9 TECHNICAL DATA

Power supply = Vdd:	24 Vdc ± 20% (SELV/PELV)
Internal capacitance:	23 nF (Tx) /120 nF (Rx)
Emitter consumption (TX) S model:	30 mA max / 0.9W
Receiver consumption (RX) S model:	75 mA max (without load) / 2.2W
Muting sensor arm consumption:	60 mA max / 1.75W (with sensors off)
Outputs:	2 PNP outputs (2 NPN on request) short-circuit protection max: 1.4A at 55°C min: 1.1A at -10°C
Output current:	0.5 A max / each output
Output voltage - ON min:	Vdd –1 V
Output voltage - OFF max:	0.2 V
Leakage current:	< 1mA
Capacitive load (pure):	65 nF max at 25°C
Resistive load (pure):	56Ω min. at 24 Vdc
Response time:	From 14 to 16 ms
Emission type:	Infrared (880 nm)
Resolution:	315 mm (4 beams) 415 mm (3 and 4 beams) 515 mm (2 beams)
Operating distance:	0.5…3 m (SG2-T/L and SG4-T/L) 0.5…50 m (SG2-S and SG4-S)
Ambient light rejection	IEC 61496-2
Safety category:	Type 4 / Type 2 (ref. EN 61496-1) SIL 3 / SIL 1 (ref. EN 61508) SIL CL 3 / SIL CL 1 (ref. EN 62061) PL and Cat. 4 / PL c Cat. 2 (ref. EN ISO 13849-1 2008) See chapter 10 “List of available models”
Auxiliary functions:	Muting / Override Restart/EDM/Reset
Time-out period:	Muting: 10 minutes / ∞ Override: 2 minutes
Operating temperature:	- 10…+ 55 °C
Storage temperature:	- 25…+ 70 °C
Temperature class:	T6 (Tx/Rx/Arm)
Humidity:	15…95 % (no condensation)
Electrical protection:	Class 1 (**refer to note)
Mechanical protection:	*IP 65 (EN 60529)*
Ambient light rejection:	IEC-61496-2
Vibrations:	**0.35 mm width, 10 … 55 Hz frequency,** **20 sweep for each axis, 1octave/min** (EN 60068-2-6)
Shock resistance:	16 ms (10 G) 1.000 shock for each axis (EN 60068-2-29)
Housing material:	Painted alluminium (yellow RAL 1003)
Cap material:	PC Lexan 943A
Lens material:	PMMA
Connections:	Tx: conn. M12-4 poles + conn. M12-5 poles Rx: conn. M12-8 poles + conn. M12-5 poles

* = if a longer cable has to be used, please verify that the same specifications are respected

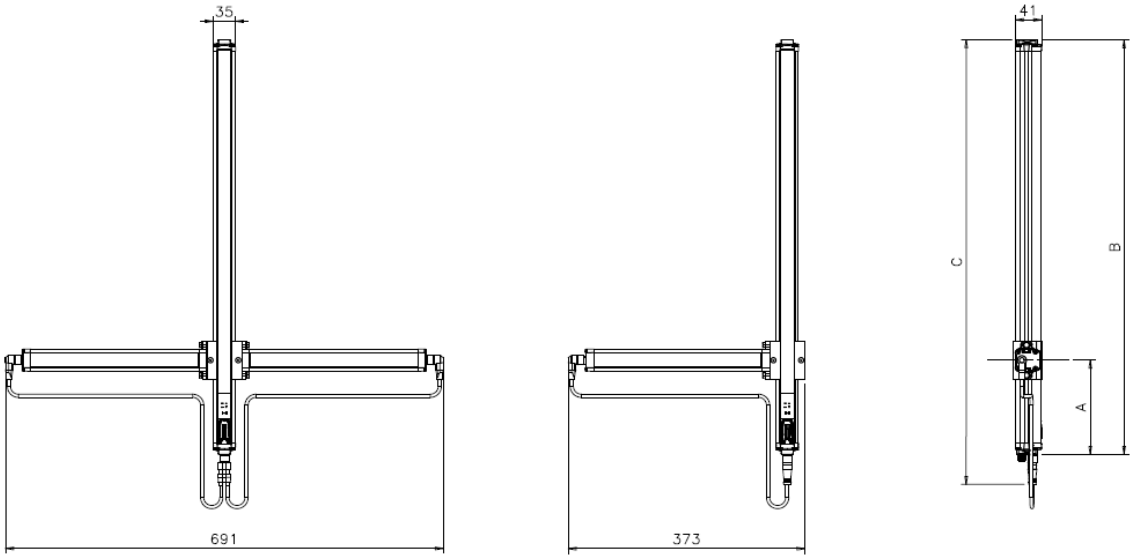
** Electrical protection	Class 1	Class 3
Protective grounding	Compulsory	Not accepted
Symbol for connection protective grounding	Compulsory	Not accepted
Protection by means of extra-low voltage with protective separation (SELV and PELV)	Recommended	Compulsory

