

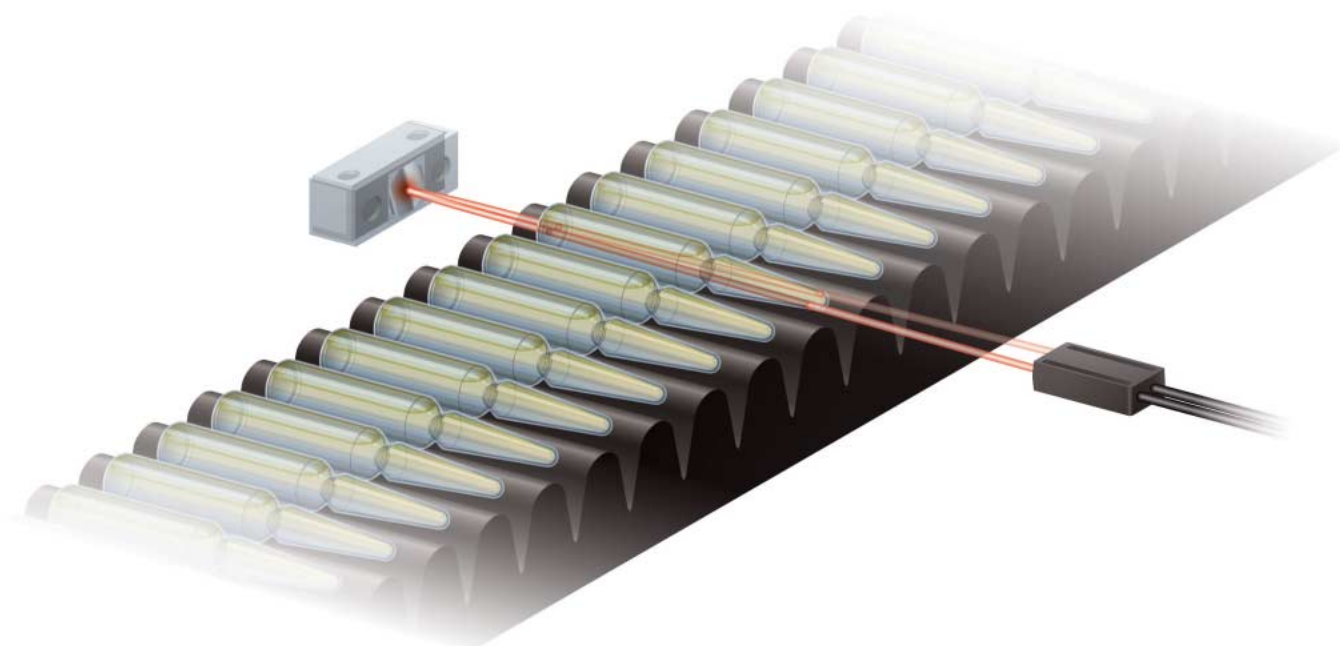
# NARROW BEAM RETROREFLECTIVE TYPE FIBER

New

# FR-KZ21/KZ21E

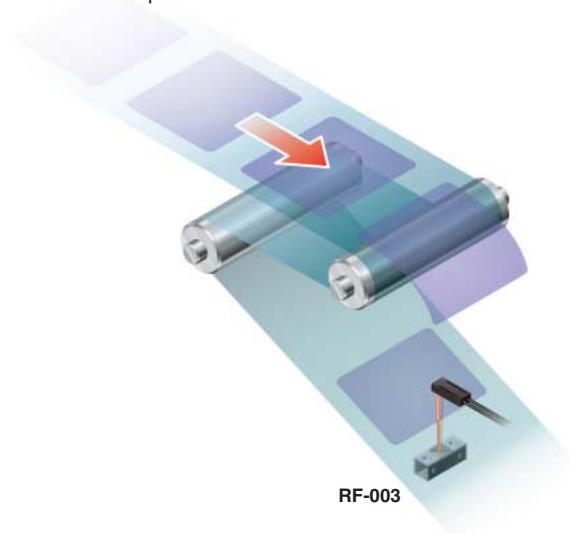
## Ideal for sensing transparent objects!

