

# S3Z



## ADVANCED GLOBAL STYLE MINIATURE PHOTOELECTRIC SENSOR



- 50-250 mm background suppression
- 0.7 m proximity, 150 mm with narrow beam
- 4 m polarized retroreflective
- 15 m through beam
- Light and dark trimmer models
- Standard 3-wire output configuration

### APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling
- Transportation lines, material handling
- Automatic warehouses
- Cosmetics and Pharmaceutical industry
- Small part detection with maximum accuracy

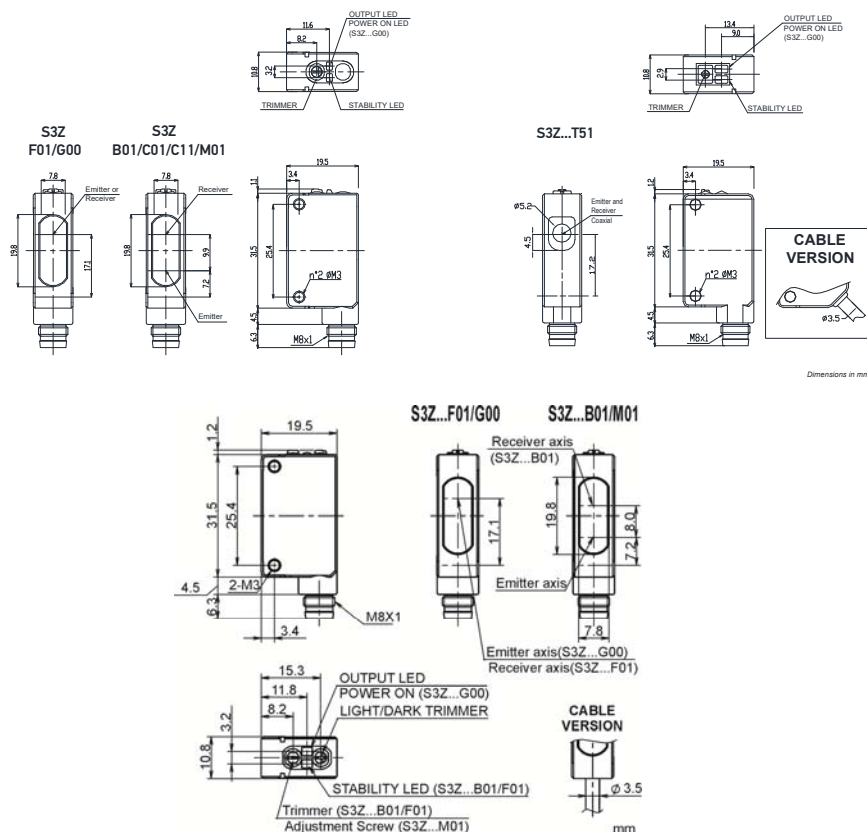


S3Z		
<b>Through beam</b>	0...15 m 0...30 m (class 1 LASER)	
<b>Polarized retroreflective</b>	0.05...4 m 0,3...10 m (class 1 LASER)	
<b>Retroreflective for transparent (on R2 reflector)</b>	0...2 m	
<b>Diffuse proximity</b>	0...700 mm 50...150 mm (narrow beam)	
<b>Background suppression</b>	50...250 mm 40...300 mm (class 1 LASER)	
<b>Power supply</b>	Vdc	10...30 V
	Vac	
	Vac/dc	
<b>Output</b>	PNP	•
	NPN	•
	NPN/PNP	
	relay	
	other	
<b>Connection</b>	cable	•
	connector	•
	pig-tail	
<b>Approximate dimensions (mm)</b>	11x31x19	
<b>Housing material</b>	PC/PBT	
<b>Mechanical protection</b>	IP67	

