



High Performance European Style Miniature Sensors

- Red LED and laser emissions
- Highly precise & safe laser Class 1 emission
- Diffused LED proximity 800mm
- Background suppression 400mm
- Retroreflective Class 1 laser 15m/red LED 7m
- Through beam Class 1 laser 20m/red LED 15m
- IP69K housing
- 2m cable or metal M8 4-pole version
- PNP or NPN output with remote Teach-in input
- High speed RGB and white emission contrast sensor
- High precision distance sensor up to 200 mm



SENSORS

APPLICATIONS

- Processing and Packaging machinery
- Cosmetic and Pharmaceutical industry
- Electronics assembly
- Conveyor lines, material handling
- Automotive industry
- Print and paper industry
- Small part detection with maximum accuracy



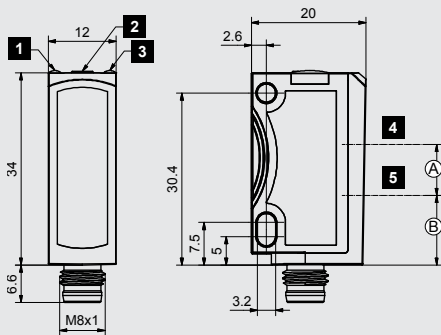
CE US LISTED **IP69K**

S45		
Through beam		20m (Laser Class1) 15m (Red Led)
Polarized Retroreflective		15m (Laser Class1) 7m (Red Led)
Autocollimated Retroreflective for Transparent objects		2m (Red Led)
Autocollimated Retroreflective		2m (Red Led)
Diffused Proximity		250mm (Laser Class1) 800mm (Red Led)
Background Suppressor		120mm (Laser Class 1) 200mm (Red Led) 400mm (Red Led)
Distance sensor		80mm (Red Led) 200mm (Red Led)
Contrast Sensor		12mm (White) 12mm (RGB)
Power Supply	Vdc	10...30 V
	Vac	No
	Vac/Vdc	No
Output	PNP	Yes
	NPN	Yes
	NPN/PNP	No
	Relay	No
	Other	Push Pull (Wxx, Yxx), Analog 0...10 V (Yxx)
Connection	Cable	Yes
	Connector	Yes
	Pig-tail	No
Approximate dimensions (mm)		34mm x 20mm x 12mm
Housing material		ABS(Housing), PMMA (Optics)
Mechanical protection		IP67 & IP69K

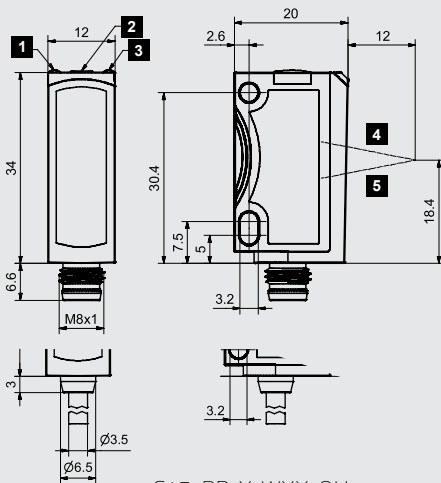
TECHNICAL DATA

Power supply	10...30 Vdc
Ripple	10% max.
Consumption (Load current excluded)	≤ 30 mA
Light emission	Red LED 632 nm, Red Laser 650 nm, White, RGB
Setting	Push Button Teach-in
Indicators	LED Green Operating Voltage LED Yellow Output Status
Output	NPN, PNP, Push Pull
Output current	100 mA
Saturation voltage	2 V max
Response time	500 μs 333 μs (C03 Laser) 250 μs (F/G Laser) 50 μs (W03, W33) 20 μs (W13, W43)
Switching frequency	≤ 1000Hz ≤ 1500Hz (C03 Laser) ≤ 2000 Hz (F/G Laser) ≤ 10 kHz (W03, W33) ≤ 25 kHz (W13, W43)
Connection	Plastic M8 4-pole connector, Metal M8 4-pole connector 2 m cable
Dielectric strength	500 Vac, 1min between electronics and housing
Insulating resistance	>20M OHM, 500 Vdc between electronics and housing
Electrical protection	Class 2
Mechanical protection	IP67 & IP69K
Ambient light rejection	according to EN 60947-5-2
Vibrations	0,5mm amplitude, 10...55Hz frequency , for every axis (EN60068-2-6)
Shock resistance	11 ms (30G) 6 shock for every axis (EN60068-2-27)
Housing material	ABS
Lens material	PMMA
Operating temperature	-20...+60 °C
Storage temperature	-20...+80 °C
Weight	10g with connector, 40g with cable

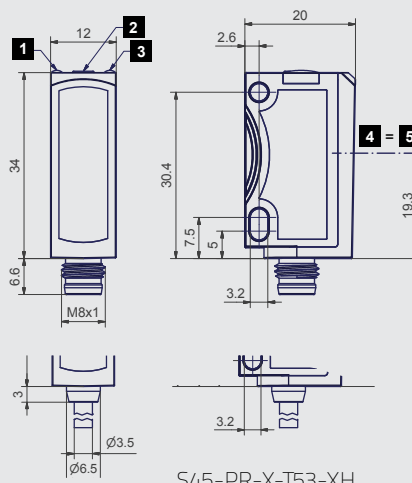
DIMENSIONS



	S45-PR-2(5)-M03 S45-PR-5-Y03	S45-PR-2(5)-M13 S45-PR-5-Y13	S45-PR-2(5)-C03 S45-PR-B03	S45-PH-5-M03	S45-PH-5-C03 S45-PH-B03	S45-PR-G00	S45-PH-G00	S45-PR(PH)-F03
A	9	11.75	10.8	8.8	8.8	11.5	13.5	
B	12.3	11	11.5	12.5	13.5			22.3



S45-PR-X-WXX-OH



S45-PR-X-T53-XH
S45-PR-X-B53-XH

1	Yellow LED 1)
2	Button
3	Green LED 2)
4	Receiver axis
5	Emitter axis

- 1) switching output indicator
- 2) operating voltage indicator

dimensions in mm

BACKGROUND SUPPRESSOR



The diffused background suppressor (BGS) models are characterized by the reliable detection of any color and surface type objects even with highly reflective backgrounds. The powerful Red LED makes the installation and sensor alignment very easy thanks to the bright visible spot. The adjustment via Teach-in and remote control inputs are fast and easy. This optic function comes in two different models and ranges: one model for long range detection up to 400 mm and the other model up to 200 mm detection range, both with excellent black and white shift.

