

S90

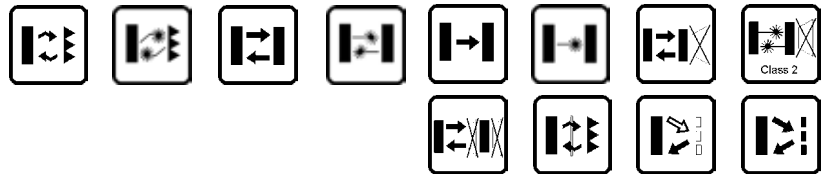
Extended range of compact photoelectric sensors in a metal housing

- Background suppression and polarized retroreflective
- Class 1 LASER models for long distance detection
- Contrast and UV Luminescence sensors
- Industrial IP67 metal housing
- Standard 4-wire NO-NC NPN or PNP output



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Automotive assembling lines
- Automated warehousing



S90		
Through beam		0...20 m 0...60 m (class 1 LASER) 0...3,2 m (coaxial)
Polarized retroreflective		0,1...6,5 m 0,1...20 m (class 1 LASER)
Retroreflective for transparent (on R2 reflector)		0...1,7 m (coaxial) short 0,01...1 m long 0,05...2 m
Diffuse proximity		0...600 mm (class 1 LASER)
Background suppression		70...200 mm 50...100 mm (class 1 LASER)
Foreground suppression		70...200 mm
Luminescence		0...40 mm
Contrast		19 ± 2 mm
Power supply	Vdc	10...30 V
	Vac	
	Vac/dc	
Output	PNP	▪
	NPN	▪
	NPN/PNP	
	relay	
	other	
Connection	cable	
	connector	▪
	pig-tail	
Approximate dimensions (mm)		15x50x41
Housing material		Zama
Mechanical protection		IP67

Compact Sensors – S90



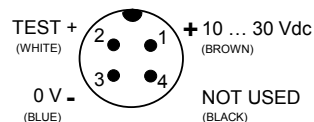
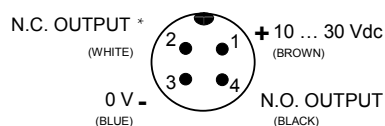
TECHNICAL DATA	
Power supply	10 ... 30 Vdc (limit values)
Ripple	2 Vpp max.
Consumption (output current excluded)	35 mA max. 30 mA max. (mod. S90...B01/B51/C01/C11/F01/T51) 50 mA max. (mod. S90...M08/N03) 60 mA max. (Laser mod. S90...M08)
Light emission	red LED 660 nm (mod. S90...B01/B51/C01/T51) red LED 670 nm (mod. S90...M08) IR LED 880 nm (mod. S90...C11/G00) white LED 400-700 nm (mod. S90...W08) UV LED 370 nm (mod. S90...U08) red Laser 650 nm
Setting	sensitivity trimmer (mod. S90...B01/B51/C01/C11/F01/T51) SET push-button (mod. S90...M08/N03/W08/U08)
Operating mode	LIGHT mode on N.O. output/DARK mode on N.C. output (mod. S90...C01) DARK mode on N.O. output/LIGHT mode on N.C. output (mod. S90...B01/F01) LIGHT mode with EASY TOUCH™/automatic with fine detection (mod. S90...M08/N03/U08) DARK mode with EASY TOUCH/automatic with fine detection (mod. S90...W08)
Indicators	yellow OUTPUT LED (excl. mod. S90...G00) green STABILITY LED (mod. S90...B01/B51/C01/C11/F01), POWER LED (mod. S90...G00, Laser mod. S90...B01/C01/F01/G00) green/red READY/ERROR LED (mod. S90...M08/N03/W08/U08) yellow/orange OUTPUT LED, green/red LASER ON/ERROR LED (Laser mod. S90...M08)
Output	PNP or NPN; NO and NC (mod. S90...B01/C01/F01/T51)
Output current	100 mA max.
Saturation voltage	2 V max.
Response time	0,5 ms (mod. S90...B01/B51/T51) 1 ms (mod. S90...C01/C11/F01) 100 µs (mod. S90...W08) 500 µs max. (mod. S90...M08/N03) 250 µs (mod. S90...U08, Laser mod. S90...B01/C01) 333 µs (Laser mod. S90...F01)
Switching frequency	1 kHz (mod. S90...B01/B51/T51) 500 Hz (mod. S90...C01/C11/F01) 5 kHz (mod. S90...W08) 1 kHz (mod. S90...M08/N03) 2 kHz (mod. S90...U08, Laser mod. S90...B01/C01) 1,5 kHz (Laser mod. S90...F01)
Connection	M12 4-pole connector
Dielectric strength	500 Vac, 1 min between electronics and housing
Insulating resistance	>20 MΩ, 500 Vdc between electronics and housing
Electrical protection	class 2
Mechanical protection	IP67 (type 1 enclosure)
Ambient light rejection	according to EN 60947-5-2
Vibrations	0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)
Shock resistance	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Housing material	ZAMA
Lens material	PMMA window and polycarbonate lens (mod. S90...B01/C01/C11/F01/G00/M08/N03) glass window and lens (mod. S90...B51/T51) glass window skewed anti-reflection and glass lens (mod. S90...W08/U08) PMMA window, polycarbonate and glass lens (Laser mod. S90...M08)
Operating temperature	-25 ... 55 °C (mod. S90...B01/B51/C01/C11/F01/G00) -10 ... 55 °C (mod. S90...M08/N03/W08/U08) -10 ... 50 °C (Laser mod.)
Storage temperature	-25 ... 70 °C (mod. S90...B01/B51/C01/C11/F01/G00, Laser mod. S90...B01/C01/F01/G00) -20 ... 70 °C (mod. S90...M08/N03/W08/U08, Laser mod. S90...M08)
Weight	77 g

