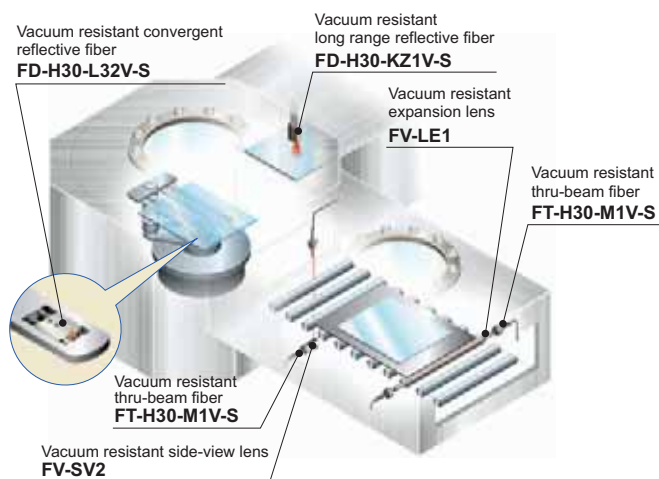


Vacuum-resistant

- Usable in high-temperatures of 300 °C 572 °F vacuum
- The leakage of **FV-BR1** is still less than a very slight $1.33 \times 10^{-10} \text{ Pa} \cdot \text{m}^3/\text{s}$ [He], so that it can be used in vacuums with confidence.

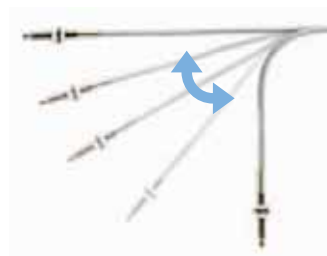
Applications

Detection of glass substrate in vacuum chamber



Highly resistant to repeated bending

Because it has a bending durability of over 100,000 times (R20 mm R0.79 in), it is highly resistant to repeated bending and is optimal for mounting on moving robot hand.



Thru-beam type (one pair set)

Type	Shape of fiber head (mm)	Model No.	Bending radius (mm)	Fiber cable length ✂: Free-cut	Sensing range (mm in)			Beam axis dia. (mm)	Ambient temp.
					FX-500 series	U-LG LONG FAST H-SP	FX-101 (Upper value) FX-102 (Lower value)		
Vacuum-resistant Thru-beam	300 °C Lens mountable (FV-LE1/SV2) M4 30	FT-H30-M1V-S (Note)	R18	1 m	STD 270 10.630 HYPR 1,000 39.370	590 23.228 470 18.504 160 6.299 55 2.165	110 4.331 280 11.024	ø1.2	-30 to +300 °C

Note: Sold as a set comprising vacuum type fiber + photo-terminal (**FV-BR1**) + fiber at atmospheric side (**FT-J8**).

Reflective type

Type	Shape of fiber head (mm)	Model No.	Bending radius (mm)	Fiber cable length ✂: Free-cut	Sensing range (mm in)(Note 2)			Ambient temp.
					FX-500 series	U-LG LONG FAST H-SP	FX-101 (Upper value) FX-102 (Lower value)	
Vacuum-resistant Reflective	300 °C, Rectangular head W9.5 × H5.2 × D15	FD-H30-KZ1V-S (Note 1)	R18	1 m	STD 20 to 200 0.787 to 7.874 HYPR 5 to 500 0.197 to 19.685	10 to 340 0.394 to 13.386 15 to 270 0.591 to 10.630 20 to 120 0.787 to 4.724 20 to 45 0.787 to 1.772	25 to 80 0.984 to 3.150 10 to 220 0.394 to 8.661	-30 to +300 °C
Vacuum-resistant Convergent reflective	300 °C, Glass substrate detection W19 × H5 × D27	FD-H30-L32V-S (Note 1)		3 m	STD 8 0.315 HYPR 18 0.709	12 0.472 10 0.394 5.5 0.217 1.5 to 3 0.059 to 0.118	2.5 to 6.5 0.098 to 0.256 0 to 11 0 to 0.433	

Notes: 1) Sold as a set comprising vacuum type fiber + photo-terminal (**FV-BR1**) + fiber at atmospheric side (**FT-J8**).

2) The sensing range of reflective type is the value for transparent glass 100 × 100 × t0.7 mm 3.937 × 3.937 × t0.028 in.