

SG-BODY "BIG" SERIES

The new **SG BODY "BIG"** safety light curtain series thanks to its new housing together with the innovative design optical-electronic platform ensures the performance of high-level safety light curtain required in the material handling market.

Classical TX-RX models with operating distance reaching up to **60m**, available in **2, 3 and 4 beams** models with controlled height of **500, 800, 900 and 1200mm** controlled height are now completed by a **LONG RANGE** version **40mm** resolution for hand protection with operating distance reaching up to 60m.

All SG BODY "BIG" models are then provided in 2 different versions :

- **BASE** version that represents the ideal product for all applications where Muting function is not required but EDM, MANUAL/AUTOMATIC restart are fundamental;
- **MUTING** version integrates the Muting function and completes it with all advanced features associated to like anti-interference coding, 'L' o 'T' configurations, edged or triggered OVERRIDE and external Muting enable.

Total absence of "DEAD ZONE", 7 segment displays **USER INTERFACE** for signaling and diagnostics, alignment AID function, both integrated and external muting lamp and 3 different types of mounting brackets (SWIVELLING SIDE for "THIN MOUNTING", TOP-BOTTOM ROTATING and REAR) complete the product and make it the ideal and most performing solution for all the industrial application.

HIGHLIGHTS

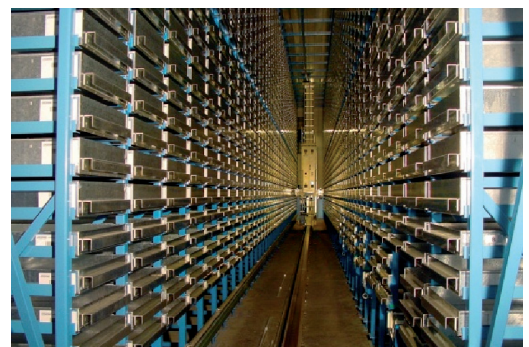
- New big sturdy profile for heavy duties;
- Up to 60mt operating distance;
- 2,3,4 beams with 500, 800, 900 and 1200mm controlled height;
- Two models : BASE and MUTING;
- No programming required : integrated safety functions DIP SWITCH selectable;
- Integrated Muting with all advanced features associated to like anti-interference coding, 'L' o 'T' configurations, edged or triggered OVERRIDE and external Muting enable.
- Type 2 models SIL 2 and PL d and Type 4 models SIL 3 PL e



APPLICATIONS

Extreme reliability and simplicity make the SG BODY safety light curtains the ideal solution for the following applications:

- Automatic machines
- Robots
- Automatic assembling lines
- Palletizers and Depalletizers
- Automatic warehouses



SAFETY & MESUREMENT

SETTINGS

BASE VERSION

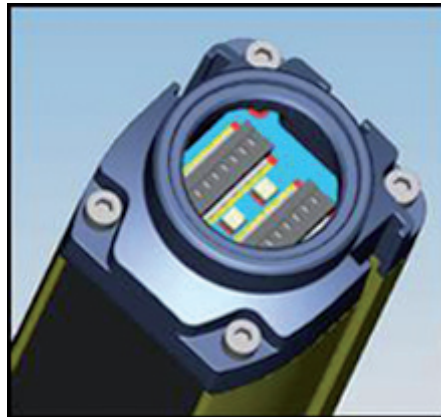
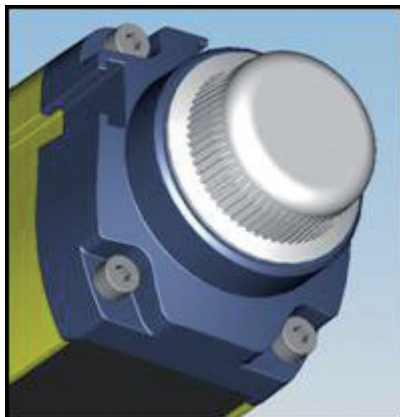
In BASE versions integrated functions can be selected or enabled through dedicate wires on TX and RX M12 connectors

Line	Layout connection	Behaviour
TEST		Test not active
RESET/RESTART/RESTART MODE		Automatic restart
RESET/RESTART/RESTART MODE		Manual restart
EDM		(EDM ENABLE: active)
EDM ENABLE		EDM enabled
OSSDs		

MUTING VERSION

A closing cap coupled with the top cap of the RX and TX units can be unscrewed to access dip-switches slot. By means of internal dip-switches the user can set-up some functions.