# TECHNICAL DATA

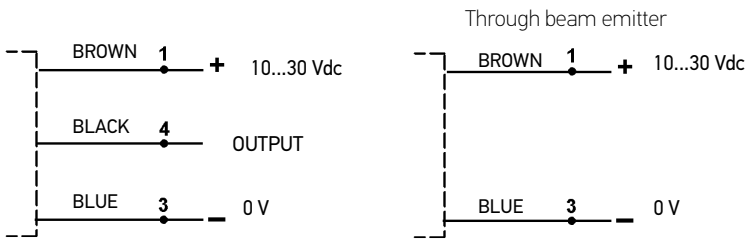
<b>Consumption (output current excluded)</b>	30 mA max. (LED mod.) 35 mA max. (Laser mod.)
<b>Light emission</b>	red LED 650 nm (mod. S3Z...T51) red LED 665 nm (mod. S3Z...B01/C01) red LED 670 nm (mod. S3Z...M01) IR LED 850 nm (mod. S3Z...C11) IR LED 870 nm (mod. S3Z...F01/G00) red Laser 650 nm (mod. S3Z...B01/F01/G00/M01)
<b>Setting</b>	sensitivity trimmer, 6 turns screw (mod. S3Z...M01), one turn sensitivity trimmer
<b>Operating mode</b>	LIGHT/DARK trimmer (Laser mod. S3Z...-PP, -NN), LIGHT (mod. S3Z...-PL, -NL), DARK (mod. S3Z...-PD, -ND)
<b>Indicators</b>	yellow OUTPUT LED, green STABILITY LED (mod. S3Z...B01/C01/C11/F01), POWER ON LED (mod. S3Z...G00)
<b>Output</b>	PNP or NPN (short circuit protection)
<b>Output current</b>	100 mA max.
<b>Saturation voltage</b>	2 V max. (LED mod.) 1,5 V max. (Laser mod.)
<b>Response time</b>	1 ms max. (LED mod.) 250 µs max. (Laser mod.)
<b>Switching frequency</b>	500 Hz max. (LED mod.) 2 kHz max. (Laser mod.)
<b>Connection</b>	2 m cable Ø 3,5 mm, M8 4-pole connector
<b>Dielectric strength</b>	500 Vac 1 min., between electronics and housing
<b>Insulating resistance</b>	>20 MΩ 500 Vdc, between electronics and housing
<b>Mechanical protection</b>	IP67
<b>Ambient light rejection</b>	according to EN 60947-5-2
<b>Vibration</b>	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)
<b>Shock resistance</b>	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
<b>Housing material</b>	body PBT, indicators cover PC
<b>Lens material</b>	PMMA, PC (mod. S3Z...B01)
<b>Operating temperature</b>	-25 ... 55 °C (LED mod.), -10 ... 55 °C (Laser mod.)
<b>Storage temperature</b>	-40 ... 70 °C (LED mod.), -25 ... 70 °C (Laser mod.)
<b>Weight</b>	50 g max. cable vers. , 10 g max. conn. vers.

