



# S3N

## MINI PHOTOELECTRIC SENSOR SERIES



Top performances series in a very rugged and miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

- Bright LED and Safe Laser emission models
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models
- Long distance detection models
- Very fast and very precise RGB Contrast sensor
- Cable, M8 connector, Pigtail M8 and M12 connection
- Rugged IP67 Plastic miniature case
- IO-Link with extended Smart Tasks



## CODE DESCRIPTION

S3N - P R - 5 - B 0 1 - P L

series	<b>S3N</b>	Miniature photoelectric sensors		P	R	-	5	-	B	0	1	-	P	L
housing	<b>P</b>	Standard housing												
emission	<b>R</b>	Radial LED emission												
	<b>H</b>	Radial LASER emission												
connection	<b>2</b>	2 m cable												
	<b>3</b>	Pigtail M12-4 pins connector												
	<b>4</b>	Pigtail M8-4 pins connector												
	<b>5</b>	M8-4 pins connector												
	<b>6</b>	Pigtail M8-3 pins connector												
function	<b>B</b>	Retro Reflex Polarized												
	<b>C</b>	Diffused												
	<b>FG</b>	Through beam												
	<b>M</b>	Background suppression												
	<b>T</b>	Transparent for clear objects												
	<b>W</b>	Mark reader												
distance	<b>0</b>	Standard distance												
	<b>1</b>	Long distance												
	<b>5</b>	Coaxial optic												
adjustment	<b>1</b>	Trimmer adjustment												
	<b>3</b>	Teach-In push button												
output	<b>P</b>	PNP output												
	<b>N</b>	NPN output												
	<b>0</b>	IO-Link configurable I/O												
output configuration	<b>L</b>	L/D configurable by trimmer												
	<b>D</b>	Light mode												
	<b>Z</b>	Dark mode												
		IO-Link												

# S3N TECHNICAL SPECIFICATIONS

	S3N-PR-*-B0*---	S3N-PR-*-C0*--**
		
<b>GENERAL DATA</b>		
Functions	Polarized retroreflective	Diffused narrow beam
Nominal sensing distance	0.05 ... 7 m On R5 reflector	1 ... 250 mm on White 90%
Emission	635 nm LED Red	
Spot dimension	Ø 40 mm @500 mm (rounded spot)	Ø 4 mm @100 mm (rounded spot)
Sensitivity adjustment	1 turn trimmer or Teach-In push button (*)	
Maximum switching frequency	1 kHz	
Response time max	500 µs	
Output type	NPN (no IO-Link) or PNP (no IO-Link) / PNP, NPN, PP, IO-Link (*)	
Output function	Din or IO-Link or L/D Selectable by trimmer or Lon (*)	
LED indicators	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models), yellow OUTPUT LED, green STABILITY LED (No IO-Link models) (**)	
<b>ELECTRICAL DATA</b>		
Supply voltage	10 ... 30 Vdc	
Maximum residual ripple	≤10 %	
Leakage current	≤ 300 µA	
Maximum No-load absorption	35mA	
Maximum DC output voltage drop	2 V @ IL=100mA	
Maximum DC load current	100 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Impulsive overvoltage protections	Yes	
Protection to capacitive loads	Yes	
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing	
Ground resistivity	500 Vac 1 min., between electronics and housing	
<b>MECHANICAL DATA</b>		
Dimensions	11 x 31 x 19 mm Cubic	
Housing material	Plastic Polymer Fiber Glass reinforced	
Active part material	PMMA	
Optical location	Radial 90°	
Weight	10 g Connector, 50 g Cable and Pigtail	
Shaft material	POM, PMMA	
Connector material	Metal	
<b>ENVIRONMENTAL DATA</b>		
Operating Temperature	-25 ... 55 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP67	
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)	
Ambient light immunity	according to EN 60947-5-2 : 2020	
<b>TEST/CERTIFICATIONS</b>		
Certifications	CE, UKCA, cULus	
Electromagnetic compatibility	EN 60947-5-2	

(\*) For a correct Part Number selection, see "AVAILABLE MODELS" table

(\*\*) For detailed information, see "USER INTERFACE" table

# TECHNICAL SPECIFICATIONS

	S3N-PR-*-C1*-*	S3N-PR-*-FG0*-*
		
<b>GENERAL DATA</b>		
Functions	Diffused beam	Through beam emitter and receiver
Nominal sensing distance	0 ... 1 m on white 90%	0 ... 20 m
Emission	635 nm LED Red	
Spot dimension	Ø 20 mm @300 mm (rounded spot)	Ø 30 mm @500 mm (rounded spot)
Sensitivity adjustment	1 turn trimmer or Teach-In push button (*)	
Maximum switching frequency	1 kHz	500 Hz
Response time max	500 µs	1 ms
Output type	NPN (no IO-Link) or PNP (no IO-Link) / PNP, NPN, PP, IO-Link (*)	
Output function	Don or IO-Link or L/D Selectable by trimmer or Lon (*)	
LED indicators	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models), yellow OUTPUT LED, green STABILITY LED (No IO-Link models) (**)	
<b>ELECTRICAL DATA</b>		
Supply voltage	10 ... 30 Vdc	
Maximum residual ripple	≤10 %	
Leakage current	≤ 300 µA	
Maximum No-load absorption	35mA	
Maximum DC output voltage drop	2 V @ IL=100mA	
Maximum DC load current	100 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Impulsive overvoltage protections	Yes	
Protection to capacitive loads	Yes	
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing	
Ground resistivity	500 Vac 1 min., between electronics and housing	
<b>MECHANICAL DATA</b>		
Dimensions	11 x 31 x 19 mm Cubic	
Housing material	Plastic Polymer Fiber Glass reinforced	
Active part material	PMMA	
Optical location	Radial 90°	
Weight	10 g Connector, 50 g Cable and Pigtail	
Shaft material	POM, PMMA	
Connector material	Metal	
<b>ENVIRONMENTAL DATA</b>		
Operating Temperature	-25 ... 55 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP67	
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)	
Ambient light immunity	according to EN 60947-5-2 : 2020	
<b>TEST/CERTIFICATIONS</b>		
Certifications	CE, UKCA, cULus	
Electromagnetic compatibility	EN 60947-5-2	

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(\*\*) For detailed information, see "USER INTERFACE" table

# TECHNICAL SPECIFICATIONS



	S3N-PR--M01--**	S3N-PR--M03--**
<b>GENERAL DATA</b>		
Functions	Background suppression	
Nominal sensing distance	10 ... 800 mm (on White 90%) 15 ... 400 mm (on Grey 18%) 25 ... 200 mm (on Black 6%)	25 ... 180 mm
Emission	635 nm LED Red	
Spot dimension	7 mm @100 mm	15 mm @60 mm
Sensitivity adjustment	9 turns trimmer (*)	Teach-In push button (*)
Maximum switching frequency	500 Hz	
Response time max	1 ms	
Output type	NPN (no IO-Link) / PNP (no IO-Link) (*)	PNP, NPN, PP, IO-Link (*)
Output function	Don or L/D Selectable by trimmer or Lon (*)	IO-Link (*)
LED indicators	yellow OUTPUT LED, green POWER ON LED (No IO-Link models) (**)	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models) (**)
<b>ELECTRICAL DATA</b>		
Supply voltage	10 ... 30 Vdc	
Maximum residual ripple	≤10 %	
Leakage current	≤ 300 µA	≤ 400 µA
Maximum No-load absorption	35mA	
Maximum DC output voltage drop	2 V @ IL=100mA	
Maximum DC load current	100 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Impulsive overvoltage protections	Yes	
Protection to capacitive loads	Yes	
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing	
Ground resistivity	500 Vac 1 min., between electronics and housing	
<b>MECHANICAL DATA</b>		
Dimensions	11 x 31 x 19 mm Cubic	
Housing material	Plastic Polymer Fiber Glass reinforced	
Active part material	PMMA	
Optical location	Radial 90°	
Weight	10 g Connector, 50 g Cable and Pigtail	
Shaft material	POM, PMMA	
Connector material	Metal	
<b>ENVIRONMENTAL DATA</b>		
Operating Temperature	-25 ... 55 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP67	
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)	
Ambient light immunity	according to EN 60947-5-2 : 2020	
<b>TEST/CERTIFICATIONS</b>		
Certifications	CE, UKCA, cULus	
Electromagnetic compatibility	EN 60947-5-2	

