

Precision Illumination & Detection for Machine Vision Systems



KEY FEATURES

- Wavelength-Matched Performance
- Fast Response Times
- Hermetically Sealed TO-Can Packaging
- Wide Operating Temperature Range

APPLICATIONS

- High speed part counting & tracking
- Conveyor-based QA systems
- Automated label inspection
- Optical edge and surface feature detection

In machine vision and industrial automation systems, reliable object detection, inspection, and feedback depend on precisely engineered optical subsystems. A fundamental building block of these systems is the matched pairing of a light source (LED) and photodiode (photodiode)—each selected based on its spectral response, optical performance, and environmental durability.

Opto Diode offers a range of visible and near-infrared LEDs (emitting at common inspection wavelengths like 630 nm, 685 nm, 850 nm, and 940 nm) that are optimized for high output power, controlled beam angles, and rugged thermal performance. These LEDs are designed to emit stable illumination under continuous operation, even in elevated temperature environments, and are available in hermetically sealed TO-can packages for long-term durability.

To detect these signals, red-enhanced and blue-enhanced photodiodes are offered with spectral responsivity curves precisely overlapping the emission bands of the paired LEDs, ensuring maximum signal conversion and high signal-to-noise ratios. These photodiodes feature fast response times, low dark current, and linear output behavior, making them ideal for high-speed inspection and feedback systems. **Custom photodiode and LED solutions are also available to meet unique wavelength, packaging, or integration requirements.**

Featured Products

Photodiodes

Model Number	Active Area Size (mm ²)	Description	Typ. Responsivity (A/W)
ODD-5WB	5	Blue Enhanced Photodiode in TO-5 pkg	0.28 @ 450nm
ODD-5WISOL	5	Red Enhanced Photodiode in TO-5 pkg	.35 @ 632nm
ODD-12W	12	Red Enhanced Photodiode in TO-5 Pkg	0.35 @ 632nm
ODD-12WB	12	Blue Enhanced Photodiode in TO-5 Pkg	0.28 @ 450nm

LEDs

Model Number	Typ. Power Output (mW)	Peak Emission Wavelength (nm)	Typ. Forward Voltage
OD-850LHT	22	850nm @ 100mA	1.6V @ 100mA
OD-850WHT	26	850nm @ 20mA	1.6V @ 100mA
OD-110WISOLHT	120	880nm @ 50mA	1.75V @ 500mA
OD-110W	140	850nm @ 50mA	1.7V @ 500mA



Built for Industrial Use

Opto Diode's emitters and detectors are engineered for:

- High-speed operation in automated environments
- Tight wavelength tolerances for repeatable results
- Rugged metal-can packaging for thermal and mechanical stability