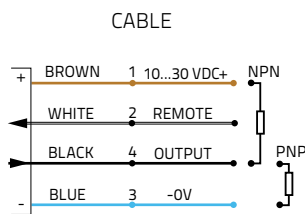
HIGHLIGHTS

- Short and long distance detection for improved precision
- Adjustable sensing distance with Teach-in button
- Easy alignment with highly visible LED
- Superior performance even with highly reflective backgrounds
- Remote input setting

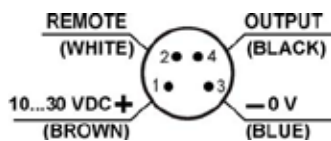
TECHNICAL DATA

DATA	LONG RANGE (M13)	SHORT RANGE (M03)
Operating Distance	3...400mm	1...200mm
Adjustment Range	30...400mm	10...200mm
Emission Type	Red 632nm	Red 632 nm
Operating Frequency	1000 Hz	1000 Hz
Response Time	500 μs	500 μs
Setting	Teach-in, Remote Input	Teach-in, Remote Input
Light/Dark selection	Via Teach-in	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status	Green LED Operating Voltage Yellow LED Output status

CONNECTION

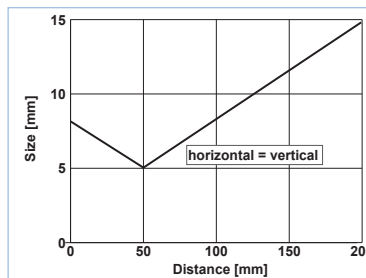


M8 CONNECTOR

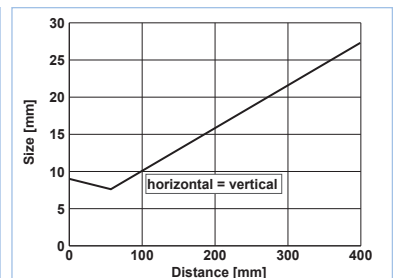


DETECTION DIAGRAM

DETECTION SPOT SIZE

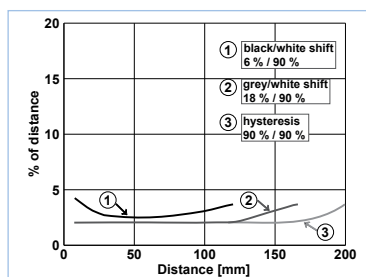


S45-PR-2(5)-M03-..

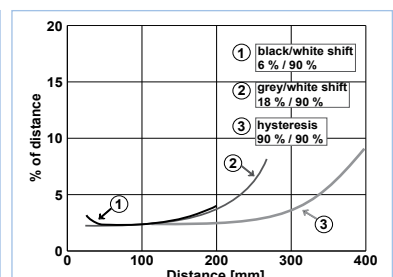


S45-PR-2(5)-M13-..

B/W SHIFT



S45-PR-2(5)-M03-..



S45-PR-2(5)-M13-..

REFERENCE MATERIAL	DETECTION RANGE (M13)	DETECTION RANGE (M03)
white (90%)	3...400mm	1...200mm
grey (18%)	6...260mm	2...160mm
black (6%)	12...200mm	4...120mm

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Background Suppression 200mm	2m Cable	PNP	S45-PR-2-M03-PH	950411280
	M8	NPN	S45-PR-2-M03-NH	950411270
Background Suppression 400mm	2m Cable	PNP	S45-PR-5-M03-PH	950411300
		NPN	S45-PR-5-M03-NH	950411290
	M8	PNP	S45-PR-2-M13-PH	950411320
		NPN	S45-PR-2-M13-NH	950411310
		PNP	S45-PR-5-M13-PH	950411340
		NPN	S45-PR-5-M13-NH	950411330

ENERGETIC DIFFUSED



The Energetic Diffused models are characterized by superior object detection performance even on a gray target. The powerful RED LED projects a bright visible spot for installation and sensor alignment. Adjustment via Teach-in and remote control inputs are fast and easy. The RED LED model delivers excellent performance with an 800mm operating distance in a very compact size.

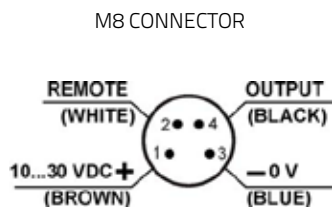
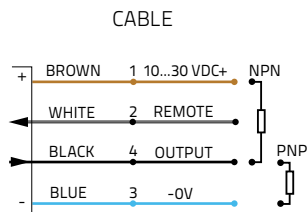
HIGHLIGHTS

- Long distance sensor
- High visibility LED
- Easy alignment
- Remote Teach-in

TECHNICAL DATA

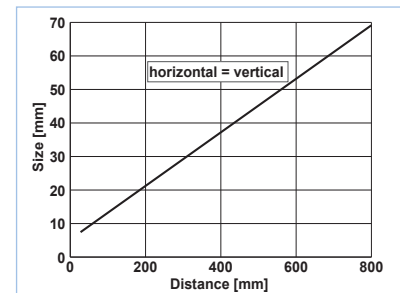
Operating Distance	0...800mm
Adjustment Range	20...800mm
Emission Type	Red 632 nm
Operating Frequency	1000 Hz
Response Time	500 µs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION



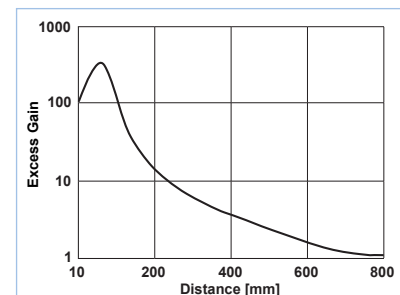
DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PR-2(5)-C03-..

EXCESS GAIN



S45-PR-2(5)-C03-..

