Contact Us

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