NEW

Fiber Unit

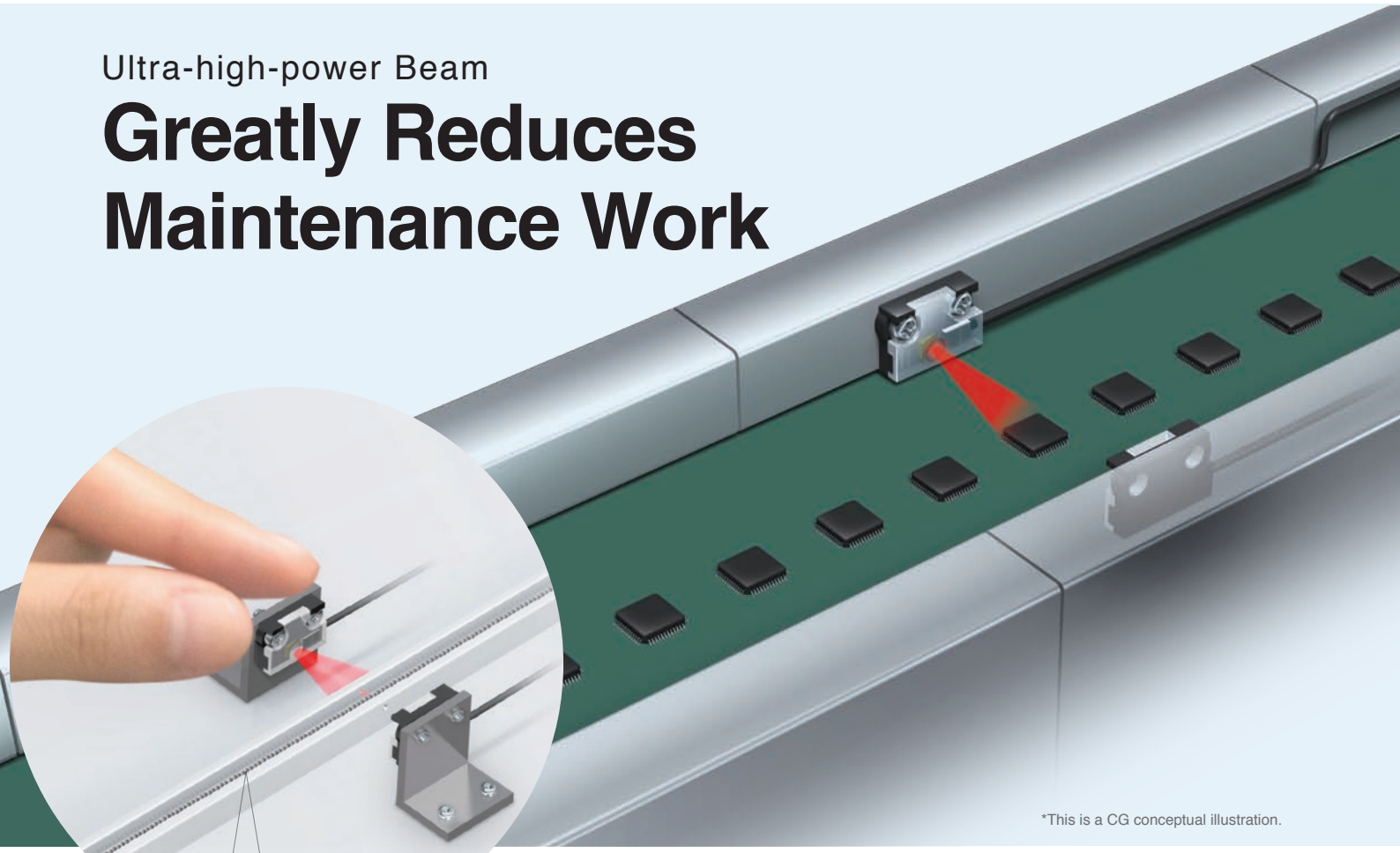
Build-in Lens Series, Flat Model

E32-LT35Z

OMRON

Ultra-high-power Beam

Greatly Reduces Maintenance Work



*This is a CG conceptual illustration.

Optical axis adjustment in just 20 sec* even for minute 0402-size workpieces.