REFERENCE MATERIAL	DETECTION RANGE
white (90%)	1...800mm
grey (18%)	6...450mm
black (6%)	3...250mm

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Energetic Diffused	2m Cable	PNP	S45-PR-2-C03-PH	950411220
		NPN	S45-PR-2-C03-NH	950411210
	M8	PNP	S45-PR-5-C03-PH	950411240
		NPN	S45-PR-5-C03-NH	950411230

RETROREFLECTIVE POLARIZED



The Retroreflective Polarized models are characterized by exceptional object detection performance suitable for many reflector types. With a bright, visible red LED, installation and sensor alignment is quick and simple. Adjustment via Teach-in and remote control input is fast and easy.

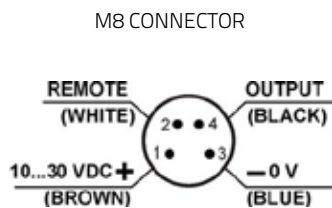
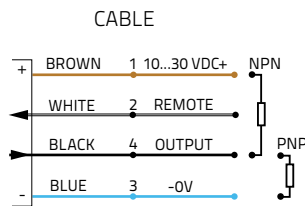
HIGHLIGHTS

- Long distance sensor
- High Visibility LED
- Easy alignment on reflector
- Remote Teach-in

TECHNICAL DATA

Operating Distance	0.1...7m
Adjustment Range	0.1...6m
Emission Type	Red 632 nm
Polarization Filter	YES
Operating Frequency	1000 Hz
Response Time	500 µs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

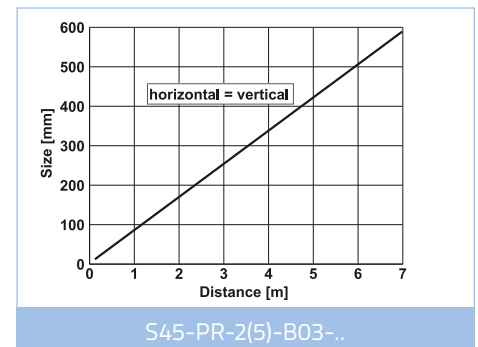
CONNECTION



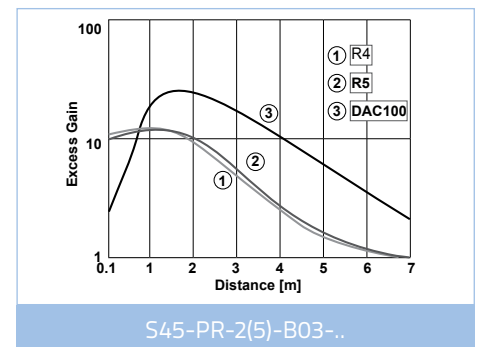
REFLECTOR	DETECTION RANGE
DAC 100	0.1...6m
R5	0.1...5m
R4	0.1...4m

DETECTION DIAGRAM

DETECTION SPOT SIZE



EXCESS GAIN



MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Retroreflective Polarized	2m Cable	PNP	S45-PR-2-B03-PH	950411100
		NPN	S45-PR-2-B03-NH	950411090
	M8	PNP	S45-PR-5-B03-PH	950411120
		NPN	S45-PR-5-B03-NH	950411110

COAXIAL RETROREFLECTIVE POLARIZED



The Coaxial Retroreflective Polarized model is characterized by reliable detection of any object. Performance is guaranteed by a state-of-the-art autocollimating optical system that delivers precise detection from a distance of 0 mm up to 2 m. The sensor is equipped with a unique auto adaptive system which continuously selects the best detecting condition. The powerful LED emission makes the sensor alignment easy and precise. The system is so precise that an object can be detected through narrow openings or drilled holes. Cable versions are available upon request.

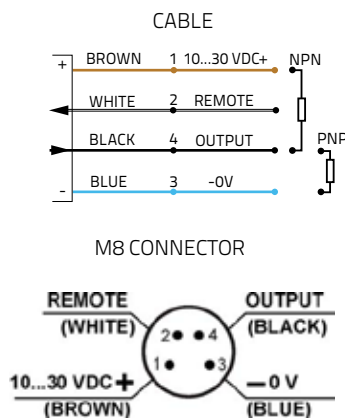
HIGHLIGHTS

- Reliable detection for any kind of object
- Visible light spot for precise, easy alignment of the sensor
- Autocollimated optics for reliable detection starting from 0m
- Remote Teach-in

TECHNICAL DATA

Operating Distance	0...2m
Emission Type	Red 632 nm
Polarization Filter	YES
Operating Frequency	1000 Hz
Response Time	500 µs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

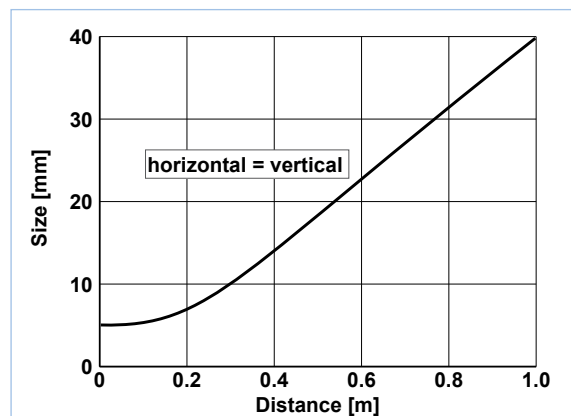
CONNECTION



REFLECTOR	DETECTION RANGE
R7	2m

DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PR-5-B53-..

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Polarized retroreflective autocollimated	M8	PNP	S45-PR-5-B53-PH	950411200
		NPN	S45-PR-5-B53-NH	950411190

RETROREFLECTIVE FOR TRANSPARENT



The Retroreflective for transparent objects model is characterized by a reliable detection system for transparent objects with any kind of shape. The performance level is guaranteed by a state of the art autocollimating optical system which offers precise detection from a distance of 0 mm up to 2 m. The Retroreflective for transparent objects model uses a unique auto adaptive system which continuously selects the best detection condition. The powerful LED emission makes the sensor alignment easy and precise.