# DIMENSIONS

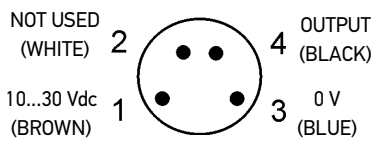


# CONNECTIONS

## CABLE

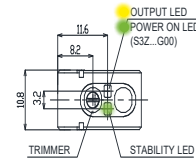


## M8 CONNECTOR

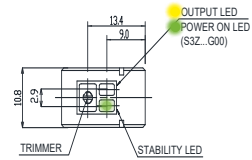


# INDICATORS AND SETTINGS

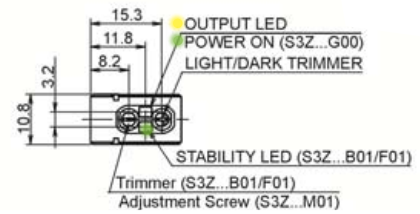
## S3Z...F01/G00/B01/C01/M01



## S3Z...T51

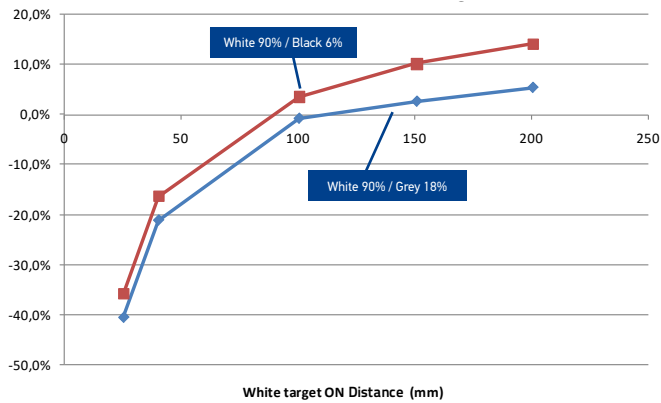


## S3Z...F01/G00/B01/M01/S3Z...-PP, -NN

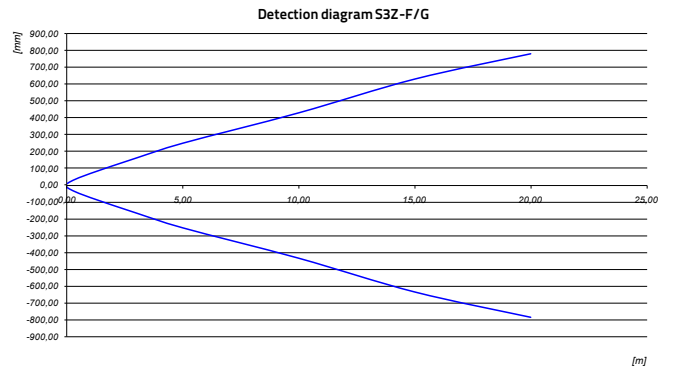


# DIAGRAM LED MODELS

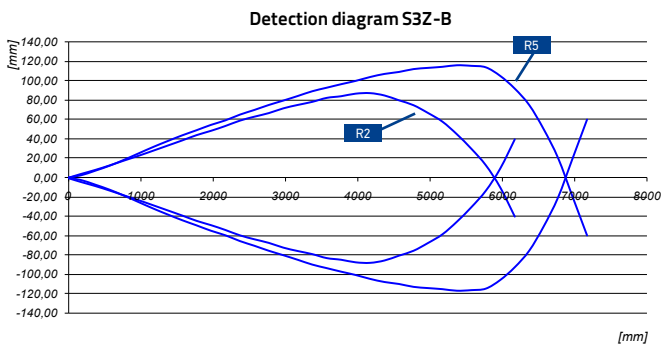
## BACKGROUND SUPPRESSION - DISTANCE DIFFERENCE VS REFLECTANCE TARGET



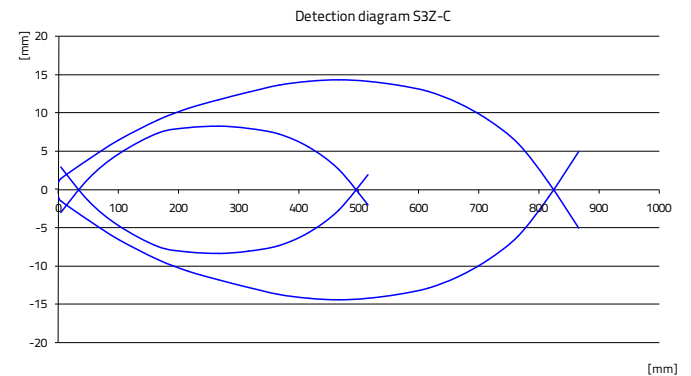
