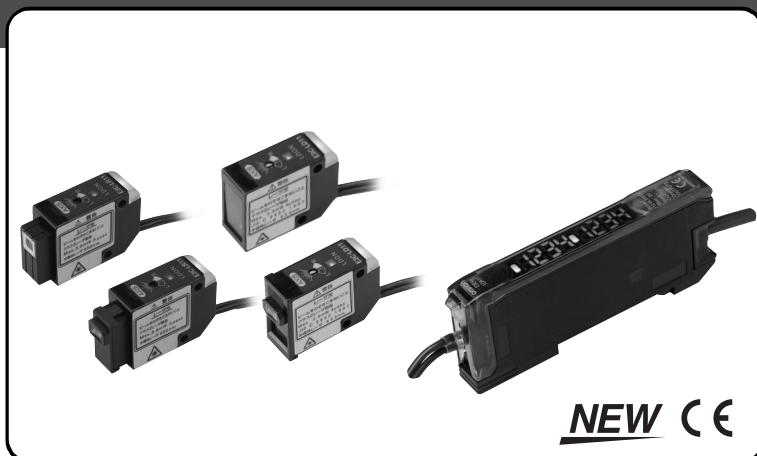


Photoelectric Sensors with Separate Digital Amplifiers (Laser-type Amplifier Units)

E3C-LDA Series

- All three beam types provide ample long-distance detection of 1,000 mm for Diffuse Reflective Models.
- Coaxial Retroreflective Models provide detection performance equivalent to through-beam sensors, simplifying Sensor installation.
- Industry-first variable focal point and optical axis alignment mechanisms. Optimize for workpieces and improve inspection quality.
- Drive the laser with an Amplifier the same size as a Digital Fiber Amplifier.



Ordering Information

■ Sensor Heads

Sensing method	Focus	Model number	Remarks
Diffuse reflective	Spot	E3C-LD11	Mounting a Beam Unit (sold separately) allows the use of line and area beams.
	Line	E3C-LD21	This model number is for the set consisting of the E39-P11 mounted to the E3C-LD11.
	Area	E3C-LD31	This model number is for the set consisting of the E39-P21 mounted to the E3C-LD11.
Coaxial retroreflective	Spot (variable)	E3C-LR11 (See note.)	Mounting a Beam Unit (sold separately) allows the use of line and area beams.
	Spot (2.0-mm fixed dia.)	E3C-LR12 (See note.)	---

Note: Select a reflector (sold separately) according to the application.

■ Amplifier Units

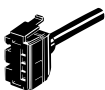
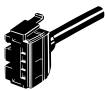
Amplifier Units with Cables

Item		Appearance	Functions	Model	
				NPN output	PNP output
Advanced models	Twin-output models		Area output, self-diagnosis, differential operation	E3C-LDA11	E3C-LDA41
	External-input models		Remote setting, counter, differential operation	E3C-LDA21	E3C-LDA51





Amplifier Units with Connectors

Item		Appearance	Functions	Model	
				NPN output	PNP output
Advanced models	Twin-output models		Area output, self-diagnosis, differential operation	E3C-LDA6	E3C-LDA8
	External-input models		Remote setting, counter, differential operation	E3C-LDA7	E3C-LDA9

■ Amplifier Unit Connectors (Order Separately)

Item	Appearance	Cable length	No. of conductors	Model
Master Connector		2 m	4	E3X-CN21
Slave Connector			2	E3X-CN22

■ Mobile Console (Order Separately)

Appearance	Model	Remarks
	E3X-MC11-S (model number of set)	Mobile Console with Head, Cable, and AC adapter provided as accessories
	E3X-MC11-C1-S	Mobile Console
	E3X-MC11-H1	Head
	E39-Z12-1	Cable (1.5 m)






Note: Use the E3X-MC11-S Mobile Console for the E3X-DA-S-series Amplifier Units. Other Mobile Consoles cannot be used.