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# TECHNICAL SPECIFICATIONS

S3N-PR-*-T5*--*		S3N-PR-*-W03-OZ
		 
<b>GENERAL DATA</b>		
Functions	Polarized retroreflective for clear object	Contrast sensor
Nominal sensing distance	0 ... 2 m On R7 reflector	12 mm ± 3 mm
Emission	635 nm LED Red	RGB blue (460 nm) / green (525 nm) / red (633 nm)
Spot dimension	Ø 20 mm @800 mm (rounded spot)	1 x 3 mm Rectangular / Longitudinal
Sensitivity adjustment	1 turn trimmer or Teach-In push button (*)	Teach-In push button (*)
Maximum switching frequency	1 kHz (T51 no IO-Link model), 500 Hz (T53 IO-Link model)	60 kHz
Response time max	500.00 µs (T51 no IO-Link model), 1.00 ms (T53 IO-Link model)	8.00 µs 4 µs jitter
Output type	NPN (no IO-Link) or PNP (no IO-Link) / PNP, NPN, PP, IO-Link (*)	PNP, NPN, PP, IO-Link (*)
Output function	Don or IO-Link or L/D Selectable by trimmer or Lon (*)	IO-Link (*)
LED indicators	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models), yellow OUTPUT LED, green STABILITY LED (No IO-Link models) (**)	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models) (**)
<b>ELECTRICAL DATA</b>		
Supply voltage	10 ... 30 Vdc	
Maximum residual ripple	≤10 %	
Leakage current	≤ 300 µA	≤ 400 µA
Maximum No-load absorption	35mA	40mA
Maximum DC output voltage drop	2 V @ IL=100mA	1 V @ IL=100mA
Maximum DC load current	100 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Impulsive overvoltage protections	Yes	
Protection to capacitive loads	Yes	
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing	
Ground resistivity	500 Vac 1 min., between electronics and housing	
<b>MECHANICAL DATA</b>		
Dimensions	11 x 31 x 19 mm Cubic	
Housing material	Plastic Polymer Fiber Glass reinforced	
Active part material	PMMA	
Optical location	Radial 90°	
Weight	10 g Connector, 50 g Cable and Pigtail	
Shaft material	POM, PMMA	
Connector material	Metal	
<b>ENVIRONMENTAL DATA</b>		
Operating Temperature	-25 ... 55 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP67	
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)	
Ambient light immunity	according to EN 60947-5-2 : 2020	
<b>TEST/CERTIFICATIONS</b>		
Certifications	CE, UKCA, cULus	
Electromagnetic compatibility	EN 60947-5-2	

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(\*\*) For detailed information, see "USER INTERFACE" table

# TECHNICAL SPECIFICATIONS

	S3N-PH-*-B0*---	S3N-PH-*-FG0*---
		
<b>GENERAL DATA</b>		
Functions	Polarized retroreflective	Through beam emitter and receiver
Nominal sensing distance	0.1 ... 12 m On R7 reflector	0 ... 30 m
Emission	650 nm LASER Red class 1	
Spot dimension	Ø 6 mm @6 m (rounded spot)	Ø 10 mm @10 m (rounded spot)
Sensitivity adjustment	1 turn trimmer or Teach-In push button (*)	
Maximum switching frequency	2 kHz	
Response time max	250 µs	
Output type	NPN (no IO-Link) or PNP (no IO-Link) / PNP, NPN, PP, IO-Link (*)	
Output function	IO-Link or L/D Selectable by trimmer (*)	
LED indicators	yellow OUTPUT LED, green POWER ON LED (No IO-Link models), yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models) (**)	
<b>ELECTRICAL DATA</b>		
Supply voltage	10 ... 30 Vdc	
Maximum residual ripple	≤10 %	
Leakage current	≤ 300 µA	
Maximum No-load absorption	35mA	
Maximum DC output voltage drop	2 V @ IL=100mA	
Maximum DC load current	100 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Impulsive overvoltage protections	Yes	
Protection to capacitive loads	Yes	
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing	
Ground resistivity	500 Vac 1 min., between electronics and housing	
<b>MECHANICAL DATA</b>		
Dimensions	11 x 31 x 19 mm Cubic	
Housing material	Plastic Polymer Fiber Glass reinforced	
Active part material	PMMA	
Optical location	Radial 90°	
Weight	10 g Connector, 50 g Cable and Pigtail	
Shaft material	POM, PMMA	
Connector material	Metal	
<b>ENVIRONMENTAL DATA</b>		
Operating Temperature	-25 ... 55 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP67	
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)	
Ambient light immunity	according to EN 60947-5-2 : 2020	
<b>TEST/CERTIFICATIONS</b>		
Certifications	CE, UKCA, cULus	
Electromagnetic compatibility	EN 60947-5-2	

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# TECHNICAL SPECIFICATIONS

S3N-PH-**-M01-**		S3N-PH-**-M03-**			
					
<b>GENERAL DATA</b>					
Functions	Background suppression				
Nominal sensing distance	10 ... 500 mm (on White 90%) 10 ... 250 mm (on Grey 18%) 30 ... 130 mm (on Black 6%)	22 ... 130 mm			
Emission	650 nm LASER Red class 1				
Spot dimension	Ø 1.5 mm @100 mm (rounded spot)	Ø 1 mm @50 mm (rounded spot)			
Sensitivity adjustment	9 turns trimmer (*)	Teach-In push button (*)			
Maximum switching frequency	2 kHz	1.5 kHz			
Response time max	250 µs	333 µs			
Output type	NPN (no IO-Link) / PNP (no IO-Link) (*)	PNP, NPN, PP, IO-Link (*)			
Output function	L/D Selectable by trimmer (*)	IO-Link (*)			
LED indicators	yellow OUTPUT LED, green POWER ON LED (No IO-Link models) (**)	yellow OUTPUT LED, green POWER ON LED, blue LED IO-Link Activity (IO-Link models) (**)			
<b>ELECTRICAL DATA</b>					
Supply voltage	10 ... 30 Vdc				
Maximum residual ripple	≤10 %				
Leakage current	≤ 300 µA	≤ 400 µA			
Maximum No-load absorption	35mA				
Maximum DC output voltage drop	2 V @ IL=100mA				
Maximum DC load current	100 mA				
Short circuit protection	Yes				
Reverse polarity protection	Yes				
Impulsive overvoltage protections	Yes				
Protection to capacitive loads	Yes				
Insulation resistance	>20 MΩ 500 Vdc, between electronics and housing				
Ground resistivity	500 Vac 1 min., between electronics and housing				
<b>MECHANICAL DATA</b>					
Dimensions	11 x 31 x 19 mm Cubic				
Housing material	Plastic Polymer Fiber Glass reinforced				
Active part material	PMMA				
Optical location	Radial 90°				
Weight	10 g Connector, 50 g Cable and Pigtail				
Shaft material	POM, PMMA				
Connector material	Metal				
<b>ENVIRONMENTAL DATA</b>					
Operating Temperature	-25 ... 55 °C				
Storage temperature max.	-25 ... 70 °C				
Mechanical Protection	IP67				
Shocks and vibrations	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)				
Ambient light immunity	according to EN 60947-5-2 : 2020				
<b>TEST/CERTIFICATIONS</b>					
Certifications	CE, UKCA, cULus				
Electromagnetic compatibility	EN 60947-5-2				

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(\*\*) For detailed information, see "USER INTERFACE" table

# S3N AVAILABLE MODELS

## POLARIZED RETROREFLECTIVE

S3N PHOTOELECTRIC CUBIC SENSORS

Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP	NPN	PNP, NPN, PP, IO-Link
0.05 ... 7 m On R5 reflector 635 nm LED Red	1 turn trimmer	Lon	M8 plug 4 pin	<b>S3N-PR-5-B01-PL</b> (95B010092)	<b>S3N-PR-5-B01-NL</b> (95B010252)	-
				<b>S3N-PR-5-B01-PD</b> (95B010112)	<b>S3N-PR-5-B01-ND</b> (95B010272)	-
				<b>S3N-PR-5-B01-P</b> (95B010612)	<b>S3N-PR-5-B01-N</b> (95B010602)	-
		Don	2 m cable	<b>S3N-PR-2-B01-PD</b> (95B010102)	<b>S3N-PR-2-B01-ND</b> (95B010262)	-
				<b>S3N-PR-2-B01-PL</b> (95B010082)	<b>S3N-PR-2-B01-NL</b> (95B010242)	-
		L/D Selectable by trimmer	M12-4 pin Pigtail	<b>S3N-PR-2-B01-P</b> (95B010592)	<b>S3N-PR-2-B01-N</b> (95B010582)	-
				<b>S3N-PR-3-B01-P</b> (95B010035)	<b>S3N-PR-3-B01-N</b> (95B010083)	-
				<b>S3N-PR-4-B01-P</b> (95B010058)	<b>S3N-PR-4-B01-N</b> (95B010063)	-
		Teach-In push button	M8-4 pin Pigtail	<b>S3N-PR-6-B01-P</b> (95B010104)	<b>S3N-PR-6-B01-N</b> (95B010103)	-
				M8 plug 4 pin	-	<b>S3N-PR-5-B03-OZ</b> (95B010780)
				M12-4 pin Pigtail	-	<b>S3N-PR-3-B03-OZ</b> (95B010053)
0.1 ... 12 m On R7 reflector 650 nm LASER Red class 1	1 turn trimmer	L/D Selectable by trimmer	M8-4 pin Pigtail	<b>S3N-PH-5-B01-P</b> (95B010462)	<b>S3N-PH-5-B01-N</b> (95B010472)	-
				<b>S3N-PH-2-B01-P</b> (95B010442)	<b>S3N-PH-2-B01-N</b> (95B010452)	-
				<b>S3N-PH-3-B01-P</b> (95B010045)	<b>S3N-PH-3-B01-N</b> (95B010048)	-
				<b>S3N-PH-4-B01-P</b> (95B010068)	<b>S3N-PH-4-B01-N</b> (95B010071)	-
				<b>S3N-PH-6-B01-P</b> (95B010125)	<b>S3N-PH-6-B01-N</b> (95B010124)	-
		Teach-In push button	M8-4 pin Pigtail	M8 plug 4 pin	-	<b>S3N-PH-5-B03-OZ</b> (95B010880)
				M12-4 pin Pigtail	-	<b>S3N-PH-3-B03-OZ</b> (95B010051)
				M8-4 pin Pigtail	-	<b>S3N-PH-4-B03-OZ</b> (95B010074)

