Photoelectric Sensors

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Specialized Photoelectric Sensors

Laser Displacement **Sensors**

Fiber Units

Easy mounting Thread type

Cylindrical type Sleeve type

Flexible R4/R2

Flexible R1/R2

Retro-reflective

Small object

detection Screen/Array

Limited diffuse

Narrow view/ wafer mapping

Heat resistant

Chemical resistant Vacuum resistant Liquid level/liquid leakage/ water detection Lens for through-beam type

Correct use





Detection at a limited distance for mapping and alignment

Related

products

Fiber amplifier

D3RF

Fiber amplifier

BRF

• P.130

Most number of models in the industry with 14 total models

Detects glass substrate

Five types for detecting existence, five types for alignment, and one for mapping are available, making for a total of 11. Selection is possible between flexible types, heat resistant types, and vacuum resistant types.

Existence detection	NF-DC38	NF-DC07	NF-DH08	NF-DH06
	Low cost	Standard	Heat resistant to 180°C	Heat resistant to 300°C
		00	and a second	and a second

	Alignment	NF-DC05	NF-DC06	NF-DC04	NF-DH10	NF-DH11
-		Standard	Flexible	Flexible	Heat resistant to 250°C	Long range, heat resistant to 250°C
		Also supports PCB deflection	Also supports PCB deflection	For long range alignment	Also supports PCB deflection	Also supports PCB deflection

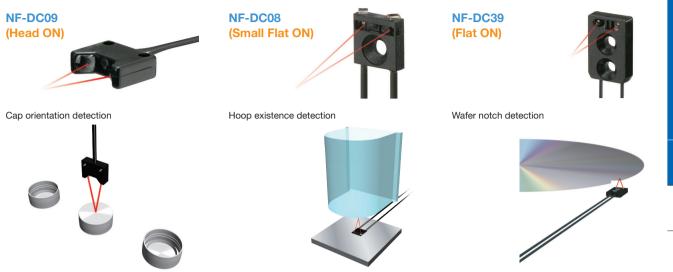
Wafer mapping	NF-DC03
	Standard
	Con
F	Also detects glass substrate of 0.5 mm in thickness

For mapping with through-beam type and retro-reflective type fibers→P.74



General-purpose use

Three general-purpose models are available



Limited diffuse reflective type fiber units (glass substrate detection)

									Easy mounting
Т	pe	Features/dimensions (mm)	Sensing dis	stance (mm)		Ambient	Min. bending	Model	
Iy	he	reatures/ dimensions (mm)	D3RF	D2RF	BRF	temperature	radius (mm)	Woder	Thread type
	Flat ON	Alignment, Free cut 29 3000 18 18 16.5 2 -M3 flush screw hole 02.2 × 2 23.5 Emitting/receiving part 4.5 Housing Emitting fiber (heat resistant 01 × 1) Receiving fiber 0.265 × 16	7-EL 3 to 44 6-UL						Cylindrical type
			4 to 39 ^{5-PL} 4 to 38 4-LG	Long 7 to 32					Sleeve type
			4 to 37 3-ST 4 to 35	Std 10 to 25 Fast 10 to 18	15	0 to +70°C	R25	NF-DC05	Flexible R4/R2
			2-FS 6 to 29 1-HS						Flexible R1/R2
E		ABS)	9 to 18						Retro-reflective
detection		Detecting part detail Emitting/ receiving 29 10	0 to 22 4-LG 0 to 22 3-ST	Long 0 to 23 Std 0 to 17 Fast 0 to 12	15	0 to +70°C	R4	NF-DC06	Small object detection
e dei									Screen/Array
substrate									Limited diffuse
sub									Narrow view/ wafer mapping
Glass		Housing (heat resistant ABS)	5 to 13						Heat resistant
Ŭ		Alignment, Flexible, Free cut Detecting part detail Emitting/receiving fiber 0.25×9	^{7-EL} 0 to 38						Chemical resistant
		$29 3000$ $18 + 6.5 2 - M3 \text{ flush screw hole} 01.3 \times 2$ $100 + 100 $	6-UL 0 to 38 5-PL 0 to 38 4-LG 0 to 38 0 to 38 3-ST F	Long			R4		Vacuum resistant
				0 to 36 Std 0 to 30 Fast	Unusable	0 to +70°C		NF-DC04	Liquid level/liquid leakage/ water detection
		Emitting/receiving part 10 / 03.2 (PVC) side		0 to 15					Lens for through-beam type
		Cheat resistant ABS)	4 to 22						Correct use
			1						

●Install with an ambient humidity between 35 and 85%. In the case of 85% RH, the ambient temperature should be between 0 and 40°C.

