

# Through-beam Type Fiber Optic Units








## FT/GT Series






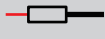




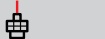






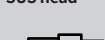





**For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.**

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Icon Overview

-  **Std.** Standard:  
Fiber optic units for general purpose
-  **Heat-resistant:**  
Fiber optic units for the high-temperature environment (-60 to 350°C)
-  **Vacuum-resistant:**  
Fiber optic units for the high-temperature (-60 to 250°C) and vacuum environment
-  **Bending-resistant (R5):**  
Fiber optic units for withstanding repeated bending
-  **Flexible (R1, R2):**  
Fiber optic units for withstanding repeated flexing

### Line Up

	Standard	Heat-resistant	Vacuum-resistant	Bending-resistant	Flexible
<b>Threaded head</b> 	Std.				
<b>Cylindrical head</b> 	Std.				
<b>Flat head</b> 					
<b>L-shaped head</b> 	Std.				
<b>Molded plastic head</b> 	Std.				
<b>Perpendicular head</b> 					
<b>SUS head</b> 	Std.				
<b>U-shaped head</b> 					
<b>Wide area head</b> 					

### Selection Guide

- The model starts with F is plastic, G is glass optical fibers. Glass fibers are for BF5 and BF4 series.
- Be sure to use the vacuum-resistant fiber mounting with the fiber optic coupler and the atmospheric side fiber (sold separately).
- The testing environments for sensing distance vary depending on the amplifiers.

Amplifier	Testing environment
<b>BF5</b>	Red LED, Standard (STD) mode, Non-glossy white paper
<b>BF4</b>	Red LED, Maximum sensitivity, Non-glossy white paper Green LED has 10% of sensing distance compare to the Red LED. In case of BF3, apply 40% of sensing distance.

- The minimum detectable target came out with the maximum sensitivity of the BF4 series.
- For the detailed drawings and dimensions, follow the Autonics website.
- Be sure to use offered fiber cutter (FC-3) for FREE CUT models.
- Be sure to connect offered fiber optic adaptor for Adaptor models.
- The installation of the fiber optic unit may vary depending on the fiber optic amplifier. See the manual of the amplifier that you are using.

## Through-beam Type: Threaded head

### Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT/ Adaptor
FT-310-05	R15	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT/ Adaptor
FT-320-05	R15	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT/ Adaptor
FT-420-10	R30	-40 to 70 °C	500 mm (BF4)	Ø 1 mm		FREE CUT

### Heat-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT/ Adaptor
FT-420-10H	R30	-40 to 105 °C	300 mm (BF4)	Ø 1 mm		FREE CUT
FT-420-15H1	R50	-40 to 150 °C	500 mm (BF4)	Ø 1 mm		FREE CUT
GT-420-13H2	R25	-40 to 250 °C	400 mm (BF4)	Ø 1 mm		—

### Vacuum-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT/ Adaptor
GT-410-12V2	R25	-60 to 250 °C	420 mm <sup>01)</sup> (BF5) 340 mm <sup>02)</sup> (BF5)	Ø 0.15 mm Ø 0.2 mm		—

01) Equipped with the atmospheric-side fiber optic unit (FU-VA01)

02) Equipped with the atmospheric-side fiber optic unit (FU-VA02)

## Through-beam Type: Threaded head

### ■ Bending-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FT-320-06B	R5	-40 to 60 °C	110 mm (BF5)	Ø 0.3 mm		FREE CUT
FT-420-13B	R5	-40 to 60 °C	400 mm (BF5)	Ø 0.6 mm		FREE CUT

### ■ Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FT-320-05R	R1	-40 to 60 °C	110 mm (BF5)	Ø 0.3 mm		FREE CUT / Adaptor
FT-420-10R	R1	-40 to 60 °C	500 mm (BF5)	Ø 0.5 mm		FREE CUT

## Through-beam Type: Cylindrical head

### ■ Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTC-1520-05	R15	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT/ Adaptor
FTC-220-05	R15	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT/ Adaptor
FTC-320-10	R30	-40 to 70 °C	150 mm (BF4)	Ø 1 mm		FREE CUT

### ■ Bending-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTC-1520-06B	R5	-40 to 60 °C	110 mm (BF4)	Ø 0.3 mm		FREE CUT