Compact Sensors - S90

CONNECTIONS

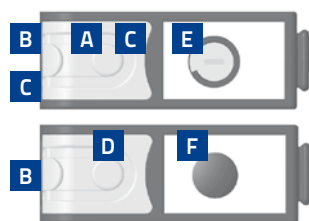
M12 CONNECTOR

Through beam emitter



* N.C. OUTPUT (mod. S90...B, C, F, T), REMOTE (mod. S90...M, N, U, W)

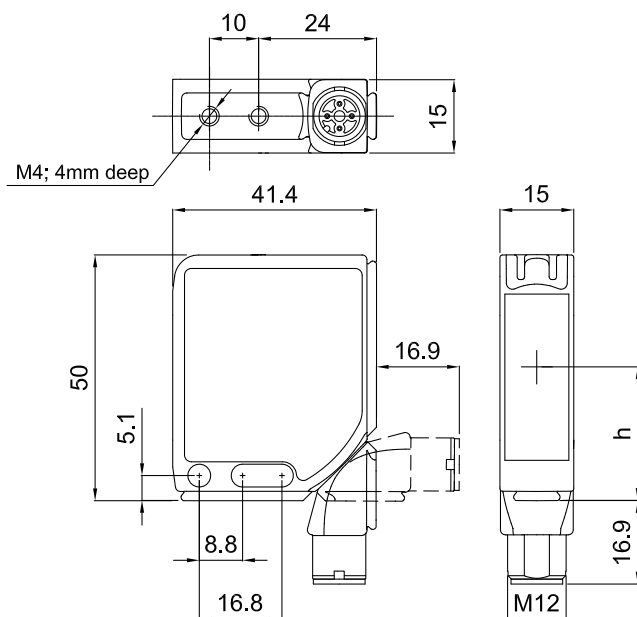
INDICATORS AND SETTINGS



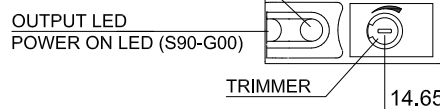
* Teach-in push-button for setting.
EASYtouch™ provides two setting modes: standard or fine.
Please refer to instructions manual for operating details.

- A** STABILITY LED
- B** Output status LED
- C** POWER ON LED
- D** READY/ERROR LED
- E** Trimmer
- F** SET push-button *
- G** M12 connector output, orientable in 4 positions

DIMENSIONS

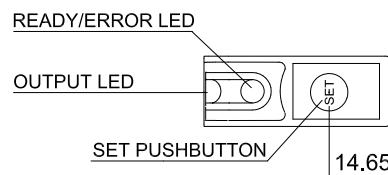


STABILITY LED/POWER LED
(LASER MOD. S90...B01/C01/F01/G00)