*This is the total adjustment time for the emitter and receiver with normal optical axis adjustment methods. It is based on OMRON test results.

Actual Size

realizing

N-Smart

Smart Fiber Amplifier Unit

E3NX-FA

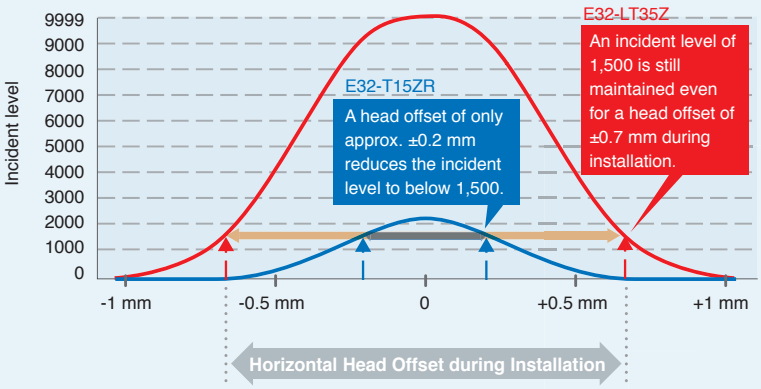
Optical Axis Adjustment in 20 Sec and Ultra-high-power

Greatly Reduce Installation and Mainte

The Optimum Aperture Angle and Optical Axis Accuracy

Enable Optical Axis Adjustment in 20 Sec Even for Minute 0402-size Workpieces

Incident Level Comparison for Parallel Movement*1



*1. Installation distance between heads: 50 mm, Installation distance between head and slit: 5 mm, Slit diameter at emitter and receiver: 0.5 mm each (Thickness: 10 mm), and E3NX-FA11 Fiber Amplifier Unit (HS mode).

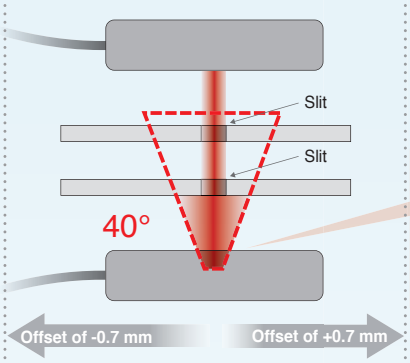
The optimum aperture angle that obtains a sufficient incident level for stable detection without making precise adjustment combines with high-quality optical axis accuracy with an optical axis inclination variation of ±2.5° or less between individual products to enable optical axis adjustment that is much faster than for previous products. All Fiber Units are inspected with a special jig before they are shipped to enable reliable installation without variations between individual products.

Technical Explanation

Finding the horizontal head (Fiber Unit) offset in the incident light range for a specific incident level of 1,500 during installation shows just how much wider the range is for the E32-LT35Z in comparison with a previous product (E32-T15ZR). In comparison with the difficult optical axis adjustment of previous products, the optical axis of the E32-LT35Z can be roughly adjusted in a short period of time to obtain the incident level required for stable detection.

Optimum Aperture Angle

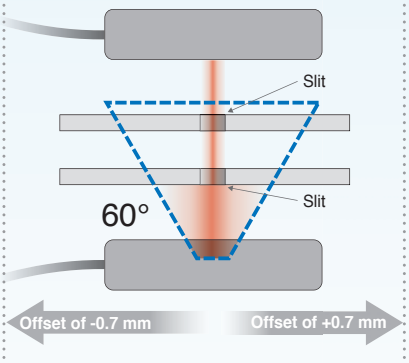
NEW (E32-LT35Z)



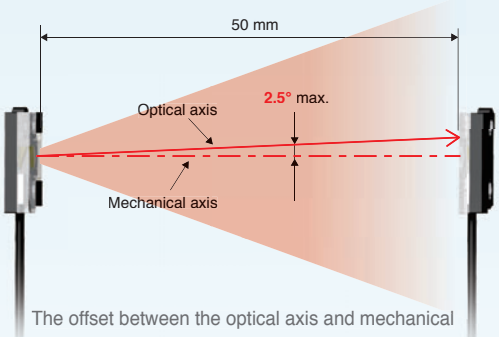
※This figure is a conceptual illustration.

The optimum aperture angle allows strong light to enter the slit holes even with an offset of ±0.7 mm.