### ■ Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTC-220-05R	R1	-40 to 60 °C	110 mm (BF5)	Ø 0.3 mm		FREE CUT/ Adaptor

# Through-beam Type: Flat head

## Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTF-210-05R	R1	-40 to 60 °C	100 mm (BF5)	Ø 0.04 mm	<p>• Hood material: SUS303, flat view</p>	FREE CUT / Adaptor
FTFB-210-05R	R1	-40 to 60 °C	110 mm (BF5)	Ø 0.04 mm	<p>• Hood material: AL, side view + top view (Bending)</p>	FREE CUT / Adaptor
FTFN-210-05R	R1	-40 to 60 °C	110 mm (BF5)	Ø 0.04 mm	<p>• Hood material: SUS303, side view</p>	FREE CUT / Adaptor
FTFU-210-05R	R1	-40 to 60 °C	110 mm (BF5)	Ø 0.04 mm	<p>• Hood material: SUS303, top view</p>	FREE CUT / Adaptor
FTLU-310-10R	R1	-40 to 60 °C	500 mm (BF5)	Ø 0.06 mm	<p>• Hood material: AL, top view</p>	FREE CUT
FTLU1-310-10R	R1	-40 to 60 °C	500 mm (BF5)	Ø 0.06 mm	<p>• Hood material: AL, top view</p>	FREE CUT
FTLU2-310-10R	R1	-40 to 60 °C	500 mm (BF5)	Ø 0.06 mm	<p>• Hood material: AL, top view</p>	FREE CUT

## Through-beam Type: L-shaped head

### ■ Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTL-420-10	R20	-30 to 70 °C	710 mm (BF5)	Ø 0.1 mm		FREE CUT

### ■ Heat-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
GTL-420-12H2	R25	-60 to 250 °C	670 mm (BF5)	Ø 0.08 mm		—
GTL-420-12H3	R25	-60 to 350 °C	680 mm (BF5)	Ø 0.08 mm		—

### ■ Vacuum-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
GTL-410-12V2	R25	-60 to 250 °C	420 mm <sup>01)</sup> (BF5) 340 mm <sup>02)</sup> (BF5)	Ø 0.1 mm		—

01) Equipped with the atmospheric-side fiber optic unit (FU-VA01)  
 02) Equipped with the atmospheric-side fiber optic unit (FU-VA02)

## Through-beam Type: Molded plastic head

### ■ Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTP-320-10	R30	-40 to 70 °C	500 mm (BF4)	Ø 1 mm		FREE CUT

## Through-beam Type: Perpendicular head

### ■ Heat-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
GTR-420-12H2	R25	-60 to 250 °C	650 mm (BF5)	Ø 0.08 mm		—
GTR-420-12H3	R25	-60 to 350 °C	630 mm (BF5)	Ø 0.08 mm		—

### ■ Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTR-410-10R	R1	-40 to 60 °C	460 mm (BF5)	Ø 0.5 mm	<p>• Hood material: SUS303</p>	FREE CUT



## Through-beam Type: SUS head

### ■ Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTS-320-05	R15 (SUS part R10)	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT / Adaptor
FTS1-320-05	R15 (SUS part R10)	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT / Adaptor
FTS2-320-05	R15 (SUS part R10)	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT / Adaptor
FTS-420-10	R30 (SUS part R10)	-40 to 70 °C	500 mm (BF4)	Ø 1 mm		FREE CUT
FTS2-420-10	R30 (SUS part R10)	-40 to 70 °C	500 mm (BF4)	Ø 1 mm		FREE CUT
FTCS-220-05	R15 (SUS part R10)	-40 to 70 °C	150 mm (BF4)	Ø 0.5 mm		FREE CUT / Adaptor
FTCSN-2520-05	R15	-40 to 60 °C	120 mm (BF5)	Ø 0.0125 mm	• Side view 	—

