

# Convergent Reflective Type Fiber Optic Units







## FL/GL 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 250°C)
-  **Vacuum-resistant:**  
Fiber optic units for the high-temperature (-60 to 350°C) and vacuum environment
-  **Flexible (R1, R2):**  
Fiber optic units for withstanding repeated flexing

### Line Up

	Standard	Heat-resistant	Vacuum-resistant	Flexible
Flat head (flat view) 	<b>Std.</b>			
Flat head (top view) 	<b>Std.</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

- 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.

## Convergent Reflective Type: Flat head (flat view)

### Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FLF-320-05	R15	-30 to 70 °C	8 mm (BF5)	Ø 0.1 mm		FREE CUT / Adaptor
FLF-320-10	R25	-40 to 60 °C	8 mm (BF5)	Ø 0.0125 mm		—
FLF-320-10A	R20	-30 to 70 °C	100 mm (BF5)	Ø 0.08 mm		FREE CUT / Adaptor

### Heat-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FLF-320-10H	R25	-40 to 105 °C	130 mm (BF5)	Ø 0.08 mm		FREE CUT
GLF-320-12H2L	R25	-60 to 250 °C	120 mm (BF5)	Ø 0.6 mm		—

## Convergent Reflective Type: Flat head (flat view)

### ■ Vacuum-resistant

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit:mm)	FREE CUT / Adaptor
FLF-310-10V	R25	-30 to 105 °C	70 mm <sup>01)</sup> (BF5)	Ø 3.4 mm		FREE CUT
			60 mm <sup>02)</sup> (BF5)	Ø 3.9 mm		
GLF-310-12V2	R25	-60 to 250 °C	80 mm <sup>01)</sup> (BF5)	Ø 1.8 mm		-
			60 mm <sup>02)</sup> (BF5)	Ø 2 mm		
GLF-310-12V2L	R25	-60 to 250 °C	80 mm <sup>01)</sup> (BF5)	Ø 0.6 mm		-
			60 mm <sup>02)</sup> (BF5)	Ø 2 mm		
GLF-310-12V3L	R25	-60 to 350 °C	80 mm <sup>01)</sup> (BF5)	Ø 0.6 mm		-
			60 mm <sup>02)</sup> (BF5)	Ø 1.5 mm		

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

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

### ■ Flexible

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FLF-320-05R	R1	-30 to 70 °C	7 mm (BF5)	Ø 0.08 mm		FREE CUT / Adaptor

## Convergent Reflective Type: Flat head (top view)

### ■ Standard

Model	Bend radius	Ambient temperature	Sensing distance (Testing amplifier)	Min. target size	Dimensions (unit: mm)	FREE CUT / Adaptor
FLFU-320-10WP <sup>01)</sup>	R20	-30 to 70 °C	80 mm (BF5)	Ø 0.08 mm	<p>Technical drawing showing dimensions (unit: mm):</p> <ul style="list-style-type: none"> <li>10, 6, 2000 (Total length)</li> <li>16.1 (Distance from tip to center of flat head)</li> <li>2-Ø3.2 (FLAT HEAD)</li> <li>2-Ø2.2</li> <li>2.04 (Diameter)</li> <li>6 (Length of cylindrical part)</li> <li>OPTICAL AXIS</li> </ul>	FREE CUT

01) This model supports water resistance.

**Sold Separately**

■ **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	

■ **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

## Sold Separately

### ■ Protection tube for cable

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

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