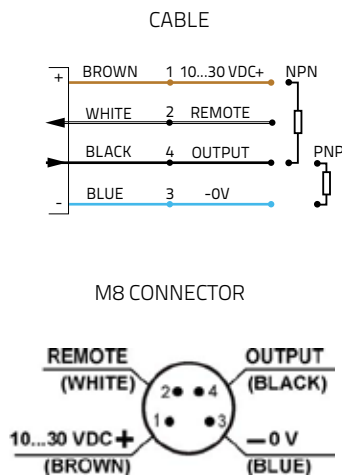
HIGHLIGHTS

- Visible light spot for precise and easy alignment of the sensor
- Autocollimated optics for reliable detection starting from 0m
- Adaptive function to improve detection when dust and dirt are present
- Precise and reliable detection of transparent objects

TECHNICAL DATA

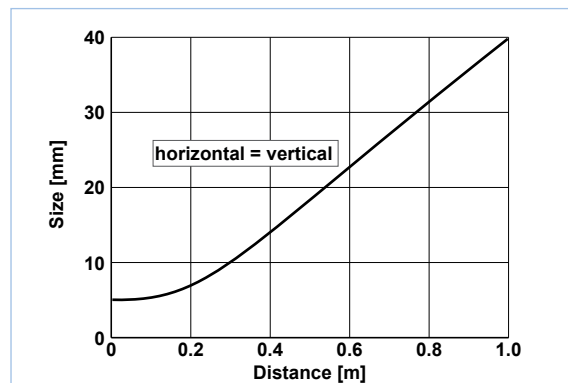
Operating Distance	0...2m
Emission Type	Red 632 nm
Polarization Filter	YES
Operating Frequency	1000 Hz
Response Time	500 µs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION



DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PR-2(5)-T53-..

REFLECTOR	DETECTION RANGE
R7	2m

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Polarized retroreflective autocollimated for transparent objects	2m Cable	PNP	S45-PR-2-T53-PH	950411160
		NPN	S45-PR-2-T53-NH	950411150
	M8	PNP	S45-PR-5-T53-PH	950411180
		NPN	S45-PR-5-T53-NH	950411170

THROUGH BEAM



The through beam light barrier models are characterized by a very compact form factor. The powerful LED emission is a real advantage during alignment operation at a long distance range, the detection is reliable and precise. The adjustment via Teach-in and remote control input is fast and easy.

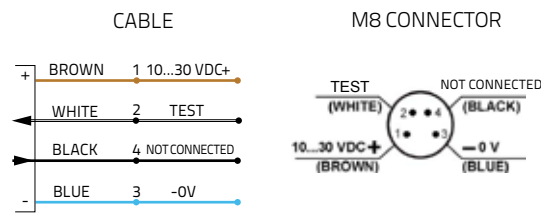
HIGHLIGHTS

- Very simple alignment with highly visible LED light
- Test input for functional test
- Remote Teach-in setting

TECHNICAL DATA

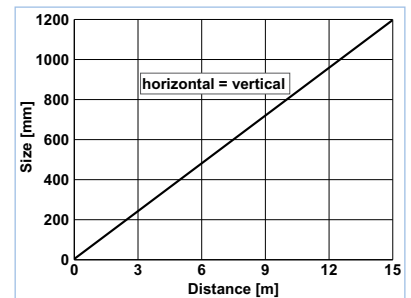
Maximum Distance	0...15m
Operating Distance	0...13m
Emission Type	Red 632 nm
Operating Frequency	1000 Hz
Response Time	500 μ s
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION TX



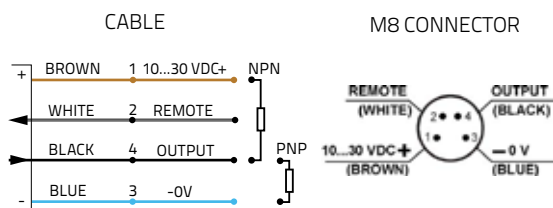
DETECTION DIAGRAM

DETECTION SPOT SIZE

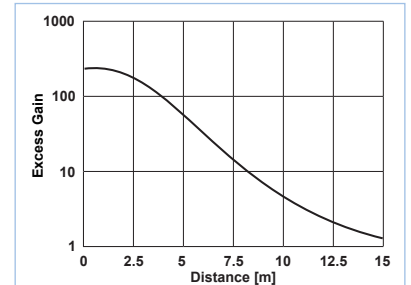


S45-PR-2(5)-F03-.../S45-PR-2(5)-G00-XE

CONNECTION RX



EXCESS GAIN



S45-PR-2(5)-F03-.../S45-PR-2(5)-G00-XE

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Through beam	2m Cable	-	S45-PR-2-G00-XE	950411000
		PNP	S45-PR-2-F03-PH	950411020
		NPN	S45-PR-2-F03-NH	950411010
	M8	-	S45-PR-5-G00-XE	950411030
		PNP	S45-PR-5-F03-PH	950411050
		NPN	S45-PR-5-F03-NH	950411040

LASER BACKGROUND SUPPRESSOR



The diffused background suppressor (BGS) models are characterized by reliable detection of any object color or surface type even with highly reflective backgrounds. The Laser Class 1 emission is excellent in applications for the detection of very small objects.

The adjustment via Teach-in and remote control input is fast and easy. This sensor is characterized by an excellent B/W shift which is less than 4% at the farthest range. Cable versions are available upon request.

HIGHLIGHTS

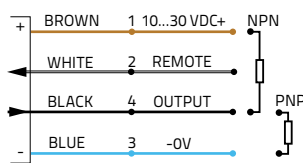
- Precise and highly visible spot
- Very small object detection
- Safe Class 1 laser emission
- Excellent performance on any object color or surface type
- Easy alignment on reflector
- Remote Teach-in setting

TECHNICAL DATA

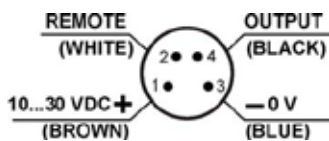
Operating Distance	4...120mm
Adjustment Range	10...120mm
Emission Type	Red Laser 650 nm Class 1
Operating Frequency	1000 Hz
Response Time	500 μs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION

CABLE

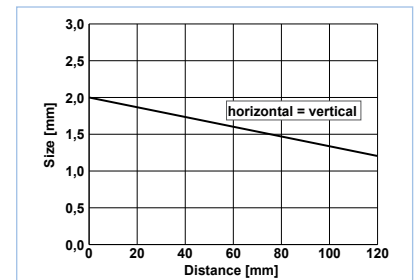


M8 CONNECTOR



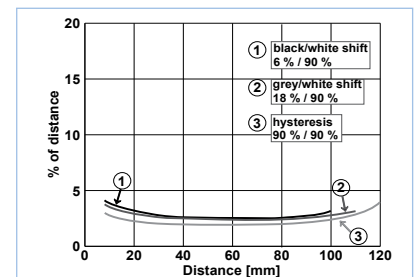
DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PH-5-M03-..