RX closing cap contains LED integrated MUTING lamp



RX			TX		
	ON	OFF		ON	OFF
Dip switch n°1: Muting timeout	10 min	∞	Dip switch n°1: coding selection	See table	See table
Dip switch n°2: Muting T/L	T	L	Dip switch n°2: coding selection	See table	See table
Dip switch n°3: Muting filter	Disabled	Enabled	Dip switch n°3: not used	-	-
Dip switch n°4: Override restart	Manual	Automatic	Dip switch n°4: not used	-	-
Dip switch n°5: Override mode	Edged	Triggered	Dip switch n°5: not used	-	-
Dip switch n°6: EDM enable	EDM on	EDM off	Dip switch n°6: not used	-	-
Dip switch n°7: coding selection	See table	See table	Dip switch n°7: not used	-	-
Dip switch n°8: coding selection	See table	See table	Dip switch n°8: not used	-	-
Dip-switch 7	Dip-switch 8	CODE	Dip-switch 1	Dip-switch 2	CODE
ON	ON	NO CODE	ON	ON	NO CODE
OFF	ON	Code 1	OFF	ON	Code 1
ON	OFF	Code 2	ON	OFF	Code 2
OFF	OFF	Not used	OFF	OFF	Not used

Wire configurations are the same reported in the table above for base versions

INDICATORS

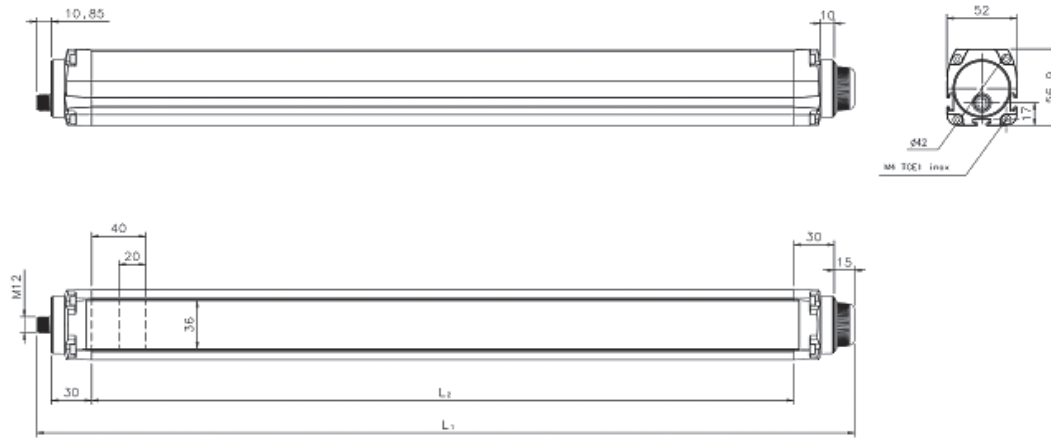
A user interface aids the customer to control and check the state of the light curtain, for alignment mode, normal operation and for troubleshooting activity. User interface is composed by four LEDs on the receiver and two LEDs on the emitter and an one-digit display present on both receiver and emitter unit

RX		TX	
NORMAL OPERATION →		POWER ON →	
SAFE →			EMISSION ←
	LAST ←		
	SYNC ←		



DIMENSIONS

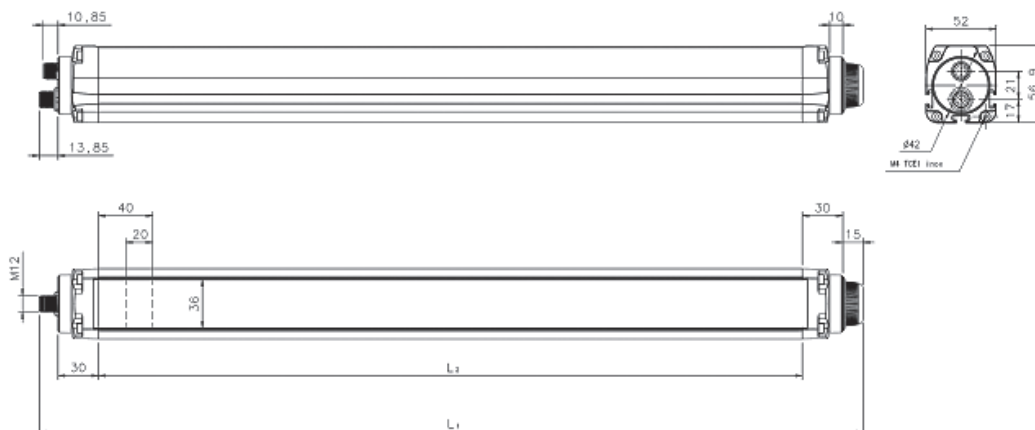
BASE VERSION



Model	L1 [mm]	L2 [mm]
SGx-B2-050-OO-E	606,35	520,5
SGx-B3-080-OO-E	906,35	820,5
SGx-B4-090-OO-E	1006,35	920,5
SGx-B4-120-OO-E	1306,35	1220,5
SG4-40-060-OO-E	783,35	700,5
SG4-40-090-OO-E	1083,35	1000,5
SG4-40-120-OO-E	1383,35	1300,5

