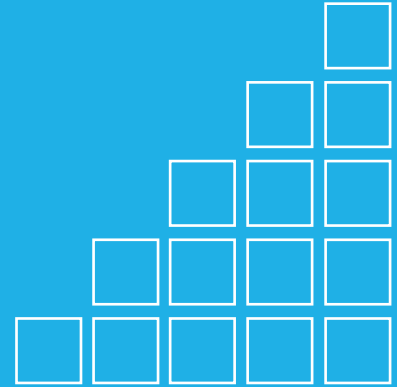# E3ZM Stainless Steel Photoelectric Sensors

- Outstanding durability and resistance to detergents and chemical wash-down

- Reduces your maintenance and replacement costs

CONTINUOUS IMPROVEMENT

Engineered by OMRON

OMRON

The World's First Stainless Steel Photoelectric Sensor

The World's Most Reliable Sensor Family

E3ZM, the new family of photoelectric sensors from Omron, sets a new standard for durability and reliable performance in the most harsh manufacturing environments.

Proven in intensive testing, this sensor family has unique characteristics, unsurpassed in the automation industry.

- **The world's first detergent-resistant photolectric sensor**

- **The world's most compact square metal photoelectric sensor**

- **Unmatched resistance to corrosive, chemical, detergent*, and disinfectant environments**

Detergent and chemical resistance is certified by Henkel-Ecolab.

200 Times More Durable Than Plastic Photoelectric Sensors

Protected by a corrosion and chemical resistant SUS316L stainless steel casing, E3ZM is capable to withstand even environments where most photoelectric sensors frequently fail – such as high-temperature, high pressure jet water spray cleaning applications, typical for food processing machinery.

- **Intensive testing proved that E3ZM is over 200 times MORE DURABLE than most plastic sensors.**

- **Its superior protective structure is IP69K compliant.**
  (The IP69K industrial standard means: high-pressure wash-down: 1160 – 1450PSI; 176°F water temperature; spray distance is 100 to 150 mm; duration is 2 minutes)
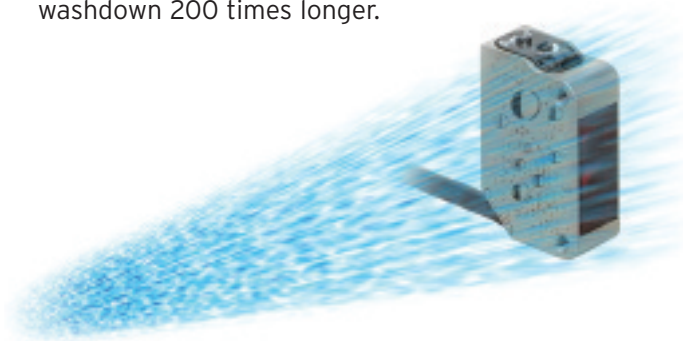
The Most Compact Square Metal Sensor In The World

Undisputed Washdown Winner

While most plastic sensors fail after just one month exposed to caustic washdown chemicals, the E3ZM sensor series endures high-pressure chemical washdown 200 times longer.

E3ZM features tested resistance against the detergents commonly used in the food industry:

• *Alkaline cleaner with sodium hydroxide (NaOH)*

• *Acid cleaner with phosphoric acid (H3PO4)*

• *Chlorinated disinfectant with hypochlorite (TEK-121)*

• *Disinfectant with hydrogen peroxide*

The World's First SUS316L Case Of This Size

10.8 mm

32.2 mm

Only **10.8 mm** wide and **32.2 mm** tall, the E3ZM has the same compact housing as E3Z and is ideally suited for installation in narrow spaces.

It comes in a world standard size and also offers a variety of mounting options and brackets, which makes it easy to use anywhere along the production line.

21 mm

25.4 mm
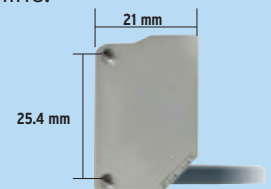
Shape And Markings Designed For Greater Hygiene

Due to the fewer indentations in the shape, E3ZM collects less dust and water and therefore is more hygienic.

