Features/Applications

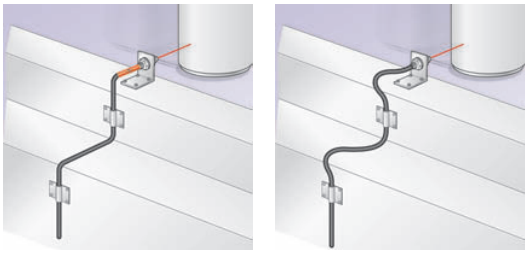
Standard Models

Flexible (New Standard)

R

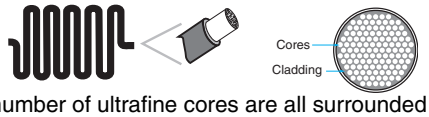
- Perform wiring without worrying about the bending radius.
- Choose the model to suit the installation space from a variety of shapes.

Flexible fiber | Conventional fiber



Fewer problems ◀ Light intensity affected by bends in fiber
Fiber broken by getting caught on surrounding objects

■ Feature: Multicore (Flexible) Fibers



A large number of ultrafine cores are all surrounded by cladding. As a result, the fiber is flexible and can be bent without significantly reducing the light intensity. This helps solve problems, such as fiber being broken by getting caught on other objects.

■ Ratings/Characteristics

Min. sensing object	0.005-mm dia.
Min. bending radius	1 mm
Ambient temperature range	–40°C to 70°C (no icing or condensation)
Fiber material	Plastic (Free-cut)

Standard

- Choose the model to suit the installation space from a variety of shapes.
- New flat models allow space savings and simple installation.

Screw-shaped | Cylindrical | Flat | Equipped with sleeve

■ Feature: Flat Models

Flat models, which allow simple attachment and wiring, have been added to the lineup. Choose the model to suit the installation space from 3 sensing directions and 2 sizes, standard and small.

■ Ratings/Characteristics

Min. sensing object	0.005-mm dia.
Min. bending radius	10 or 25 mm*
Ambient temperature range	–40°C to 70°C (no icing or condensation)
Fiber material	Plastic (Free-cut)

*Depends on the fiber diameter.

Break-resistant

B

- Bundle-fiber models can be used for moving parts.
- Capable of withstanding at least one million repeated bends (in typical applications).

■ Feature: Bundle Fibers

The Fiber Units contain a large number of independent fine fibers, ensuring a high degree of flexibility.

■ Ratings/Characteristics

Min. sensing object	0.005-mm dia.
Min. bending radius	4 mm (withstands repeated bending)
Ambient temperature range	–40°C to 70°C (no icing or condensation)
Fiber material	Plastic (Free-cut)

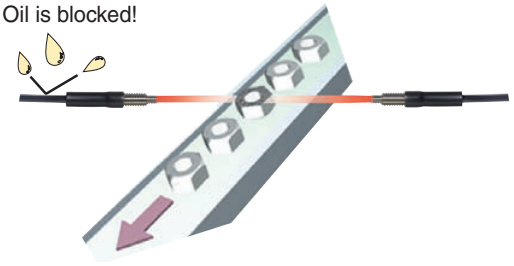
Standard Models

Fluorine Coating

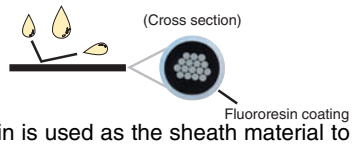
U

- Fiber degradation due to oil is prevented using a fluororesin coating.
- Free cutting is possible with cutter provided.

Oil is blocked!



■ Feature: Fluorine Coating



Fluororesin is used as the sheath material to prevent fiber degradation resulting from oil adhesion.
Note: The tip of the head is not chemical-resistant.

