Grooved

Throughbeam fiber unit

High resolution mode
Super long-distance mode
Green light
Standard mode
Super high-speed mode
Red light

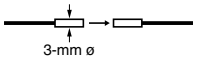
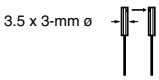
Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1 (Parentheses: With E39-F1 Lens Unit)				Standard object*2 (min. sensing object) (Parentheses: Opaque object)	Model	Permissible bending radius
Suitable for film sheet detection; no optical axis adjustment required; easy to mount Free-cut		E3X-DA□-S	10 10 10				4.0 mm ø (0.1 mm ø)	E32-G14	25 mm
		E3X-DAG□-S E3X-DAB□-S	10 10 10						
		E3X-DA□-N	10 10 10				4.0 mm ø (2.0 mm ø)		
		E3X-DAB#-N	10 10 10						
		E3X-DAH□-N	10 10 10						
		E3X-MDA	10 10 10				4.0 mm ø (0.1 mm ø)		
		E3X-NA□(V)	10						
		E3X-NAG□	10						
		E3X-NA□F	10				4.0.0 mm ø (1.0 mm ø)		

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

Narrow Vision Field

Throughtbeam fiber unit

High resolution mode
Super long-distance mode
Red light
Standard mode
Super high-speed mode

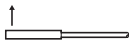
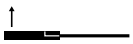
Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1 (Parentheses: With E39-F1 Lens Unit)	Standard object*2 (min. sensing object) (Parentheses: Opaque object)	Model	Permissible bending radius
Suitable for detecting wafers Free-cut		E3X-DA□-S	2,500 1,900 500	1.7 mm ø (0.1 mm ø)	E32-T22S	25 mm
		E3X-DA□-N	2,300 1,900 700	1.7 mm ø (0.01 mm ø)		
		E3X-MDA	1,600 1,250 500	1.7 mm ø (0.1 mm ø)		
		E3X-NA□(V)	1,000	1.7 mm ø (0.5 mm ø)		
		E3X-NA□F	300			
Side-view; suitable for detecting wafers Free-cut		E3X-DA□-S	1,750 1,300 350	2 mm ø (0.1 mm ø)	E32-T24S	10 mm
		E3X-DA□-N	1,700 1,300 500	2 mm ø (0.01 mm ø)		
		E3X-MDA	1,100 870 350	2 mm ø (0.1 mm ø)		
		E3X-NA□(V)	700	2.0 mm ø (0.03 mm ø)		
		E3X-NA□F	210	2.0 mm ø (0.5 mm ø)		

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

Limited-reflective

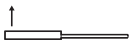
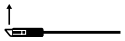
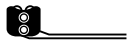
Diffuse reflective fiber units

High resolution mode
Super long-distance mode
Red light
Standard mode
Super high-speed mode

Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1	Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Suitable for positioning of crystal glass Free-cut		E3X-DA□-S	0 to 15 0 to 15 0 to 15	100x100 Soda glass with reflection factor of 7%	E32-L16 NEW	25 mm
		E3X-DA#-N	0 to 15 0 to 15 0 to 15			
		E3X-MDA	0 to 15 0 to 15 0 to 15			
		E3X-NA#(V)	0 to 15			
		E3X-NA#F	0 to 13			
Suitable for positioning of crystal glass Free-cut		E3X-DA□-S	4 to 12 4 to 12 4 to 12		E32-L56E1 E32-L56E2	35 mm
		E3X-DA□-N	4 to 12 4 to 12 4 to 12			
		E3X-MDA	4 to 12 4 to 12 4 to 12			
		E3X-NA□(V)	4 to 12	---		
		E3X-NA□F	4 to 12			
Suitable for positioning of crystal glass Heat resists up to 300°C Free-cut		E3X-DA□-S	5 to 18 5 to 18 5 to 18	100x100 Soda glass with reflection factor of 7%	E32-L66 NEW	25 mm
		E3X-DA#-N	5 to 18 5 to 18 5 to 18			
		E3X-MDA	5 to 18 5 to 18 5 to 18			
		E3X-NA#(V)	5 to 18			
		E3X-NA#F	7 to 14			