No labels have been used in order to **prevent foreign matter contaminating food** products. The E3ZM model and lot numbers are imprinted on the rear side of the sensor with a laser marker.

CE OMRON E3ZM-LS66H MADE IN JAPAN
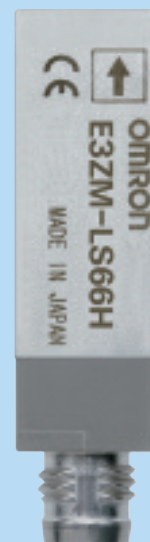
A Variety Of Models To Fit Any Application

Reliability Inherited From The E3Z

The new E3ZM family continues the tradition of the E3Z – the trusted photoelectric sensor series that set the standard for compact housing and reliable performance.

Now the E3ZM elevates the reputation of its predecessor to a new, higher level. The compact size, stable detection, and range of various models, upgraded with the SUS316L stainless steel casing, provide a package that outperforms any equivalent sensor on the market.

But that's not all. All the environment-friendly features of the E3Z, such as energy-saving and resource-saving, are carried on to the E3ZM as well. That's why in the new series you'll find:

- *Low-power curcuit design*

- *Polyethylene packaging that can be incinerated as general waste*

- *Immunity to external light and noise*

BGS Reflective Models

The E3ZM family features **three models** with different fixed sensitivity (rated sensing distances). They cover the sensing ranges of the E3Z-LS61.

100 mm

150 mm

200 mm
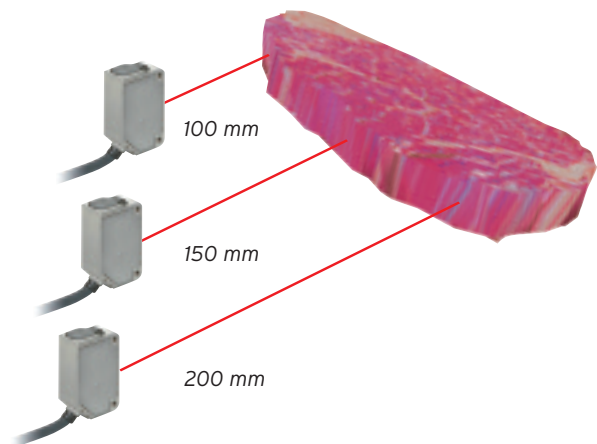
Through-beam Inner Aperture Models

Fine beam without attaching an external slit. This eliminates malfunctions from residual water drops, even immediately after washing.
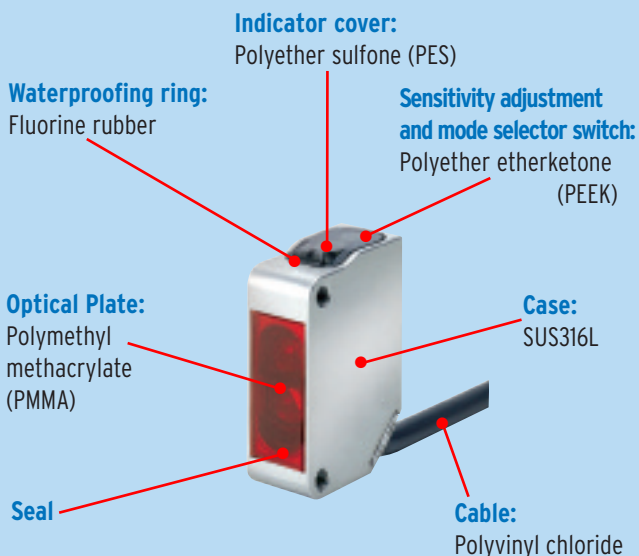
0.8 m