B/W SHIFT



S45-PH-5-M03-..

REFERENCE MATERIAL	DETECTION RANGE (LASER)
white (90%)	4...120 mm
grey (18%)	5...110 mm
black (6%)	8...100 mm

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Laser Background suppressor	M8	PNP	S45-PH-5-M03-PH	950411360
		NPN	S45-PH-5-M03-NH	950411350

LASER ENERGETIC DIFFUSED



The Energetic Diffused models are characterized by superior object detection performance even on gray targets. Thanks to a bright, highly visible red laser, installation and sensor alignment is very easy. The adjustment via Teach-in and remote control input is fast and easy. The laser model has a very sharp, highly visible spot for best-in-class, precise detection of objects. The Class 1 laser emission delivers high performance with safe operating conditions. Cable versions are available upon request.

HIGHLIGHTS

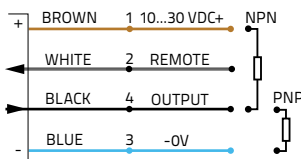
- Long distance sensor
- High visibility LED
- Easy alignment
- Remote Teach-in

TECHNICAL DATA

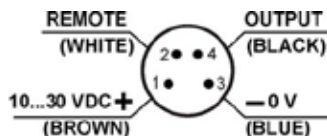
Operating Distance	1...250mm
Adjustment Range	25...250mm
Emission Type	Red Laser 650 nm Class 1
Hysteresis	10%
Operating Frequency	1500 HZ
Response Time	333 µs
Setting	Teach-in, Remote Input
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Oputut status

CONNECTION

CABLE

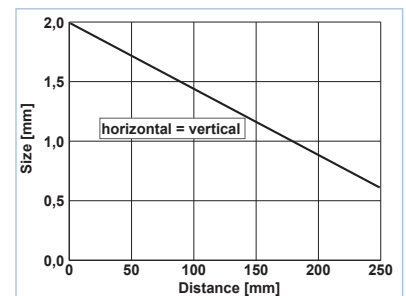


M8 CONNECTOR



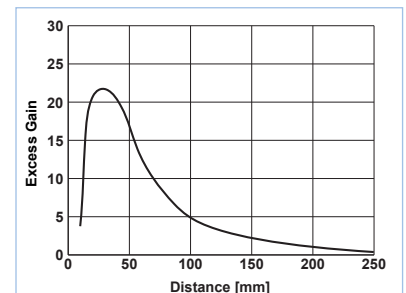
DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PH-5-C03-..

EXCESS GAIN



S45-PH-5-C03-..

REFERENCE MATERIAL	DETECTION RANGE (LASER)
white (90%)	1...250mm
grey (18%)	6...100mm
black (6%)	20...60mm

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Laser Energetic Diffused	M8	PNP	S45-PH-5-C03-PH	950411260
		NPN	S45-PH-5-C03-NH	950411250

LASER RETROREFLECTIVE POLARIZED



The Laser Retroreflective Polarized models are characterized by exceptional performance detecting very small objects while using various types of reflectors. Thanks to the bright and highly visible red laser spot, installation and sensor alignment is easy. The adjustment via Teach-in and remote control input is fast and accurate. Cable versions are available upon request.

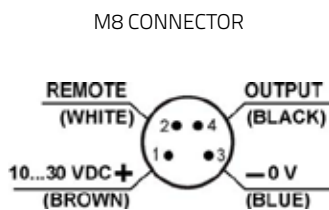
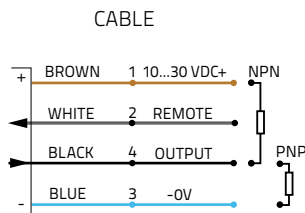
HIGHLIGHTS

- Precise and highly visible spot
- Long detection distance
- Safe Class 1 laser emission
- Very small object detection
- Easy reflector alignment
- Remote Teach-in

TECHNICAL DATA

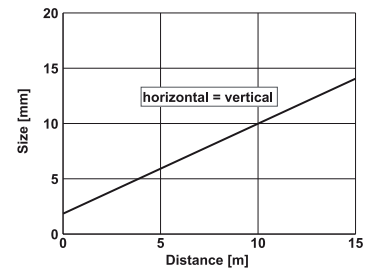
Operating Distance	0.1...15m
Adjustment Range	0.1...13m
Emission Type	Red Laser 650 nm Class 1
Operating Frequency	2000 Hz
Response Time	250 μ s
Setting	Teach-in, Remote In
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION



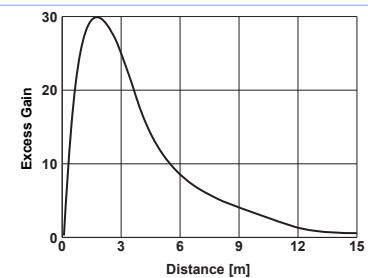
DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PH-5-B03-..

EXCESS GAIN



S45-PH-5-B03-..

REFLECTOR	DETECTION RANGE
R7	13m

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Laser Retroreflective Polarized	M8	PNP	S45-PH-5-B03-PH	950411140
		NPN	S45-PH-5-B03-NH	950411130

LASER THROUGH BEAM



The through beam laser light barrier models are characterized by a superior operating distance. The safe yet powerful class 1 laser emission delivers reliable and precise detection over long distances. With a small and highly visible spot, the through beam laser light barrier sensors offer significant advantages for installation and alignment.

The adjustment via Teach-in and remote control input is fast and easy. The TEST input provided in the Emitter sensor is very useful to check the sensor pairs functionality. Cable versions are available upon request.