## Through-beam Type: U-shaped head

### ■ Heat-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
GTU3-320-H2	R25	-60 to 250 °C	20 mm (BF5)	Ø 2.5 mm		—

## Through-beam Type: Wide area head

### ■ Bending-resistant

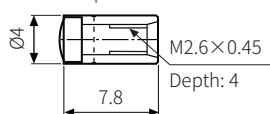
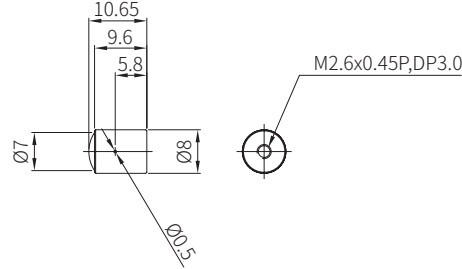
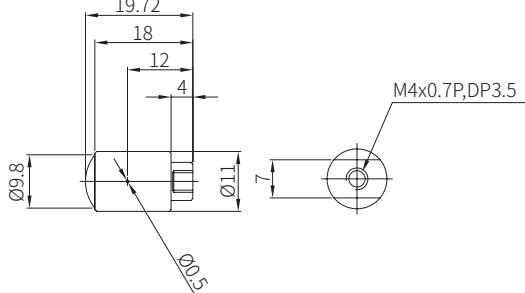
Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTW5-320-02B	R5	-30 to 70 °C	730 mm (BF5)	Ø 0.8 mm		FREE CUT

### ■ Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FTW11-210-10R	R2	-40 to 60 °C	1,400 mm (BF5)	Ø 0.07 mm		FREE CUT

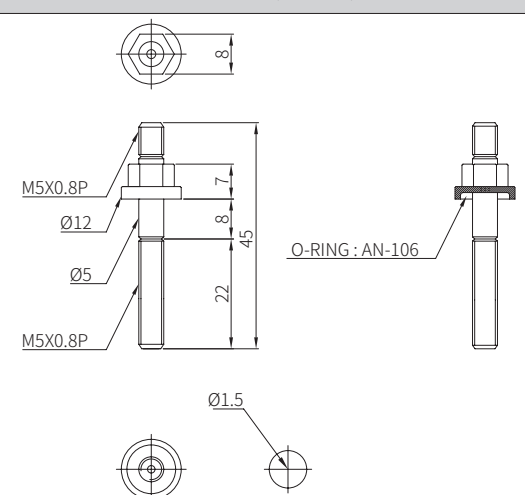
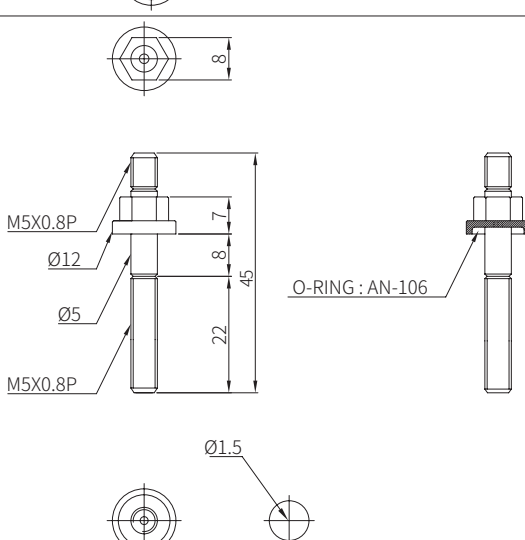
## Sold Separately

### ■ Lens unit for long distance detection

Model	Ambient temperature	Magnification <sup>01)</sup>	Dimensions (unit: mm)
FTL-M26	-40 to 100 °C	×5	<p>• Mount the lens unit on the 3 mm of sensor tip at the front hood.</p> 
FTL-M26V3	-60 to 350 °C	×10	
FTL-M4V3	-60 to 350 °C	×15	

01) The sensing distance may vary depending on the detection environment.

### ■ Fiber optic coupler (vacuum fiber optics component)

Model	Ambient temperature	Dimensions (unit: mm)
FU-VC01	-60 to 200 °C	
FU-VC02	-60 to 300 °C	

## Sold Separately

### ■ Atmospheric-side fiber optic units

Model	Bend radius	Ambient temperature	Dimensions (unit: mm)	FREE CUT
FU-VA01	R30	-30 to 70 °C		FREE CUT
FU-VA02	R20	-30 to 70 °C		FREE CUT

### ■ Protection tube for cable

Model	Dimensions (unit: mm)
FTH-305	
FTH-310	
FTH-405	
FTH-410	
FDH-605	
FDH-610	

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