VERSION	h
B01 C01 C11 F01 G00	26.7
M08 N03	27.2
B51 T51 W08 U08	29.7

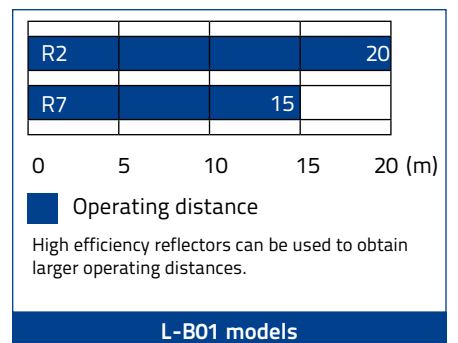
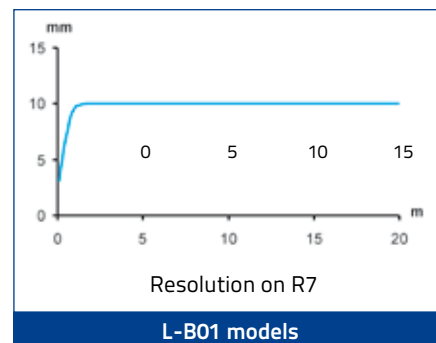
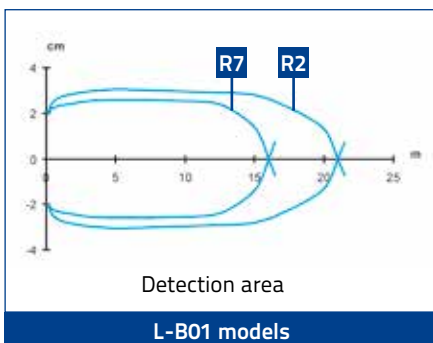
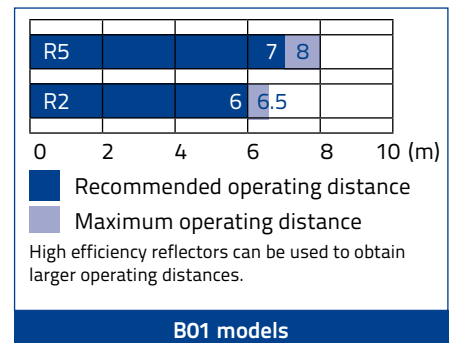
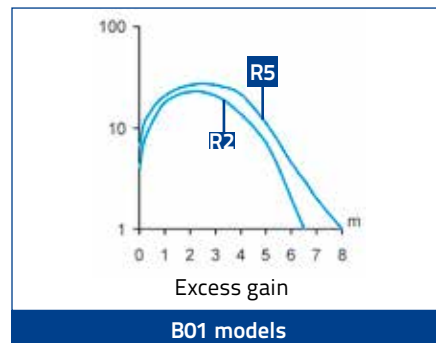
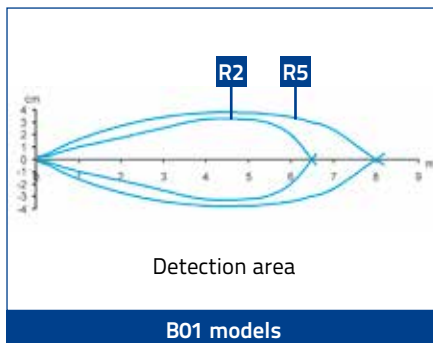
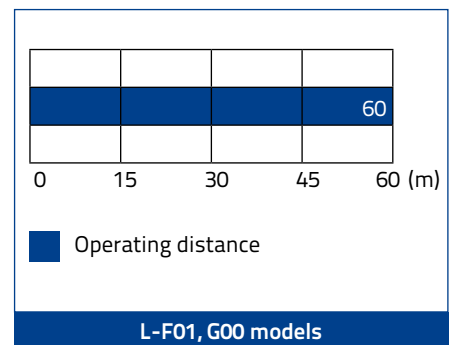
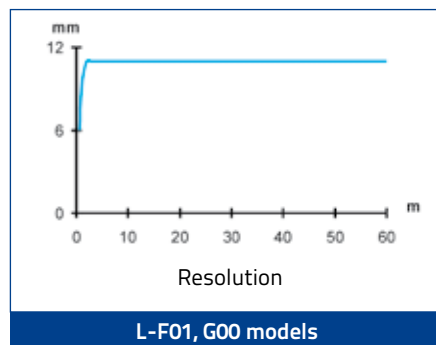
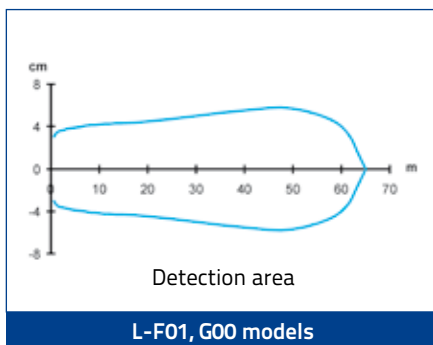
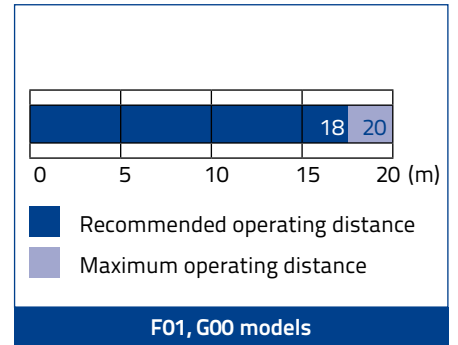
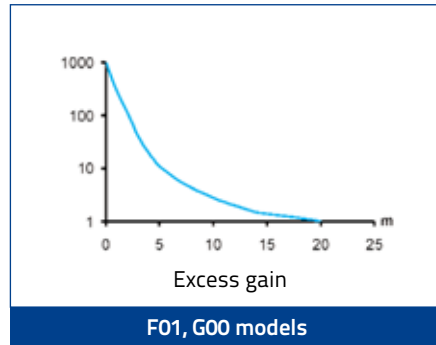
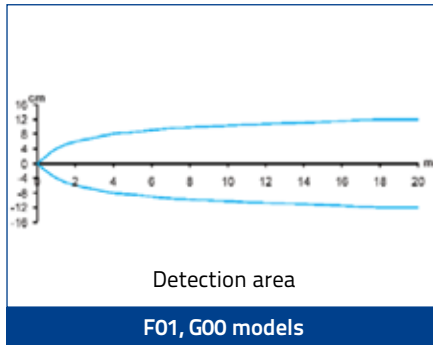
S90...M08/N03/W08/U08