■ Accessories (Order Separately)

Beam Units

Applicable Sensor Head	Appearance	Focus	Model
E3C-LD11		Line	E39-P11
		Area	E39-P21
E3C-LR11		Line	E39-P31
		Area	E39-P41

Reflectors

Type	Appearance	Model
Standard Effective area: 23 × 23 mm		E39-R12
Standard Effective area: 7 × 7 mm		E39-R13
Transparent detection Effective area: 23 × 23 mm		E39-R14
Sheet (cuttable) Effective area: 195 × 22 mm		E39-RS4
Sheet (cuttable) Effective area: 108 × 46 mm		E39-RS5

Specifications

■ Ratings/Characteristics

Sensor Heads

Item	Diffuse reflective			Coaxial retroreflective			
	E3C-LD11	E3C-LD21	E3C-LD31	E3C-LR11	E3C-LR11 + E39-P31	E3C-LR11 + E39-P41	E3C-LR12
Light source (emission wavelength)	Red semiconductor laser diode (650 nm), 2.5 mW max. (JIS standard: Class 2, FDA standard: Class II)						1 mW max. (JIS standard Class 1)
Sensing distance	High-resolution mode: 30 to 1,000 mm Standard mode: 30 to 700 mm Super-high-speed mode: 30 to 250 mm (See note 1.)			7 m 5 m 2 m (See note 2.)	1,700 mm, 1,300 mm 700 mm (See note 2.)	900 mm 700 mm 400 mm (See note 2.)	7 m 5 m 2 m (See note 2.)
Beam size (See note 3.)	0.8 mm max. (at distances up to 300 mm)	33 mm (at 150 mm)	33 × 15 mm (at 150 mm)	0.8 mm max. (at distances up to 1,000 mm)	28 mm (at 150 mm)	28 × 16 mm (at 150 mm)	2.0 mm dia. (at distances up to 1,000 mm)
Functions	Variable focal point mechanism (beam size adjustment) (See note 4.), optical axis adjustment mechanism (axis adjustment)						
Indicators	LDON indicator: Green; Operation indicator: Orange						
Ambient illumination (receiver side)	3,000 lx (incandescent lamp)						
Ambient temperature	Operating: -10°C to 55°C; Storage: -25°C to 70°C (with no icing or condensation)						
Ambient humidity	Operating/storage: 35% to 85% (with no condensation)						
Vibration resistance (destruction)	10 to 150 Hz with double amplitude of 0.7 mm, in X, Y, and Z directions for 80 min each						
Degree of protection	IEC 60529: IP40						
Materials	Case and cover: ABS Front surface filter: Acrylic resin			Case and cover: ABS Front surface filter: Glass			
Weight (packed)	Approx. 85 g			Approx. 100 g			

Note 1. Values are sensed for white paper.

2. These values apply when a E39-R12 Reflector is used. The MSR function is built-in. The reflected light from the object being measured may affect the sensing accuracy, so adjust the threshold value before use.
3. The beam radius is the value for the middle measurement distance and indicates a typical value for the middle sensing distance. The radius is defined by light intensity of $1/e^2$ (13.5%) of the central light intensity.
Light will extend beyond the main beam and may be affected by conditions surrounding the object being measured.
4. The E3C-LR12 has a fixed beam size (the focus point cannot be changed).

