

NARROW BEAM, WAFER MAPPING

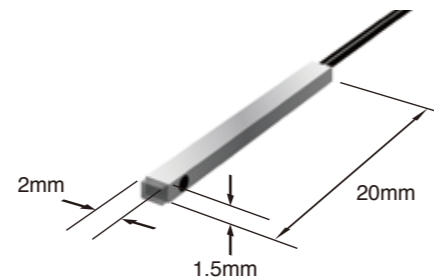


Ultra-narrow aperture light angle provides narrowest beam in a ultra-thin and ultra-compact size. Cross talk is reduced.

Super narrow beam and super thin type

Super narrow view type: Aperture is 2°max. Ideal for wafer mapping.
Straight type: NF-TG01
Side type: NF-TG02,03

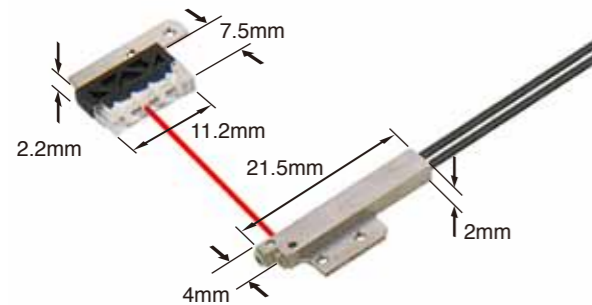
NF-TG04 features ultra-compact size sensing head (2mm x 1.5mm) and ultra-narrow 3 degree aperture for minimum object detection of 0.02mm diameter.



Retro-reflective and diffuse type

Super thin 2mm height Retro-reflective type enables wafer mapping saving space.

Retro-reflective type
NF-RG01



Diffuse type
NF-DR09



Specifications (Thru-beam/Thru-beam Side)

	Sensinghead	Sensingdistance(unit=mm) Value in parenthesis is the Minimum detectable object size. (copper wire)			Operation temperature (°C)	Radius (mm)	PartNumber										
		D3RF	D2RF	BRF													
Thru-beam	aperture2°Free cut 	7-EL 3,600	Long 3,000 Std 2,000 Fast 1,300	2,300	-40~70	R=25	NF-TG01										
		6-UL 3,600															
5-PL 3,600																	
4-LG 3,200																	
3-ST 2,100																	
2-FS 2,000																	
1-HS 790																	
2x1.5	aperture3°Free cut 	7-EL 1,000						Long 500 Std 300 Fast 150	220	-40~55	R=10	NF-TG04					
		6-UL 900															
5-PL 790																	
4-LG 690																	
3-ST 450																	
2-FS 260																	
1-HS 90																	
Thru-beam side	aperture2°Free cut 	7-EL 3,600	Long 2,500 Std 1,600 Fast 800	900	-40~60	R=25	NF-TG03										
		6-UL 3,600															
5-PL 3,600																	
4-LG 3,300																	
3-ST 2,100																	
2-FS 1,780																	
1-HS 510																	
φ4	aperture2°FlexibleFree cut 	7-EL 3,600						Long 2,500 Std 1,600 Fast 800	1,000	-40~55	R=1	NF-TG02					
		6-UL 3,600															
5-PL 3,600																	
4-LG 3,300																	
3-ST 2,100																	
2-FS 1,500																	
1-HS 520																	
φ3.5	aperture5°Free cut 	7-EL 4,000	Long 4,000 Std 3,000 Fast 2,000	1,700	-40~70	R=25	NF-TS12										
		6-UL 4,000															
5-PL 4,000																	
4-LG 4,000																	
3-ST 3,000																	
φ3.5	aperture3°Free cut 	7-EL 4,000						Long 3,000 Std 1,600 Fast 700	750	-40~70	R=25	NF-TS22					
		6-UL 4,000															
5-PL 4,000																	
4-LG 4,000																	
3-ST 3,000																	
φ3.5	aperture3° Heat resistantFree cut 	7-EL 3,500											Long 1,200 Std 700 Fast 500	500	-40~70	R=10	NF-TS22H
		6-UL 2,500															
5-PL 2,300																	
4-LG 1,900																	
□1.5	aperture2.5° Heat resistantFree cut 	7-EL 2,300	Long 600 Std 300 Fast 100	200	-40~70	R=10	NF-TS25										
		6-UL 1,200															
5-PL 1,100																	
4-LG 950																	
□2	aperture2.5° Heat resistantFree cut 	7-EL 3,500						Long 900 Std 600 Fast 400	400	-40~70	R=10	NF-TS23					
		6-UL 2,400															
5-PL 2,200																	
4-LG 1,900																	
□2	aperture2.5° Heat resistant 	7-EL 2,000											Long 500 Std 300 Fast 100	150	-40~70	R=30	NF-TS27
		6-UL 1,000															
5-PL 950																	
4-LG 800																	

Operating humidity is 35~85%RH. Please use in 0~40°C when it's 85%RH.