## THROUGH BEAM - DETECTION AREA



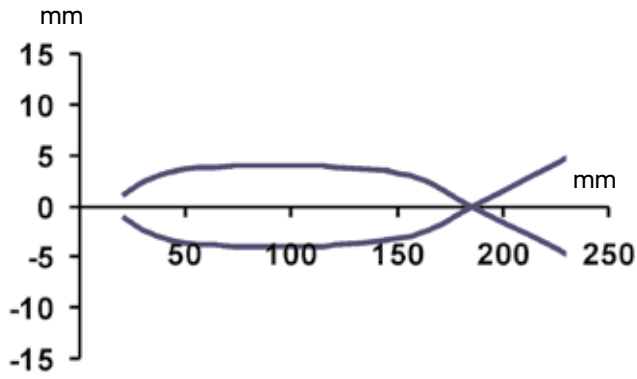
## POLARIZED RETROREFLECTIVE - DETECTION AREA



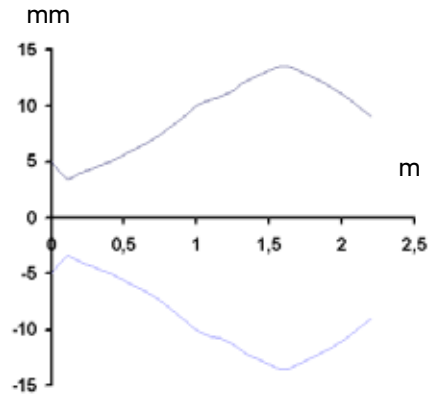
## DIFFUSE PROXIMITY - DETECTION AREA



**NARROW BEAM PROXIMITY - DETECTION AREA**

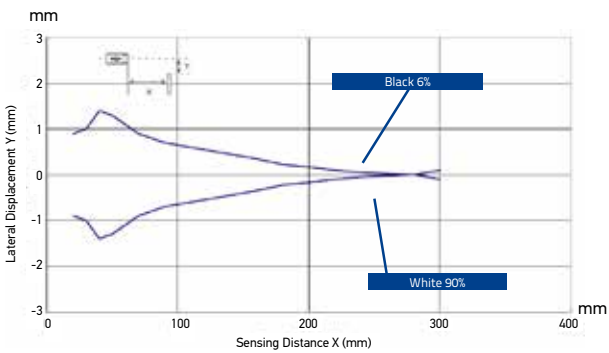


**POLARIZED RETROREFLECTIVE FOR TRANSPARENT - DETECTION AREA**

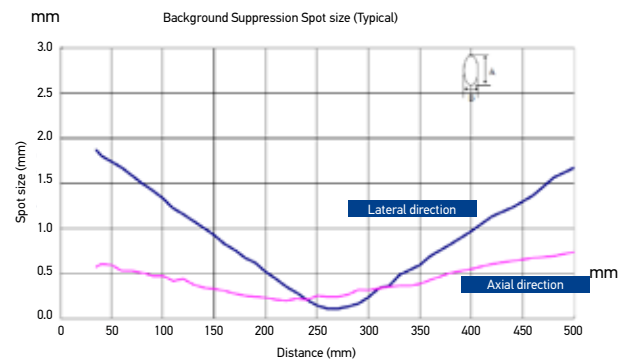


**DIAGRAMS LASER MODELS**

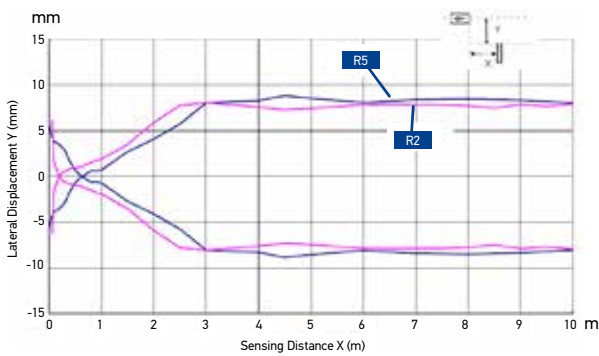
**BACKGROUND SUPPRESSION - DETECTION AREA**