x = ESPE Type: 2,4

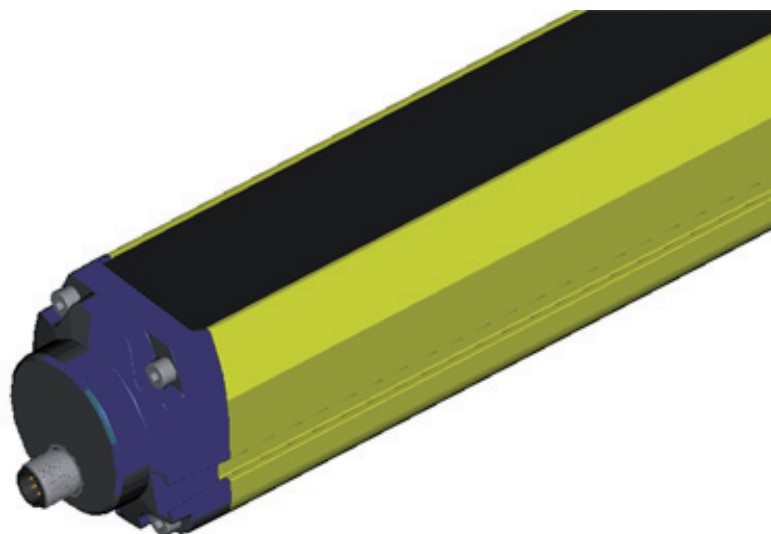
MUTING VERSION



Model	L1 [mm]	L2 [mm]
SGx-Byy2-050-OO-W-C	609,35	520,5
SGx-Byy3-080-OO-W-C	909,35	820,5
SGx-Byy4-090-OO-W-C	1009,35	920,5
SGx-Byy4-120-OO-W-C	1309,35	1220,5

x = ESPE Type: 2,4

yy = operating distance (only for Type 4): SR, LR

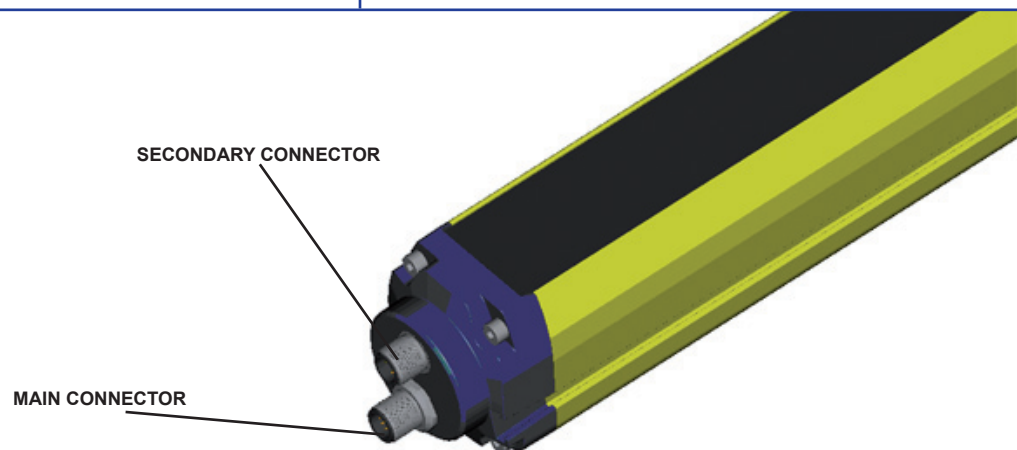
CONNECTIONS
BASE VERSION CONNECTIONS


RX	TX
<p>M12 8-pole connector</p> <ul style="list-style-type: none"> 1 = White = RESET/RESTART/RESTART MODE 2 = Brown = 24Vdc 3 = Green = EDM ENABLE 4 = Yellow = EDM 5 = Grey = OSSD1 6 = Pink = OSSD2 7 = Blue = 0V 8 = Red = EARTH 	<p>M12 5-pole connector</p> <ul style="list-style-type: none"> 1 = Brown = 24Vdc 2 = White = TEST 3 = Blue = 0V 4 = Black = EARTH 5 = Grey = N.C.

CONNECTIONS

MUTING VERSION CONNECTIONS

RX		TX	
MAIN CONNECTOR	SECONDARY CONNECTOR	MAIN CONNECTOR	SECONDARY CONNECTOR
<p>Main connector: M12 12-pole connector</p> <p>1 = Brown = 24Vdc 2 = Blue = 0V 3 = White = RESET/RESTART/RESTART MODE 4 = Green = OVERRIDE1 5 = Pink = OSSD2 6 = Yellow = EDM 7 = Black = MUTING ENABLE 8 = Grey = OSSD1 9 = Red = OVERRIDE2 10 = Violet = LAMP OUTPUT 11 = Grey-Pink = OVERRIDE STATUS 12 = Red-Blue = EARTH</p> <p>Secondary connector: M12 5-pole connector</p> <p>1 = Brown = 24Vdc 2 = White = MUTING2 3 = Blue = 0V 4 = Black = MUTING1 5 = Grey = N.C.</p>		<p>Main connector: M12 5-pole connector</p> <p>1 = Brown = 24Vdc 2 = White = TEST 3 = Blue = 0V 4 = Black = EARTH 5 = Grey = N.C.</p> <p>Secondary connector: M12 5-pole connector</p> <p>1 = Brown = 24Vdc 2 = White = N.C. 3 = Blue = 0V 4 = Black = N.C. 5 = Grey = N.C.</p>	