# AVAILABLE MODELS

## DIFFUSE BEAM

Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP	NPN	PNP, NPN, PP, IO-Link
1 ... 250 mm on White 90%  635 nm LED Red	1 turn trimmer	Lon	M8 plug 4 pin	<b>S3N-PR-5-C01-PL</b> (95B010052)	<b>S3N-PR-5-C01-NL</b> (95B010212)	-
		L/D Selectable by trimmer		<b>S3N-PR-5-C01-P</b> (95B010692)	<b>S3N-PR-5-C01-N</b> (95B010682)	-
		Lon	2 m cable	<b>S3N-PR-2-C01-P</b> (95B010672)	<b>S3N-PR-2-C01-N</b> (95B010662)	-
		Don		<b>S3N-PR-2-C01-PL</b> (95B010042)	<b>S3N-PR-2-C01-NL</b> (95B010202)	-
		Don	M8 plug 4 pin	<b>S3N-PR-2-C01-PD</b> (95B010062)	<b>S3N-PR-2-C01-ND</b> (95B010222)	-
		Teach-In push button		<b>S3N-PR-5-C01-PD</b> (95B010072)	<b>S3N-PR-5-C01-ND</b> (95B010232)	-
		IO-Link		-	-	<b>S3N-PR-5-C03-OZ</b> (95B010790)
		L/D Selectable by trimmer	M8 plug 4 pin	<b>S3N-PR-5-C11-P</b> (95B010652)	<b>S3N-PR-5-C11-N</b> (95B010642)	-
		Lon	2 m cable	<b>S3N-PR-2-C11-PL</b> (95B010002)	<b>S3N-PR-2-C11-NL</b> (95B010162)	-
		Don		<b>S3N-PR-2-C11-PD</b> (95B010022)	<b>S3N-PR-2-C11-ND</b> (95B010182)	-
0 ... 1 m on white 90%  635 nm LED Red	1 turn trimmer	L/D Selectable by trimmer	M12-4 pin Pigtail	<b>S3N-PR-3-C11-P</b> (95B010036)	<b>S3N-PR-3-C11-N</b> (95B010041)	-
			M8-4 pin Pigtail	<b>S3N-PR-4-C11-P</b> (95B010059)	<b>S3N-PR-4-C11-N</b> (95B010064)	-
			M8-3 pin Pigtail	<b>S3N-PR-6-C11-P</b> (95B010107)	<b>S3N-PR-6-C11-N</b> (95B010106)	-
		Lon	M8 plug 4 pin	<b>S3N-PR-5-C11-PL</b> (95B010012)	<b>S3N-PR-5-C11-NL</b> (95B010172)	-
		Don		<b>S3N-PR-5-C11-PD</b> (95B010032)	<b>S3N-PR-5-C11-ND</b> (95B010192)	-
		Teach-In push button	IO-Link	M8-4 pin Pigtail	-	<b>S3N-PR-4-C13-OZ</b> (95B010077)
				M12-4 pin Pigtail	-	<b>S3N-PR-3-C13-OZ</b> (95B010054)
				M8 plug 4 pin	-	<b>S3N-PR-5-C13-OZ</b> (95B010800)

# S3N AVAILABLE MODELS

THROUGH BEAM Emitter AND RECEIVER

PHOTOELECTRIC CUBIC SENSORS

Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP	NPN	PNP, NPN, PP, IO-Link
0 ... 20 m 635 nm LED Red	1 turn trimmer	Lon	M8 plug 4 pin	<b>S3N-PR-5-FG01-PL</b> (95B010132)	<b>S3N-PR-5-FG01-NL</b> (95B010292)	-
		Don		<b>S3N-PR-5-FG01-PD</b> (95B010152)	<b>S3N-PR-5-FG01-ND</b> (95B010312)	-
		L/D Selectable by trimmer		<b>S3N-PR-5-FG01-P</b> (95B010732)	<b>S3N-PR-5-FG01-N</b> (95B010722)	-
		Lon	2 m cable	<b>S3N-PR-2-FG01-PL</b> (95B010122)	<b>S3N-PR-2-FG01-NL</b> (95B010282)	-
		Don		<b>S3N-PR-2-FG01-PD</b> (95B010142)	<b>S3N-PR-2-FG01-ND</b> (95B010302)	-
		L/D Selectable by trimmer		<b>S3N-PR-2-FG01-P</b> (95B010712)	<b>S3N-PR-2-FG01-N</b> (95B010702)	-
	Teach-In push button	M12-4 pin Pigtail	IO-Link	<b>S3N-PR-3-FG01-P</b> (95B010037)	<b>S3N-PR-3-FG01-N</b> (95B010084)	-
		M8-4 pin Pigtail		<b>S3N-PR-4-FG01-P</b> (95B010087)	<b>S3N-PR-4-FG01-N</b> (95B010065)	-
		M8-3 pin Pigtail		<b>S3N-PR-6-FG01-P</b> (95B010113)	<b>S3N-PR-6-FG01-N</b> (95B010109)	-
0 ... 30 m 650 nm LASER Red class 1	1 turn trimmer	M8 plug 4 pin	L/D Selectable by trimmer	-	-	<b>S3N-PR-5-FG03-OZ</b> (95B010810)
		M12-4 pin Pigtail		-	-	<b>S3N-PR-3-FG03-OZ</b> (95B010055)
		M8-4 pin Pigtail		-	-	<b>S3N-PR-4-FG03-OZ</b> (95B010078)
		M8 plug 4 pin		<b>S3N-PH-5-FG01-P</b> (95B010542)	<b>S3N-PH-5-FG01-N</b> (95B010552)	-
		2 m cable		<b>S3N-PH-2-FG01-P</b> (95B010522)	<b>S3N-PH-2-FG01-N</b> (95B010532)	-
	Teach-In push button	M12-4 pin Pigtail	IO-Link	<b>S3N-PH-3-FG01-P</b> (95B010046)	<b>S3N-PH-3-FG01-N</b> (95B010049)	-
		M8-4 pin Pigtail		<b>S3N-PH-4-FG01-P</b> (95B010069)	<b>S3N-PH-4-FG01-N</b> (95B010093)	-
		M8-3 pin Pigtail		<b>S3N-PH-6-FG01-P</b> (95B010128)	<b>S3N-PH-6-FG01-N</b> (95B010127)	-
		M8 plug 4 pin		-	-	<b>S3N-PH-5-FG03-OZ</b> (95B010890)
		M12-4 pin Pigtail		-	-	<b>S3N-PH-3-FG03-OZ</b> (95B010086)

# AVAILABLE MODELS

## BACKGROUND SUPPRESSION

Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP	NPN	PNP, NPN, PP, IO-Link
10 ... 800 mm (on White 90%) 15 ... 400 mm (on Grey 18%) 25 ... 200 mm (on Black 6%)  635 nm LED Red	9 turns trimmer  Teach-In push button	Don	M8 plug 4 pin	<b>S3N-PR-5-M01-PD</b> (95B010562)	-	-
		L/D Selectable by trimmer		<b>S3N-PR-5-M01-P</b> (95B010772)	<b>S3N-PR-5-M01-N</b> (95B010762)	-
		Lon	2 m cable	<b>S3N-PR-2-M01-PL</b> (95B010332)	<b>S3N-PR-2-M01-NL</b> (95B010322)	-
		L/D Selectable by trimmer		<b>S3N-PR-2-M01-P</b> (95B010752)	<b>S3N-PR-2-M01-N</b> (95B010742)	-
		M12-4 pin Pigtail	<b>S3N-PR-3-M01-P</b> (95B010038)	<b>S3N-PR-3-M01-N</b> (95B010043)	-	
		M8-4 pin Pigtail	<b>S3N-PR-4-M01-P</b> (95B010061)	<b>S3N-PR-4-M01-N</b> (95B010066)	-	
		M8-3 pin Pigtail	<b>S3N-PR-6-M01-P</b> (95B010116)	<b>S3N-PR-6-M01-N</b> (95B010115)	-	
		Lon	<b>S3N-PR-5-M01-PL</b> (95B010352)	<b>S3N-PR-5-M01-NL</b> (95B010342)	-	
		IO-Link	M8-4 pin Pigtail	-	-	<b>S3N-PR-4-M03-OZ</b> (95B010079)
			M8 plug 4 pin	-	-	<b>S3N-PR-5-M03-OZ</b> (95B010820)
			M12-4 pin Pigtail	-	-	<b>S3N-PR-3-M03-OZ</b> (95B010056)
10 ... 500 mm (on White 90%) 10 ... 250 mm (on Grey 18%) 30 ... 130 mm (on Black 6%)  650 nm LASER Red class 1	9 turns trimmer  Teach-In push button	L/D Selectable by trimmer	2 m cable	<b>S3N-PH-2-M01-P</b> (95B010482)	<b>S3N-PH-2-M01-N</b> (95B010492)	-
			M12-4 pin Pigtail	<b>S3N-PH-3-M01-P</b> (95B010047)	<b>S3N-PH-3-M01-N</b> (95B010085)	-
			M8-4 pin Pigtail	<b>S3N-PH-4-M01-P</b> (95B010089)	<b>S3N-PH-4-M01-N</b> (95B010073)	-
			M8 plug 4 pin	<b>S3N-PH-5-M01-P</b> (95B010502)	<b>S3N-PH-5-M01-N</b> (95B010512)	-
			M8-3 pin Pigtail	<b>S3N-PH-6-M01-P</b> (95B010134)	<b>S3N-PH-6-M01-N</b> (95B010133)	-
22 ... 130 mm  650 nm LASER Red class 1	Teach-In push button	IO-Link	M8-4 pin Pigtail	-	-	<b>S3N-PH-4-M03-OZ</b> (95B010136)
			M12-4 pin Pigtail	-	-	<b>S3N-PH-3-M03-OZ</b> (95B010135)
			M8 plug 4 pin	-	-	<b>S3N-PH-5-M03-OZ</b> (95B010900)