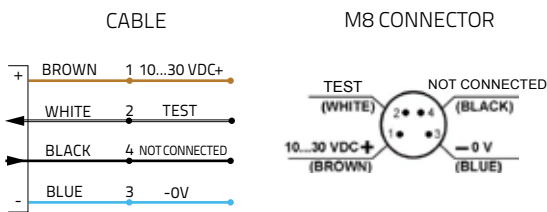
HIGHLIGHTS

- Long range detection in a very compact sensor format
- Safe Class 1 laser emission
- Test input for functional test
- Small object detection
- Easy alignment with very bright and precise spot
- Remote Teach-in setting

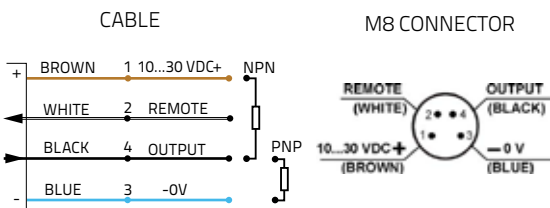
TECHNICAL DATA

Maximum Distance	0...20m
Operating Distance	0...18m
Emission Type	Red 632 nm
Operating Frequency	1000 Hz
Response Time	500 µs
Setting	Teach-in, Remote In
Light/Dark selection	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status

CONNECTION TX

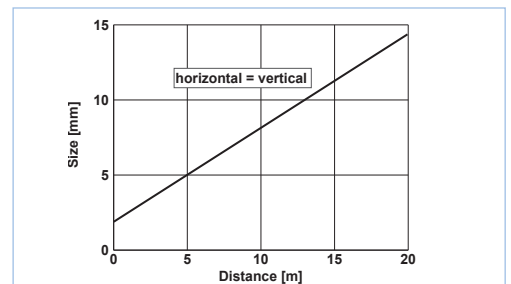


CONNECTION RX



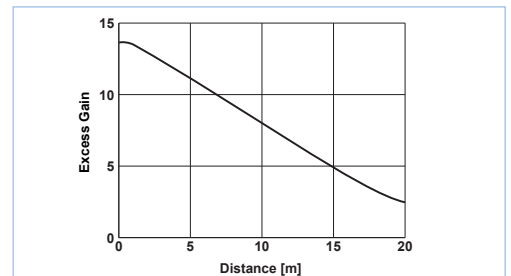
DETECTION DIAGRAM

DETECTION SPOT SIZE



S45-PH-5-F03-../S45-PH-5-G00-XE

EXCESS GAIN



S45-PH-5-F03-../S45-PH-5-G00-XE

MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Laser Through beam	M8	-	S45-PH-5-G00-XE	950411060
		PNP	S45-PH-5-F03-PH	950411080
		NPN	S45-PH-5-F03-NH	950411070

CONTRAST SENSOR



The S45 contrast sensor models are offered with a wide range of features and options. The product range is characterized by two different types of light emissions, with multicolor RGB LED and bright white LED. With this functionality, S45 can cover all the possible contrast sensor applications in the market. S45 delivers precise and reliable detection with the slightest contrast difference, fluttering or glossy objects, and very high position accuracy with 10 μ s scanning jitter. The S45 performs at a high speed operating frequency of up to 25 kHz. Object alignment is easy and very precise with the very visible and thin shaped light spot. Cable versions are available upon request.

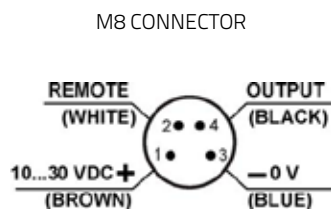
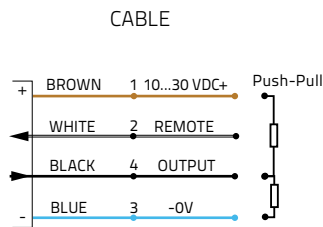
HIGHLIGHTS

- High performance even in applications with minimal contrast differences
- Glossy and fluttering objects do not affect the sensor operation
- The 10 μ s low Jitter functionality allows for very precise detection and positioning
- Highly visible spot in both white and RGB versions for improved precision
- Simple alignment with accurate optics system
- Push Pull Output

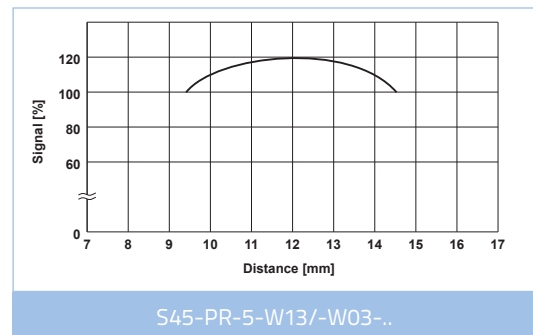
TECHNICAL DATA

DATA	WHITE EMISSION	RGB EMISSION
Operating Distance	12mm	12mm
Depth of field	+/- 2.5mm	+/- 3mm
Emission Type	White LED 400...780 nm	Red Green Blue LED
Spot Size	1 x 4mm	1 x 4mm
Operating Frequency	25 kHz (W13) 10 kHz (W03)	25 kHz (W43) 10 kHz (W33)
Response Time	20 μ s (W13) 50 μ s (W03)	20 μ s (W43) 50 μ s (W33)
Jitter Electrical	10 μ s (W13) 25 μ s (W03)	10 μ s (W43) 25 μ s (W33)
Setting	Teach-in, Remote In	Teach-in, Remote In
Light/Dark selection	Via Teach-in	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status	Green LED Operating Voltage Yellow LED Output status

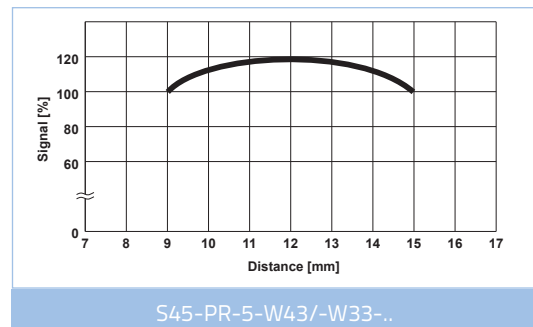
CONNECTION



DETECTION DIAGRAM



READING DIAGRAM



MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Contrast Sensor White	M8	PUSH-PULL	S45-PR-5-W03-OH	950411420
		PUSH-PULL	S45-PR-5-W13-OH	950411440
Contrast Sensor RGB	M8	PUSH-PULL	S45-PR-5-W33-OH	950411410
		PUSH-PULL	S45-PR-5-W43-OH	950411430

DISTANCE SENSOR



The S45 miniature distance sensors offer both long range and short range models, covering all applications up to 200mm.