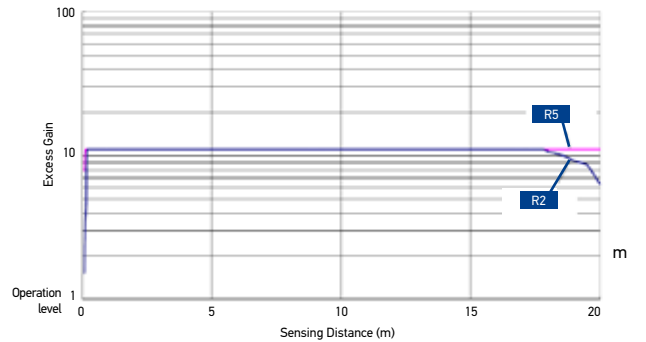
**BACKGROUND SUPPRESSION - SPOT DIMENSION**



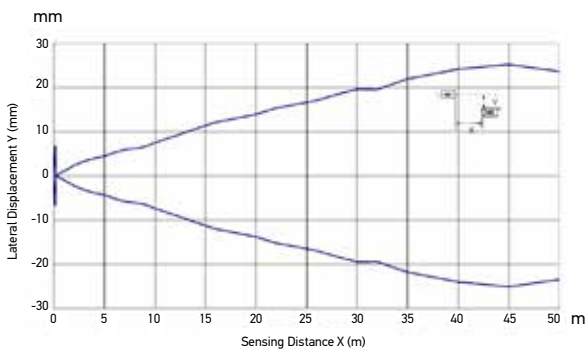
**POLARIZED RETROREFLECTIVE - DETECTION AREA**



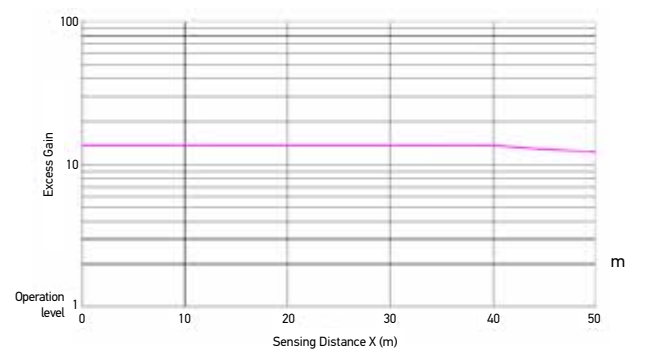
**POLARIZED RETROREFLECTIVE - EXCESS GAIN**