# S3N AVAILABLE MODELS

POLARIZED RETROREFLECTIVE FOR CLEAR OBJECT

PHOTOELECTRIC CUBIC SENSORS

Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP		NPN	PNP, NPN, PP, IO-Link
0 ... 2 m On R7 reflector 635 nm LED Red	1 turn trimmer	L/D Selectable by trimmer	M8 plug 4 pin	<b>S3N-PR-5-T51-P</b> (95B010850)	<b>S3N-PR-5-T51-N</b> (95B010860)	-	-
		Don		<b>S3N-PR-5-T51-PD</b> (95B010362)	<b>S3N-PR-5-T51-ND</b> (95B010372)	-	-
		Lon		<b>S3N-PR-5-T51-PL</b> (95B010402)	<b>S3N-PR-5-T51-NL</b> (95B010412)	-	-
		L/D Selectable by trimmer	2 m cable	<b>S3N-PR-2-T51-P</b> (95B010830)	<b>S3N-PR-2-T51-N</b> (95B010840)	-	-
		Don		<b>S3N-PR-2-T51-PD</b> (95B010382)	<b>S3N-PR-2-T51-ND</b> (95B010392)	-	-
		Lon		<b>S3N-PR-2-T51-PL</b> (95B010422)	<b>S3N-PR-2-T51-NL</b> (95B010432)	-	-
		M12-4 pin Pigtail	L/D Selectable by trimmer	<b>S3N-PR-3-T51-P</b> (95B010039)	<b>S3N-PR-3-T51-N</b> (95B010044)	-	-
		M8-4 pin Pigtail		<b>S3N-PR-4-T51-P</b> (95B010088)	<b>S3N-PR-4-T51-N</b> (95B010067)	-	-
		M8-3 pin Pigtail		<b>S3N-PR-6-T51-P</b> (95B010119)	<b>S3N-PR-6-T51-N</b> (95B010118)	-	-
	Teach-In push button	M8 plug 4 pin	IO-Link	-	-	-	<b>S3N-PR-5-T53-OZ</b> (95B010870)
		M12-4 pin Pigtail		-	-	-	<b>S3N-PR-3-T53-OZ</b> (95B010057)
		M8-4 pin Pigtail		-	-	-	<b>S3N-PR-4-T53-OZ</b> (95B010094)

# AVAILABLE MODELS

CONTRAST SENSOR

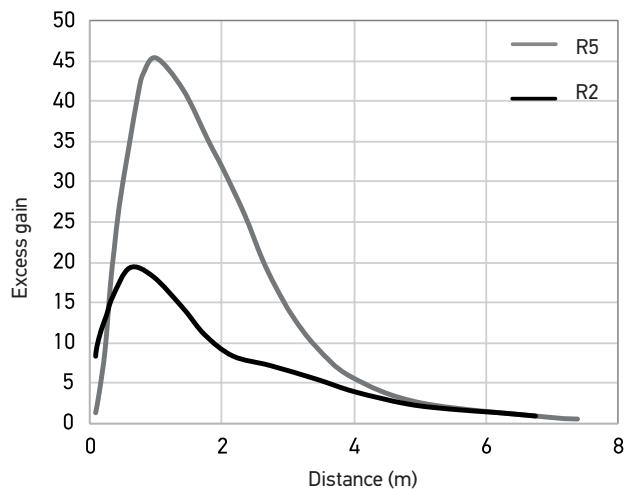


Nominal sensing distance	Sensitivity adjustment	Output function	Connections	PNP, NPN, PP, IO-Link
12 mm ± 3 mm  RGB blue (460 nm) / green (525 nm) / red (633 nm)	Teach-In push button	IO-Link	M8 plug 4 pin	<b>S3N-PR-5-W03-OZ</b> (95B010026)
			M12-4 pin Pigtail	<b>S3N-PR-3-W03-OZ</b> (95B010137)
			M8-4 Pin Pigtail	<b>S3N-PR-4-W03-OZ</b> (95B010138)

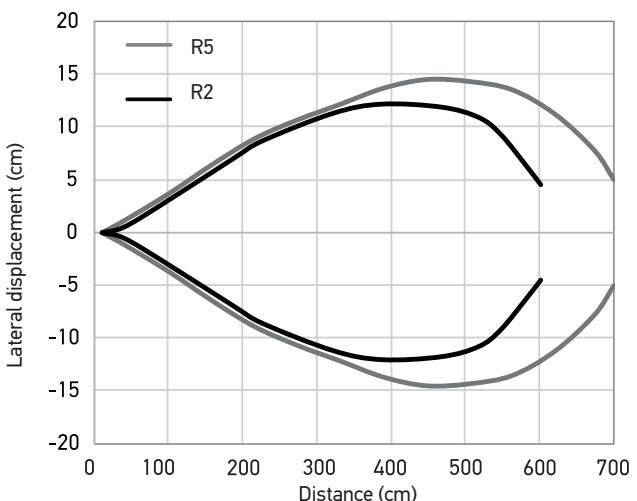
## RESPONSE DIAGRAMS

POLARIZED RETROREFLECTIVE LED RED

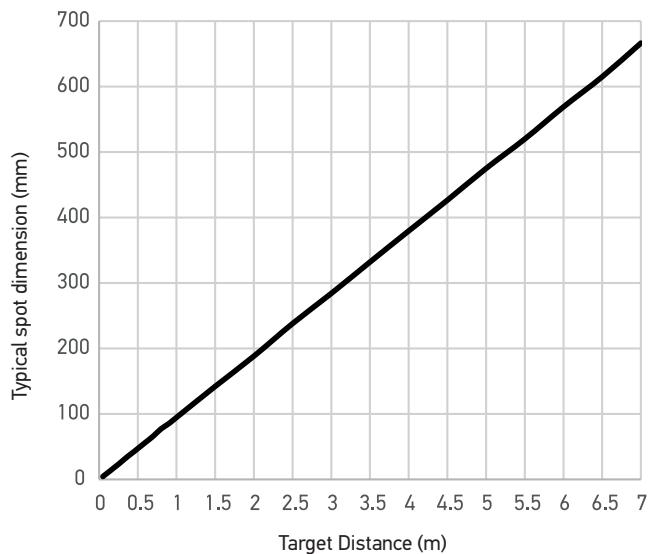
**S3N-PR-\* -B\*\* -\*\* (Excess gain)**