TECHNICAL DATA

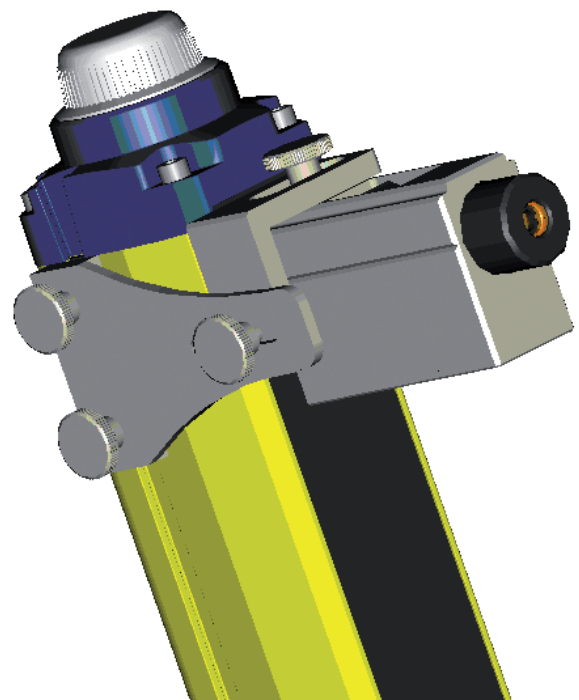
	BASE VERSION	MUTING VERSION
Electrical Data		
Power supply	24 Vdc \pm 20%	24 Vdc \pm 20%
Emitter consumption (TX)	2.5 W max	2.5 W max
Receiver consumption (RX)	4.0 W max (without load)	4.0 W max (without load)
Outputs:	2 PNP outputs short-circuit protection (1.4 A @55°C)	2 PNP outputs short-circuit protection (1.4 A @55°C)
Output current:	0.5 A max / each output	0.5 A max / each output
Output voltage - ON min:	Power supply value less 1 V	Power supply value less 1 V
Output voltage - OFF max:	0.2 V	0.2 V
Output capacitive load	2.2 μ F @24Vdc	2.2 μ F @24Vdc
Response time:	From 11 to 24 ms See section "MODEL TABLE SELECTION"	From 11 to 24 ms See section "MODEL TABLE SELECTION"
Protected height:	from 500mm to1200mm See section "MODEL TABLE SELECTION"	from 500mm to1200mm See section "MODEL TABLE SELECTION"
Safety category:	Type 4 / Type 2 (ref. EN 61496-1)	Type 4 / Type 2 (ref. EN 61496-1)
Auxiliary functions:	Reset, Restart selection, EDM, Test	Reset, Restart selection, Alignment, EDM, Test, Muting, Override, Coding
Electrical protection:	class III	class III
Connections:	TX : M12 5 poles RX : M12 8 poles	TX : M12 5 pole + M12 5 pole RX : M12 12 pole + M12 5 pole
Cable length (for power supply):	70m. max.	70m. max.
Pollution degree	2	2
Optical Data		
Light source:	Infrared LED (950 nm wavelength)	Infrared LED (950 nm wavelength)
Resolution:	40 mm 319,75 mm 419,75 mm 519,75 mm	319,75 mm 419,75 mm 519,75 mm
Beam spacing:	20 mm 300 mm 400 mm 500 mm	300 mm 400 mm 500 mm
Operating distance:	See section "MODEL TABLE SELECTION"	See section "MODEL TABLE SELECTION"
Ambient light rejection:	IEC 61496-2	IEC 61496-2
Mechanical and environmental data		
Operating temperature:	0...55°C	0...55°C
Storage temperature:	-25...+ 70 °C	-25...+ 70 °C
Temperature class:	T6	T6
Humidity:	15...95 % (no condensation)	15...95 % (no condensation)
Water protection grade:	IP 65 (EN 60529)	IP 65 (EN 60529)
Vibration:	0.35 mm width, 10...55 Hz frequency, 20 sweep for each axis, 1 octave/min (EN 60068-2-6)	0.35 mm width, 10...55 Hz frequency, 20 sweep for each axis, 1 octave/min (EN 60068-2-6)
Shock resistance:	16 ms (10g) 1.000 shock for each axis (EN 60068-2-29)	16 ms (10g) 1.000 shock for each axis (EN 60068-2-29)
Housing material:	Painted aluminium (yellow RAL 1003)	Painted aluminium (yellow RAL 1003)
Caps material:	PBT Valox 508 (pantone 072-CVC)	PBT Valox 508 (pantone 072-CVC)
Front glass material:	PMMA	PMMA
Connectors:	M12	M12