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

High resolution mode
Super long-distance mode
Red light
Standard mode
Super high-speed mode

Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1	Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Siutable for crystal glass detection Thin and compact type Free-cut		E3X-DA□-S	0 to 4 0 to 4 0 to 4	25x25 (0.005 mm ø)	E32-L24S NEW	10 mm
		E3X-DA#-N				
		E3X-MDA	0 to 4 0 to 4 0 to 4			
		E3X-NA#(V)	0 to 4	25x25		
		E3X-NA#F	0 to 4			
Detects wafers and small differences in height; (operating ambient temperature: -40°C to 105°C); degree of protection: IEC60529 IP50 Free-cut		E3X-DA□-S	4±2 4±2 4±2	25x25 (0.005 mm ø)	E32-L24L	10 mm
		E3X-DA□-N	4 ±2 4 ±2 4 ±2	25x25 (0.01 mm ø)		
		E3X-MDA	4±2 4±2 4±2	25x25 (0.005 mm ø)		
		E3X-NA□(V)	4 ± 2	25x25 (0.015 mm ø)		
		E3X-NA□F	4 ± 2	25x25 (0.03 mm ø)		
		E3X-DA□-S	7.2±1.8 7.2±1.8 7.2±1.8	25x25 (0.005 mm ø)	E32-L25L	10 mm
		E3X-DA□-N	7.2 ±1.8 7.2 ±1.8 7.2 ±1.8	25x25 (0.01 mm ø)		
		E3X-MDA	7.2±1.8 7.2±1.8 7.2±1.8	25x25 (0.005 mm ø)		
		E3X-NA□(V)	7.2±1.8	25x25 (0.015 mm ø)		
		E3X-NA□F	7.2±1.8	25x25 (0.03 mm ø)		

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

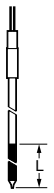
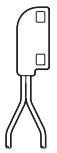
High resolution mode | Standard mode
Super long-distance mode | Super high-speed mode
Red light

Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1				Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Detects wafers and small differences in height; degree of protection: IEC60529 IP50 Free-cut		E3X-DA□-S	3.3 3.3 3.3				25x25 (0.005 mm ø)	E32-L25	25 mm
		E3X-DA□-N	3.3 3.3 3.3				25x25 (0.01 mm ø)		
		E3X-MDA	3.3 3.3 3.3				25x25 (0.005 mm ø)		
		E3X-NA□(V)	3.3				25x25 (0.015 mm ø)		
		E3X-NA□F	3.3				25 x 25 (0.03 mm ø)		
		E3X-DA□-S	3.3 3.3 3.3				25x25 (0.005 mm ø)	E32-L25A	25 mm
		E3X-DA□-N	3.3 3.3 3.3				25x25 (0.01 mm ø)		
		E3X-MDA	3.3 3.3 3.3				25x25 (0.005 mm ø)		
		E3X-NA□(V)	3.3				25x25 (0.015 mm ø)		
		E3X-NA□F	3.3				25x25 (0.03 mm ø)		