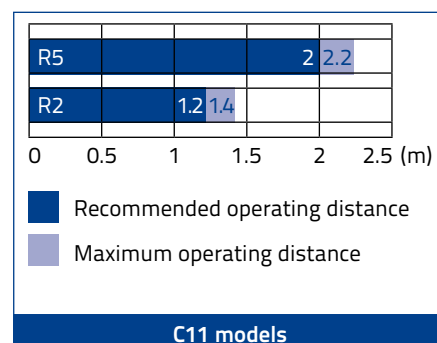
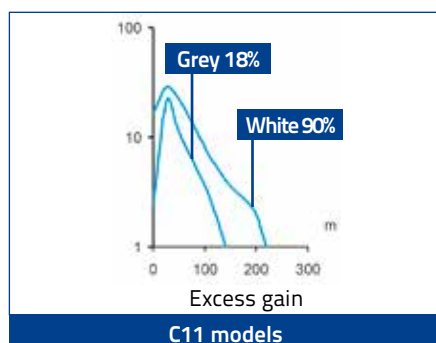
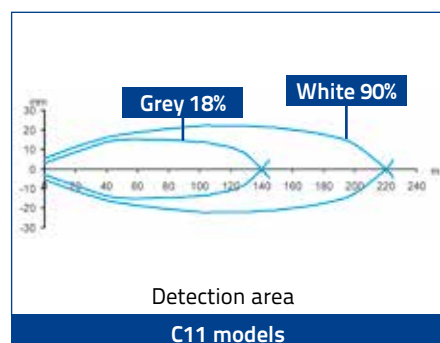
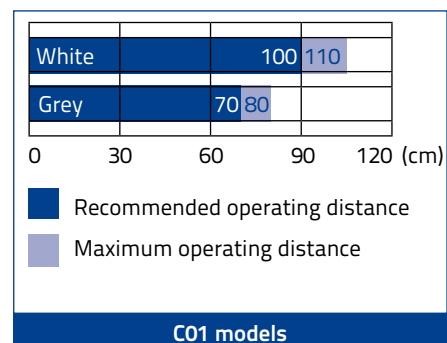
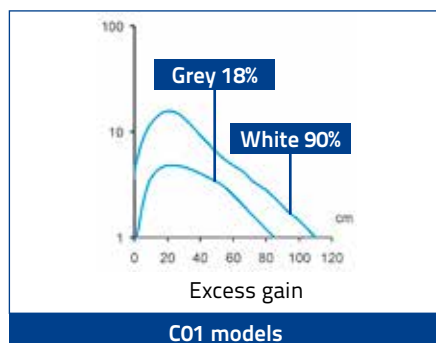
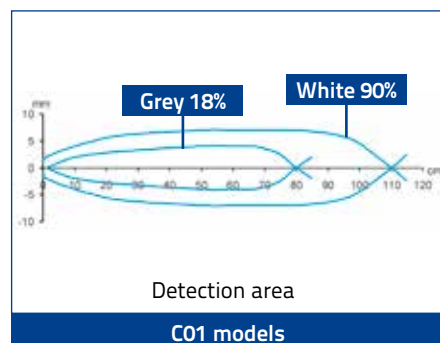
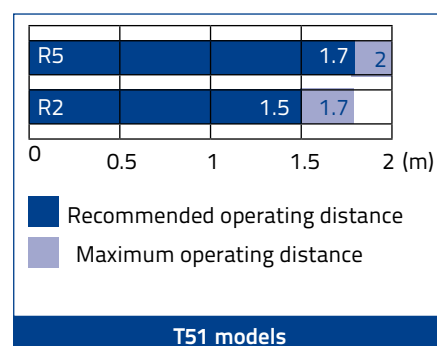
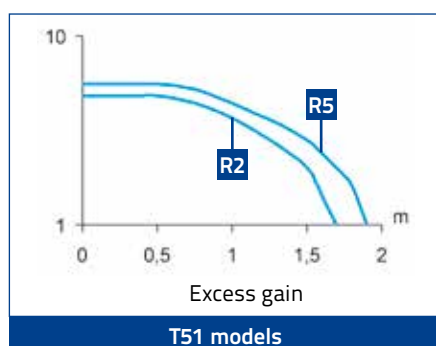
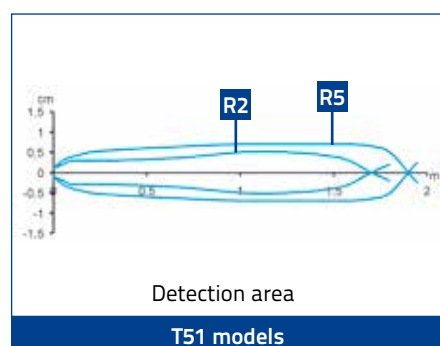
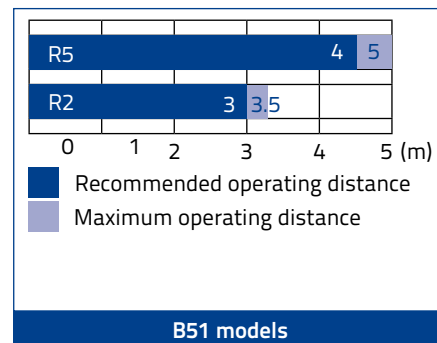
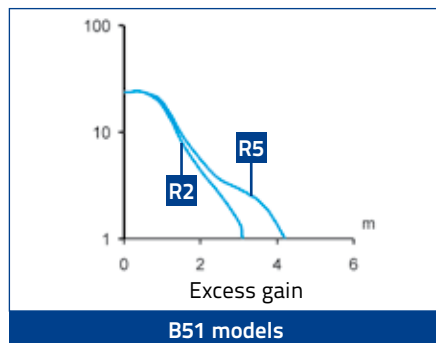
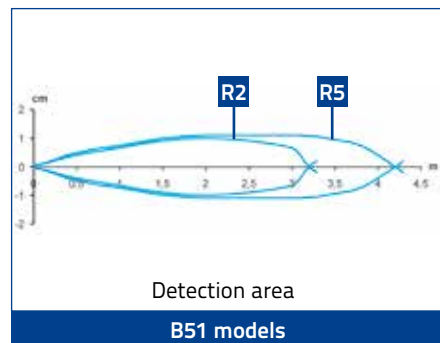
mm