TECHNICAL DATA

	BASE VERSION	MUTING VERSION
Reliability data		
PL (Ref. EN ISO 13849-1)	SG2 : d SG4 : e	SG2 : d SG4 : e
CAT (Ref. EN 954-1)	SG2 : 2 SG4 : 4	SG2 : 2 SG4 : 4
SIL (Ref. EN IEC 61508)	SG2 : 2 SG4 : 3	SG2 : 2 SG4 : 3
SIL CL (Ref. EN IEC 62061)	SG2 : 2 SG4 : 3	SG2 : 2 SG4 : 3
PFHD – Probability of Danger Failure (1/h)	SG2 : 1,19E-08 SG4 : 1,10E-08 SG4 40mm LONG RANGE : 1,95E-08	SG2 : 3,15E-08 SG4 : 1,03E-08
T1 – Life Time (Years)	SG2 : 20 SG4 : 20	SG2 : 20 SG4 : 20
MTTFD - Mean Time to Danger Failure (Years)	SG2 : 317 SG4 : 353 SG4 40mm LONG RANGE : 98	SG2 : 288 SG4 : 338
DC – Diagnostic Coverage (%)	SG2 : 96,7% SG4 : 96,4% SG4 40mm LONG RANGE : 98,3%	SG2 : 92,10% SG4 : 96,80%
SFF – Safe Failure Fraction (%)	SG2 : 98% SG4 : 97,9% SG4 40mm LONG RANGE : 98,9%	SG2 : 95,20% SG4 : 98,1%
HFT – Hardware Fault Tolerance	SG2 : 0 SG4 : 1 SG4 40mm LONG RANGE : 1	SG2 : 0 SG4 : 1

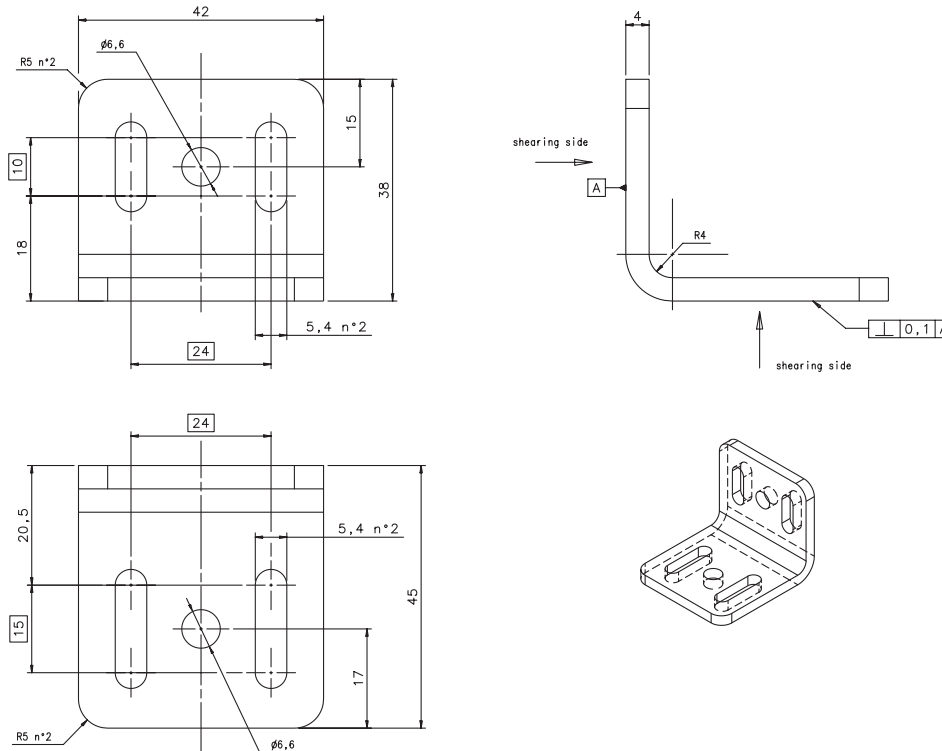


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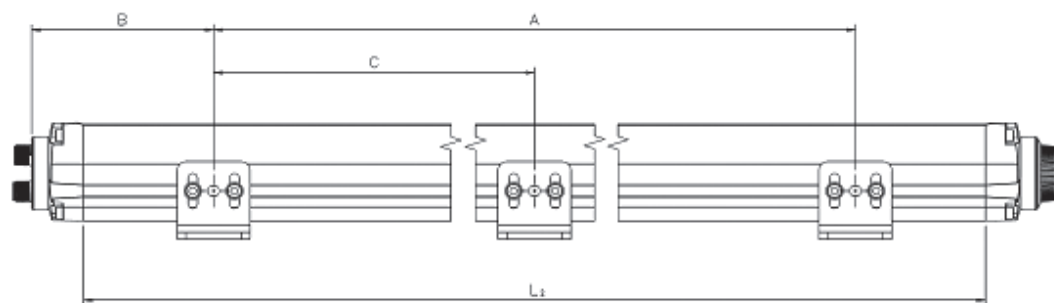
ACCESSORY SELECTION AND ORDER INFORMATION