Specifications (Thru-beam Side/Retro Reflective/Diffuse)

	Sensinghead	Sensingdistance(unit:mm)			Operation temperature (°C)	Radius (mm)	PartNumber
		D3RF	D2RF	BRF			
Thru-beam side φ5	<p>aperture3° Heat resistant</p> <p>rod prism:Glass (BK7) lens:Glass (BK7) SUS tube φ1 spiral tube material:SUS303</p> <p>detecting part detail</p>	<p>7-EL 1,000 6-UL 570 5-PL 520 4-LG 450 3-ST 300 2-FS 150 1-HS 45</p>	<p>Long 500 Std 300 Fast 100</p>	150	-40~70	R=25 R=10	NF-TS24
Retro reflective 4x2	<p>Wafer mapping:Super-smallFree cut</p> <p>mounting part (SUS) base (ABS) reflector (Acrylic) head block (SUS) prism marking band emitter (Receiver) φ3.2 (PVC) 2-M1.4x0.3 threaded</p>	<p>7-EL 590 6-UL 550 5-PL 480 4-LG 420 3-ST 270 2-FS 180 1-HS 70</p>	<p>Long 350 Std 230 Fast 130</p>	□□□	-40~60	R=10	NF-RG01
Diffuse square	<p>Long distance detection:FlexibleFree cut</p> <p>glass lens (BK7) multi core fiber φ0.075x151 case (SUS) mounting bracket accessories equipped detail glass lens (BK7) 2-M3x0.5 NF-DA51 (SUS) case (SUS)</p>	<p>7-EL 1,070 6-UL 990 5-PL 880 4-LG 770 3-ST 500 2-FS 310 1-HS 90</p>	<p>Long 600 Std 380 Fast 200</p>	250	-40~70	R=1	NF-DR09

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HEAT RESISTANT (up to 130°C)



12 models to choose from featuring thru-beam and diffuse in both head-on and space saving side-view

Space saving

Heat resistant right angle type NF25-TH and NF25-DH help installing in limited space.

Straight type



Right angle type



Specifications (Thru-beam)

	Sensinghead	Sensingdistance(unit:mm)			Operation temperature (°C)	Radius (mm)	PartNumber
		D3RF	D2RF	BRF			
130°C	<p>Free cut</p> <p>lens:PC M4 P-0.7 polyamide (PA6)</p>	<p>7-EL 2,100 6-UL 2,070 5-PL 1,800 4-LG 1,530 3-ST 990 2-FS 620 1-HS 200</p>	<p>Long 1,100 Std 650 Fast 400</p>	500	-60~130	R=25	NF-TH17
105°C	<p>NutiFree cut</p> <p>lens:PC M4 P-0.7 polyamide (PA6)</p>	<p>7-EL 2,000 6-UL 1,100 5-PL 1,000 4-LG 900 3-ST 600 2-FS 300 1-HS 90</p>	<p>Long 750 Std 500 Fast 170</p>	300	-40~105	R=25	NF25-TH
	<p>SideviewFree cut</p> <p>rod prism (materialBK7) lens (materialBK7) SUS303</p> <p>detecting part detail</p>	<p>7-EL 3,500 6-UL 2,300 5-PL 2,000 4-LG 1,800</p>	<p>3-ST 1,200 2-FS 600 1-HS 170</p>	500	-40~105	R=10	NF-TS22M
	<p>Narrow BeamSideviewFree cut</p> <p>rod prism (materialBK7) lens (materialBK7) SUS303</p> <p>detecting part detail</p>	<p>7-EL 3,500 6-UL 2,500 5-PL 2,300 4-LG 1,900</p>	<p>3-ST 1,300 2-FS 650 1-HS 200</p>	500	-40~105	R=10	NF-TS22H

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Amplifiers
Various Shapes for mounting
Tight Bend / High-Flex
Various Detecting Modes
Environment-resistant
Liquid
Extension lens
Notes

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