Same minimum detection object (0.7-mm dia.) as the E3Z-T61+E39-S65C (2-mm-dia. slit).
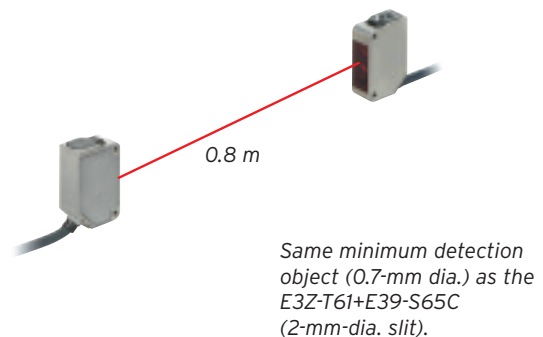
Ideal Solution For The Food And Beverage Industry

Superior Performance And Total Reliability In The Most Harsh Factory Floor Environments
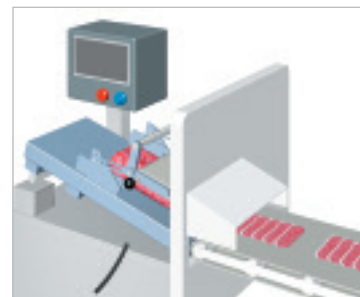
Detergent-resistant, hygienic, and extremely durable, E3ZM is engineered to endure the harsh factory floor environments of numerous industries and applications:

- **Meat, fish and poultry processing**
- **Soda and fruit juice processing**
- **Dairy processing**
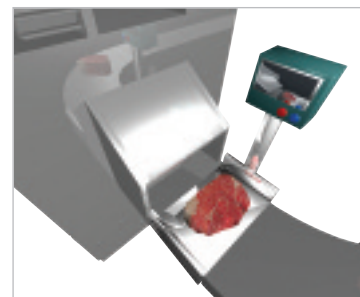- **Food handling and packaging**
- **Pharmaceutical equipment**

E3ZM's superior performance is guaranteed by every component of its cutting-edge structural design. All materials are carefully selected to provide the maximum durability and resistance in IP69K compliant environments.
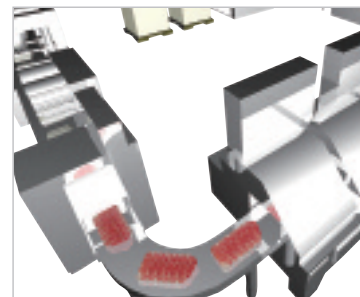
Indicator cover:
Polyether sulfone (PES)

Waterproofing ring:
Fluorine rubber

Sensitivity adjustment and mode selector switch:
Polyether etherketone (PEEK)

Optical Plate:
Polymethyl methacrylate (PMMA)

Case:
SUS316L

Seal

Cable:
Polyvinyl chloride

A Perfect Fit For Numerous Applications:

Meat slicing and similar processing

Weighing raw food products
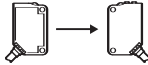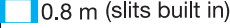
Wrapping raw food products

5

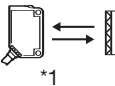## Sensors

Red light   Infrared light

Sensing Method	Appearance	Connection method	Sensing distance	Model NPN output	Model PNP output
Through-beam *5		Pre-wired (2 m) *3	15 m	E3ZM-T61	E3ZM-T81
		Connector (M8, 4 pins) *4		E3ZM-T66	E3ZM-T86
		Pre-wired (2 m) *3 (released soon)	0.8 m (slits built in)	E3ZM-T63	E3ZM-T83
		Connector (M8, 4 pins) *4 (released soon)		E3ZM-T68	E3ZM-T88
Retro-reflective with MSR function	*1	Pre-wired (2 m) *3	*2 4 m (100 mm) (Using E39-R1S)	E3ZM-R61	E3ZM-R81
		Connector (M8, 4 pins) *4		E3ZM-R66	E3ZM-R86
Diffuse-reflective		Pre-wired (2 m) *3	1 m	E3ZM-D62	E3ZM-D82
		Connector (M8, 4 pins) *4		E3ZM-D67	E3ZM-D87
BGS reflective (fixed distance)		Pre-wired (2 m) *3	10 to 100 mm	E3ZM-LS61H	E3ZM-LS81H
		Connector (M8, 4 pins) *4		E3ZM-LS66H	E3ZM-LS86H
		Pre-wired (2 m) *3	10 to 150 mm	E3ZM-LS62H	E3ZM-LS82H
		Connector (M8, 4 pins) *4		E3ZM-LS67H	E3ZM-LS87H
		Pre-wired (2 m) *3	10 to 200 mm	E3ZM-LS64H	E3ZM-LS84H
		Connector (M8, 4 pins) *4		E3ZM-LS69H	E3ZM-LS89H

