

Fiber Optics, Plastic Types FUR, FUT

CARLO GAVAZZI



- Inner fiber diameter \varnothing 0.25, 0.5 or 1.0 mm
- Outer fiber diameter \varnothing 2.2, 1.25 mm
- Bending radius 10, 15 or 25 mm
- For use with fiber optic sensor amplifier FA series
- Overmoulding protection for better curvature and protection from breakage of fiber
- High tensile strength of 8 kg ensuring reliability and durability
- 2000 mm fiber length



Over moulding for better curvature protection

Ordering Key

FURC6-20/S10

Fiber unit

Fiber type

- R Reflective
- T Through-beam

Fiber diameter

- O 1.0 mm/ \varnothing 2.2
- C 0.25 mm x 10/0.5 mm x 1
- A 0.25 mm/ \varnothing 1.25
- D 0.5 mm/ \varnothing 1.25
- S 0.5 mm/ \varnothing 2.2

Head diameter

- 6 M6
- 4 M4
- 3 M3

Fiber length 2000 mm

Options

- /E Extended range
- /A Angled
- /S10 Sleeve 10 mm
- /S20 Sleeve 20 mm
- /S40 Sleeve 40 mm
- /S90 Sleeve 90 mm

Note:

1. Not every combination is available.
2. Please see Type Selection section to see availability
3. Sleeve option is not available if you choose extended range (/E) or angled (/A) version

General Specifications

Temperature range

Operating temperature

-55 to +70°C (-67 to +158°F)

Materials

Fiber
Sheath
Detection head

PMMA
PE (polyethylene)
SUS303

Note 3:

FURO6-20/E, FURD4-20/E, FURD3-20/E, FUTO4-20/E, FUTO3-20/E head is made of nickel plated brass

Type Selection

| Reflective types | | | | | | | |
|-----------------------|-------------------------------|----------------------------|------------------|-------------------|------------|--|--|
| Inner diameter | Max. detection distance (mm)* | Smallest detectable object | Min. bend radius | Dimensions (mm)** | Weight (g) | Ordering key | |
| Ø1.0 x 2 | 90 | Ø0.50 | R25 | | 38 | FURO6-20 FURO6-20/S10 FURO6-20/S20 FURO6-20/S40 FURO6-20/S90 | |
| Ø1.0 x 2 | 60 | Ø0.50 | R25 | | 30 | FURO6-20/A | |
| Ø1.0 x 2 | 100 | Ø0.50 | R25 | | 38 | FURO6-20/E*** | |
| Ø1.0 x 1, Ø0.265 x 16 | 90 | Ø0.50 | R25 | | 38 | FURC6-20 FURC6-20/S10 FURC6-20/S20 FURC6-20/S40 FURC6-20/S90 | |
| Ø0.5 x 1, Ø0.25 x 10 | 40 | Ø0.05 | R15 | | 25 | FURC4-20 FURC4-20/S10 FURC4-20/S20 FURC4-20/S40 FURC4-20/S90 | |
| Ø0.5 x 1, Ø0.25 x 10 | 20 | Ø0.05 | R15 | | 30 | FURC4-20/A | |
| Ø0.5 x 1, Ø0.25 x 10 | 40 | Ø0.05 | R15 | | 25 | FURC3-20 FURC3-20/S10 FURC3-20/S20 FURC3-20/S40 FURC3-20/S90 | |
| Ø0.5 x 1, Ø0.25 x 10 | 20 | Ø0.05 | R15 | | 29 | FURC3-20/A | |
| Ø0.5 x 2 | 20 | Ø0.10 | R15 | | 25 | FURD4-20 FURD4-20/S10 FURD4-20/S20 FURD4-20/S40 FURD4-20/S90 | |
| Ø0.5 x 2 | 20 | Ø0.10 | R15 | | 20 | FURD4-20/A | |

*note 1 : Detection distance in the table is based on FA1 amplifier with setting; response time at 5000µS and threshold value at 27 (max setting)
 **note 2 : Dimensional drawing shown here is for the standard version (without sleeve).
 ***note 3 : Head is made of nickel plated brass

Type Selection (cont.)