Previous product (E32-T15ZR)



High-quality Optical Axis Accuracy



The offset between the optical axis and mechanical axis is within ±2.5°, so a sufficient incident level can be achieved merely by aligning the mechanical axis at installation.

Application Examples

Minute Chip Passage Detection in Parts Feeders

Work Required for Optical Axis Adjustment Is Greatly Reduced

Previous Products

Optical Axis Adjustment Required Time

For minute 0603/0402-size workpieces, detection of passage through slits was the main method used, but the expected future downsizing of workpieces means that optical axis adjustment will become even more difficult.

With the E32-LT35Z

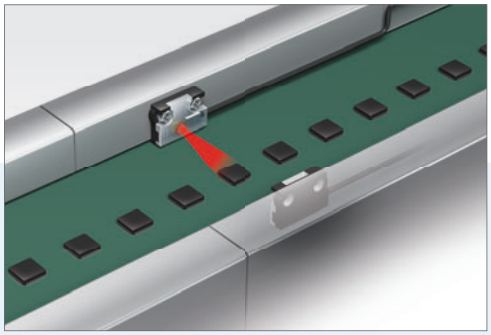
Optical Axis Adjustment in Only 20 Sec

Even roughly adjusting the optical axis produces stable detection of minute workpieces. And a built-in mirror lens is used to achieve a high-power beam. Stable detection is also possible even if the LED deteriorates over a long period of usage.

Beam
nance Work

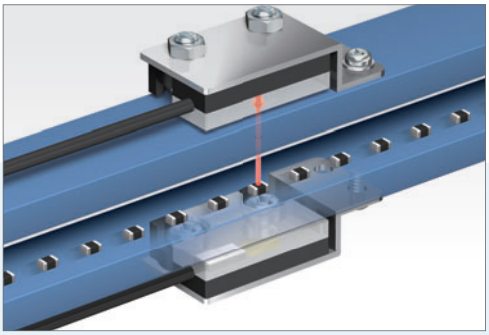
Application Examples

IC Chip Passage Detection



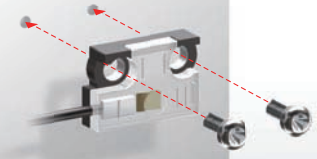
Helps Save Installation Space

Minute Chip Passage Detection

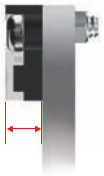


Work Required for Optical Axis Adjustment Is Greatly Reduced

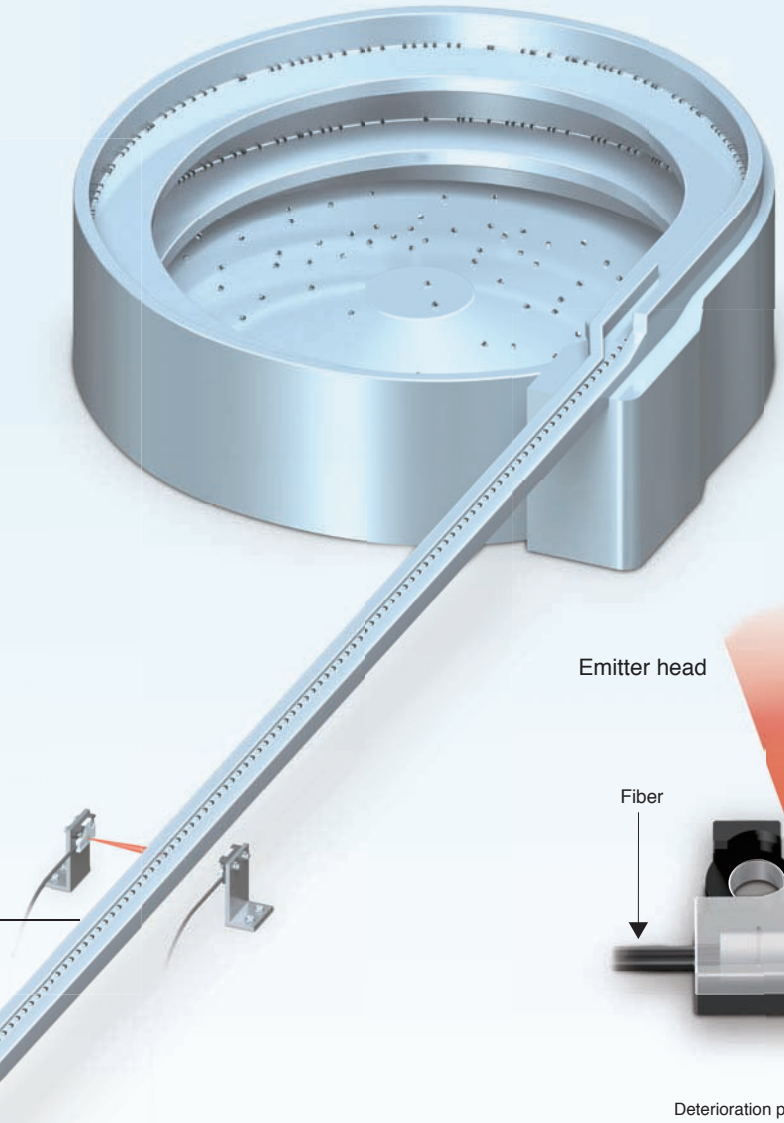
No Mounting Brackets Required So You Can Save Installation Space