**THROUGH BEAM - DETECTION AREA**



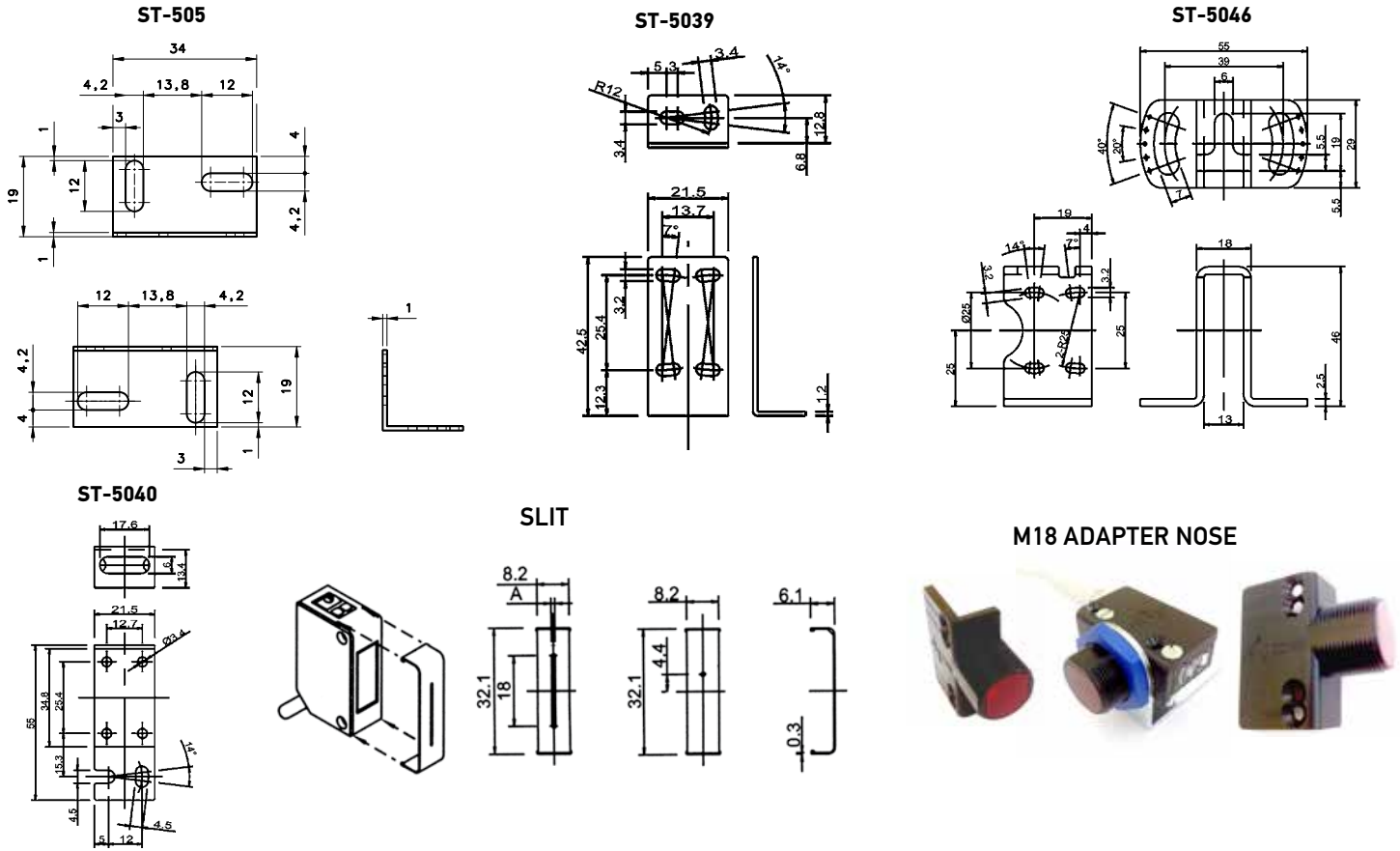
**THROUGH BEAM - EXCESS GAIN**



# MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	EMISSION	CONNECTION	OUTPUT	MODEL	ORDER NO.		
Narrow beam diffuse proximity	LED	2 m Cable	PNP - LIGHT	S3Z-PR-2-C01-PL	95B010040		
		M8 Connector	PNP - LIGHT	S3Z-PR-5-C01-PL	95B010050		
		2 m Cable	PNP - DARK	S3Z-PR-2-C01-PD	95B010060		
		M8 Connector	PNP - DARK	S3Z-PR-5-C01-PD	95B010070		
		2 m Cable	NPN - LIGHT	S3Z-PR-2-C01-NL	95B010200		
		M8 Connector	NPN - LIGHT	S3Z-PR-5-C01-NL	95B010210		
		2 m Cable	NPN - DARK	S3Z-PR-2-C01-ND	95B010220		
		M8 Connector	NPN - DARK	S3Z-PR-5-C01-ND	95B010230		
		2 m Cable	PNP - LIGHT/DARK	S3Z-PR-2-C01-PP	95B010670		
		M8 Connector	PNP - LIGHT/DARK	S3Z-PR-5-C01-PP	95B010690		
Long diffuse proximity	LED	2 m Cable	PNP - LIGHT	S3Z-PR-2-C11-PL	95B010001		
		M8 Connector	PNP - LIGHT	S3Z-PR-5-C11-PL	95B010011		
		2 m Cable	PNP - DARK	S3Z-PR-2-C11-PD	95B010021		
		M8 Connector	PNP - DARK	S3Z-PR-5-C11-PD	95B010031		
		2 m Cable	NPN - LIGHT	S3Z-PR-2-C11-NL	95B010161		
		M8 Connector	NPN - LIGHT	S3Z-PR-5-C11-NL	95B010171		
		2 m Cable	NPN - DARK	S3Z-PR-2-C11-ND	95B010181		
		M8 Connector	NPN - DARK	S3Z-PR-5-C11-ND	95B010191		
		2 m Cable	PNP - LIGHT/DARK	S3Z-PR-2-C11-PP	95B010630		
		M8 Connector	PNP - LIGHT/DARK	S3Z-PR-5-C11-PP	95B010650		
Polarized retroreflective	LED	2 m Cable	PNP - LIGHT	S3Z-PR-2-B01-PL	95B010081		
		M8 Connector	PNP - LIGHT	S3Z-PR-5-B01-PL	95B010091		
		2 m Cable	PNP - DARK	S3Z-PR-2-B01-PD	95B010101		
		M8 Connector	PNP - DARK	S3Z-PR-5-B01-PD	95B010111		
		2 m Cable	NPN - LIGHT	S3Z-PR-2-B01-NL	95B010241		
		M8 Connector	NPN - LIGHT	S3Z-PR-5-B01-NL	95B010251		
		2 m Cable	NPN - DARK	S3Z-PR-2-B01-ND	95B010261		
		M8 Connector	NPN - DARK	S3Z-PR-5-B01-ND	95B010271		
		2 m Cable	PNP - LIGHT/DARK	S3Z-PR-2-B01-PP	95B010590		
		M8 Connector	PNP - LIGHT/DARK	S3Z-PR-5-B01-PP	95B010610		
Polarized retroreflective	LASER	2 m Cable	NPN - LIGHT/DARK	S3Z-PR-2-B01-NN	95B010580		
		M8 Connector	NPN - LIGHT/DARK	S3Z-PR-5-B01-NN	95B010600		