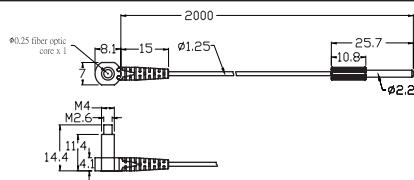
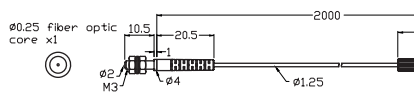
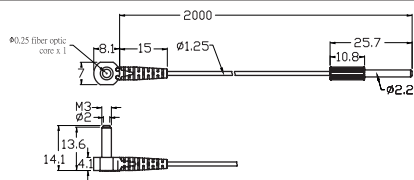
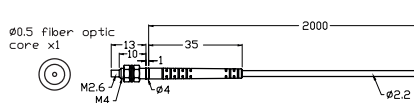
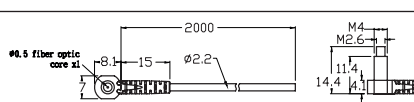
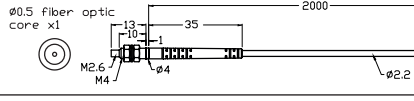
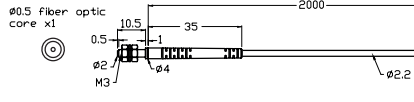
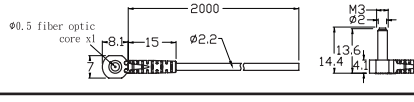
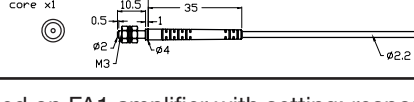
| Reflective types | | | | | | | |
|--------------------|-------------------------------|----------------------------|------------------|-------------------|------------|--|--|
| Inner diameter | Max. detection distance (mm)* | Smallest detectable object | Min. bend radius | Dimensions (mm)** | Weight (g) | Ordering key | |
| Ø0.5 x 2 | 30 | Ø0.10 | R15 | | 25 | FURD4-20/E*** | |
| Ø0.5 x 2 | 20 | Ø0.10 | R15 | | 24 | FURD3-20 FURD3-20/S10 FURD3-20/S20 FURD3-20/S40 FURD3-20/S90 | |
| Ø0.5 x 2 | 20 | Ø0.10 | R15 | | 20 | FURD3-20/A | |
| Ø0.5 x 2 | 30 | Ø0.10 | R15 | | 24 | FURD3-20/E*** | |
| Ø0.25 x 2 | 7 | Ø0.05 | R10 | | 16 | FURA4-20 FURA4-20/S10 FURA4-20/S20 FURA4-20/S40 FURA4-20/S90 | |
| Ø0.25 x 2 | 5 | Ø0.05 | R10 | | 21 | FURA4-20/A | |
| Ø0.25 x 2 | 7 | Ø0.05 | R10 | | 16 | FURA3-20 FURA3-20/S10 FURA3-20/S20 FURA3-20/S40 FURA3-20/S90 | |
| Ø0.25 x 2 | 5 | Ø0.05 | R10 | | 20 | FURA3-20/A | |
| Through-Beam types | | | | | | | |
| Ø1.0 | 440 | Ø0.50 | R25 | | 38 | FUTO4-20 FUTO4-20/S10 FUTO4-20/S20 FUTO4-20/S40 FUTO4-20/S90 | |
| Ø1.0 | 300 | Ø0.50 | R25 | | 28 | FUTO4-20/A | |
| Ø1.0 | 490 | Ø0.50 | R25 | | 38 | FUTO4-20/E*** | |

*note 1 : Detection distance in the table is based on FA1 amplifier with setting; response time at 5000µS and threshold value at 27 (max setting)

**note 2 : Dimensional drawing shown here is for the standard version (without sleeve).

***note 3 : Head is made of nickel plated brass

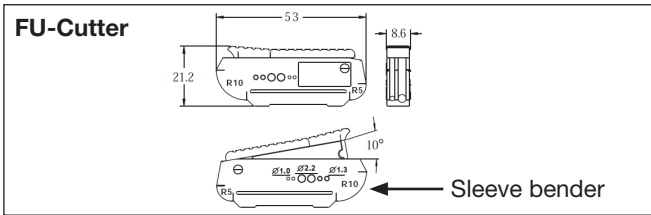
Type Selection (cont.)