■ Ratings/Characteristics

Min. sensing object	0.005-mm dia.
Min. bending radius	4 mm
Ambient temperature range	–40°C to 70°C (with no icing or condensation)
Fiber material	Plastic (Free-cut)

Fiber Customization Service (Fiber Length, Sleeve Length, and Bends)

This customization/delivery service applies to standard models. It is aimed at reducing industrial waste and simplifying the installation procedure.

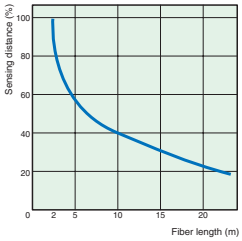
Fiber Length

■Aplicable Models
Standard models

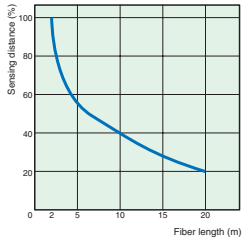
■Model Number Used for Ordering
Standard model number + Fiber length
Fiber length: 0.3 m, 0.5 m, or any length from 1 to 20 m (in 1-m units)

■ Fiber Length vs. Sensing Distance

Through-beam Fiber Units (Fiber length of 2 m corresponds to 100%.)



Fiber Units with Reflective Sensors (Fiber length of 2 m corresponds to 100%.)



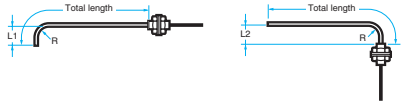
Sleeve Length and Bends

■Applicable Models
E32-TC200B/E32-TC200F
E32-DC200B/E32-DC200F
The E32-DC200B cannot be bent.

■ Model Number Used When Changing Only the Sleeve Length

Model: E32-[*1]C200[*2]-S[*3]

■ Model Number Used When Changing the Sleeve Length and Bends



Model Numbers Incorporating the Bending Radius, R, and Dimensions L1 and L2

Specifying L1 Only (Units: mm)

Bending radius	L1 (±1)	Model number
R5	10	E32-[*1]C200[*2]-S[*3]A1
	15	E32-[*1]C200[*2]-S[*3]A2
R7.5	12.5	E32-[*1]C200[*2]-S[*3]B1
	17.5	E32-[*1]C200[*2]-S[*3]B2
R10	15	E32-[*1]C200[*2]-S[*3]C1
	20	E32-[*1]C200[*2]-S[*3]C2
R12.5	17.5	E32-[*1]C200[*2]-S[*3]D1
	22.5	E32-[*1]C200[*2]-S[*3]D2

Specifying L2 Only (Units: mm)

Bending radius	L2 (±1)	Model number
R5	5	E32-[*1]C200[*2]-S[*3]A3
	10	E32-[*1]C200[*2]-S[*3]A4
R7.5	7.5	E32-[*1]C200[*2]-S[*3]B3
	17.5	E32-[*1]C200[*2]-S[*3]B4
R10	10	E32-[*1]C200[*2]-S[*3]C3
	20	E32-[*1]C200[*2]-S[*3]C4
R12.5	12.5	E32-[*1]C200[*2]-S[*3]D3
	22.5	E32-[*1]C200[*2]-S[*3]D4

*1: Insert "T" for Through-beam Fiber Units and "D" for Fiber Units with Reflective Sensors.
*2: Insert the "B" or "F" that appears at the end of the original model number.
*3: Insert "50" if the total length is 50 mm. The total length must not exceed 120 mm.