		2 m Cable	PNP - LIGHT/DARK	S3Z-PH-2-B01-P	95B010440		
		M8 Connector	PNP - LIGHT/DARK	S3Z-PH-5-B01-P	95B010460		
		2 m Cable	NPN - LIGHT/DARK	S3Z-PH-2-B01-N	95B010450		
		M8 Connector	NPN - LIGHT/DARK	S3Z-PH-5-B01-N	95B010470		
		Through beam	LED	2 m Cable	PNP - LIGHT	S3Z-PR-2-FG01-PL	95B010121
				M8 Connector	PNP - LIGHT	S3Z-PR-5-FG01-PL	95B010131
				2 m Cable	PNP - DARK	S3Z-PR-2-FG01-PD	95B010141
				M8 Connector	PNP - DARK	S3Z-PR-5-FG01-PD	95B010151
2 m Cable	NPN - LIGHT			S3Z-PR-2-FG01-NL	95B010281		
M8 Connector	NPN - LIGHT			S3Z-PR-5-FG01-NL	95B010291		
2 m Cable	NPN - DARK			S3Z-PR-2-FG01-ND	95B010301		
M8 Connector	NPN - DARK			S3Z-PR-5-FG01-ND	95B010311		
2 m Cable	PNP - LIGHT/DARK			S3Z-PR-2-FG01-PP	95B010710		
M8 Connector	PNP - LIGHT/DARK			S3Z-PR-5-FG01-PP	95B010730		
Through beam	LASER	2 m Cable	NPN - LIGHT/DARK	S3Z-PR-2-FG01-NN	95B010700		
		M8 Connector	NPN - LIGHT/DARK	S3Z-PR-5-FG01-NN	95B010720		
		2 m Cable	PNP - LIGHT/DARK	S3Z-PH-2-FG01-P	95B010520		
		M8 Connector	PNP - LIGHT/DARK	S3Z-PH-5-FG01-P	95B010540		
		2 m Cable	NPN - LIGHT/DARK	S3Z-PH-2-FG01-N	95B010530		
		M8 Connector	NPN - LIGHT/DARK	S3Z-PH-5-FG01-N	95B010550		
		Background suPpression	LED	2 m Cable	PNP - LIGHT	S3Z-PR-2-M01-PL	95B010331
				M8 Connector	PNP - LIGHT	S3Z-PR-5-M01-PL	95B010351
				2 m Cable	NPN - LIGHT	S3Z-PR-2-M01-NL	95B010321
				M8 Connector	NPN - LIGHT	S3Z-PR-5-M01-NL	95B010341
2 m Cable	PNP - LIGHT/DARK			S3Z-PR-2-M01-PP	95B010750		
M8 Connector	PNP - LIGHT/DARK			S3Z-PR-5-M01-PP	95B010770		
2 m Cable	NPN - LIGHT/DARK			S3Z-PR-2-M01-NN	95B010740		
M8 Connector	NPN - LIGHT/DARK			S3Z-PR-5-M01-NN	95B010760		
2 m Cable	PNP - LIGHT/DARK			S3Z-PH-2-M01-P	95B010480		
M8 Connector	PNP - LIGHT/DARK			S3Z-PH-5-M01-P	95B010500		
Polarized retroreflective for transparent	LED	2 m Cable	NPN - LIGHT/DARK	S3Z-PH-2-M01-N	95B010490		
		M8 Connector	NPN - LIGHT/DARK	S3Z-PH-5-M01-N	95B010510		
		2 m Cable	NPN - DARK	S3Z-PR-2-T51-ND	95B010390		
		2 m Cable	PNP - DARK	S3Z-PR-2-T51-PD	95B010380		
		M8 Connector	NPN - DARK	S3Z-PR-5-T51-ND	95B010370		
		M8 Connector	PNP - DARK	S3Z-PR-5-T51-PD	95B010360		