*1. The Reflector is sold separately. Select the Reflector model suited to the application.

*2. Values in parentheses indicate the minimum required distance between the Sensor and Reflector.

*3. Pre-wired Models with a 5-m cable are also available for these products. When ordering, specify the cable length by adding "5M" to the end of the model number (e.g., E3ZM-LT61 5M).
M12 Pre-wired Connector models are also available. When ordering, add "-M1J" to the end of the model number (e.g., E3ZM-R61-M1J 0.3m).

*4. M8 Connector Models are also available with three-pin connectors. When ordering, add "-M5" to the end of the model number (e.g., E3ZM-T66-M5).
This does not apply to BGS Reflective Models, however, because they require 4 pins.

*5. Through-beam Models are also available with a light emission stop function. Whem ordering, add "-G0" to the end of the model number (e.g., E3ZM-T61-G0).

Accessories
Connector Cables

Compatible Sensor	Connector Size	Cable Type	Enclosure Rating	Connector Shape	Cable Length	Model
E3ZM-□□6	M8	Four-wire	IP69K	Straight	2m	Y96E-M843SD2S
					5m	Y96E-M843SD5S
			IP67	Right angle	2m	Y96E-M843RD2S
					5m	Y96E-M843RD5S

Accessories
Reflectors

Name	E3ZM-R Sensing distance (typical)*	Model	Quantity	Remarks
Reflector	3 m (100 mm) (rated value)	E39-R1	1	• Reflectors are not provided with Retro-reflective models. • The MSR function is enabled.
	4 m (100 mm) (rated value)	E39-R1S	1	
	5 m (100 mm)	E39-R2	1	
	2.5 m (100 mm)	E39-R9	1	
	3.5 m (100 mm)	E39-R10	1	
Fog Preventive Coating	3 m (100 mm)	E39-R1K	1	
Small Reflector	1.5 m (50 mm)	E39-R3	1	
Tape Reflector	700 mm (150 mm)	E39-RS1	1	
	1.1 m (150 mm)	E39-RS2	1	
	1.4 m (150 mm)	E39-RS3	1	

Note: When using a Reflector without a rated value, use 0.7 times typical value as a guideline for the sensing distance.
*Value in parenteses indicate the minimum distance between the Sensor and Reflector.

Mounting Brackets

Appearance	Model	Quantity	Remarks	Appearance	Model	Quantity	Remarks
	E39-L153 *SUS304*	1	Mounting Brackets		E39-L98 *SUS304*	1	Metal Protective Cover Bracket*
	E39-L104 *SUS304*	1			E39-L150 *SUS304*	1 set	(Sensor adjuster) Easily mounted to the aluminum frame rails of conveyors and easily adjusted. For left to right adjustment
	E39-L43 *SUS304*	1	Horizontal Mounting Bracket*		E39-L151 *SUS304*	1 set	
	E39-L142 *SUS304*	1	Horizontal Protective Cover Bracket*				
	E39-L44 *SUS304*	1	Rear Mounting Bracket		E39-L144 *SUS304*	1	Compact Protective Cover Bracket*

Note: When using Through-beam Models, order one bracket for the Receiver and one for the Emitter.
*Cannot be used for Standard Connector models.

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877.486.6766

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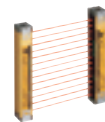Programmable Controllers   Industrial Sensors   Machine Vision   Temperature Controls   Smart Sensors   Touchscreens/HMI   Operator Safety

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