

## The Standard for Photoelectric Sensors with a Secure Track Record of One Million Sold Yearly.



- Long sensing distance of 30 m for through-beam models, 4 m for retro-reflective models, and 1 m for diffuse-reflective models.
- Mechanical axis and optical axis offset of less than  $\pm 2.5^\circ$  simplifies optical axis adjustment.
- High stability with unique algorithm that prevents interference of external light.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

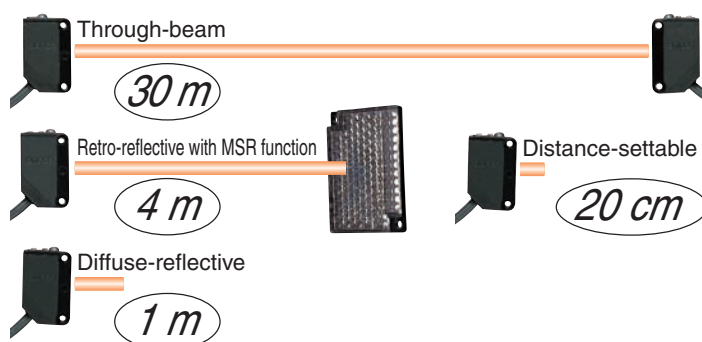
Be sure to read *Safety Precautions* on page 13.

## Features

### Industry's Top-level Sensing Distance with Built-in Amplifier

A separately sold filter is available to prevent mutual interference for Through-beam Models with red lights sources and a sensing distance of 10 m. Reflective Models include functionality to prevent mutual interference (up to 2 sensors).

Long-distance, Through-beam Sensors with a detection distance of 30 m (response time: 2 ms) are also available.

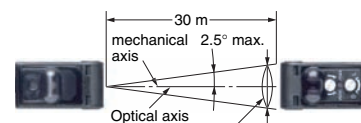


### Low-temperature Operation for Applications in Cold-storage Warehouses

A wider ambient operating range from  $-40$  to  $55^\circ\text{C}$  (main models with connectors). We also provide Sensor I/O Connectors with PUR Cables for high resistance to cold environments.

### Improved Matching of Optical Axis and Mechanical Axis for Through-beam Models and Retro-reflective Models

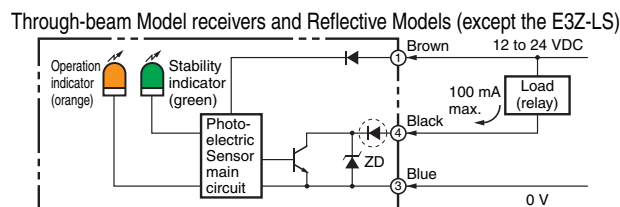
The offset between the optical axis and the mechanical axis is kept within  $\pm 2.5^\circ$ , so the optical axis can be accurately set simply by mounting the Sensor according to the mechanical axis.



The receiver will always be in the range of light diffusion.

### Sensor Protection against Incorrect Wiring

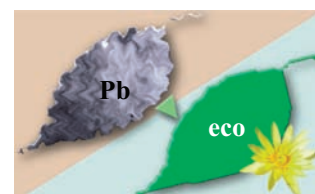
The Sensor includes output reverse polarity protection. (A diode to protect against reverse polarity is added to the output line.)



Protection for NPN output models

### Complete Compliance with the EU's RoHS Directive

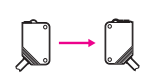



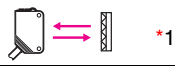

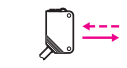
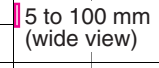

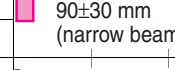
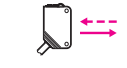
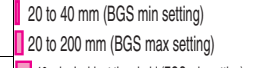
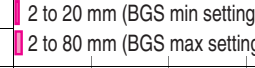



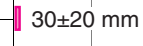
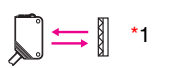
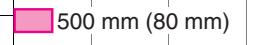

Lead, mercury, cadmium hexachrome, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE) have all been eliminated. Also, burnable polyethylene packaging has been used.