**S3N-PR-\* -B\*\* -\*\* (Beam diagram)**

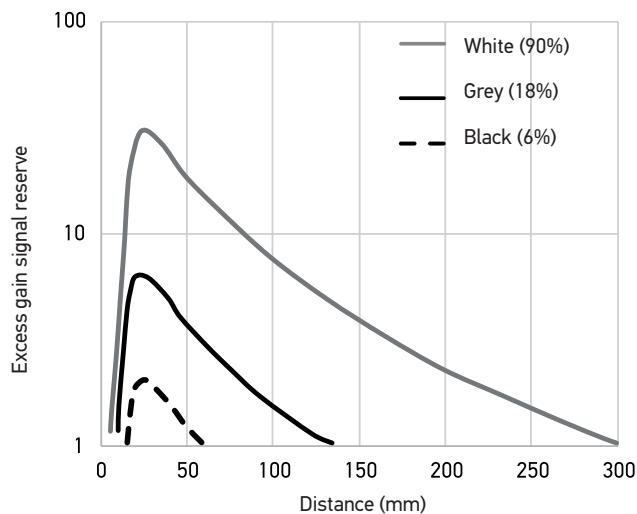


**S3N-PR-\* -B\*\* -\*\* (Spot dimension)**

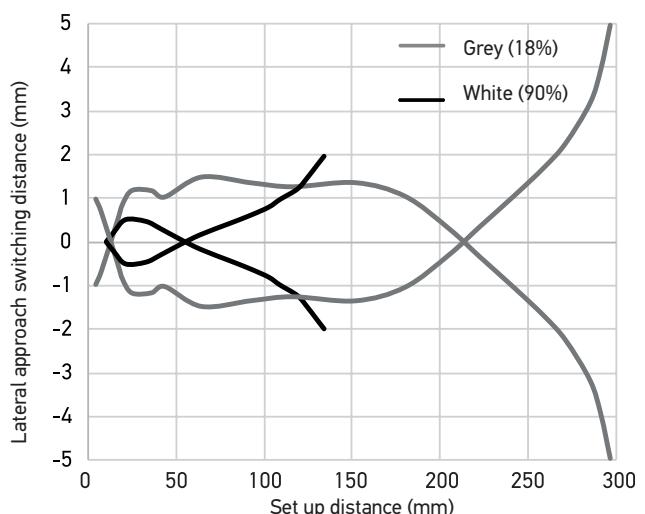


## DIFFUSE BEAM LED RED

**S3N-PR-\* -C0\* -\*\* (Excess gain)**



**S3N-PR-\* -C0\* -\*\* (Beam diagram)**



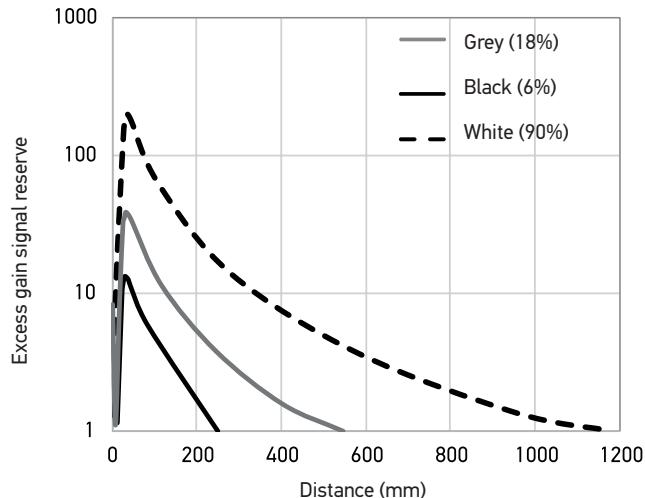
# RESPONSE DIAGRAMS

DIFFUSE BEAM LED RED

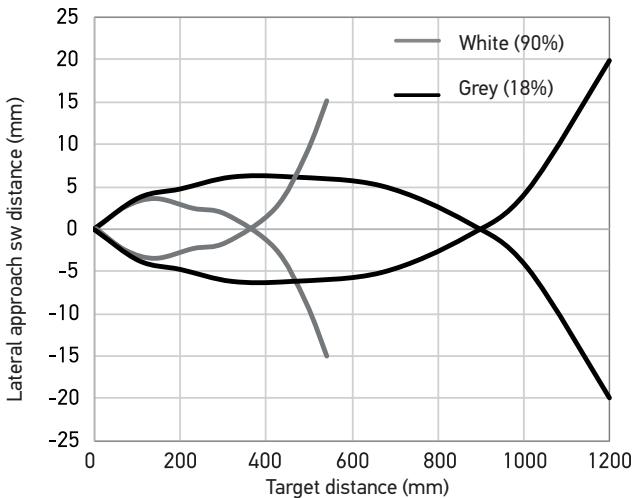
NES

PHOTOELECTRIC CUBIC SENSORS

**S3N-PR-<sup>\*</sup>-C1\*-<sup>\*\*</sup> (Excess gain)**

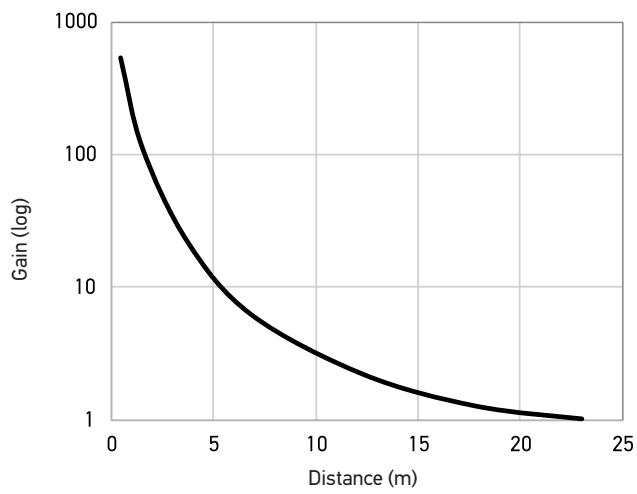


**S3N-PR-<sup>\*</sup>-C1\*-<sup>\*\*</sup> (Beam diagram)**

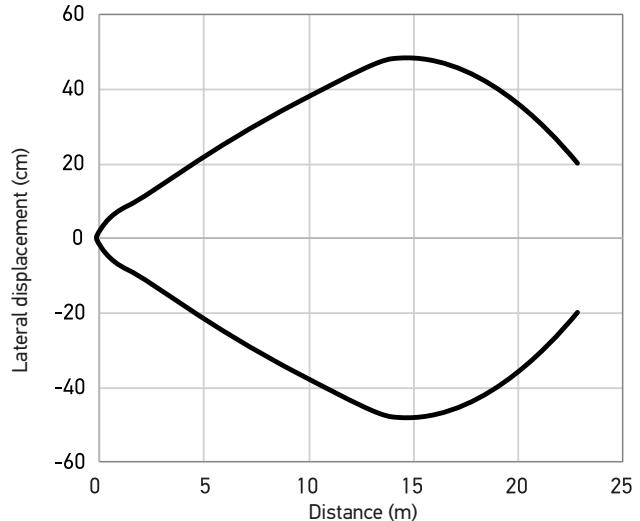


THROUGH BEAM Emitter AND RECEIVER LED RED

**S3N-PR-<sup>\*</sup>-FG\*\*-<sup>\*\*</sup> (Excess gain)**

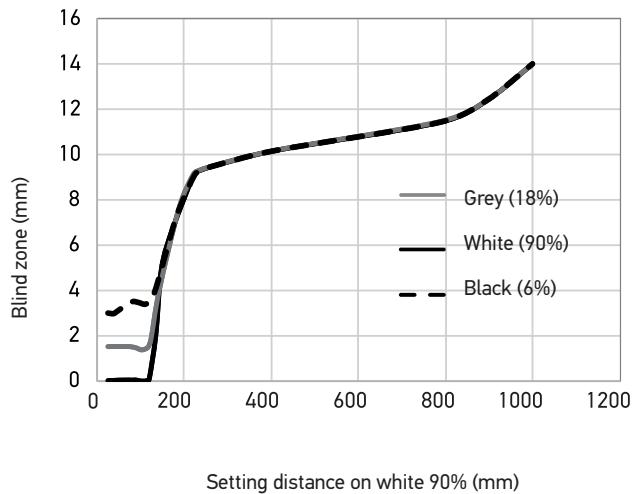


**S3N-PR-<sup>\*</sup>-FG\*\*-<sup>\*\*</sup> (Beam diagram)**

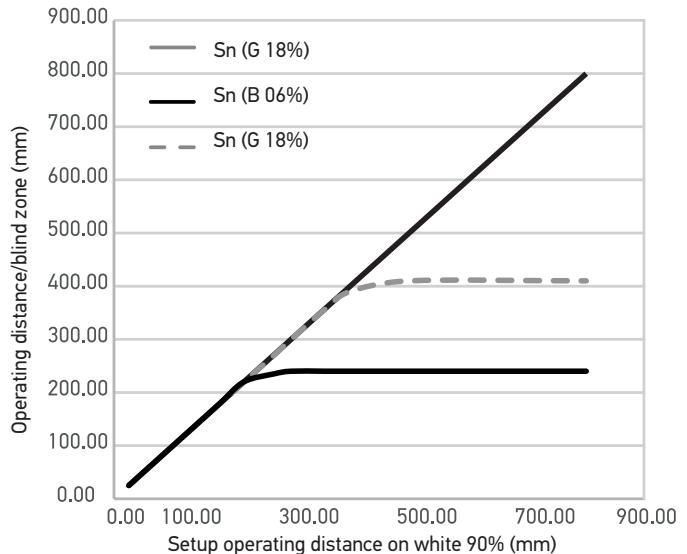


BACKGROUND SUPPRESSION LED RED

**S3N-PR-<sup>\*</sup>-M01-<sup>\*\*</sup> (Blind zone)**

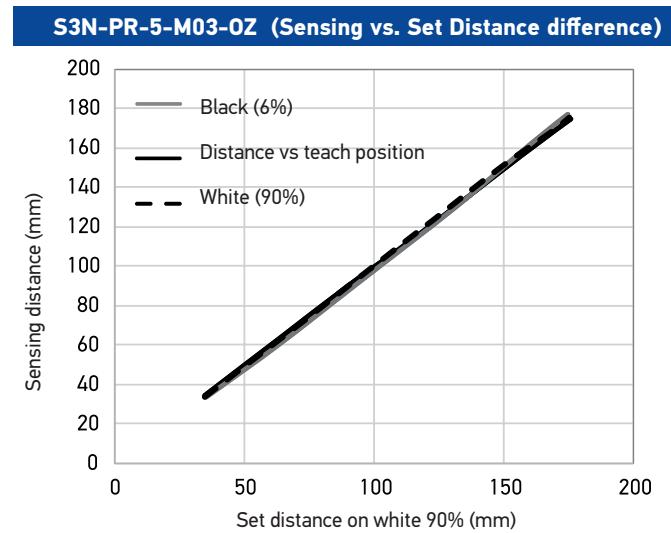
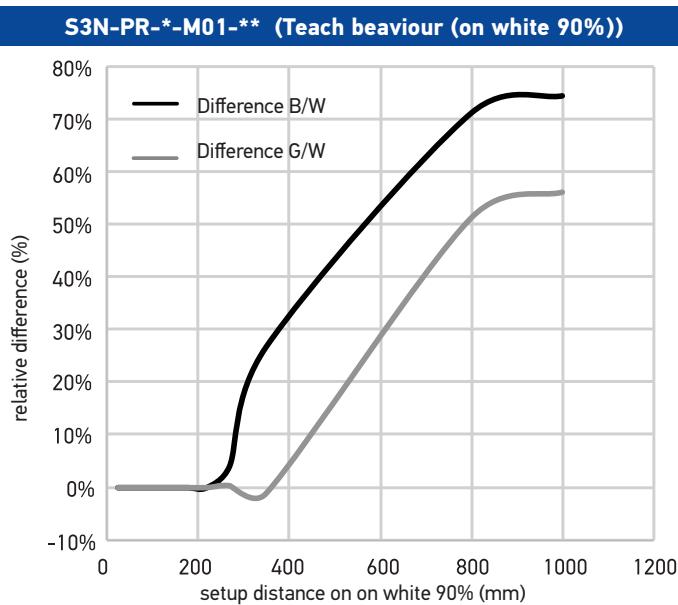