Compact Sensors - S90

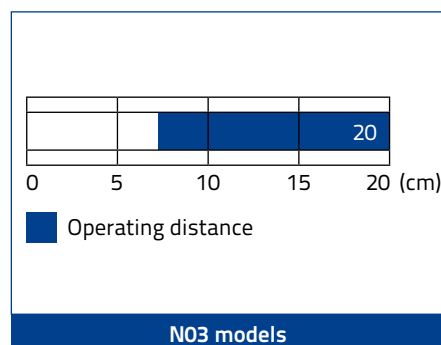
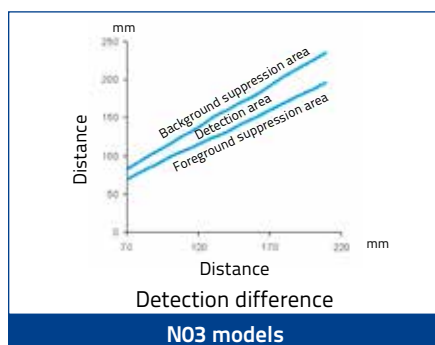
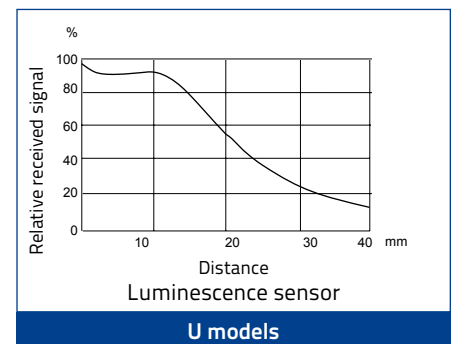
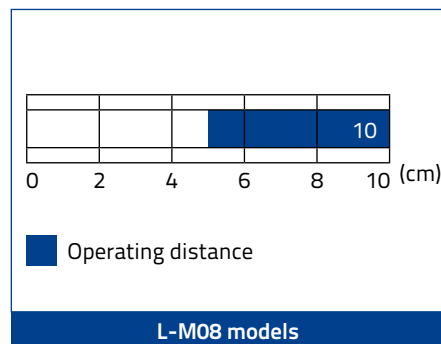
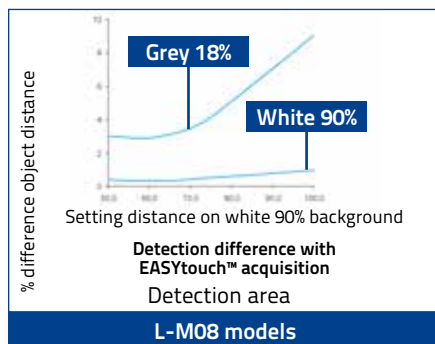
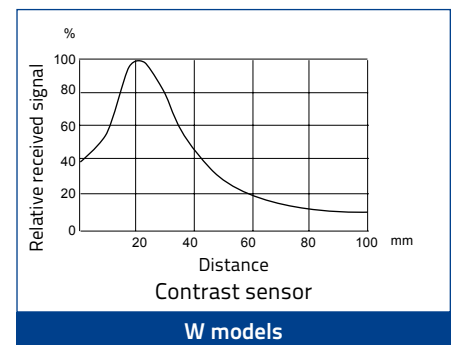
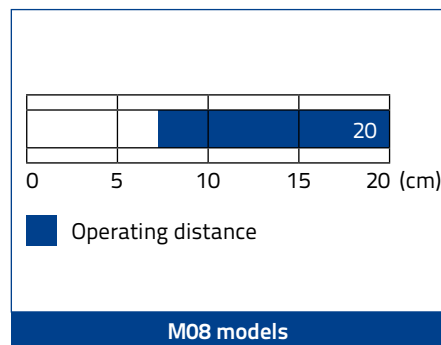
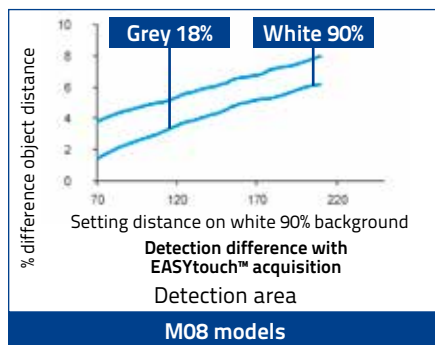
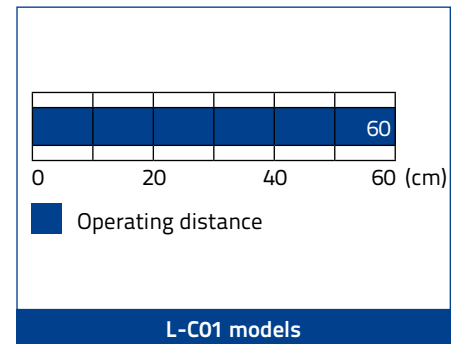
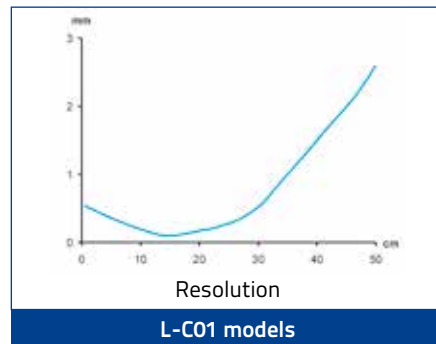
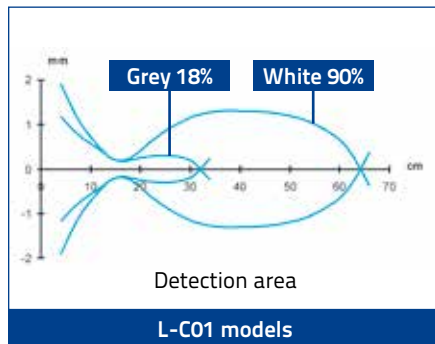
DETECTION DIAGRAMS