10 LIST OF AVAILABLE MODELS

Model	Length of the sensitive area	Interaxis	N°. Beams	Resolution (mm)	Response time (ms)	Operating distance (m)	Code
SG2-S2-050-PP-W	515	500	2	515	14	0.5..50	957851080
SG2-S3-080-PP-W	815	400	3	415	14	0.5..50	957851090
SG2-S4-090-PP-W	915	300	4	315	16	0.5..50	957851100
SG2-S4-120-PP-W	1215	400	4	415	16	0.5..50	957851110
SG2-L2-050-PP-W	515	500	2	515	14	0.5..3	957851120
SG2-L3-080-PP-W	815	400	3	415	14	0.5..3	957851130
SG2-T2-050-PP-W	915	500	2	515	14	0.5..3	957851140
SG2-T3-080-PP-W	1215	400	3	415	14	0.5..3	957851150
SG4-S2-050-PP-W	515	500	2	515	14	0.5..50	957851160
SG4-S3-080-PP-W	815	400	3	415	14	0.5..50	957851170
SG4-S4-090-PP-W	915	300	4	315	16	0.5..50	957851180
SG4-S4-120-PP-W	1215	400	4	415	16	0.5..50	957851190
SG4-L2-050-PP-W	515	500	2	515	14	0.5..3	957851200
SG4-L3-080-PP-W	815	400	3	415	14	0.5..3	957851210
SG4-T2-050-PP-W	515	500	2	515	14	0.5..3	957851220
SG4-T3-080-PP-W	815	400	3	415	14	0.5..3	957851230
SG4-S2-050-PP-N	515	500	2	515	14	0.5..50	957851640
SG4-S3-080-PP-N	815	400	3	415	14	0.5..50	957851650
SG4-S4-090-PP-N	915	300	4	315	16	0.5..50	957851660
SG4-S4-120-PP-N	1215	400	4	415	16	0.5..50	957851670

	EN ISO 13849-1	*EN 954-1*	*EN IEC 61508*	*EN IEC 62061*	*Prob. of danger failure/hour*	*Life span*	*Mean Time to Dangerous Failure*	*Average Diagnostic Coverage*	*Safe Failure Fraction*	*Hardware Fault Tolerance*
Description	**PL**	**CAT**	**SIL**	**SIL CL**	**PFHd (1/h)**	**T1 (anni)**	**MTTFd (anni)**	**DC**	**SFF**	**HFT**
SG2-S2-050-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-S3-080-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-S4-090-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-S4-120-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-L2-050-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-L3-080-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-T2-050-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG2-T3-080-PP-W	c	2	1	1	1.00E-08	20	337	97.00%	98.14%	0
SG4-S2-050-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-S3-080-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-S4-090-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-S4-120-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-L2-050-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-L3-080-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-T2-050-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1
SG4-T3-080-PP-x	e	4	3	3	2.62E-09	20	384	98.90%	99.38%	1