Mounts directly without special mounting brackets.



Flat design that is only 3 mm.

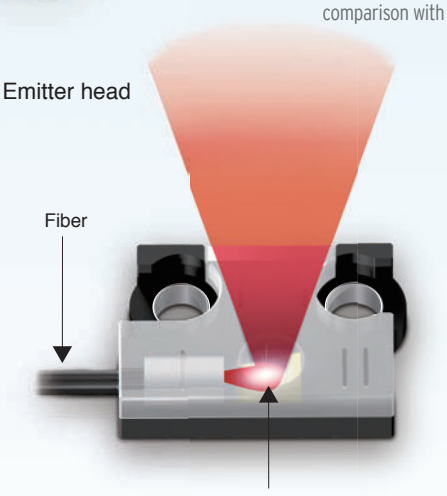


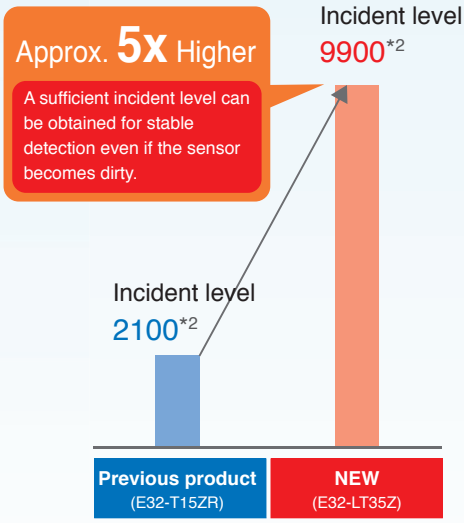
Patent Pending

Built-in Mirror Lens

Provides an Ultra-high-power Beam

A concave mirror lens (patent pending) produces a divergent beam that achieves both easy adjustment and light emission power. An ultra-high-power beam is provided that is approx. five times that of previous products with no lens. A sufficient incident level can be obtained for stable detection even if the optical axis is offset over a long period of usage and even if the emitter/receiver section becomes dirty. You can reduce the maintenance frequency in comparison with previous products.





*2. Digital incident level for the following conditions: Installation distance between heads: 50 mm, Installation distance between head and slit: 5 mm, Slit diameter at emitter and receiver: 0.5 mm each (Thickness: 10 mm), and E3NX-FA11 Fiber Amplifier Unit (HS mode).

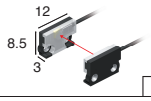
※The application CG is a conceptual illustration.

Build-in Lens

OMRON highly recommends these new-standard Fiber Units with a Built-in Lens that provide stable detection with a high-power beam. You don't have to worry about the lens falling off and getting lost.

