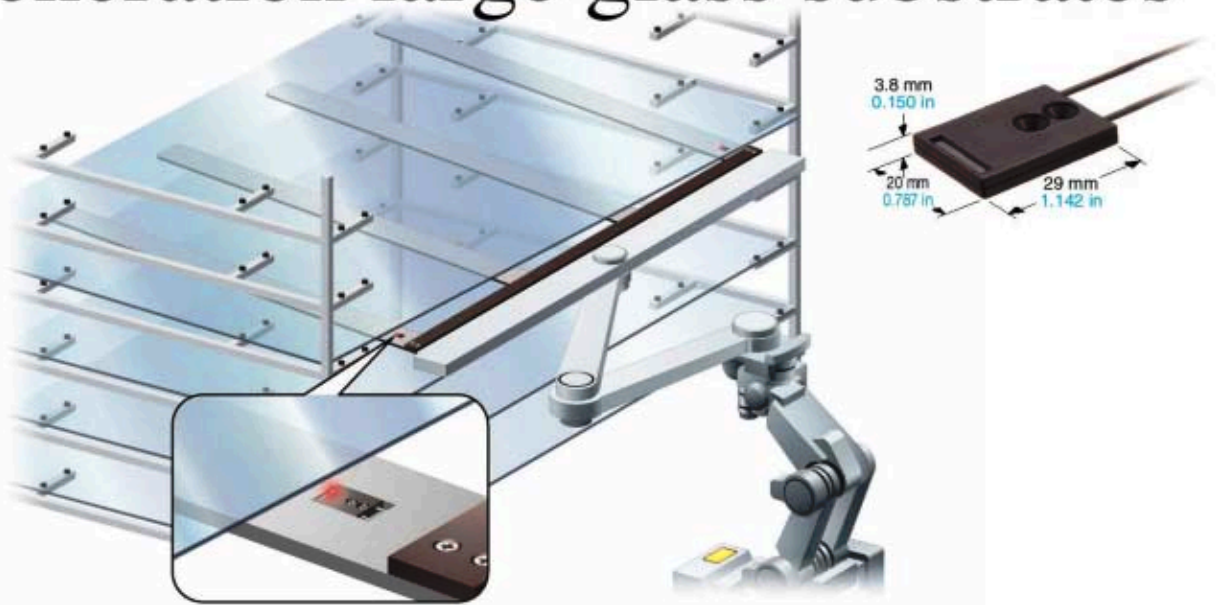


**New**

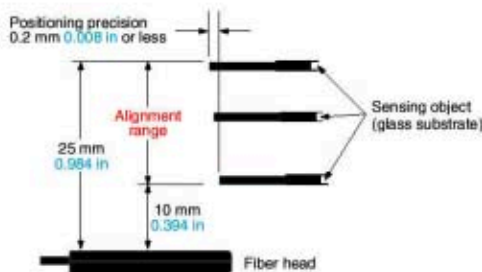
# FD-L45

## Ideal for 6th and beyond generation large glass substrates



### Alignment at an even longer range made possible

This fiber has a sensing range of 0 to 30 mm 0 to 1.181 in and an alignment range of 10 to 25 mm 0.394 to 0.984 in. This wide range of alignment makes it perfect for large glass substrates. (FAST mode)

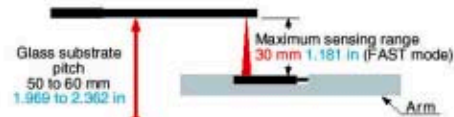


A long sensing range = more leeway in the alignment range

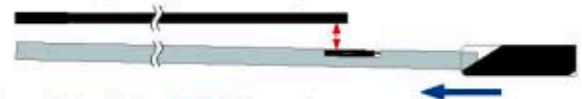
### Ideal for the increasing size of glass substrates

This fiber is perfect for enlarged processing lines constructed to handle the recent increase in the scale of glass substrates.

- Sensing possible even if the pitch between glass substrates is wide.



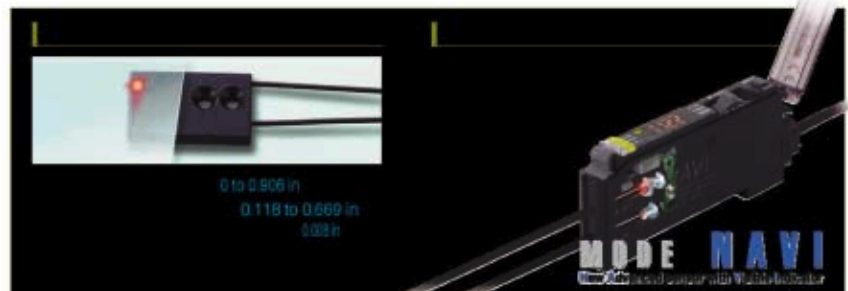
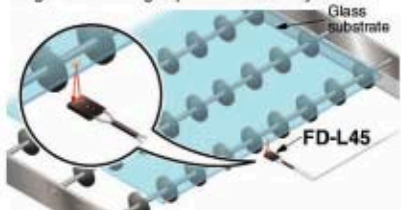
- Extended sensing range handy for when large-scale robot arms bend increasing the distance of the object from the fiber.



- Fiber cable length 3 m 9.843 ft (Free-cut)  
Designed for mounting on large-scale robots
- Alignment possible in FAST mode (150 μs)  
Throughput is improved thanks to its quick startup.

### Other application

Accurate sensing can also be performed at a long range for checking objects on a conveyor.