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Fiber Units

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OPTEX

Limited diffuse reflective type fiber units (glass substrate detection)

<u>с</u>	т	ne	Footures (dimensions (Sensing dis	stance (mm)		Ambient	Min. bending	Model
	ſy	ре	Features/dimensions (mm)	D3RF	D2RF	BRF	temperature	radius (mm)	Model
Photoelectr Sensors			Alignment, Heat resistant to 250°C 300 52 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	7-EL 2 to 28 6-UL 2 to 24 5-PL 2 to 23 4-LG 3 to 23 3-ST 3 to 20 2-FS 3 to 18 1-HS 4 to 11	Long 4 to 20 Std 4 to 20 Fast 4 to 15	4 to 17	-20 to +250°C (Normal temperature side: -20 to +70°C)	R25	NF-DH10
Photoelectric Sensors Specialized Photoelectric Sensors Laser Displacement Sensors			Alignment, Heat resistant to 250°C 3.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1	7-EL 2 to 45 6-UL 3 to 40 5-PL 3 to 39 4-LG 3 to 39 4-LG 3 to 38 3-ST 4 to 35 2-FS 6 to 28 1-HS 8 to 19	Long 6 to 38 Std 7 to 30 Fast 8 to 25	8 to 25	-20 to +250°C (Normal temperature side: -20 to +70°C)	R25	NF-DH11
Fiber Units Easy mounting	stection		Existence detection, Free cut Housing (polycarbonate) 2-03.2 01 × 2 12 12 12 12 12 12 13 2000	7-EL 0 to 12 B-UL 0.5 to 11 5-PL 1.5 to 10 4-L6 1.5 to 10	Long 2 to 9 Std 4 to 8 Fast 5 to 6	3.5 to 7	-40 to +60°C	R10	NF-DC38 Low cost
Thread type Cylindrical type Sleeve type Flexible R4/R2 Flexible R1/R2	Glass substrate detection	Flat ON	Existence detection, Free cut 2000 9.5 + Housing (heat resistant ABS) 24 16 + (20)	7-EL 3 to 16 6-UL 3 to 14 5-PL 4 to 14 4-LG 5 to 14 4-LG 5 to 14 2-FS 5 to 13 2-FS 5 to 11 1-HS 7 to 8	Long 4 to 15 Std 5 to 12 Fast 7 to 10	7	-40 to +60°C	R10	NF-DC07
Retro-reflective Small object detection Screen/Array Limited diffuse Narrow view/ wafer mapping			Existence detection, Heat resistant to 180°C, Free cut	7-EL 0 to 35 6-UL 0 to 28 5-PL 0 to 25 4-UG 0 to 22 3-ST 0 to 20 2-FS 0 to 9 1-HS 3 to 4	Long 0 to 20 Std 0 to 10 Fast 0 to 8	10	-60 to +180°C	R25	NF-DH08
Heat resistant Chemical resistant Vacuum resistant Liquid level/liquid leakage/ water detection Lens for through-beam type			Existence detection, Heat resistant to 300°C 10.75 19 0 10.75 10.75 10.75 0 0 0 10.75 10.75 0 0 0 10.75 0 0 0 0 0 0 0 0 0 0 0 0 0	7-EL 0 to 40 6-UL 0 to 34 S-PL 0 to 22 4-LG 0 to 18 S-ST 0 to 17 2-FS 0 to 9 1-HS 0 to 4	Long 0 to 15 Std 0 to 10 Fast 0 to 8	6	-30 to +300°C or -60 to +200°C	R25	NF-DH06

Correct use

OPTEX FR ●Install with an ambient humidity between 35 and 85%. In the case of 85% RH, the ambient temperature should be between 0 and 40°C.