Specifications

Through-beam Fiber Units

Sensing direction	Appearance (mm)	Bending radius of cable (mm)	Cable length	Sensing distance (mm)*1				Optical axis diameter (minimum sensing object) (mm)*2	Model
				E3X-HD		E3NX-FA			
				GIGA HS	Other modes	GIGA HS	Other modes		
Flat-view		R1	2 m	2,400 800	ST : 1,200 SHS: 300	3,600 1,200	ST : 1,800 SHS: 300	3 dia. (0.1 dia./0.03 dia.)	E32-LT35Z 2M

*1. The following mode names and response times apply to the modes given in the Sensing distance column.
[E3X-HD] GIGA: Giga-power mode (16 ms), HS: High-speed mode (250 µs), ST: Standard mode (1 ms), and SHS: Super-high-speed mode (NPN output: 50 µs, PNP output: 55 µs)
[E3NX-FA] GIGA: Giga-power mode (16 ms), HS: High-speed mode (250 µs), ST: Standard mode (1 ms), and SHS: Super-high-speed mode (30 µs)

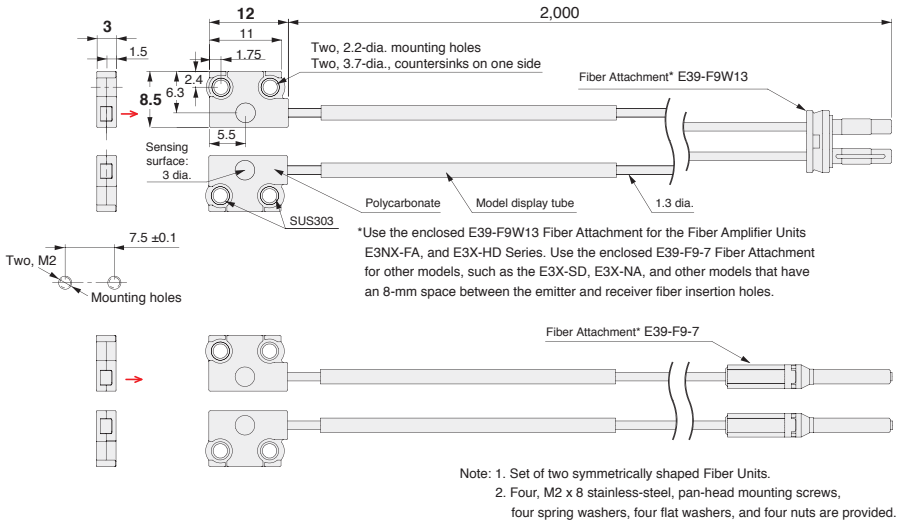
*2.The values for the minimum sensing object are reference values that indicate values obtained in standard mode with the sensing distance and sensitivity set to the optimum values.
The first value is for the E3X-HD and the second value is for the E3NX-FA.

Installation Information

Model	Installation			Cable						Weight (packed state)
	Ambient temperature	Tightening torque	Mounting hole	Bending radius	Unbendable length	Tensile strength	Sheath material	Core material	Emitter/receiver differentiation	
E32-LT35Z 2M	–40 to 70°C	0.15 N·m	—	R1	0	9.8 N	Polyethylene	Plastic	None	Approx. 25 g

Dimensions (Unit: mm) Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

E32-LT35Z (Free Cutting)



*Use the enclosed E39-F9W13 Fiber Attachment for the Fiber Amplifier Units E3NX-FA, and E3X-HD Series. Use the enclosed E39-F9-7 Fiber Attachment for other models, such as the E3X-SD, E3X-NA, and other models that have an 8-mm space between the emitter and receiver fiber insertion holes.

Note: 1. Set of two symmetrically shaped Fiber Units.
2. Four, M2 x 8 stainless-steel, pan-head mounting screws, four spring washers, four flat washers, and four nuts are provided.

Fiber Amplifier Units

			E3X-HD Series	E3NX-FA Series
Fiber Amplifier Unit specifications	Output		1 output	1 or 2 outputs (depending on the model)
	External input		None	Provided on some models.
	Response time*3		50 µs (55 µs), 250 µs, 1 ms, or 16 ms (Default: 250 µs)	30 µs (32 µs), 250 µs, 1 ms, or 16 ms (Default: 250 µs)
	Sensing distance (Giga-power mode)	E32-LT35Z	2,400 mm	3,600 mm
	Minimum sensing object	E32-LT35Z	0.1 mm dia.	0.03 mm dia.

*3. These are the response times for super-high-speed mode (SHS), high-speed mode (HS), standard mode (Stnd), and giga-power mode (GIGA).
The value in parentheses for the super-high-speed mode is for a model with a PNP output.

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