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

Fluid-level Detection Fiber Units

Diffuse reflective fiber units

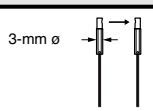
Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1	Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Fluid contact type: unbendable section L 150 mm, 350 mm (two types); (operating ambient temperature: -40° C to 200° C)		E3X-DA□-S DA□-N E3X-MDA NA□(V NA□F	---	Pure water at 25° C	E32-D82F1 E32-D82F2	40 mm
Tube-mounting type; Light ON when fluid is present; minimal influence from bubbles and water drops Free-cut		E3X-DA□-S DA□-N E3X-MDA	Applicable tube: FEP, transparent tube,. 3.2, 6.4, 9.5 mm ø, wall thickness 1mm		E32-A01	4 mm
Tube-mounting type; light ON when fluid is present; minimal influence from bubbles and water drops Free-cut		E3X-DA□-S DA□-N E3X-MDA	Applicable tube: FEP, transparent tube,. 6- to 13 mm ø, wall thickness 1mm		E32-A02	
Tube-mounting type; dense mounting to detect level differences of 4 mm Free-cut		E3X-DA□-S DA□-N E3X-MDA	Applicable tube: FEP, transparent tube,. 8- to 10 mm ø, wall thickness 1mm		E32-L25T	10 mm
		NA□(V) NA□F	---	---		
Teflon*3-covered Tube-mounting type; unlimited tube diameter; minimal influence from bubbles and water drops Free-cut		E3X-DA□-S E3X-MDA	Applicable tube: Transparent tube Tube diameter: No restriction (Tube must be FEP or material with equivalent transparency)		E32-D36F	4 mm

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.
*3. Teflon is a registered trademark of Dupont Company and Mitsui Chemical Company for fluorine resin.

Mapping sensors

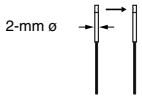
Diffuse reflective fiber units

High resolution mode
Super long-distance mode
Standard mode
Super high-speed mode

Features	**Shape**	**Applicable Amplifier Unit**	**Sensing distance (mm)*1**	**Standard object*2 (min. sensing object: Gold wire)**	**Model**	**Permissible bending radius**
Super-narrow vision field; side-view; opening angle: 1.5° ; simple adjustment Free-cut		E3X-DA□-S	1,150 890 250	2 mm ø (0.1 mm ø)	E32-A03	1 mm
		DA□-N	1,100 890 500	2 mm ø (0.01 mm ø)		
		E3X-MDA	750 580 250	2 mm ø (0.1 mm ø)		
		NA□(V)	---	---		
		NA□F				

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

High resolution mode
Super long-distance mode
Standard mode
Super high-speed mode

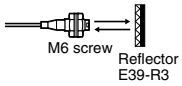
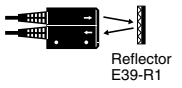
Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1	Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Super-narrow vision field; small; side-view; opening angle: 3°; simple adjustment Free-cut		E3X-DA□-S	460 340 100	1.2 mm ø (0.1 mm ø)	E32-A04	10 mm
		DA□-N	440 340 170	1.2 mm ø (0.01 mm ø)		
		E3X-MDA	300 220 100	1.2 mm ø (0.1 mm ø)		
		NA□(V)	---	---		
		NA□F				

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.

Retroreflective

Diffuse reflective fiber

High resolution mode
Super long-distance mode
Red light
Standard mode
Super high-speed mode

Features	Shape	Applicable Amplifier Unit	Sensing distance (mm)*1	Standard object*2 (min. sensing object: Gold wire)	Model	Permissible bending radius
Opaque object detection Free-cut		E3X-DA□-S	10 to 250 10 to 250 10 to 250	35 mm ø (0.1 mm ø)	E32-R21 + E39-R3 (Attachment)	10 mm
		E3X-DA□-N	10 to 250 10 to 2 50 10 to 250			
		E3X-MDA	10 to 250 10 to 250 10 to 250			
		E3X-NA□(V)	10 to 250	35.0 mm ø (0.3 mm ø)		
		E3X-NA□F	10 to 250	35.0 mm ø (0.5 mm ø)		
Opaque object detection		E3X-DA□-S	150 to 1,500 150 to 1,500 150 to 1,500	35 mm ø (0.2 mm ø)	E32-R16 + E39-R1 (Attachment)	25 mm
		E3X-DA□-N	150 to 1,500 150 to 1,500 150 to 1,500			
		E3X-MDA	150 to 1,500 150 to 1,500 150 to 1,500			
		E3X-NA□(V)	150 to 1500	35.0 mm ø (0.6 mm ø)		
		E3X-NA□F	150 to 1000	35.0 mm ø (0.4 mm ø)		

*1. Sensing distance based an white paper.
*2. Indicates values for standard mode.