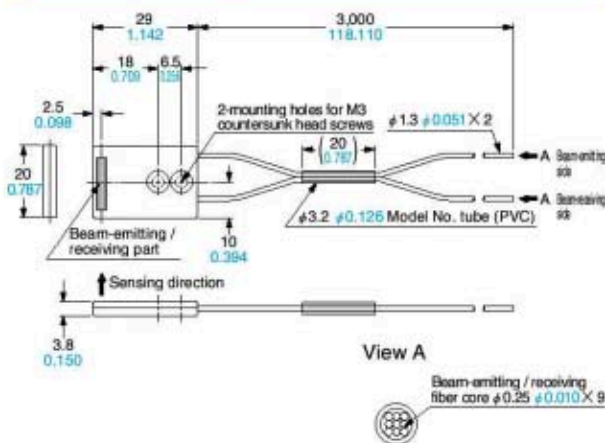
## SPECIFICATIONS

Type	Fixed-focus reflective	
Item	Model No.	FD-L45
Applicable amplifiers (Note 1)	FX-301(P), FX-311(P)	
Sensing range (Note 2)	LONG	0 to 36 mm 0 to 1.417 in
	STD	0 to 30 mm 0 to 1.181 in
	FAST (Note 3)	0 to 30 mm 0 to 1.181 in
	S-D	0 to 21 mm 0 to 0.827 in
Sensing object	LCD glass	
Angular deviation (Note 2)	Right and left side inclination of the sensing object: $\pm 6^\circ$ (at sensing range 10 to 25 mm 0.394 to 0.984 in)	
Position sensing accuracy (Note 2)	0.2 mm 0.008 in or less (at sensing range 10 to 25 mm 0.394 to 0.984 in)	
Allowable bending radius	R4 mm R0.157 in or more	
Fiber cable length	3 m 9.843 ft free out	
Bending durability	100,000 times or more (at R4 mm R0.157 in)	
Ambient temperature	0 to +70 °C +32 to +158 °F (No dew condensation or icing allowed), Storage: 0 to +70 °C +32 to +158 °F	
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH	
Material	Fiber cable	Fiber core: Acrylic, Sheath: Polyethylene
	Fiber head	Case: Heat-resistant ABS, Lens: Acrylic
Accessories	FX-AT5 (Attachment for $\phi 1.3$ mm $\phi 0.051$ in fiber): 1 set FX-CT2 (Fiber cutter): 1 pc.	

- Notes: 1) Refer to the sensor general catalog 2003-2004, catalog of each amplifier (FX-301/311 series) or SUNX website (<http://www.sunx.co.jp/>) for details about the applicable amplifier.
- 2) The sensing range, the angular deviation and the position sensing accuracy are specified for glass substrate (100 × 100 × t 0.7 mm  $3.937 \times 3.937 \times t$  0.028 in) as the object. Furthermore, the angular deviation and position sensing accuracy are the values for FAST mode.
- 3) FX-311(P) does not have a FAST mode.

## DIMENSIONS (Unit : mm in)

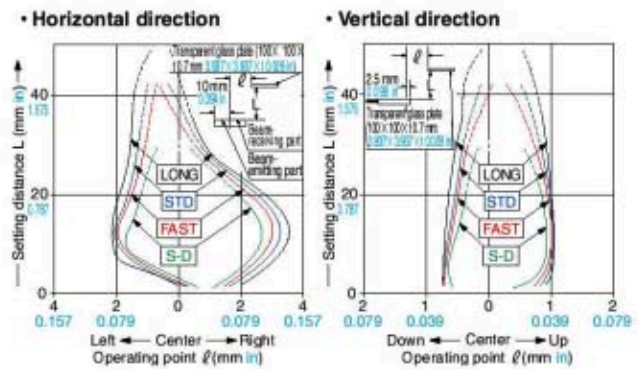
The CAD data in the dimensions can be downloaded from the SUNX website: <http://www.sunx.co.jp/>



All information is subject to change without prior notice.

**SUNX**  
Sensing the Future

## SENSING FIELDS (TYPICAL)



## PRECAUTIONS FOR PROPOSER USE



This product is not a safety sensor. Its use is not intended or designed to protect life and prevent body injury or property damage from dangerous parts of machinery. It is a normal object detection sensor.

## Mounting

- Mount using M3 countersunk head screws. The tightening torque should be 0.3 N·m or less.



## Cautions

- Note that the sensing may not be stable if the sensing object is specially processed, e.g., if light does not reflect regularly on its surface.
- Do not use the fiber at places having intense vibrations, as this can cause malfunction.
- Keep the fiber head surface intact. If it is scratched or spoiled, the detectability will deteriorate.
- If the sensing surface gets dirty, wipe dirt or stains from the sensing faces with a soft cloth moistened with water. (Do not use organic solvents.)
- Do not expose the fiber to any organic solvents.
- Do not use the fiber head surface in places where it may come in direct contact with water. A water drop on the fiber head surface deteriorates the sensing. No dew or liquid drop is present on surface of fiber head or sensing object.
- Ensure that any strong extraneous light is not incident on the receiving face of the fiber head.
- Do not apply excessive tensile force to the fiber cable.
- Take care that the fiber is not directly exposed to fluorescent light from a rapid-starter lamp or a high frequency lighting device, as it may affect the sensing performance.
- There is white dots on the beam-emitting fiber cable. When setting the amplifier, put the fiber cable with white dots into the beam-emitting side.

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