**S3N-PR-<sup>\*</sup>-M01-<sup>\*\*</sup> (Operating distance)**

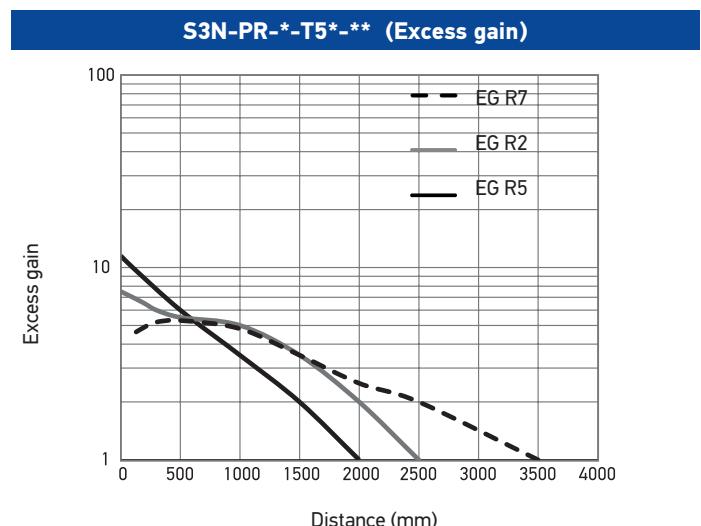
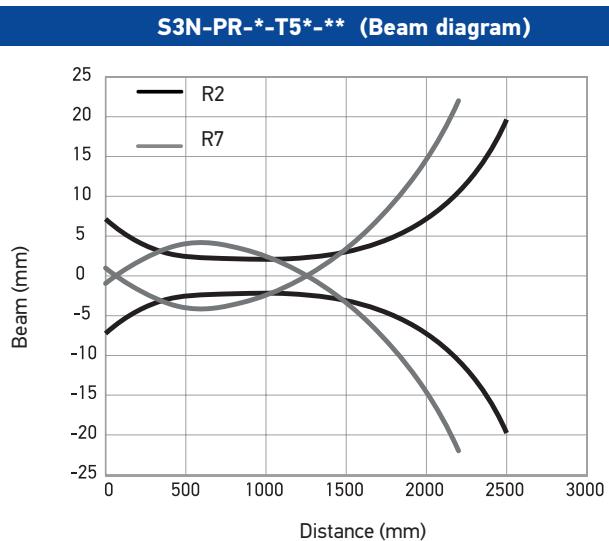


## RESPONSE DIAGRAMS

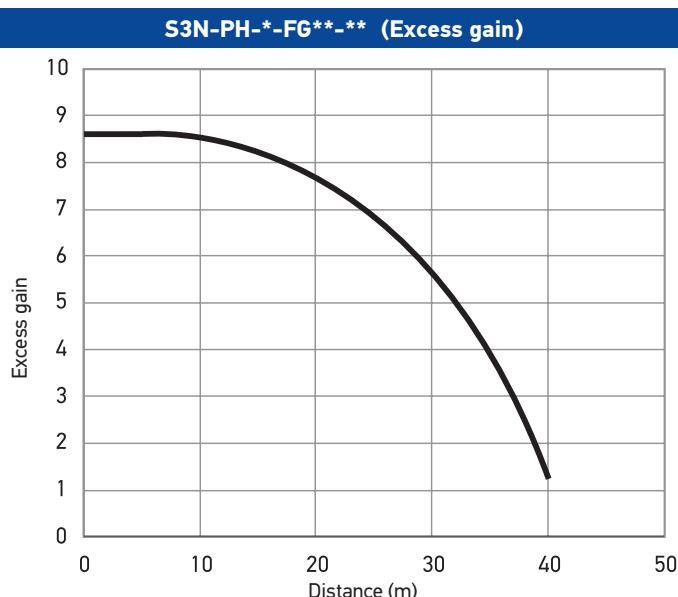
### BACKGROUND SUPPRESSION LED RED



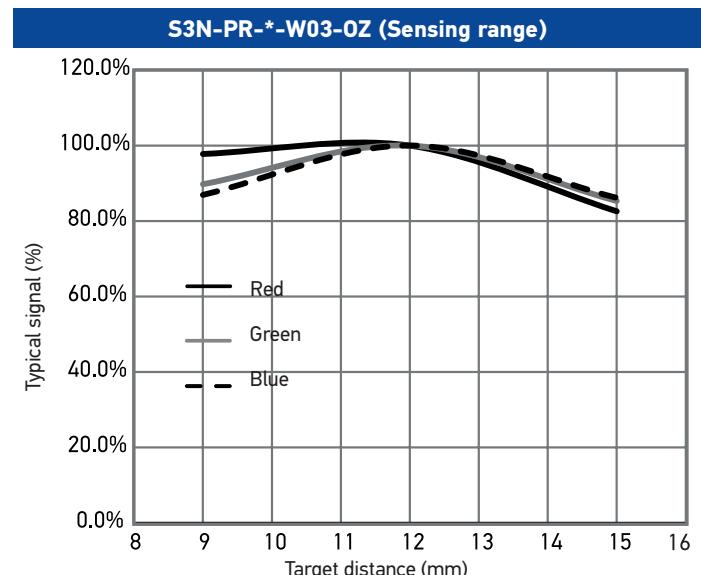
### POLARIZED RETROREFLECTIVE FOR CLEAR OBJECT LED RED



### THROUGH BEAM LED RED



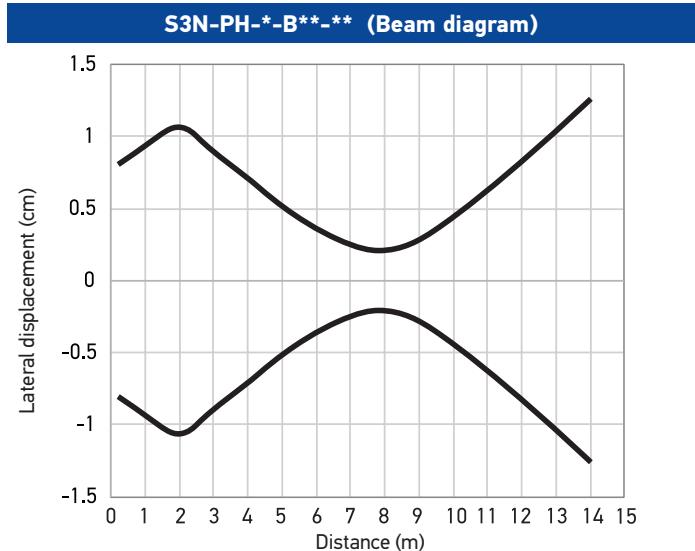
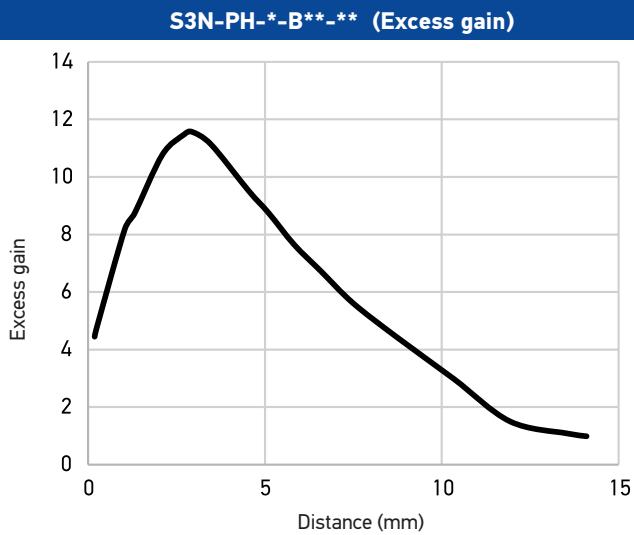
### CONTRAST SENSOR RGB LED