Stable sensing of transparent objects such as transparent sheets on transparent mounts and transparent tubes



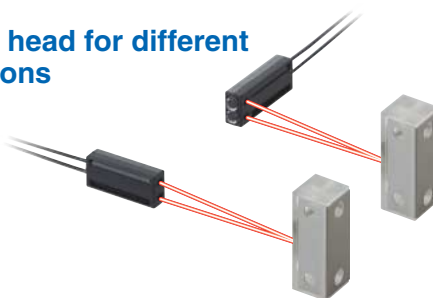
### Stable sensing of transparent objects is possible

A unique optical system gives excellent performance in sensing transparent objects at close ranges. Uses an exclusive reflector (RF-003) for stable sensing of transparent objects such as transparent sheets on transparent mounts and transparent tubes.



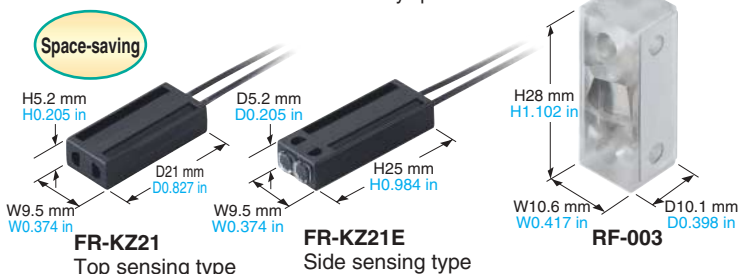
### Two types of fiber head for different installation directions

Two types of fiber head are available: a Top sensing type (FR-KZ21) and a Side sensing type (FR-KZ21E). Whichever type best suits the installation conditions can be selected.



### Ultra-compact fiber head & compact reflector

The fiber head size is ultra compact at W9.5×H5.2×D21 mm W0.374×H0.205×D0.827 in (Side sensing type: W9.5×H25×D5.2 mm W0.374×H0.984×D0.205 in). The reflector is also a compact W10.6×H28×D10.1 mm W0.417×H1.102×D0.398 in so that it very space efficient.



## SPECIFICATIONS

Type	Top sensing type	Side sensing type
Item	Model No.	Model No.
	<b>FR-KZ21</b>	<b>FR-KZ21E</b>
Applicable amplifiers (Note 1)	<b>FX-301/305/311/411</b>	
Sensing range (RF-003)	200 mm <b>7.874 in</b> (FX-301/305/311/411)(Note 2)	
Allowable bending radius	R10 mm <b>R0.394 in</b> or more	
Fiber cable length	2 m <b>6.562 ft</b> free cut	
Ambient temperature	-40 to +60 °C <b>-40 to +140 °F</b> , Strage: -40 to +60 °C -40 to +140 °F (No dew condensation or icing allowed)	
Ambient humidity	35 to 85 %RH, Strage: 35 to 85 %RH	
Material	Fiber cable	Fiber core: Acrylic, Sheath: Polyethylene
	Fiber head	Enclosure: ABS, Prism: Acrylic
	Reflector	Reflector: Norbornene resin Mounting bracket: Stainless steel (SUS)
Weight	Net weight: 4.4 g approx., Gross weight: 54 g approx. Net weight: 4.7 g approx., Gross weight: 54 g approx.	
Accessories	FX-AT4 (Fiber attachment for $\phi$ 1 mm $\phi$ 0.039 in fiber): 1 set FX-CT2 (Fiber cutter): 1 pc. MS-FD-2 (Fiber mounting bracket): 1 pc., RF-003 (Reflector): 1 pc.	

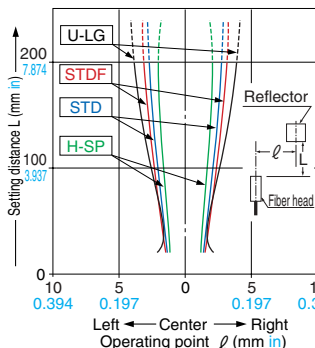
Notes: 1) Refer to the sensor general catalog 2003-2004, catalog of each amplifier or SUNX website (<http://www.sunx.co.jp>) for details about the applicable amplifier.  
2) The 'sensing range' means the possible setting range for the reflector. The fiber can detect an object less than 20 mm **0.787 in** away. However, if setting the fiber to detect objects passing within 0 to 20 mm **0 to 0.787 in** from the fiber head, unstable detection may result.

