

# E3Z PHOTOELECTRIC SENSORS

Compact, Self-Amplified  
Photoelectric Sensors



- » Food grade 316L stainless steel models
- » Integrated circuit design for high noise immunity
- » IP67 or IP69K housing ratings
- » Compact size fits tight or confined locations

# E3Z Compact, Self-Amplified Photoelectric Sensors...

## a Sensor for Every Application

Omron's E3Z product line is among the world's most popular and successful photoelectric sensors. Omron Automation & Safety continues to expand the E3Z product line with a goal to provide a sensor to meet any photoelectric detection challenge in the industrial automation market.

E3Z series is sought after to provide solutions in:

- **General Purpose Sensing**
- **Background/Foreground Suppression**
- **Sensing for Packaging**
- **Chemical Washdown Environments**
- **Oil Resistant Sensing**
- **Color Mark Detection**



### E3Z Series key features:

#### **Compact size (31 H x 10.8 W x 20 D mm)**

The E3Z is the smallest in its class and ideal for tight or confined locations. The requirement for compact sensors is of importance for machine designers as component space is at a premium.

#### **High noise immunity against interference from inverters and other inductive loads**

Providing decreased sensor down-time for maintenance, E3Z sensors perform under the most demanding electrical noise circumstances.

#### **Unique integrated circuit design with advanced LED**

Performance of the E3Z sensors has among the highest gain output in the industry, allowing optimum detection over long distances or in dirty or dusty environments.

#### **IP67 or IP69K housing ratings**

All E3Z (Plastic) models are rated IP67 and tested to withstand 1200 psi washdown applications; All E3ZM (Stainless Steel) models are rated IP69K to match 1450 psi washdown applications as well as providing optimum resistance to potential damage from common chemicals or detergents.



Use this document as a guide to find the right E3Z sensor for your application. Enter the **Quick Link Codes** in the Search Center of the Omron website ([www.omron247.com](http://www.omron247.com)) to download comprehensive E3Z product documentation such as datasheets, brochures, manuals and CAD files.

# General Purpose Sensing Solutions

## E3Z Standard LED Sensors (Models: E3Z-T, E3Z-R & E3Z-D)

- Long distance sensing: 30 m through-beam; 4 m retro-reflective; 1 m diffuse reflective.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 or M12 connector ready and 2 m, pre-wired models available.



## E3Z Narrow-Beam Sensors (Models: E3Z-L)

- Small 2.5 mm beam diameter at 90 mm sensing distance enables detection through small holes or gaps.
- Detect objects as small as 0.1 mm in diameter.
- Adjustable distance setting of  $90 \pm 30$  mm.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.



## E3Z Laser Sensors (Models: E3Z-LT, E3Z-LR & E3Z-LL)

- Small spot beam permits ideal detection of minute objects or detecting objects through narrow gaps in application.
- Powerful Class 2 (safe) laser provides reliable sensing in the most dirty or dusty of environments with ultra long detection distance; 60 m through-beam; 15 m retro-reflective; 300 mm distance-settable models.
- Optical flexibility and characteristics allow for simple sensor alignment with object.
- Distance-settable models offer long distance, diffuse type with no influence from background.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.





# Background/Foreground Suppression Sensing Solutions

## E3Z Background/Foreground Suppression Sensors (Models: E3Z-LS)

- Detect glossy/uneven surfaces with foreground suppression.
- Ignore objects beyond the set distance such as a conveyor belt rail using background suppression.
- Web/edge position detection sensors. (E3Z-LS63/-LS83 models)
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.

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## Sensing Solutions for Packaging

### E3Z Retro-Reflective Sensors for Transparent PET Bottle Detection (Models: E3Z-B)

- Reliably detect PET and thin wall plastic bottles with complex geometries that fool standard, polarized retro-reflective sensors.
- Detect various shapes of PET bottles from 500-ml to 2-liter size.
- Short range models detect single bottles, from 80 to 500 mm.
- Long range models detect multiple or “stacked” bottles on conveyors or across accumulators, from 0.1 to 2 m.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.