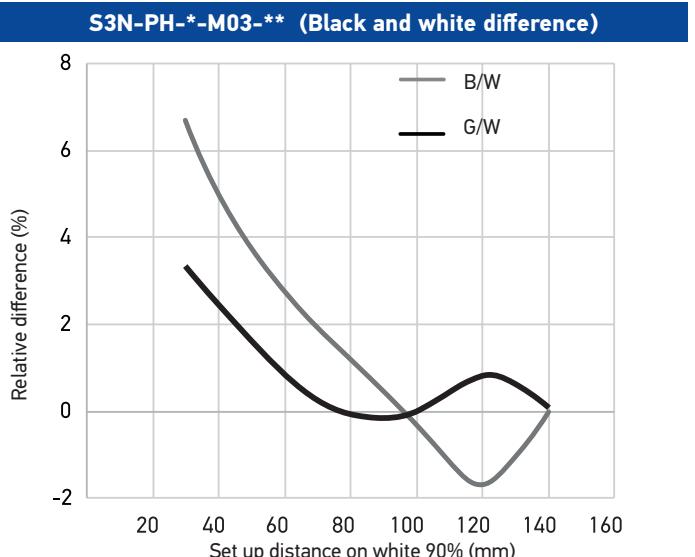
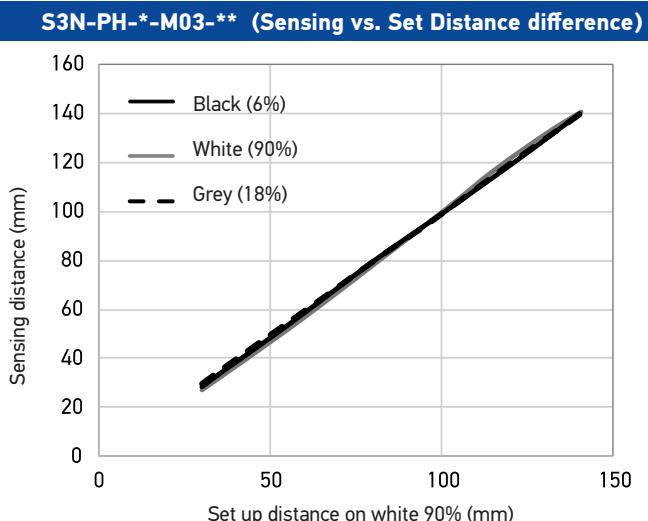
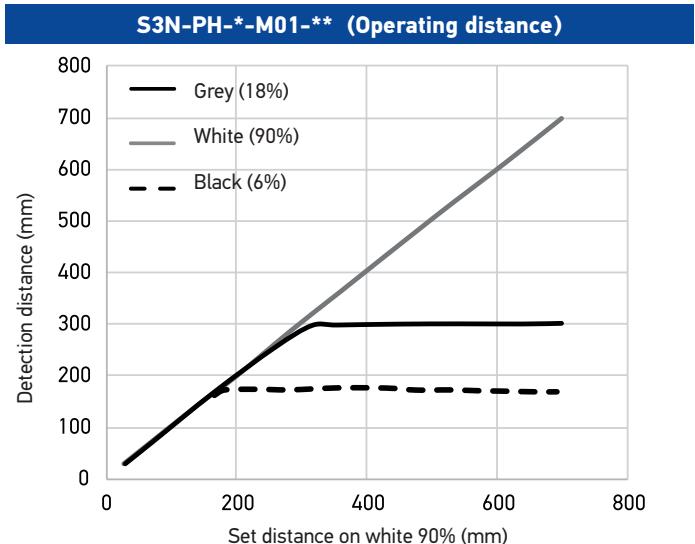
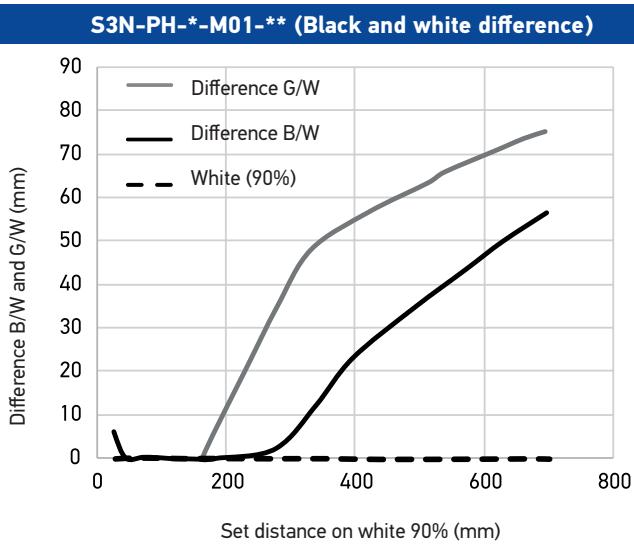
# S3N RESPONSE DIAGRAMS

POLARIZED RETROREFLECTIVE LASER RED CLASS 1

PHOTOELECTRIC CUBIC SENSORS

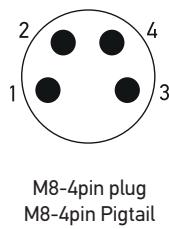


BACKGROUND SUPPRESSION LASER RED CLASS 1



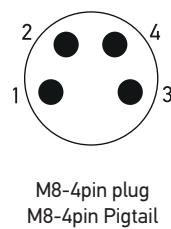
## CONNECTIONS

**S3N-P\*-\*-\*\*\*1-\*\***  
(With Trimmer and PNP or NPN Out)



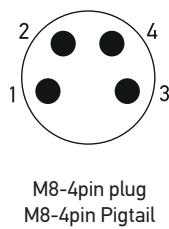
1	Brown	+10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	OUT

**S3N-P\*-\*-\*\*\*3-OZ**  
(With Teach-In and IO-Link)



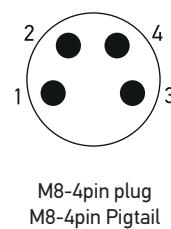
1	Brown	+10...30Vdc
2	White	CONFIG I/O
3	Blue	0Vdc
4	Black	C/Q IO-Link

**S3N-P\*-\*-G\*\*-\*\***  
(Emitter with TEST-)



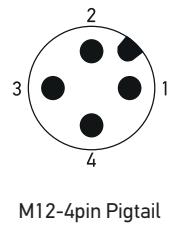
1	Brown	+10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	TEST-

**S3N-P\*-\*-G\*\*-OZ**  
(Emitter with TEST- and IO-Link)



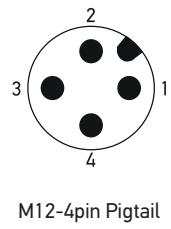
1	Brown	+10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	C/Q IO-Link

**S3N-P\*-3-\*\*\*1-\*\***  
(With Trimmer and PNP or NPN Out)



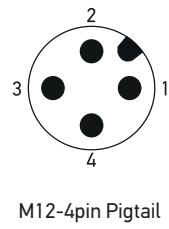
1	Brown	10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	OUT

**S3N-P\*-3-\*\*\*3-OZ**  
(With Teach-In and IO-Link)



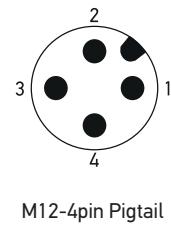
1	Brown	+10...30Vdc
2	White	CONFIG/I/O
3	Blue	0Vdc
4	Black	C/Q IO-Link

**S3N-P\*-3-\*G\*\*-\*\***  
(Emitter with TEST-)



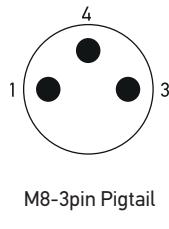
1	Brown	+10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	TEST-

**S3N-P\*-3-\*G\*\*-OZ**  
(Emitter with TEST- and IO-Link)



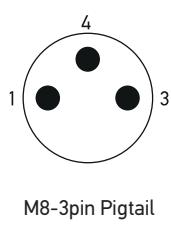
1	Brown	+10...30Vdc
2	White	NOT USED
3	Blue	0Vdc
4	Black	C/Q IO-Link