SIDE FIXING BRACKET



MODEL	DESCRIPTION	CODE
ST-K4STD-SG BODY BIG	Side fixing bracket (4 pcs kit)	95ASE1950
ST-K4AV	Antivibration support (4 pcs kit)	95ACC1700
ST-K6AV	Antivibration support (6 pcs kit)	95ACC1710

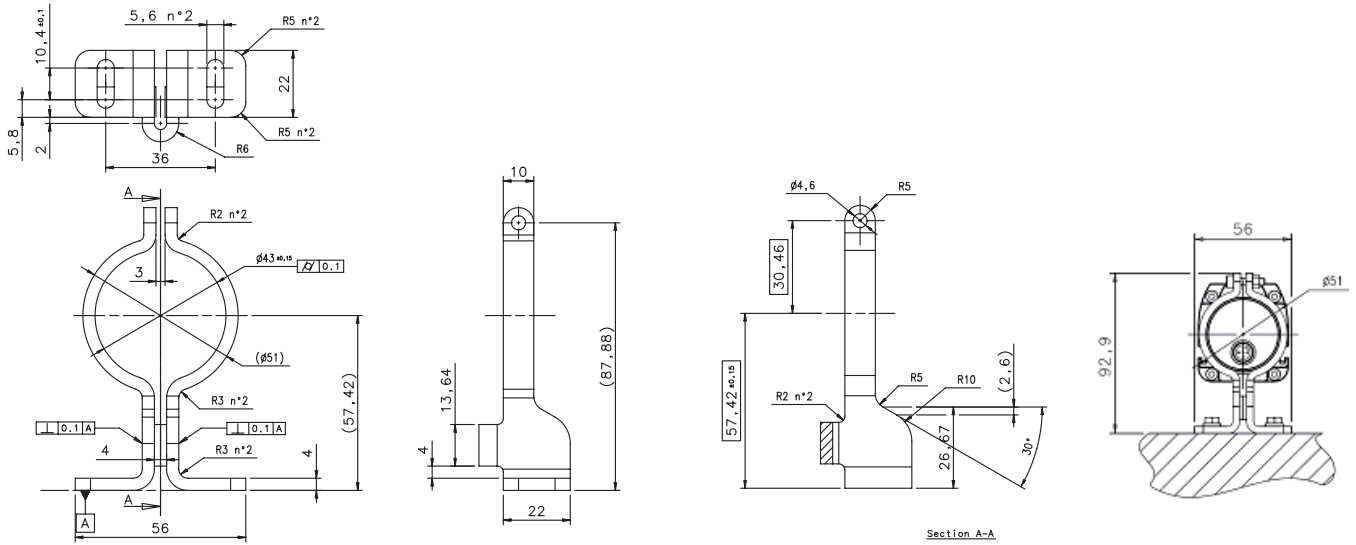
THE RECOMMENDED MOUNTING POSITIONS ACCORDING TO THE LIGHT CURTAIN LENGTH ARE SHOWN IN FIGURE 52 AND IN THE SUBSEQUENT TABLE.



DESCRIPTION	L2[mm]	A [mm]	B [mm]	C [mm]
SGx-yyy2-050-OO-k-x	520,5	320,5	100	-
SGx- yyy3 -080-OO-k-x	820,5	370,5	125	-
SGx- yyy4 -090-OO-k-x	920,5	620,5	150	-
SGx- yyy4 -120-OO-k-x	1220,5	1020,5	100	510,25
SG4-40-060-OO-E	700,5	420,5	140	-
SG4-40-090-OO-E	1000,5	770,5	115	-
SG4-40-120-OO-E	1300,5	1120,5	90	560,25