Fiber Units with Reflective Sensors

Type		Appearance (mm) *3	Sensing distance (mm) *1	(Min. sensing object) (mm) *2	Min. bending radius (mm)	Features	Model number
Standard models	Break-resistant, Standard size	Free-cut M6	300 170 120 (50)	(0.005 dia.)	B R4	M6 screw	E32-D11
		Free-cut 15 × 10 × 3				Flat shape	E32-D15XB
	Break-resistant, Small size	Free-cut M4	110 70 45 (20)			M4 screw (small)	E32-D21B
		Free-cut 3 dia.				3-dia. cylinder (small)	E32-D221B
		Free-cut M3	50 30 20 (8)			M3 screw (small)	E32-D21
		1.5 dia.				1.5-dia. cylinder (small)	E32-D22B
		Free-cut 12 × 8 × 2	85 50 30 (15)			Flat shape (small)	E32-D25XB
	Coating	Free-cut M6	300 170 120 (50)	(0.005 dia.)	U R4	M6 screw, fluorine coating	E32-D11U
Special-beam models	Long-distance, high-power	Free-cut 17.5	40 to 1,000 40 to 700 40 to 450 (40 to 240)	---	B R4	Large built-in lens, screw mounting	E32-D16
		Free-cut M6	650 400 260 (110)	(0.005 dia.)	R25	M6 screw	E32-D11L
		Free-cut M4	210 130 80 (35)		R10	M4 screw	E32-D21L
		Free-cut 3 dia.				3-dia. cylinder	E32-D22L
	Ultracompact, thin-sleeve	Free-cut 3 dia. 0.8 dia. Sleeve cannot be bent.	25 16 10 (4)		R4	0.8-dia. sleeve	E32-D33
		2 dia. 0.5 dia. Sleeve cannot be bent.	5 3 2 (0.8)			0.5-dia. sleeve	E32-D331

*1. The sensing distances are for white paper.
*2. The values for the minimum sensing object are representative values that indicate values obtained in standard mode with the sensing distance and sensitivity set to optimum values.
*3. Free-cut Indicates models that allow free cutting.

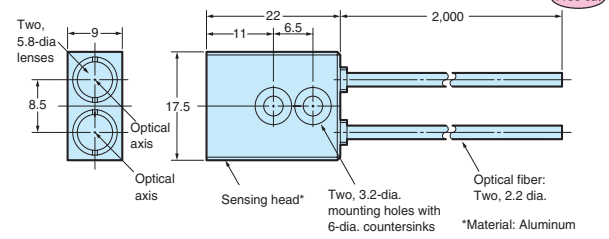
Fiber Units with Reflective Sensors

Long-distance/High-power Models

Free-cut Indicates models that allow free cutting.