**S3N-P\*-6-\*\*\*1-\*\***  
(With Trimmer and PNP or NPN Out)



1	Brown	+10...30Vdc
3	Blue	0V
4	Black	OUT

**S3N-P\*-6-\*G\*\*-\*\***  
(Emitter with TEST-)

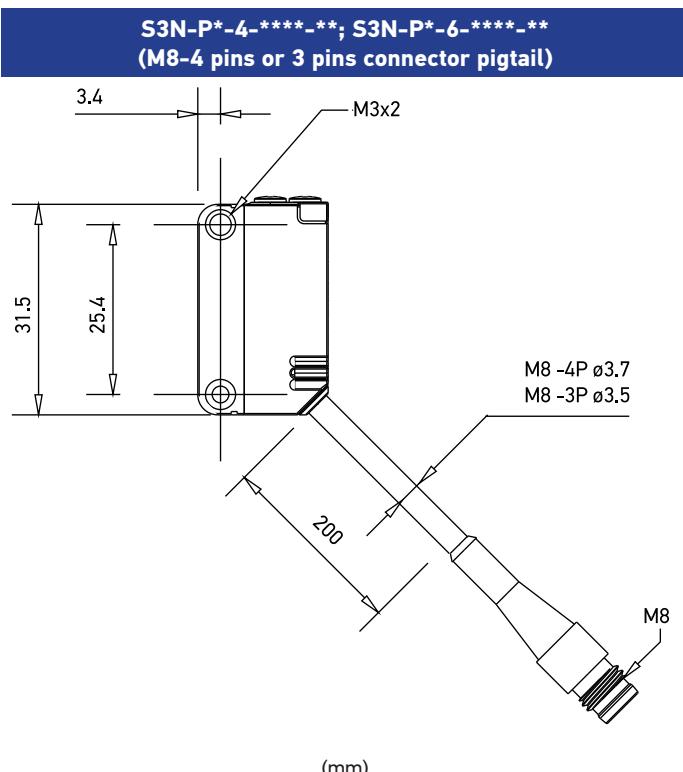
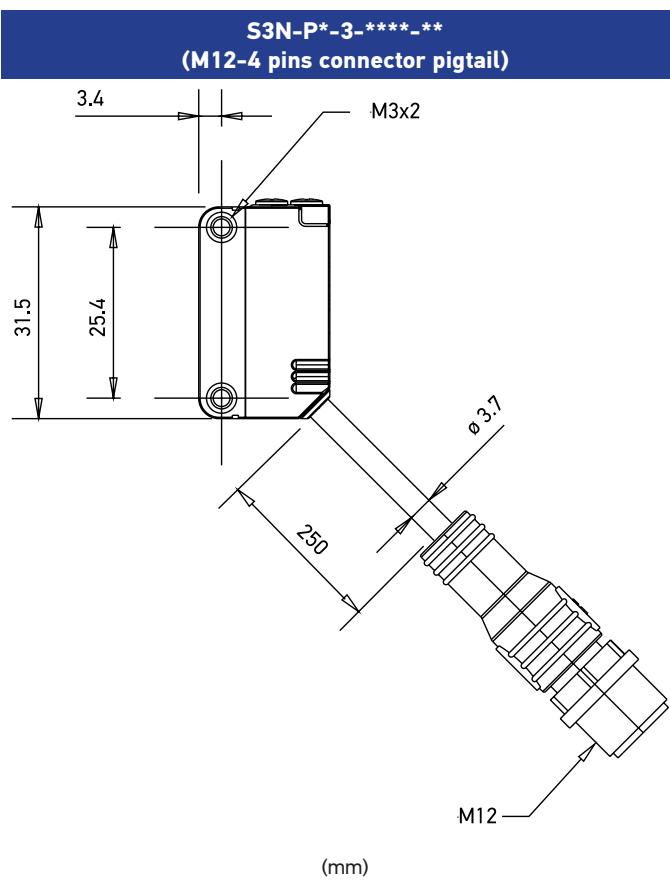
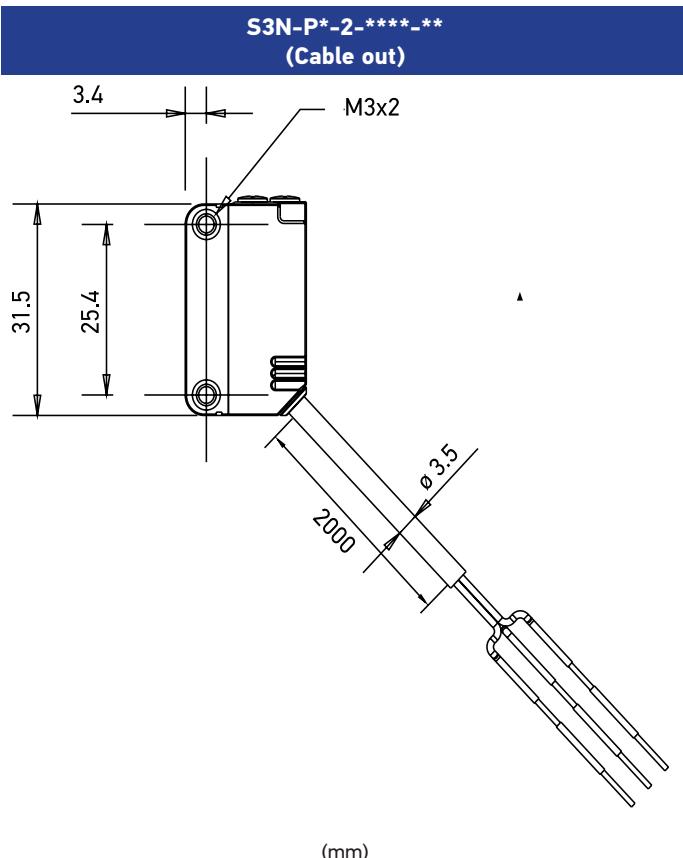
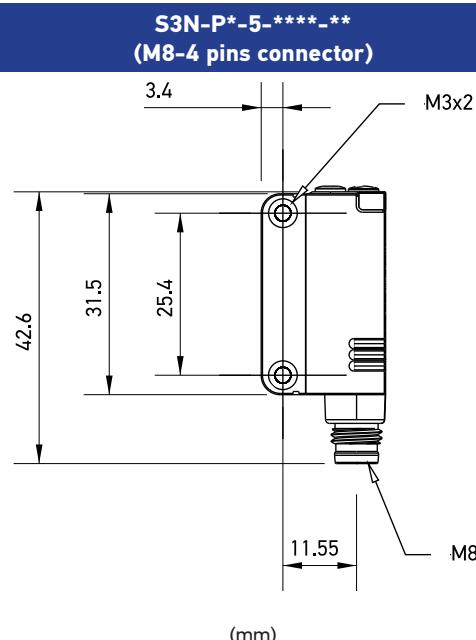


1	Brown	+10...30Vdc
3	Blue	0Vdc

# MECHANICAL DRAWINGS

**S3N**

PHOTOELECTRIC CUBIC SENSORS



## OPTICAL DISPLACEMENT

S3N Front view	Models	A	B
	S3N-PR-*-*B0*-* S3N-PH-*-*B0*-* S3N-P*-*T5*-* S3N-P*-*M01-* S3N-P*-*C0*-* S3N-P*-*C1*-* S3N-P*-*M03-* S3N-PR-*-*G0*-* S3N-PH-*-*G0*-* S3N-PR-*-*W03-* S3N-P*-*F0*-*	7.2 17.2 7.2 13.6 13.8 7.2 14.2	8.25 6.2 10.65 6.3 7 10.2 - 7.5 -

## USER INTERFACE

S3N-P*-*-*-*D; S3N-P*-*-*-*L Single trimmer		S3N-P*-*-*-*P; S3N-P*-*-*-*N Dual trimmer	S3N-P*-*-*-*OZ Teach-in	S3N-P*-*-*G01-* Transmitter	S3N-P*-*-*G03-* Transmitter IO-Link
A	Green LED: POWER ON (M01, Laser models) STABILITY (other models)	Green LED: POWER ON (M01, Laser models) STABILITY (other models)	Green LED: POWER ON	Green LED: POWER ON	Green LED: POWER ON
B	Yellow LED OUTPUT status	Yellow LED OUTPUT status	Yellow LED OUTPUT status	-	Blue LED : IO-Link Activity
C	Sensitivity Adjust M01: 9 turns Others: 1 turn	L/D Selection	TEACH-IN Push Button	-	-
D	-	Sensitivity Adjust M01 9 turns Others 1 turn	Blue LED : IO-Link Activity	-	-

## ACCESSORIES

### MOUNTING BRACKETS

Model	Description
S3N L-Shaped Fixing Bracket (95ACC0024)	S3N L-Shaped Side Fixing bracket ST-1051
S3N Protection Bracket-Horiz (95ACC0025)	S3N Protection Bracket-Horizontal Fixing bracket ST-1049
S3N Protection Bracket-Vert U shaped (95ACC0026)	S3N Protection Bracket-Vertical U shaped Fixing bracket QM ST 103
S3N Bracket for M03 (95ACC0033)	S3N Bracket for M03 products over the belt applications ST-1053

# S3N ACCESSORIES

## REFLECTORS

PHOTOELECTRIC CUBIC SENSORS

Model	Description
<b>R4-PLASTIC REFL -51X61MM</b> (95A151340)	R4 = Prismatic reflector 47x 47 mm - plastic support 51.5 x 61 mm
<b>R7 REFL RRX LASER 51x61mm M505-12</b> (95A151360)	R7 = Microprismatic reflector 38 x 40 mm - plastic support 51 x 61 mm
<b>R5-PLASTIC REFL -MM.75</b> (S940700075)	R5 = Prismatic reflector ø 75 mm - plastic support ø 82 mm

## CABLES

Model	Description
<b>CS-B1-02-G-03</b> (95A251420)	CS-B1-02-G-03 4 poli M8 3m grigio
<b>CS-B1-02-G-05</b> (95A251430)	CS-B1-02-G-05 = M8 4-p axial 5m
<b>CS-B2-02-G-03</b> (95A251450)	CS-B2-02-G-03 = M8 4-p radial 3m
<b>CS-B2-02-G-05</b> (95A251460)	CS-B2-02-G-05 = M8 4-p radial 5m
<b>CS-B1-02-G-10</b> (95A251480)	CS-B1-02-G-10 4 poli M8 10m grigio
<b>CS-B2-02-G-10</b> (95A251530)	CS-B2-02-G-10 = M8 4-p radial 10m
<b>CS-B1-02-R-02</b> (95A251620)	CS-B1-02-R-02 M8 4 poli diritto 2m PUR
<b>CS-B2-02-R-02</b> (95A251630)	CS-B2-02-R-02 = M8 4-p radial 2m PUR
<b>CS-B1-02-R-05</b> (95A251640)	CS-B1-02-R-05 = M8 4-p axial 5m PUR
<b>CS-B2-02-R-05</b> (95A251650)	CS-B2-02-R-05 = M8 4-p radial 5m PUR
<b>CS-H1-02-B-03</b> (95ACC0008)	CS-H1-02-B-03 4p M12-M/M8-F axial 3m bk

## OPTICAL APERTURES

Model	Description
<b>S3N-SLIT1 Ø 0,5 mm for through beam</b> (95ACC0027)	S3N-SLIT1 round aperture of Ø 0,5 mm for through beam optical functions
<b>S3N-SLIT2 Ø 1 mm for through beam</b> (95ACC0028)	S3N-SLIT2 round aperture of Ø 1 mm for through beam optical functions
<b>S3N-SLIT3 Ø 2 mm for through beam</b> (95ACC0029)	S3N-SLIT3 round aperture of Ø 2 mm for through beam optical functions
<b>S3N-SLIT4 0,5x19 mm for through beam</b> (95ACC0030)	S3N-SLIT4 round aperture of 0,5x19 mm for through beam optical functions
<b>S3N-SLIT5 1x19 mm for through beam</b> (95ACC0031)	S3N-SLIT5 rectangular aperture of 1x19 mm for through beam optical functions
<b>S3N-SLIT6 2x19 mm for through beam</b> (95ACC0032)	S3N-SLIT6 rectangular aperture of 2x19 mm for through beam optical functions

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