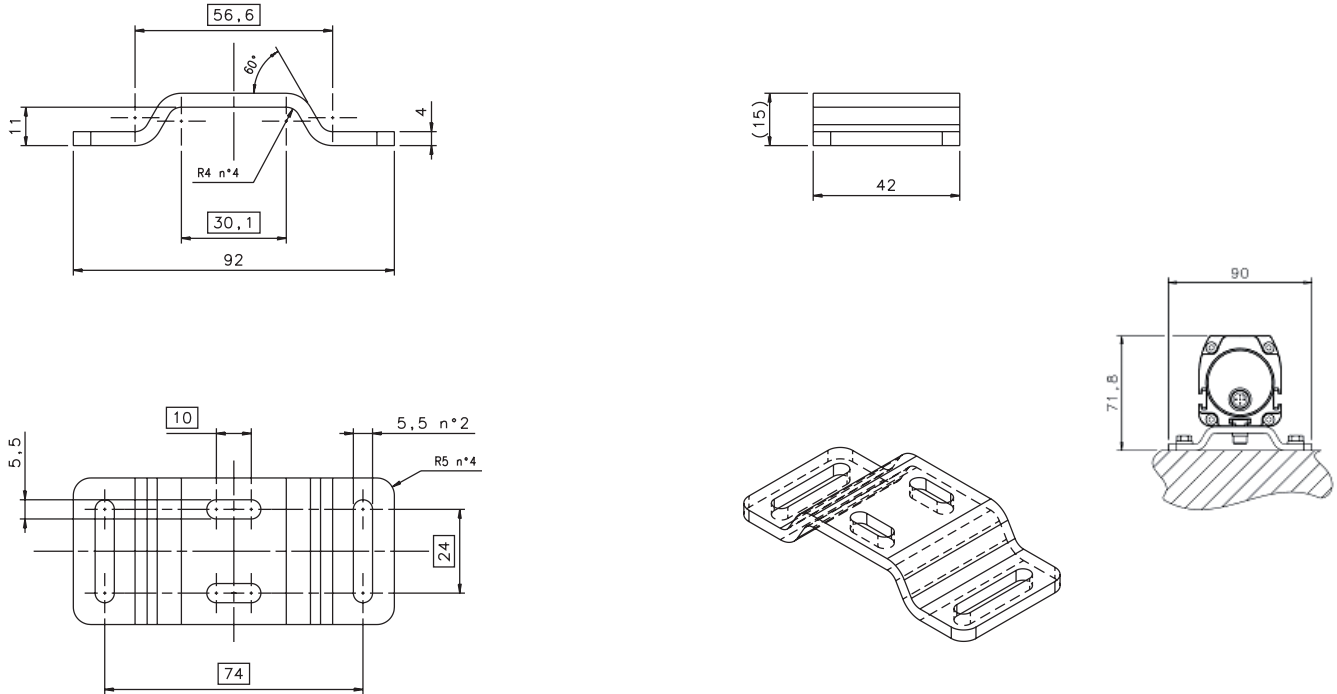
Legend
 x : 2 or 4;
 yyy : • B
 • BSR
 • BLR
 k : E or W
 x : C

ROTATIVE FIXING BRACKET



MODEL	DESCRIPTION	CODE
ST-K4ROT-SG BODY BIG	Rotative Fixing Bracket (4 pcs kit)	95ASE1960

REAR FIXING BRACKET



MODEL	DESCRIPTION	CODE
ST-K4REAR-SG BODY BIG	Rear Fixing Bracket (4 pcs kit)	95ASE1970

NOTE: The aforementioned fixing brackets are not available as outfit

MODEL	DESCRIPTION	CODE
SG-DM 150	Deviating mirror version 150 mm	95ASE1670
SG-DM 600	Deviating mirror version 600 mm	95ASE1680
SG-DM 900	Deviating mirror version 900 mm	95ASE1690
SG-DM 1200	Deviating mirror version 1200 mm	95ASE1700
SG-DM 1650	Deviating mirror version 1650 mm	95ASE1710
SG-DM 1900	Deviating mirror version 1900 mm	95ASE1720
SE-S 800	Column and floor stand H= 800 mm	95ACC1730
SE-S 1000	Column and floor stand H= 1000 mm	95ACC1740
SE-S 1200	Column and floor stand H= 1200 mm	95ACC1750
SE-S 1500	Column and floor stand H= 1500 mm	95ACC1760
SE-S 1800	Column and floor stand H= 1800 mm	95ACC1770
SG-SB	Protective stand base	95ASE1660
SG-PS 600	Protective stand H= 600 mm	95ASE1610
SG-PS 900	Protective stand H= 900 mm	95ASE1620
SG-PS 1200	Protective stand H= 1200 mm	95ASE1630
SG-PS 1650	Protective stand H = 1650 mm	95ASE1640
SG-PS 1900	Protective stand H = 1900 mm	95ASE1650
TP-40	Test piece Ø 40 mm	95ASE1820
TP-50	Test piece Ø 50 mm	95ASE1790
TP-90	Test piece Ø 90 mm	95ASE1800
SG-LP	Laser pointer	95ASE5590
CS-A1-03-U-03	5-pole M12 cable (axial) 3 m	95ASE1170
CS-A1-03-U-05	5-pole M12 cable (axial) 5 m	95ASE1180
CS-A1-03-U-10	5-pole M12 cable (axial) 10 m	95ASE1190
CS-A1-03-U-15	5-pole M12 cable (axial) 15 m	95ASE1200
CS-A1-03-U-25	5-pole M12 cable (axial) 25 m	95ASE1210
CS-A1-03-U-50	5-pole M12 cable (axial) 50m	95A252700
CS-A1-06-U-03	8-pole M12 cable (axial) 3 m	95ASE1220
CS-A1-06-U-05	8-pole M12 cable (axial) 5 m	95ASE1230
CS-A1-06-U-10	8-pole M12 cable (axial) 10 m	95ASE1240
CS-A1-06-U-15	8-pole M12 cable (axial) 15 m	95ASE1250
CS-A1-06-U-25	8-pole M12 cable (axial) 25 m	95ASE1260
CS-A1-06-U-50	8-pole M12 cable (axial) 50 m	95A252710
CS-A1-10-U-03	12-pole M12 cable (axial) 3 m	95A252720
CS-A1-10-U-05	12-pole M12 cable (axial) 5 m	95A252730
CS-A1-10-U-10	12-pole M12 cable (axial) 10 m	95A252740
CS-A1-10-U-15	12-pole M12 cable (axial) 15 m	95A252750
CS-A1-10-U-25	12-pole M12 cable (axial) 25 m	95A252760
CS-A1-10-U-50	12-pole M12 cable (axial) 50 m	95A252770
SG-AS-ARM ^{note 1}	Active sensor single arm	95ASE1840
SG-PR-ARM ^{note 1}	Passive reflector single arm	95ASE1850
SG-F1-G1-ARMS ^{note 2}	F1-G1 muting arm for RX	95ASE1880
SG-F2-G2-ARMS ^{note 2}	F2-G2 muting arm for RX	95ASE1890
SG-CB-B	Muting C bracket big kit	95ASE1920
LMS	Muting lamp	95ASE1830
LMS-1	Modular Muting lamp	95ACC1990
LMS-2	Muting lamp - horizontal mounting	95ACC2000
LMS-3	Muting lamp - vertical mounting	95ACC2010
SU-LMS-1A	Basic module for LMS-1	95ACC2020
SU-LMS-1B	Tower module for LMS-1	95ACC2030
CV-Y1-02-B-007	M12 4-pole cable 0.7m for "T" versions with integrated sensors	95ACC2560
CV-L1-02-B-007	M12 4-pole cable 0.7m for "L" versions with integrated sensors	95ACC2570
SE-SR2	TYPE 4 SAFETY RELAY 3NO 1NC	95ACC6170
CS ME-03VU24-Y14	EDM RELAY BOX	95ASE1270