These sensors are characterized by high repeatability and linearity for precise controls, object surface independent detection, invertible analogue output characteristic, windowed detection mode.

The compact S45 distance sensors are made of rugged materials purpose built for harsh industrial environments.

Cable versions are available upon request.

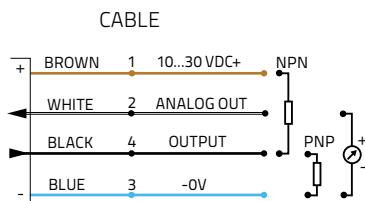
HIGHLIGHTS

- High surface independence by color and type
- Inversion of the analog characteristic
- Window mode for two set point detection
- High linearity and repeatability
- 0...10V analog output

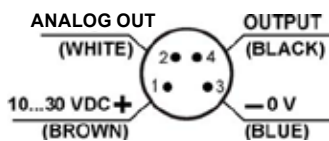
TECHNICAL DATA

DATA	SHORT RANGE (Y03)	LONG RANGE (Y13)
Operating Distance	20...80mm	30...200mm
Resolution	0.12mm	0.68mm
Linearity	+/- 0.4mm < 0.4mm	+/- 2mm < 1mm
Emission Type	Red LED 632 nm	Red LED 632 nm
Spot Size	1 x 4mm	1 x 4mm
Operating Frequency	1000 Hz	1000 Hz
Response Time Q	500 µs	500 µs
Response Time QA	400 µs	3.4 µs
Power Supply	13...30 Vdc	13...30 Vdc
Analogue Output	1...10 V max 3 mA	1...10 V max 3 mA
Warm-up Time	10 min.	10 min.
Temperature Drift	< 0.1mm/K	< 0.2mm/K
Setting	Teach-in, Remote In	Teach-in, Remote In
Light/Dark selection	Via Teach-in	Via Teach-in
Indicators	Green LED Operating Voltage Yellow LED Output status	Green LED Operating Voltage Yellow LED Output status

CONNECTION

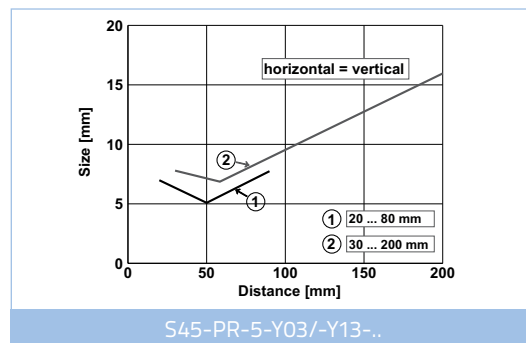


M8 CONNECTOR

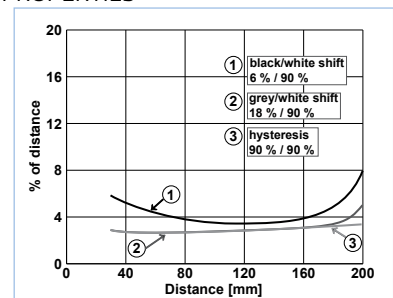
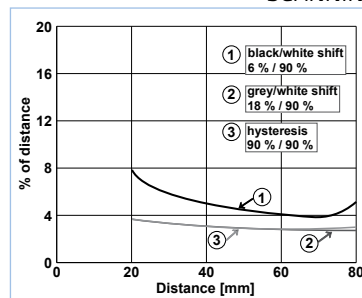


DETECTION DIAGRAM

DETECTION SPOT SIZE



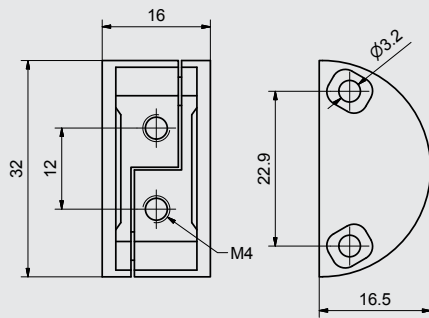
SCANNING PROPERTIES



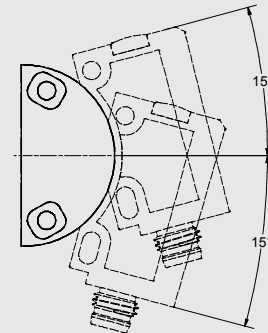
MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Distance sensor Short Range	M8	PNP	S45-PR-5-Y03-PV	950411380
		NPN	S45-PR-5-Y03-NV	950411370
Distance sensor Long Range	M8	PNP	S45-PR-5-Y13-PV	950411400
		NPN	S45-PR-5-Y13-NV	950411390