Limited diffuse reflective type fiber units (glass substrate detection)

	imo		Sensing dis	tance (mm)		Ambient	Min. bending	Model
Туре		Features/dimensions (mm)	D3RF	D2RF	BRF	temperature	radius (mm)	woder
Glass substrate detection	Head ON	Mapping, Free Cut Detecting part detail Emitting/receiving tiber 01.5 × 1 (ABS) 25 (ABS) 26 (ABS) (B) (C) (C) (C) (C) (C) (C) (C) (C	7-EL 2 to 310 6-UL 3 to 160 5-PL 4 to 130 4-LG 5 to 120 3-ST 5 to 110 2-FS 10 to 95 1-HS 12 to 60	Long 10 to 55 Std 10 to 45 Fast 13 to 35	55	-40 to +60°C	R25	NF-DC03

●Install with an ambient humidity between 35 and 85%. In the case of 85% RH, the ambient temperature should be between 0 and 40°C.

L Limited diffuse reflective fiber units (general-purpose)

			Sensing dis	stanco (mm)		Auchiteut			Displacement
T	/pe	Features/dimensions (mm)	D3RF	D2RF	BRF	Ambient temperature	Min. bending radius (mm)	Model	Śensors
	Flat ON	Free cut 2-03.2 Housing (polycarbonate) 4.3 5.5	$\begin{array}{c} \begin{array}{c} 7\text{-EL} & 3\text{-ST} \\ 1.5 \text{ to } 4 & 0 \text{ to } 4 \\ \text{\tiny 6-UL} & 0 \text{ to } 4 \\ 0 \text{ to } 4 & 0 \text{ to } 4 \\ \text{\tiny 5-PL} & 0 \text{ to } 4 \\ 0 \text{ to } 4 & 0 \text{ to } 4 \\ \text{\tiny 4-LG} & 0 \text{ to } 4 \end{array}$	Long 0 to 4 Std 0 to 4 Fast 0 to 4	0 to 4	-40 to +60°C	R10	NF-DC39 Low cost	Fiber Units Easy mounting
	Head ON		7-EL 0 to 15 6-UL 5 to 12 5-PL 5 to 11 4-LG 6 to 11 3-ST 6 to 11 2-FS 7 to 9 1-HS 6 to 7						Thread type
se				4.5 to 11		40 1 7000	Dia		Cylindrical type
General-purpose		$\frac{1}{2 - \omega_3} \frac{1}{\omega_3 (PVC)} \frac{1}{2 - \omega_3} \frac{1}{\omega_3 (PVC)}$ Detecting part detail		4.5 to 10 Fast 4.5 to 10	6	-40 to +70°C	R10	NF-DC09	Sleeve type
al-p		Housing Emitting/receiving fiber 00.5 × 1							Flexible R4/R2
ener		O Ultra-small, Flexible, Free cut							Flexible R1/R2
G		0.5	7-EL 0 to 9 6-UL 0 to 8 5-PL 0 to 7 4-L6 0 to 7 4-L6 3-ST 2 to 5 2-FS 2 to 3 1-HS			-20 to +60°C	D°C R1		Retro-reflective
	Flat ON	1.5 + (polycarbonate) <u>g1 × 2</u> 1.3 + (20) +		Long 1 to 7					Small object detection
				Std 1 to 5.5 Fast	3			NF-DC08	Screen/Array
		2 Detecting axis 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5		1 to 3					Limited diffuse
		0.5 -+ += 01.6 00.05 × 151	1 to 2						Narrow view/ wafer mapping

•The sensing distances for the diffuse type fiber units are values on 500 × 500 mm white paper.

●Install with an ambient humidity between 35 and 85%. In the case of 85% RH, the ambient temperature should be between 0 and 40°C.

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Laser

resistant

Vacuum resistant

Liquid level/liquid leakage

water detection Lens for

through-beam type

Correct use