11 DIMENSIONS



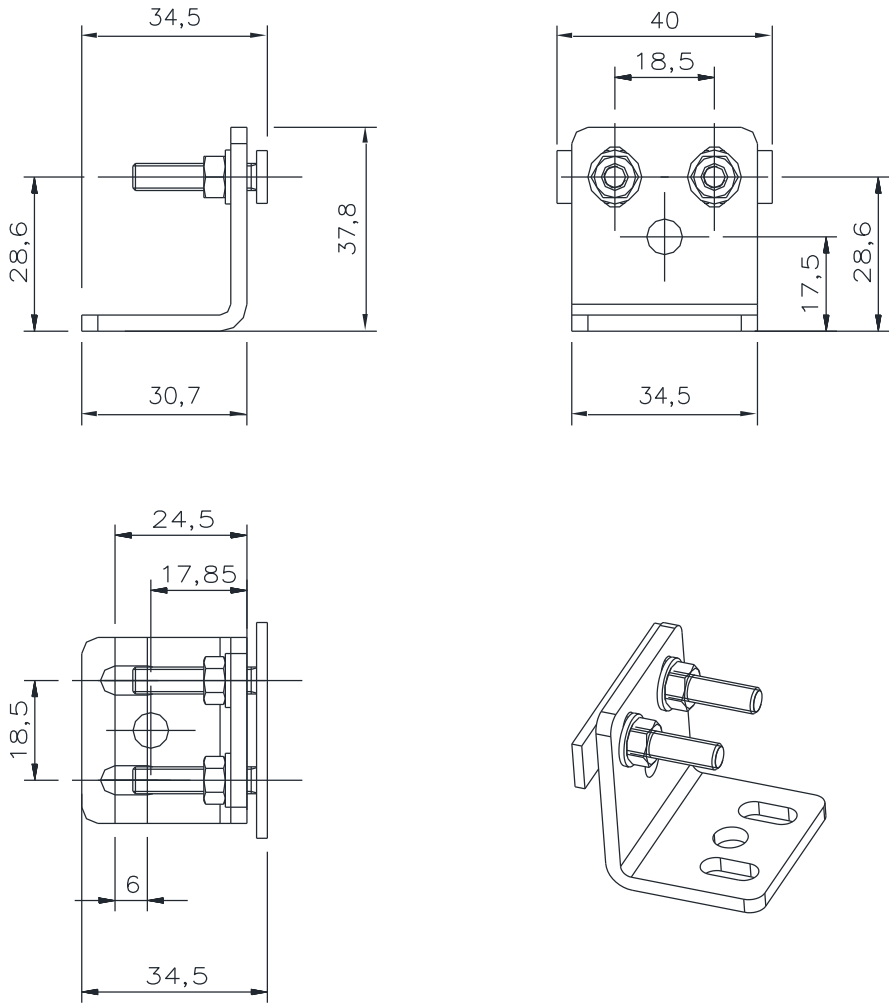
MODEL	A (mm)	B (mm)	C (mm)
SG T/L 2 050	120 - 260	653	700
SG T/L 3 080	120 - 260	953	1000
SG T/L 4 090	120 - 260	1053	1100
SG T/L 4 120	120 - 260	1353	1400

12 ACCESSORIES

(dimensions in mm)

12.1 METAL ANGLED FIXING BRACKET (ST-KSTD)

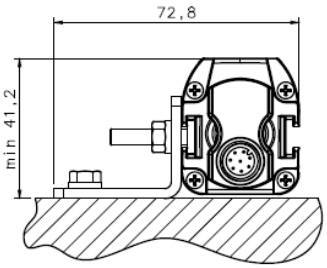
MODEL	DESCRIPTION	CODE
ST-KSTD	Angled fixing bracket (4 pcs kit)	95ACC1670

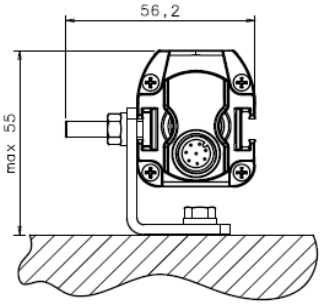


Angled fixing bracket mounting with orientable and antivibration supports

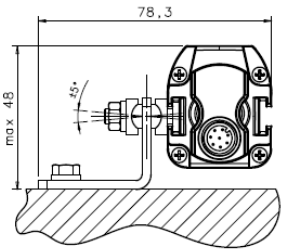
MODEL	DESCRIPTION	CODE
ST-K4OR	Orientable supports (4 pcs kit)	95ACC1680
ST-K6OR	Orientable supports (6 pcs kit)	95ACC1690
ST-K4AV	Antivibration supports (4 pcs kit)	95ACC1700
ST-K6AV	Antivibration supports (6 pcs kit)	95ACC1710