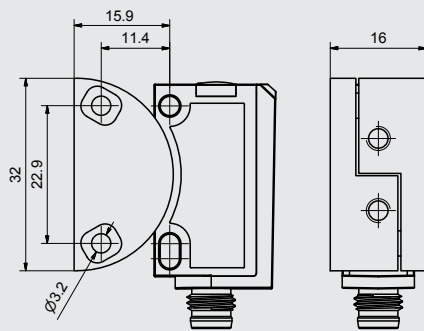
ACCESSORIES



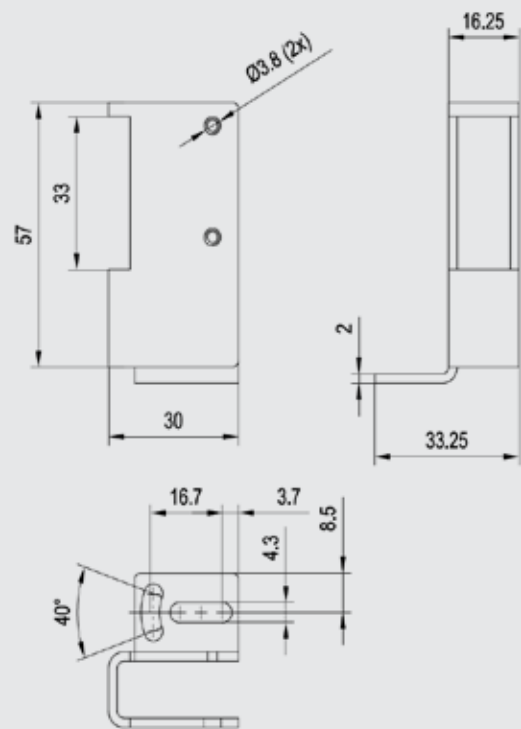
ST-S45-DVT



ST-S45-DVT



ST-S45-DVT



ST-MINI-PRO

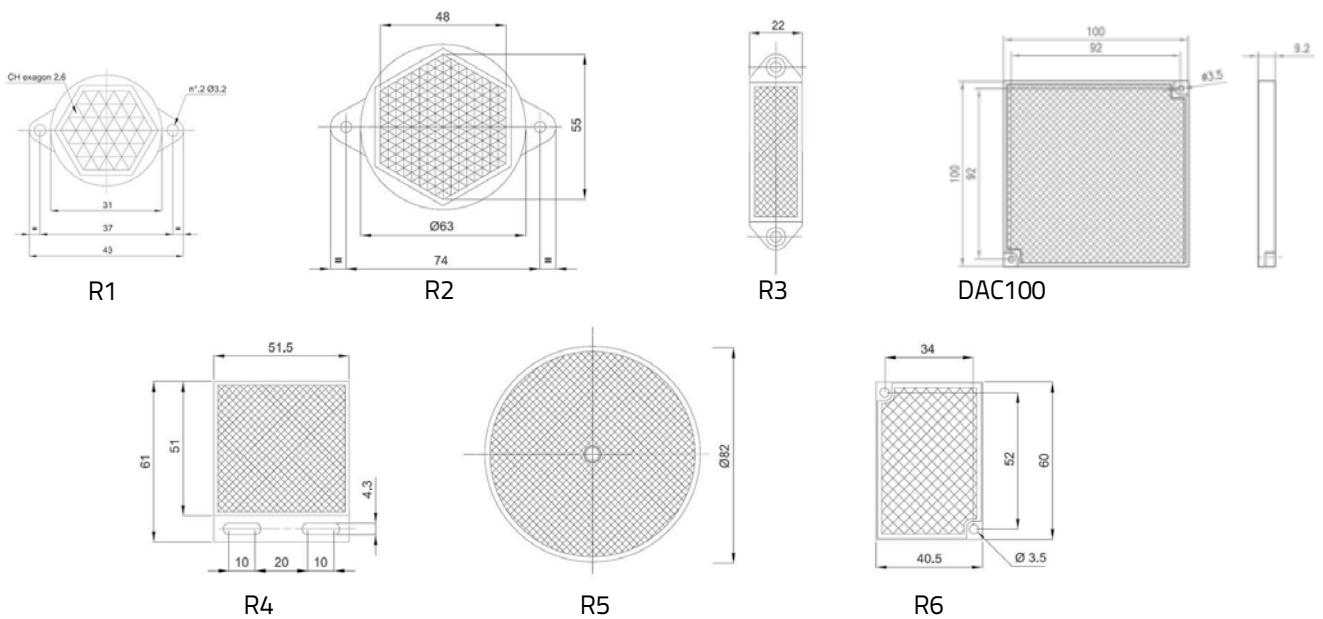
MODEL	DESCRIPTION	ORDER NO.
ST-S45-DVT	S45 DOVE TAIL BRACKET	95ACC7970
ST-MINI-PRO	MINI PROTECTIVE BRACKET	95ACC7980

CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M8 Connector	4-pole, grey, P.V.C.	3m	CS-B1-02-G-03	95A251420
		5m	CS-B1-02-G-05	95A251430
		7m	CS-B1-02-G-07	95A251440
		10m	CS-B1-02-G-10	95A251480
Radial M8 Connector	4-pole, P.U.R.	2m	CS-B1-02-R-02	95A251620
		5m	CS-B1-02-R-05	95A251640
		3m	CS-B2-02-G-03	95A251450
		5m	CS-B2-02-G-05	95A251460
Radial M8 Connector	4-pole, grey, P.V.C.	7m	CS-B2-02-G-07	95A251470
		10m	CS-B2-02-G-10	95A251530
		2m	CS-B2-02-R-02	95A251630
		5m	CS-B2-02-R-05	95A251650

REFLECTORS

MODEL	DESCRIPTION	ORDER No.
R1	Ø 23mm with Ø 31mm support	S940700023
R2	Ø 48mm with Ø 63mm support	S940700048
R3	18 x 54mm with 22 x 82mm support	S940700972
DAC100	DAC100 Reflector 100x100 mm	95A155020
R4	47x 47mm with 51.5 x 61mm support	95A151340
R4K	51X61mm IP69K protection	95A151220
R5	Ø 75mm with Ø 82mm support	S940700075
R6	36 x 55mm with 40.5 x 60mm support	95A151350
RT3870	200 x 300mm self-adhesive reflective tape	S940000600
RT3970	200 x 300mm self-adhesive reflective tape for polarized light	S940000604
RT3970	60 x 40mm self-adhesive reflective tape for polarized light	S940000900



CODING

S45 - P R - 5 - B03-PH

S45	-	P	Plastic	R	LED radial optics	2	cable	B	Polarized Retroreflective	0	Short Distance White 10kHz (W)	0	no adjustment	O	Push-Pull	E	Test Input+
				H	Laser radial optic	5	Connector	C	Energetic Diffused	1	Long Distance White 25kHz (W)	3	Teach In	N	NPN	H	Remote Input
								F	Receiver Through Beam	3	RGB 10kHz (W)			P	PNP	V	Analog out voltage
								G	Emitter Through Beam	4	RGB 25kHz (W)			X	No input No output		
								M	Background Suppressor	5	Autocollimated						
								T	Retroreflective for Transparent								
								W	Contrast Sensor								
								Y	Distance Sensor								