# ACCESSORIES



## MODEL SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER NO.
ST-505	lateral mounting	95ACC2800
ST-5039	L-shaped fixing bracket	95ACC2270
ST-5040	protection bracket with vertical fixing (only for cable versions)	95ACC2280
ST-5046	protection bracket with horizontal fixing	95ACC2370
S3Z-SLIT1	Ø 0,5 mm slit for through beam	95ACC2470
S3Z-SLIT2	Ø 1 mm slit for through beam	95ACC2480
S3Z-SLIT3	Ø 2 mm slit for through beam	95ACC2490
S3Z-SLIT4	0,5x18 mm slit for through beam	95ACC2500
S3Z-SLIT5	1x18 mm slit for through beam	95ACC2510
S3Z-SLIT6	2x18 mm slit for through beam	95ACC2520
ST-S3Z-M18	S3Z FIX BRK M18 THREADED NOSE	95ACC7850

## CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M8 Connector	4-pole, grey, PVC.	3 m	CS-B1-02-G-03	95A251420
		5 m	CS-B1-02-G-05	95A251430
		7 m	CS-B1-02-G-07	95A251440
		10 m	CS-B1-02-G-10	95A251480
		4-pole, PU.R.	2 m	CS-B1-02-R-02
Radial M8 Connector	4-pole, grey, PVC.	5 m	CS-B1-02-R-05	95A251640
		3 m	CS-B2-02-G-03	95A251450
		5 m	CS-B2-02-G-05	95A251460
	4-pole, PU.R.	7 m	CS-B2-02-G-07	95A251470
		10 m	CS-B2-02-G-10	95A251530
		2 m	CS-B2-02-R-02	95A251630
		5 m	CS-B2-02-R-05	95A251650

Rev. 03, 03/2019

## DATALOGIC PRODUCT OFFERING