## Ordering Information

### Sensors [Refer to Dimensions on page 14.]

 Red light  Infrared light

Sensing method	Appearance	Connection method	Sensing distance	Model	
				NPN output	PNP output
Through-beam (Emitter + Receiver) *3		Pre-wired (2 m)		E3Z-T61 2M *4 *5	E3Z-T81 2M *4 *5
		Standard M8 connector		E3Z-T66	E3Z-T86
		Pre-wired (2 m)		E3Z-T61A 2M *4	E3Z-T81A 2M *4
		Standard M8 connector		E3Z-T66A	E3Z-T86A
		Pre-wired (2 m)		E3Z-T62 2M *4	E3Z-T82 2M
		Standard M8 connector		E3Z-T67	E3Z-T87
Retro-reflective with MSR function		Pre-wired (2 m)		E3Z-R61 2M *4 *5	E3Z-R81 2M *4 *5
		Standard M8 connector		E3Z-R66	E3Z-R86
Diffuse-reflective		Pre-wired (2 m)		E3Z-D61 2M *4	E3Z-D81 2M *4 *5
		Standard M8 connector		E3Z-D66	E3Z-D86
		Pre-wired (2 m)		E3Z-D62 2M *4 *5	E3Z-D82 2M *4 *5
		Standard M8 connector		E3Z-D67	E3Z-D87
		Pre-wired (2 m)		E3Z-L61 2M *4 *5	E3Z-L81 2M *4 *5
		Standard M8 connector		E3Z-L66	E3Z-L86
Distance-settable Refer to E3Z-LS.		Pre-wired (2 m)		E3Z-LS61 2M *4	E3Z-LS81 2M *4
		Standard M8 Connector		E3Z-LS66	E3Z-LS86
		Pre-wired (2 m)		E3Z-LS63 2M	E3Z-LS83 2M *5
		Standard M8 connector		E3Z-LS68	E3Z-LS88
Slit-type Through-beam Refer to E3Z-G.		1 axis		E3Z-G61 2M *4 *5	E3Z-G81 2M *4 *5
		2 axes		E3Z-G62 2M *4	E3Z-G82 2M *4
		1 axis		E3Z-G61-M3J	E3Z-G81-M3J
		2 axes		E3Z-G62-M3J	E3Z-G82-M3J
Limited-reflective for transparent glasses		Pre-wired (2 m)		E3Z-L63 2M	E3Z-L83 2M
		Standard M8 connector		E3Z-L68	E3Z-J88
Retro-reflective without MSR function for clear, plastic bottles		Pre-wired (2 m)		E3Z-B61 2M	E3Z-B81 2M *4
		Standard M8 connector		E3Z-B66	E3Z-B86
		Pre-wired (2 m)		E3Z-B62 2M *4	E3Z-B82 2M *4
		Standard M8 connector		E3Z-B67	E3Z-B87

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

\*2. The sensing distance specified is possible when the E39-R1S is used. Values in parentheses indicate the minimum required distance between the Sensor and Reflector.

\*3. Through-beam Sensors are normally sold in sets that include both the Emitter and Receiver.

\*4. M12 Standard Pre-wired Connector Models are also available.

When ordering, add "-M1J 0.3M" to the end of the model number (e.g., E3Z-T61-M1J 0.3M).

The cable is 0.3 m long.



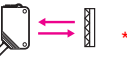
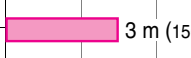

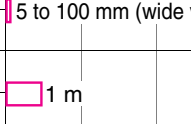
\*5. M12 Pre-wired Smartclick Connector Models are also available.

When ordering, add "-M1TJ 0.3M" to the end of the model number (e.g., E3Z-T61-M1TJ 0.3M).

The cable is 0.3 m long.

**Oil-resistive Sensors** [Refer to Dimensions on page 14.]

 Red light  Infrared light

Sensing method	Appearance	Connection method	Sensing distance	Model	
				NPN output	PNP output
Through-beam (Emitter + Receiver) *3		Pre-wired (2 m)		<b>E3Z-T61K 2M *4</b>	<b>E3Z-T81K 2M *4</b>
		Pre-wired M8 connector		<b>E3Z-T61K-M3J 0.3M</b>	<b>E3Z-T81K-M3J 0.3M</b>
Retro-reflective with MSR function		Pre-wired (2 m)		<b>E3Z-R61K 2M *4</b>	<b>E3Z-R81K 2M</b>
		Pre-wired M8 connector		<b>E3Z-R61K-M3J 0.3M</b>	<b>E3Z-R81K-M3J 0.3M</b>
Diffuse-reflective		Pre-wired (2 m)		<b>E3Z-D61K 2M *4</b>	<b>E3Z-D81K 2M</b>
		Pre-wired M8 connector		<b>E3Z-D61K-M3J 0.3M</b>	<b>E3Z-D81K-M3J 0.3M</b>
		Pre-wired (2 m)		<b>E3Z-D62K 2M *4</b>	<b>E3Z-D82K 2M</b>
		Pre-wired M8 connector		<b>E3Z-D62K-M3J 0.3M</b>	<b>E3Z-D82K-M3J 0.3M</b>