## SENSING CHARACTERISTICS (TYPICAL)

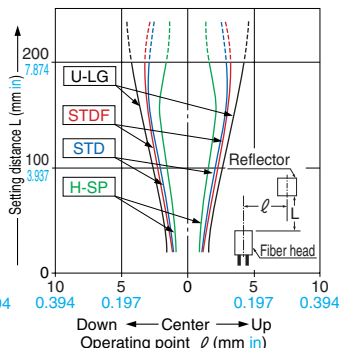
### FR-KZ21

#### Parallel deviation

##### • Horizontal direction



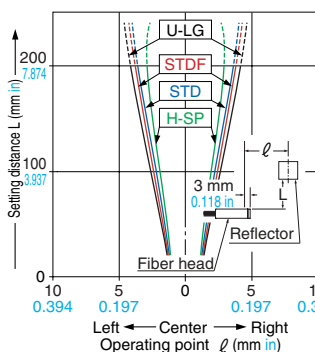
##### • Vertical direction



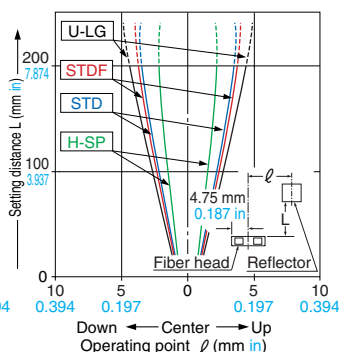
### FR-KZ21E

#### Parallel deviation

##### • Horizontal direction



##### • Vertical direction



All information is subject to change without prior notice.

## PRECAUTIONS FOR PROPOSER USE



- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet regulations and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

## Mounting

### If not using the attached mounting bracket

- If not using the attached mounting bracket, mount using set screws (cup point, M3 or less). In such cases, use a tightening torque of 0.1 N.m or less.

### If using the attached mounting bracket

- Even if not using together with set screws, the fiber head can still be secured. In such cases, use a tightening torque of 0.3 N.m or less.
- Note that if using together with set screws, the mounting brackets may become bent if excessive tightening torque is used. In such cases, use a tightening torque of 0.05 N.m or less.

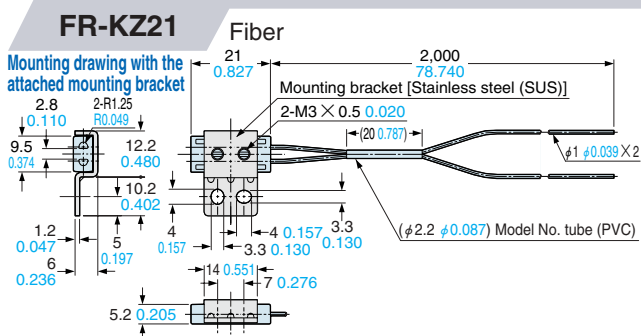
## Caution

- This product has an extremely narrow opening, and it may not receive light under certain setup conditions. Take careful note of any beam axis offset and tilt to ensure that the center of the fiber head is aligned with the center of the reflector.

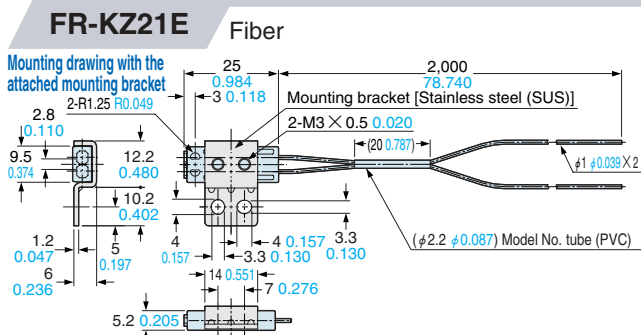
## DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from the SUNX website: <http://www.sunx.co.jp/>

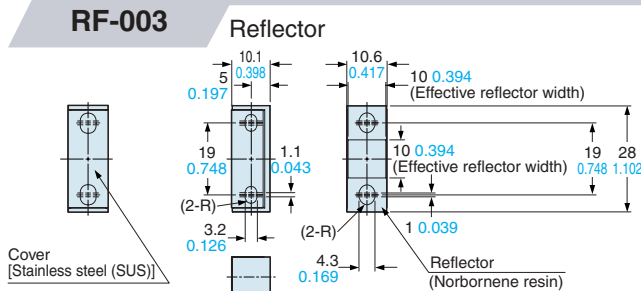
### FR-KZ21



### FR-KZ21E



### RF-003



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