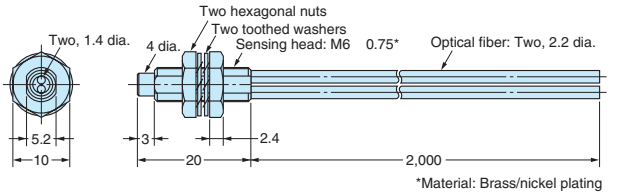
E32-D16

Free-cut



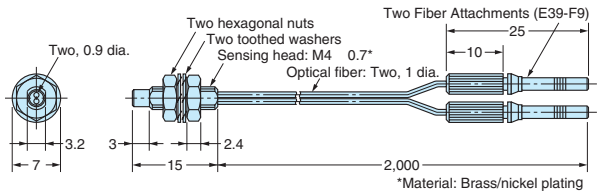
E32-D11L

Free-cut



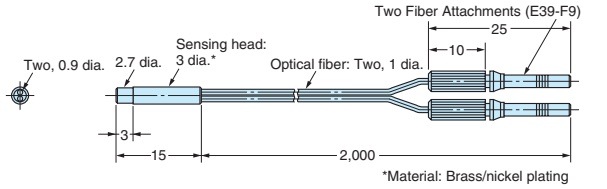
E32-D21L

Free-cut



E32-D22L

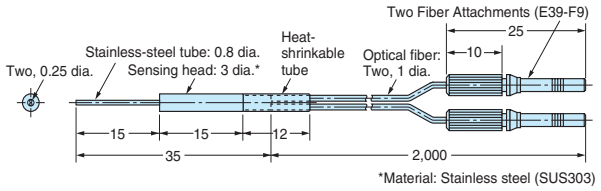
Free-cut



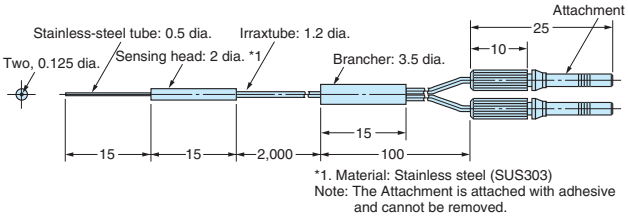
Ultracompact/Thin-sleeve Models

E32-D33

Free-cut



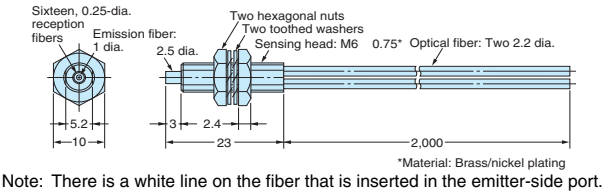
E32-D331



Coaxial/Small-spot Models

E32-CC200
E32-CC200R

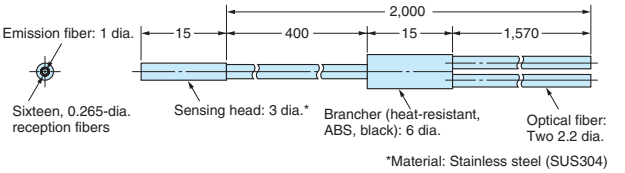
Free-cut



Note: There is a white line on the fiber that is inserted in the emitter-side port.

E32-D32L

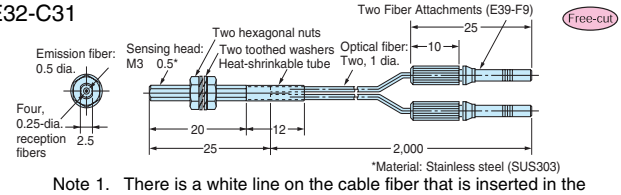
Free-cut



Note: There is a yellow dotted line on the fiber that is inserted in the emitter-side port.

E32-C31

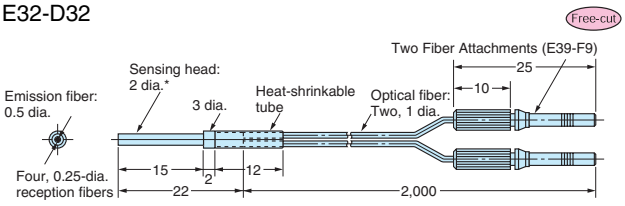
Free-cut



Note 1. There is a white line on the cable fiber that is inserted in the emitter-side port.
2. The core diameter of the sensing head is assumed to lie in the range 2.44 to 2.49 mm.

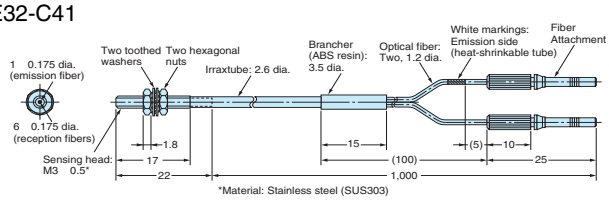
E32-D32

Free-cut



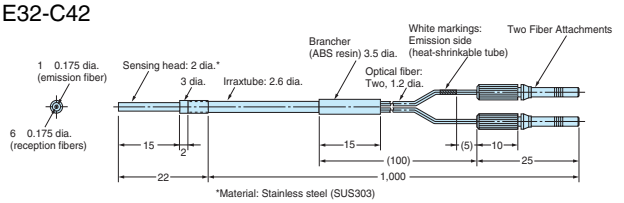
Note: There is a white line on the cable fiber that is inserted in the emitter-side port.

E32-C41



Note: The Fiber Attachment is attached with adhesive and cannot be removed.

E32-C42



Note: The Fiber Attachment is attached with adhesive and cannot be removed.