DETECTION DIAGRAMS



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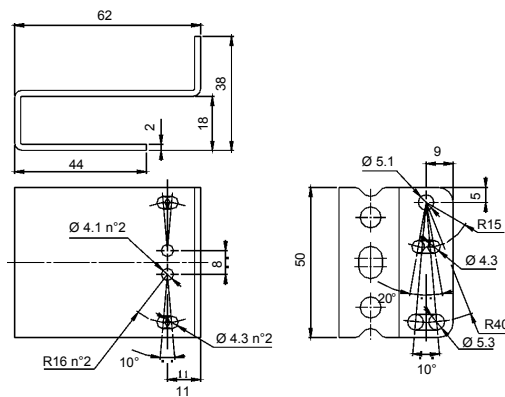


MODEL SELECTION AND ORDER INFORMATION

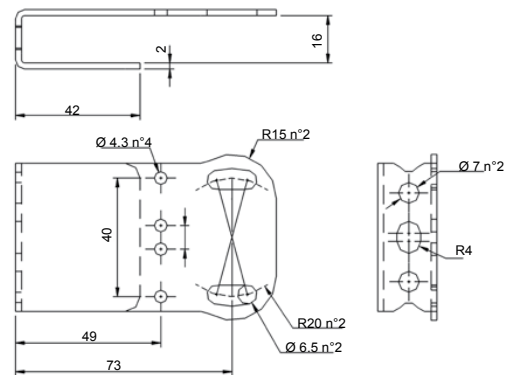
OPTIC FUNCTION	EMISSION	SETTING	OUTPUT	MODEL	ORDER No.
Polarized retroreflective	LASER	Trimmer	NPN	S90-ML-5-B01-NN	956301260
			PNP	S90-ML-5-B01-PP	956301090
	LED	Trimmer	NPN	S90-MA-5-B01-NN	956301160
			PNP	S90-MA-5-B01-PP	956301000
Coaxial polarized retroreflective	LED	Trimmer	NPN	S90-MA-5-B51-NN	956301170
			PNP	S90-MA-5-B51-PP	956301030
Short diffuse proximity	LASER	Trimmer	NPN	S90-ML-5-C01-NN	956301270
			PNP	S90-ML-5-C01-PP	956301100
	LED	Trimmer	NPN	S90-MA-5-C01-NN	956301190
			PNP	S90-MA-5-C01-PP	956301010
Long diffuse proximity	LED	Trimmer	NPN	S90-MA-5-C11-NN	956301200
			PNP	S90-MA-5-C11-PP	956301020
Through beam receiver	LASER	Trimmer	NPN	S90-ML-5-F01-NN	956301280
			PNP	S90-ML-5-F01-PP	956301110
	LED	Trimmer	NPN	S90-MA-5-F01-NN	956301210
			PNP	S90-MA-5-F01-PP	956301050
Through beam emitter	LASER	-	-	S90-ML-5-G00-XG	956301120
	LED	-	-	S90-MA-5-G00-XG	956301060
Background suppression	LASER	Teach-in, delay-off, remote	NPN	S90-ML-5-M08-NH	956301290
			PNP	S90-ML-5-M08-PH	956301130
	LED	Teach-in, delay-off, remote	NPN	S90-MA-5-M08-NH	956301220
			PNP	S90-MA-5-M08-PH	956301070
Background and foreground suppression	LED	Teach-in, remote	NPN	S90-MA-5-N03-NH	956301230
			PNP	S90-MA-5-N03-PH	956301080
Retroreflective for transparent	LED	Trimmer	NPN	S90-MA-5-T51-NN	956301180
			PNP	S90-MA-5-T51-PP	956301040
Luminescence	LED	Teach-in, delay-off, remote	NPN	S90-MA-5-U08-NH	956301240
			PNP	S90-MA-5-U08-PH	956301140
Contrast	LED	Teach-in, delay-off, remote	NPN	S90-MA-5-W08-NH	956301250
			PNP	S90-MA-5-W08-PH	956301150