note 1: With RRX Muting arms the overall operating distance is reduced to **3 meters**.

RRX Muting arms **MUST BE USED ONLY WITH 0.5..30/60 MT OPERATING DISTANCE MODELS**

note 2: With F/G Muting arms the overall operating distance is reduced to **7 meters**.

F/G Muting arms **MUST BE USED ONLY WITH 0.5..30/60 MT OPERATING DISTANCE MODELS**

MODEL SELECTION TABLE

BASE MODELS

Description	Protected height [mm]	Beams N	Response time [msec]	Resolution [mm]	Interaxis [mm]	Operating distance [m]	Code
SG2-B2-050-OO-E	500	2	11	519,75	500	0.5..60	957851240
SG2-B3-080-OO-E	800	3	12	419,75	400	0.5..60	957851250
SG2-B4-090-OO-E	900	4	13	319,75	300	0.5..60	957851260
SG2-B4-120-OO-E	1200	4	13	419,75	400	0.5..60	957851270
SG4-B2-050-OO-E	500	2	11	519,75	500	6..60	957851280
SG4-B3-080-OO-E	800	3	12	419,75	400	6..60	957851290
SG4-B4-090-OO-E	900	4	13	319,75	300	6..60	957851300
SG4-B4-120-OO-E	1200	4	13	419,75	400	6..60	957851310
SG4-40-060-OO-E	660	33	20	40	20	6..60	957851570
SG4-40-090-OO-E	960	48	22	40	20	6..60	957851580
SG4-40-120-OO-E	1260	63	24	40	20	6..60	957851590

MUTING MODELS

Description	Protected height [mm]	Beams N	Response time [msec]	Resolution [mm]	Interaxis [mm]	Operating distance [m]	Code
SG2-B2-050-OO-W-C	500	2	No code: 11 Code: 17	519,75	500	0.5..60	957851320
SG2-B3-080-OO-W-C	800	3	No code: 12 Code: 19	419,75	400	0.5..60	957851330
SG2-B4-090-OO-W-C	900	4	No code: 13 Code: 21	319,75	300	0.5..60	957851340
SG2-B4-120-OO-W-C	1200	4	No code: 13 Code: 21	419,75	400	0.5..60	957851350
SG4-BSR2-050-OO-W-C	500	2	No code: 11 Code: 17	519,75	500	0.5..30	957851400
SG4-BSR3-080-OO-W-C	800	3	No code: 12 Code: 19	419,75	400	0.5..30	957851410
SG4-BSR4-090-OO-W-C	900	4	No code: 13 Code: 21	319,75	300	0.5..30	957851420
SG4-BSR4-120-OO-W-C	1200	4	No code: 13 Code: 21	419,75	400	0.5..30	957851430
SG4-BLR2-050-OO-W-C	500	2	No code: 11 Code: 17	519,75	500	6..60	957851360
SG4-BLR3-080-OO-W-C	800	3	No code: 12 Code: 19	419,75	400	6..60	957851370
SG4-BLR4-090-OO-W-C	900	4	No code: 13 Code: 21	319,75	300	6..60	957851380
SG4-BLR4-120-OO-W-C	1200	4	No code: 13 Code: 21	419,75	400	6..60	957851390



The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.

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