| Through-Beam types | | | | | | |
|--------------------|-------------------------------|----------------------------|------------------|--|------------|--|
| Inner diameter | Max. detection distance (mm)* | Smallest detectable object | Min. bend radius | Dimensions (mm)** | Weight (g) | Ordering key |
| Ø0.25 | 20 | Ø0.03 | R10 |  | 25 | FUTA4-20/A |
| Ø0.25 | 30 | Ø0.03 | R10 |  | 20 | FUTA3-20 FUTA3-20/S10 FUTA3-20/S20 FUTA3-20/S40 FUTA3-20/S90 |
| Ø0.25 | 20 | Ø0.03 | R10 |  | 24 | FUTA3-20/A |
| Ø0.5 | 160 | Ø0.05 | R15 |  | 25 | FUTS4-20 FUTS4-20/S10 FUTS4-20/S20 FUTS4-20/S40 FUTS4-20/S90 |
| Ø0.5 | 130 | Ø0.05 | R15 |  | 30 | FUTS4-20/A |
| Ø0.5 | 180 | Ø0.05 | R15 |  | 25 | FUTS4-20/E |
| Ø0.5 | 160 | Ø0.05 | R15 |  | 25 | FUTS3-20 FUTS3-20/S10 FUTS3-20/S20 FUTS3-20/S40 FUTS3-20/S90 |
| Ø0.5 | 130 | Ø0.05 | R15 |  | 29 | FUTS3-20/A |
| Ø0.5 | 180 | Ø0.05 | R15 |  | 25 | FUTS3-20/E |

*note 1 : Detection distance in the table is based on FA1 amplifier with setting; response time at 5000µS and threshold value at 27 (max setting)

**note 2 : Dimensional drawing shown here is for the standard version (without sleeve).

Accessories



- 1) Cutter is not included. Sold separately.
- 2) FU-Cutter can also be used as a fiber-unit sleeve bender.

| Lenses | | | | | |
|--------------|---------------------------------|--|--|-----------------|---|
| Part No | Description | Usage | | Dimensions (mm) | Suitable to be used with |
| FUT-M4LENS | Through-beam M4 fiber lens | Attaching this lens to the transmitter fiber and to the receiver fiber will increase the scanning distance 4 times. | | | FUTO4-20 FUTO4-20/A FUTO4-20/E FUTD4-20 FUTD4-20A FUTD4-20/E FUTA4-20/A FUTA4-20 FUTS4-20 FUTS4-20/A FUTS4-20/E |
| FUT-M4SLENS | Through-beam M4 fiber side lens | The axial fiber unit can be changed to a radial type by attaching this unit to the light emitter or receiver of the fiber unit | | | FUTO4-20 FUTO4-20/A FUTO4-20/E FUTD4-20 FUTD4-20A FUTD4-20/E FUTA4-20/A FUTA4-20 FUTS4-20 FUTS4-20/A FUTS4-20/E |
| FUR-M3LENS-2 | Reflective M3 fiber lens | The light signal will converge into a 0.5 mm dia. spot, provided the lens is attached to the fiber at a distance of 8 mm. | | | FURC3-20 FURC3-20/A FURA3-20 FURA3-20/A FURD3-20 FURD3-20/A FURD3-20/E |
| FUR-M3LENS-1 | Reflective M3 fiber lens | The light signal will converge into a 2 mm dia. spot, provided the lens is attached to the fiber at a distance of 8 mm. | | | FURC3-20 FURC3-20/A FURA3-20 FURA3-20/A FURD3-20 FURD3-20/A FURD3-20/E |
| FUR-M4LENS | Reflective M4 fiber lens | The light signal will converge into a 0.7 mm dia. spot, provided the lens is attached to the fiber at a distance of 10 mm. | | | FURD4-20 FURD4-20/A FURD4-20/E FURA4-20/A FURA4-20 |

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