Amplifier Units

Model		Type	Advanced, twin-output models		Advanced, external-input models	
		NPN output	E3C-LDA11	E3C-LDA6	E3C-LDA21	E3C-LDA7
Item	PNP output	E3C-LDA41	E3C-LDA8	E3C-LDA51	E3C-LDA9	
Supply voltage		12 to 24 VDC ±10%, ripple (p-p) 10% max.				
Power consumption		1,080 mW max. (current consumption: 45 mA max. at power supply voltage of 24 VDC)				
Control output		Load power supply voltage: 26.4 VDC max.; NPN/PNP (depends on model) open collector Load current: 50 mA max.; residual voltage: 1 V max.				
Response time	Super-high-speed mode	100 µs for operation and reset		80 µs for operation and reset		
	Standard mode	1 ms for operation and reset				
	High-resolution mode	4 ms for operation and reset				
Functions		Power tuning, differential detection, timer, zero-reset, initial reset, mutual interference prevention (See note 1.), preset counter (See note 2.), reversed display				
I/O settings		Output setting (Select from channel 2 output, area output, or self-diagnosis.)		External input setting (Select from teaching, power tuning, zero reset, light OFF, or counter reset.)		
Display		Operation indicator for channel 1 (orange), operation indicator for channel 2 (orange)		Operation indicator (orange), Power Tuning indicator (orange)		
Digital display		Select from the following: Incident level + threshold, incident level percentage + threshold, incident light peak level + no incident light bottom level, minimum incident light peak level + maximum no incident light bottom level, long bar display, incident level + peak hold, incident level + channel		Select from same displays as given at the left or a counter display.		
Ambient illumination (receiver side)		Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.				
Ambient temperature		Operating: Groups of 1 to 2 Amplifiers: -25°C to 55°C Groups of 3 to 11 Amplifiers: -25°C to 50°C Groups of 12 to 16 Amplifiers: -25°C to 45°C (with no icing or condensation) Storage: -30°C to 70°C (with no icing or condensation)				
Ambient humidity		Operating and storage: 35% to 85% (with no condensation)				
Connection method		Prewired cable	Separate connector	Prewired cable	Separate connector	
Weight (packed state)		Approx. 100 g	Approx. 55 g	Approx. 100 g	Approx. 55 g	
Materials	Case	Polybutylene terephthalate (PBT)				
	Cover	Polycarbonate				

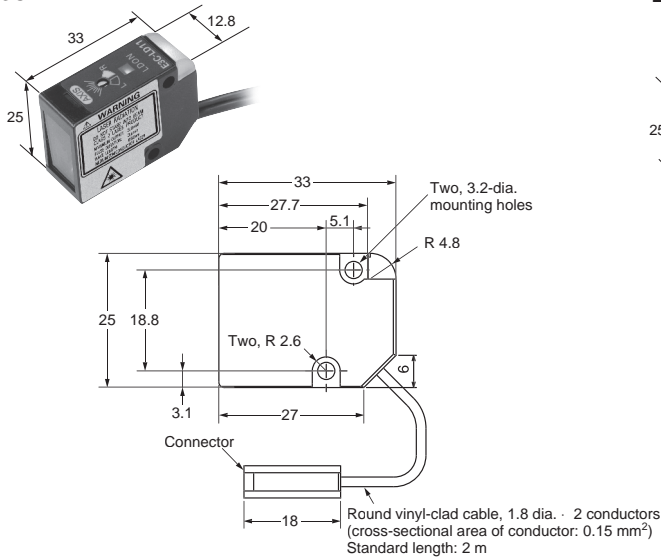
*1: Communications are disabled if super-high-speed mode is selected, and the mutual interference prevention function and the communications function for the Mobile Console will not function.

*2: The preset counter is available only with advanced, external-input models.

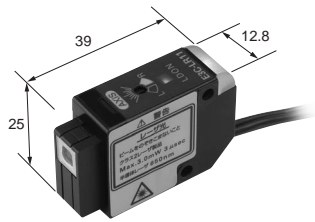
Dimensions

Sensor Head

E3C-LD11

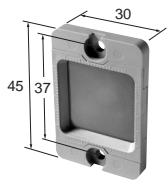


E3C-LR11

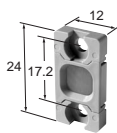


Reflector

E39-R12/-R14

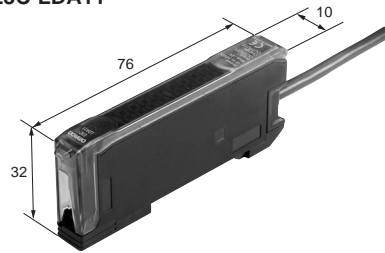


E39-R13



Amplifier Unit

E3C-LDA11



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. E338-E1-03

In the interest of product improvement, specifications are subject to change without notice.

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