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# Sensing Solutions for Chemical Washdown

## E3ZM Detergent-Proof Sensors in Food-Grade 316L Stainless Steel (Models: E3ZM-T, E3ZM-R, E3ZM-D, E3ZM-LS)

- 316L stainless steel body resists corrosion from detergents and disinfectants used for in-situ cleaning of food-processing or beverage filling machinery.
- IP69K (DIN 40050-9) compliant sensor housing, suitable for high-temperature, high-pressure jet water spray and steam cleaning applications.
- Shape and markings designed for greater hygiene: few indentations means less dust and water can collect, laser etched identification and no sticker type labels prevents foreign matter contamination.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.



## E3ZM Retro-Reflective Sensors for Transparent PET Bottle Detection in High-Temperature and High-Pressure Washdown Environments (Models: E3ZM-B)

- Accurate detection using Bi-refrangent and P-opaquing technologies to provide the margin necessary to overcome the complex geometries that fool standard, polarized retro-reflective sensors.
- 316L stainless steel body resists detergents and disinfectants used for in-situ cleaning of food-processing or beverage filling machinery.
- IP69K (DIN 40050-9) compliant sensor housing, suitable for high-temperature, high-pressure jet water spray and steam cleaning applications.
- Simple push button (2-point teaching) operation.
- Maximizes uptime with unique AC3 technology that compensates for lens contamination to maintain expected sensor output.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.



# Oil-Resistant Sensing Solutions

## E3Z Oil-Resistant Sensors in Plastic Housing (Models: E3Z-TK, E3Z-RK, E3ZM-DK)

- Sensor housing includes special coating to resist effects in environments subject to high pH oil mists, coolants and medium pH detergents that aggressively attack sensors.
- Long distance sensing: 15 m through-beam models; 3 m retro-reflective; 1 m diffuse-reflective.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.



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## E3ZM Oil-Resistant Sensors in 316L Stainless Steel Housing (Models: E3ZM-CT, E3ZM-CR, E3ZM-CD, E3ZM-CL)

- Robust 316L stainless steel body is oil and water resistant.
- IP69K (DIN 40050-9) compliant sensor housing, suitable for high-temperature, high-pressure jet water spray and steam cleaning applications.
- Long distance sensing: 20 m through-beam models; 4 m retro-reflective; 1 m diffuse-reflective; 200 mm BGS reflective.
- Through-beam models available with orange LED emitter to provide a spot visible from 1 m for easy alignment.
- Switch-selectable, Light-ON/Dark-ON operation.
- NPN or PNP output models available.
- Models available with M12 twist-and-click pre-wired connectors for fast connection; M8 connector ready or 2 m, pre-wired models available.



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# Color/Mark Sensing Solutions

## E3Z Slotted Edge Control/Mark Sensors (Models: E3Z-G)

- Easy to install: Slotted head eliminates the need for optical axis adjustment.
- Ideal for slow down and then stop applications.
- 25 mm sensing distance.
- One or two axes models available.
- Light-ON/Dark-ON operation by wire.
- NPN or PNP output models available.
- 0.3 m, pre-wired M12 connector ready or 2 m, pre-wired models available.



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## E3ZM Diffuse Color Mark Sensor in 316L Stainless Steel Housing (Models: E3ZM-V)

- World's smallest color mark detection sensor with built-in amplifier provides fast 50  $\mu$ s response time.
- Exceptional color-difference discrimination with white LED emitter and RGB signal processing.
- Coaxial optical system maintains detection accuracy even with sensing object movement.
- Two teaching methods available: Easy 2-point teaching (manual) or automatic teaching (remote) by wire to PLC.
- $12 \pm 2$  mm sensing distance.
- 316L stainless steel body resists detergents and disinfectants used for in-situ cleaning of food-processing or beverage filling machinery.
- IP69K (DIN 40050-9) compliant sensor housing, suitable for high-temperature, high-pressure jet water spray and steam cleaning applications.
- NPN or PNP output models available.
- M8 connector ready or 2 m, pre-wired models available.



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For more detailed product information, visit [www.omron247.com](http://www.omron247.com) and enter Quick Link code provided in this brochure in web site Search Box.



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