- \*1. The Reflector is sold separately. Select the Reflector model most suited to the application.
- \*2. The sensing distance specified is possible when the E39-R1S is used. Values in parentheses indicate the minimum required distance between the Sensor and Reflector.
- \*3. Through-beam Sensors are normally sold in sets that include both the Emitter and Receiver.
- \*4. M12 Standard Pre-wired Connector Models are also available.  
When ordering, add "-M1J 0.3M" to the end of the model number (e.g., E3Z-T61-M1J 0.3M).  
The cable is 0.3 m long.

**Accessories (Order Separately)**

**Slit** (A Slit is not provided with Through-beam Sensors) Order a Slit separately if required. [Refer to Dimensions on page 16.]

Slit width	Sensing distance		Minimum detectable object (Reference value)	Model	Contents
	E3Z-T□□	E3Z-T□□A			
0.5-mm dia.	50 mm	35 mm	0.2-mm dia.	<b>E39-S65A</b>	One set (contains Slits for both the Emitter and Receiver)
1-mm dia.	200 mm	150 mm	0.4-mm dia.	<b>E39-S65B</b>	
2-mm dia.	800 mm	550 mm	0.7-mm dia.	<b>E39-S65C</b>	
0.5 × 10 mm	1 m	700 mm	0.2-mm dia.	<b>E39-S65D</b>	
1 × 10 mm	2.2 m	1.5 m	0.5-mm dia.	<b>E39-S65E</b>	
2 × 10 mm	5 m	3.5 m	0.8-mm dia.	<b>E39-S65F</b>	

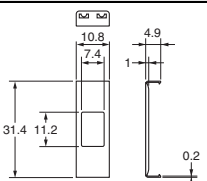
**Reflectors** (Reflector required for Retroreflective Sensors) A Reflector is not provided with the Sensor. Be sure to order a Reflector separately. [Refer to Dimensions on E39-L/E39-S/E39-R]

Name	Sensing distance *					Model	Quantity	Remarks
	E3Z-R		E3Z-R□K	E3Z-B□1/-B□6	E3Z-B□2/-B□7			
	Rated value (sensing distance of 15 m)	Reference value (sensing distance of 10 m)	Rated value	Rated value	Rated value			
Reflector	3 m (100 mm)	---	2 m (100 mm)	---	---	<b>E39-R1</b>	1	<ul style="list-style-type: none"> <li>• Retro-reflective models are not provided with Reflectors.</li> <li>• The MSR function is enabled.</li> </ul>
	4 m (100 mm)	---	3 m (150 mm)	500 mm (80 mm)	2 m (500 mm)	<b>E39-R1S</b>	1	
	---	5 m (100 mm)	---	---	---	<b>E39-R2</b>	1	
	---	2.5 m (100 mm)	---	---	---	<b>E39-R9</b>	1	
	---	3.5 m (100 mm)	---	---	---	<b>E39-R10</b>	1	
Fog Preventive Coating	---	3 m (100 mm)	---	500 mm (80 mm)	2 m (500 mm)	<b>E39-R1K</b>	1	
Small Reflector	---	1.5 m (50 mm)	---	---	---	<b>E39-R3</b>	1	
Tape Reflector	---	700 mm (150 mm)	---	---	---	<b>E39-RS1</b>	1	
	---	1.1 m (150 mm)	---	---	---	<b>E39-RS2</b>	1	
	---	1.4 m (150 mm)	---	---	---	<b>E39-RS3</b>	1	

Note: 1. If you use the Reflector at any distance other than the rated distance, make sure that the stability indicator lights properly when you install the Sensor.  
2. Refer to Reflectors on E39-L/E39-S/E39-R for details.

\* Values in parentheses indicates the minimum required distance between the Sensor and Reflector.

**Mutual Interference Protection Filter** A Filter is not provided with the Sensor (for the through-beam E3Z-T□□A). Order a Filter separately if required.

Sensing distance	Appearance/Dimensions	Model	Quantity	Remarks
3 m		<b>E39-E11</b>	Two sets each for the Emitter and Receiver (total of four pieces)	Can be used with the E3Z-T□□A Through-beam models. The arrow indicates the direction of polarized light. Mutual interference can be prevented by altering the direction of polarized light from or to adjacent Emitters and Receivers.

Note: The polarization directions of the Filters are offset by 90° to prevent interference. When you install the Emitter and Receiver, install them at the same angle to maintain this offset.