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High Resolution 1550nm Converter for CCD Cameras

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Physical & Mechanical Properties

Dimensions (mm):
46 Diameter x 97 L

Weight (g):
210.00

Active Area (mm):
27.5

Optical Properties

Distortion (%):
-1.0 Barrel

Resolution:

12 lp/mm over active area
40 lp/mm at Sensor focal plane

Spectral Response (nm):

1495 - 1595
790 - 840, 870 - 1070, 1550 Peaks
950 - 1075 Converted IR Output

Damage Threshold, By Design:

1 W/cm^2

Sensor

Sensor Format:

1/2"

Electrical

Dynamic Range (A):

Analog: 30 - 40
Digital: 48, 68 (12 bit, 16 bit)

Threading & Mounting

Mount:

M42 x 1.0 to Lens, C-Mount to Camera

Environmental & Durability Factors

Operating Temperature (°C):

-10 to +40

Regulatory Compliance

Reach 191:

Compliant

RoHS 2015:

Compliant

Certificate of Conformance:

View

Product Details

- Converter Extends Standard CCD Cameras into IR (1495 - 1595nm)
- Device for Imaging or Alignment Applications

High Resolution 1550nm Converter for CCD Cameras are a low cost alternative to expensive IR viewers. When attached to a monochrome camera with typical visible spectral response characteristics, it creates an imaging system with extended sensitivity into the NIR region. Conventional silicon based CCD cameras are predominantly sensitive around 850nm. A proprietary phosphor coating (using patented AST technology) on both the Converter's lens system and 1550nm-camera's sensor converts the 1495 - 1595nm band to Si-based CCD detectable wavelengths without fade or lag.

With an imaging lens attached to the Converter, it acts as a 1:1 relay lens for ½" sensor cameras, simultaneously relaying high resolution, low distortion, uniform NIR images while converting the images to an SI detector wavelength. A focus ring at the rear of the Converter allows adjustment for wavelength-focus variation and focus optimization onto the camera. Large Format lenses (designed for sensors >28mm) are recommended to maintain highest resolution, in order to fill the Converter's active area and maximum light throughput.

Without an imaging lens (as shown in photo), the Converter is also useful for beam alignment as the phosphor coating allows visualization of any 1550nm beam on its input window. The Converter features a large aperture window that is anti-reflection coated to ensure maximum image resolution is transferred. Increased sensitivity for beam profiling and telecommunication applications can be obtained by utilizing the IR Converter together with the 1550nm camera. Other applications include surveillance and inspection.

Note: Phosphor coating is partially transmissive outside the optimized coating band (into the visible). For viewing objects in the visible-NIR spectrum simultaneously with 1550-NIR wavelengths, an illumination source with NIR output is recommended for use with the 1550nm camera, but especially for the Converter (since the optical system significantly reduces light throughput).

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