ACCESSORIES

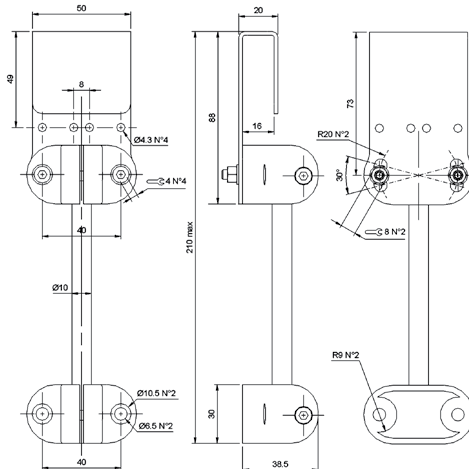
ST-5018



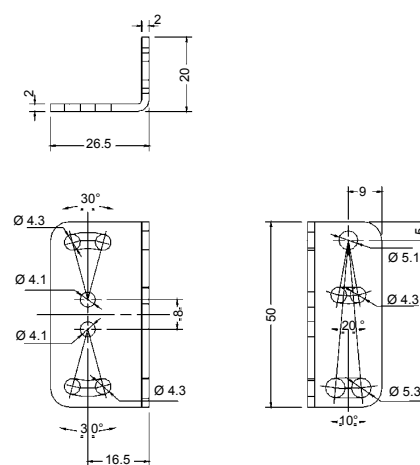
ST-5019



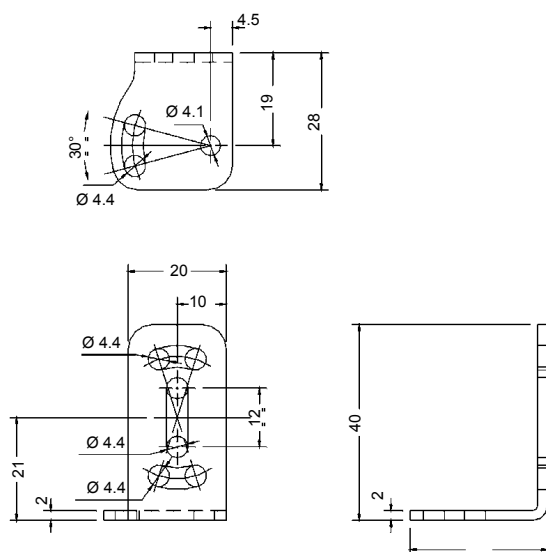
JOINT-60



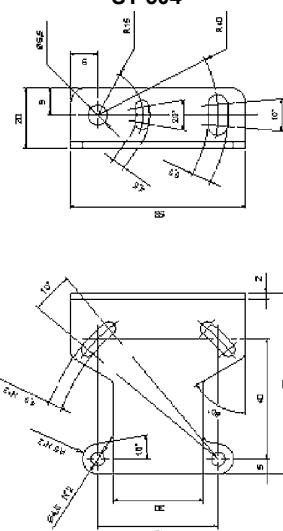
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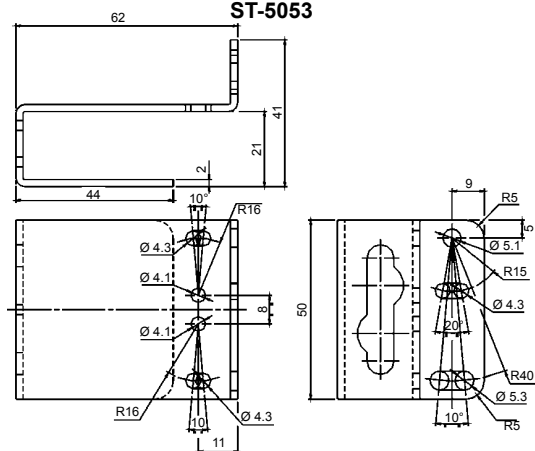
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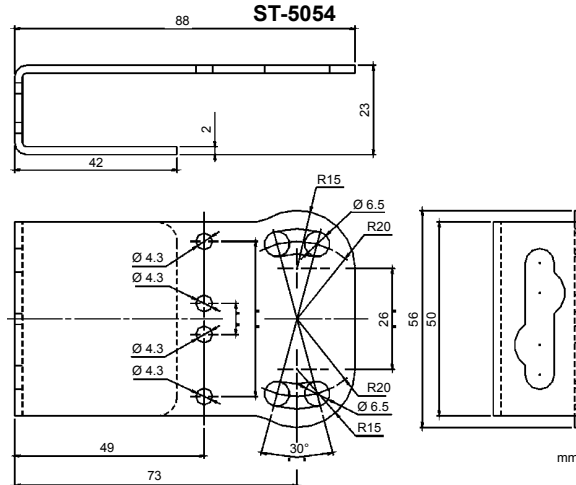
ST-504



