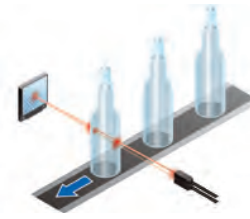


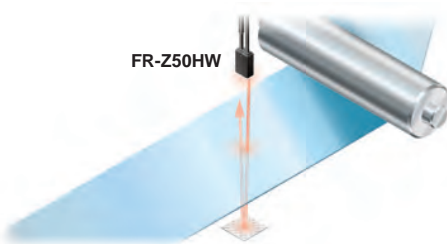
Retroreflective Type

Compared with the thru-beam type, it is easier to arrange the fibers since one side is a reflector. Sensing transparent objects is also its advantage.

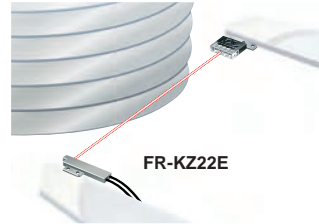


Applications

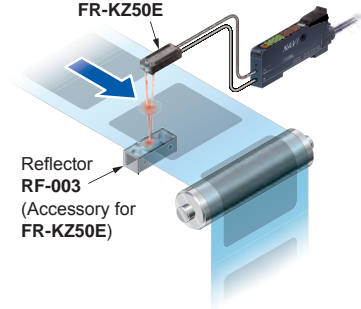
Detecting transparent film



Detecting wafers



Detecting transparent seals on transparent sheet



LIST OF FIBERS

Retroreflective type

| Type | Shape of fiber head (mm) | Model No. | Bending radius (mm) | Fiber cable length Free-cut | Sensing range (mm in) (Note 1, 2) | | | Protection | Ambient temp. | Dimensions |
|-------------------------|--|-------------------|---------------------|--------------------------------|-----------------------------------|------------------------------|--|------------|---------------|------------|
| | | | | | FX-500 series | U-LG LONG FAST H-SP | FX-101 (Upper value) FX-102 (Lower value) | | | |
| With polarizing filters | W5.2 x H9.5 x D16 W30 x H30 x D0.5 | FR-Z50HW | R1 | Free-cut | STD | 100 to 1,400 3.937 to 55.118 | 100 to 550 | IP40 | -25 to +55 °C | |
| | | | | | HYPR | 100 to 990 3.937 to 38.976 | 100 to 830 | | | |
| Wafer mapping | W7.5 x H2.2 x D11.2 W4 x H2 x D21.5 | Tough FR-KZ22E | R2 | 2 m | STD | 15 to 460 0.591 to 18.110 | 15 to 200 | IP30 | -40 to +60 °C | P.55 |
| | | | | | HYPR | 15 to 310 0.591 to 12.205 | 15 to 360 | | | |
| Narrow beam | W5.2 x H9.5 x D21 W10.6 x H28 x D10.1 | Tough FR-KZ50H | Bending durability | Free-cut | STD | 20 to 800 0.787 to 31.496 | 20 to 200 | IP30 | -40 to +60 °C | |
| | | | | | HYPR | 20 to 300 0.787 to 11.811 | 20 to 350 | | | |
| Side sensing | W9.5 x H25 x D5.2 W28 x H10.6 x D10.1 | Tough FR-KZ50E | | | HYPR | 20 to 1,000 0.787 to 39.370 | 20 to 200 | | | |

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The sensing range is the possible setting range for the attached reflector. The fiber can detect an object less than setting range for the reflector.

Sensing range when FR-Z50HW is used in combination with a reflector (optional)

| Reflector model No. | Sensing range (mm in) | | | | | | | FX-101 | FX-102 |
|---------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|--------|
| | HYPR | U-LG | LONG | STD | FAST | H-SP | FX-500 series | | |
| RF-230 | 100 to 19,000 3.937 to 748.030 | 100 to 8,000 3.937 to 314.960 | 100 to 5,000 3.937 to 196.850 | 100 to 3,600 3.937 to 141.732 | 100 to 2,900 3.937 to 114.173 | 100 to 1,400 3.937 to 55.118 | 100 to 2,400 3.937 to 94.488 | 100 to 5,000 3.937 to 196.850 | |
| RF-220 | 100 to 8,000 3.937 to 314.960 | 100 to 4,700 3.937 to 185.039 | 100 to 3,500 3.937 to 137.795 | 100 to 3,000 3.937 to 118.110 | 100 to 1,800 3.937 to 70.866 | 100 to 830 3.937 to 32.677 | 100 to 1,300 3.937 to 51.181 | 100 to 2,600 3.937 to 102.362 | |
| RF-210 | 100 to 5,500 3.937 to 216.535 | 100 to 2,700 3.937 to 106.299 | 100 to 2,400 3.937 to 94.488 | 100 to 1,500 3.937 to 59.055 | 100 to 1,200 3.937 to 47.244 | 100 to 530 3.937 to 20.866 | 100 to 980 3.937 to 38.583 | 100 to 1,300 3.937 to 51.181 | |

Note: The sensing range of retroreflective type is the possible setting range for the attached reflector. The fiber can detect an object less than 100 mm 3.937 in. However, note that if there are any white or highly-reflective surfaces near the fiber head, reflected incident light may affect the fiber head. If this occurs, adjust the threshold value of the amplifier unit before use.

FIBER OPTION

Reflectors (for FR-Z50HW) ▶ P.45



Tough : Refers to a fiber which possesses both unbreakable (bending radius: R10 mm R0.394 in, reciprocating bending: 180°) and more flexible (bending radius: R4 mm R0.157 in or less) features.

New product introduction
Tough Fiber

Fiber Selection Guide
Model
Choose by shape/application
How to read Model No.
Earlier models comparison table

Fibers
Super Quality
Threaded Type
Square Head Type
Cylindrical Type
Sleeve
Flat Type
Small Spot
Narrow Beam
Wide Beam
Convergent Reflective Type
Retroreflective Type
Chemical / Oil-resistant
Heat-resistant
Vacuum-resistant
Liquid Leak / Liquid Detection

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