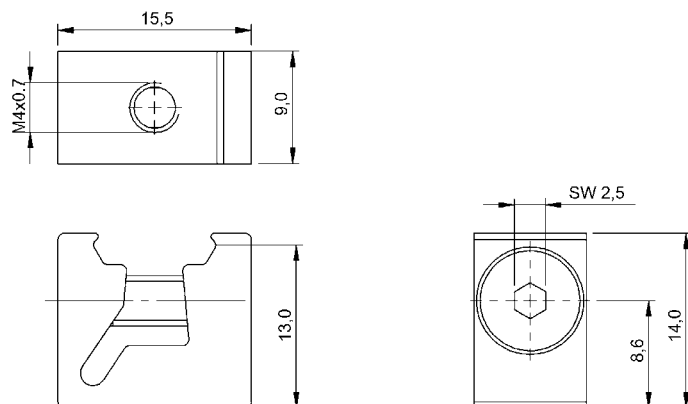
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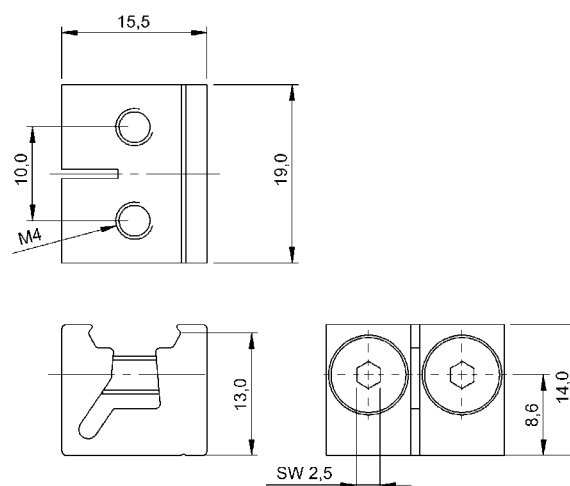
ST-5054



ST-5041



ST-5042



Compact Sensors – S90



MODEL	DESCRIPTION	ORDER No.
ST-5018	protective bracket	95ACC5310
ST-5019	protective bracket	95ACC5320
ST-5020	mounting bracket	95ACC5330
ST-5021	mounting bracket	95ACC5340
ST-504	mounting bracket	95ACC2820
ST-5053	protective bracket	95ACC2410
ST-5054	protective bracket	95ACC2420
ST-5041	short dove-tail bracket	95ACC2300
ST-5042	long dove-tail bracket	95ACC2310
JOINT -60	protective bracket with jointed support	95ACC 5350

CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.	
Axial M12 Connector	4-pole, grey, P.V.C.	3 m	CS-A1-02-G-03	95A251380	
		5 m	CS-A1-02-G-05	95A251270	
		7 m	CS-A1-02-G-07	95A251280	
		10 m	CS-A1-02-G-10	95A251390	
	4-pole, P.U.R.	2 m	CS-A1-02-R-02	95A251540	
		5 m	CS-A1-02-R-05	95A251560	
Radial M12 Connector	4-pole, grey, P.V.C.	3 m	CS-A2-02-G-03	95A251360	
		5 m	CS-A2-02-G-05	95A251240	
		7 m	CS-A2-02-G-07	95A251245	
		10 m	CS-A2-02-G-10	95A251260	
	4-pole, P.U.R.	2 m	CS-A2-02-R-02	95A251550	
		5 m	CS-A2-02-R-05	95A251570	
Radial M12 Connector with LED (for PNP N.O. sensors)	4-pole, grey, P.V.C.	3 m	CS-A2-12-G-03	95A251400	
		5 m	CS-A2-12-G-05	95A251350	
		10 m	CS-A2-12-G-10	95A251370	
Axial M12 Connector	4-pole, shielded, black, P.V.C.	3 m	CV-A1-22-B-03	95ACC1480	
		5 m	CV-A1-22-B-05	95ACC1490	
		10 m	CV-A1-22-B-10	95ACC1500	
		15 m	CV-A1-22-B-15	95ACC2070	
		25 m	CV-A1-22-B-25	95ACC2090	
Radial M12 Connector		4-pole, shielded, black, P.V.C.	3 m	CV-A2-22-B-03	95ACC1540
			5 m	CV-A2-22-B-05	95ACC1550
			10 m	CV-A2-22-B-10	95ACC1560
Axial M12 Connector	4-pole, U.L., black, P.V.C.	3 m	CS-A1-02-U-03	95ASE1120	
		5 m	CS-A1-02-U-05	95ASE1130	
		10 m	CS-A1-02-U-10	95ASE1140	
		15 m	CS-A1-02-U-15	95ASE1150	
		25 m	CS-A1-02-U-25	95ASE1160	
Radial M12 Connector	4-pole, black	Connector- not cabled	CS-A1-02-B-NC	G5085002	
		Connector- not cabled	CS-A2-02-B-NC	G5085003	