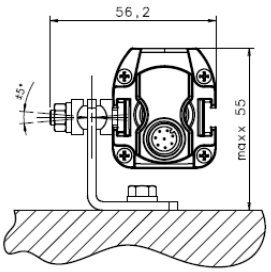
MOUNTING A *MOUNTING B*



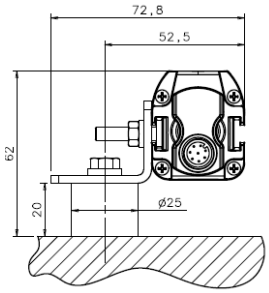


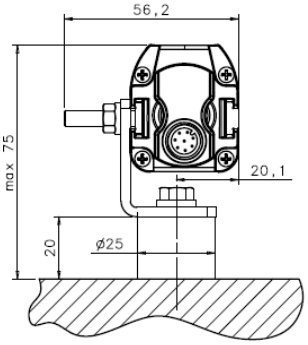
Angled fixing bracket



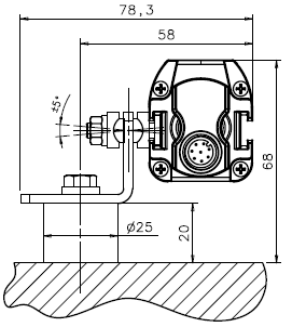


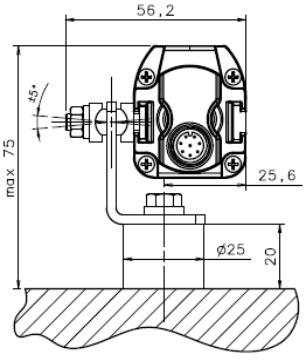
Angled fixing bracket + Orientable support





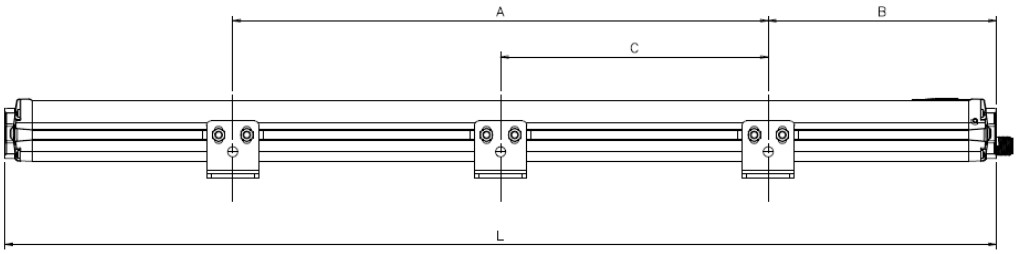
Angled fixing bracket + Antivibration support





Angled fixing bracket + Orientable support + Antivibration support

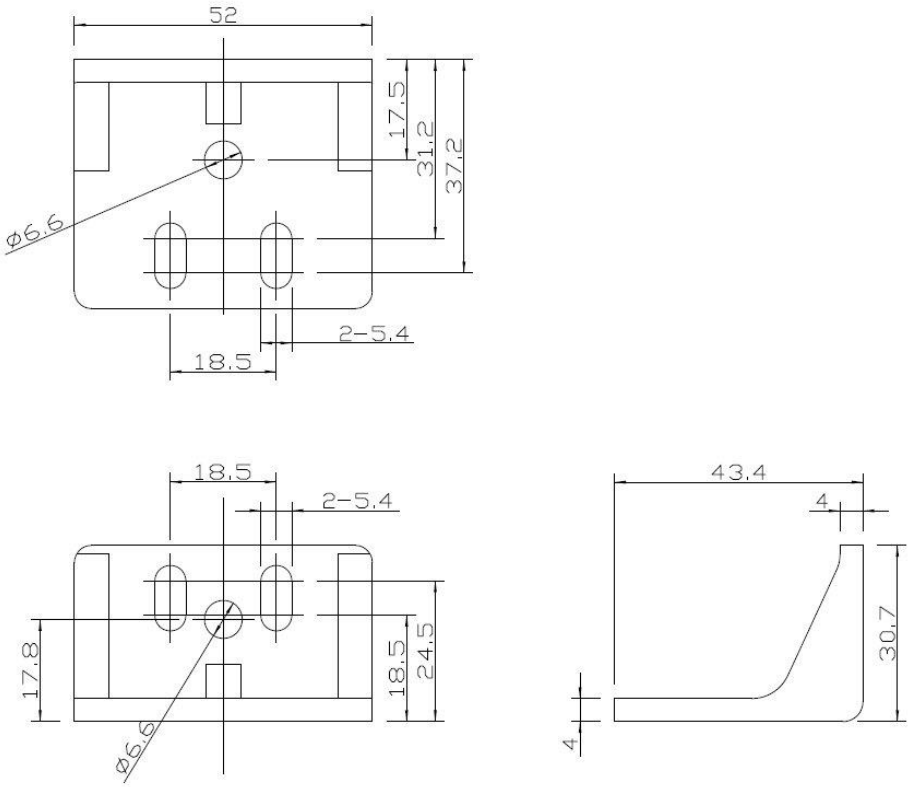
The recommended mounting positions according to the safety light curtain length are shown in the following drawings and table:



MODEL	L (mm)	A (mm)	B (mm)	C (mm)
SGx-S2-050-PP-x	653	342	150	-
SGx-S3-080-PP-x	953	542	200	-
SGx-S4-090-PP-x	1053	602	220	-
SGx-S4-120-PP-x	1353	942	200	472

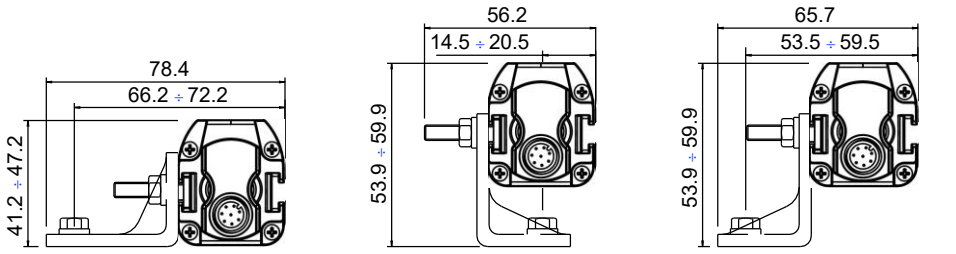
12.2 PLASTIC ANGLED FIXING BRACKET (ST-KPXMP)

MODEL	DESCRIPTION	CODE
ST-KP4MP	Angled fixing bracket (4 pcs kit)	95ASE1100
ST-KP6MP	Angled fixing bracket (6 pcs kit)	95ASE1110

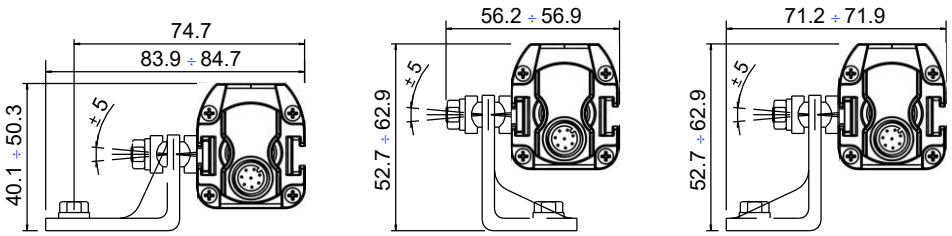


Angled fixing bracket mounting with orientable and antivibration supports

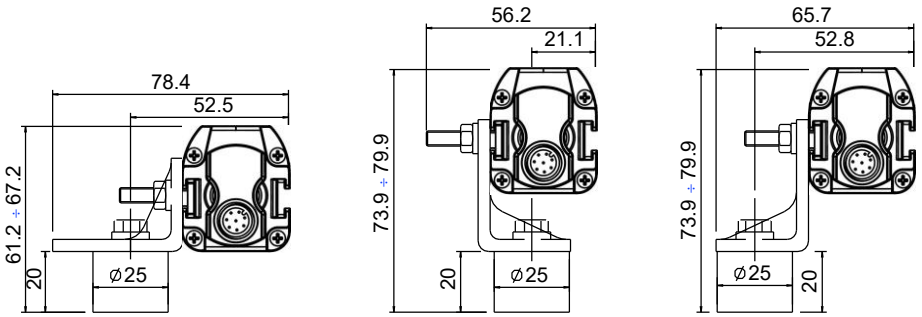
MODEL	DESCRIPTION	CODE
ST-K4OR	Orientable supports (4 pcs kit)	95ACC1680
ST-K6OR	Orientable supports (6 pcs kit)	95ACC1690
ST-K4AV	Antivibration supports (4 pcs kit)	95ACC1700
ST-K6AV	Antivibration supports (6 pcs kit)	95ACC1710



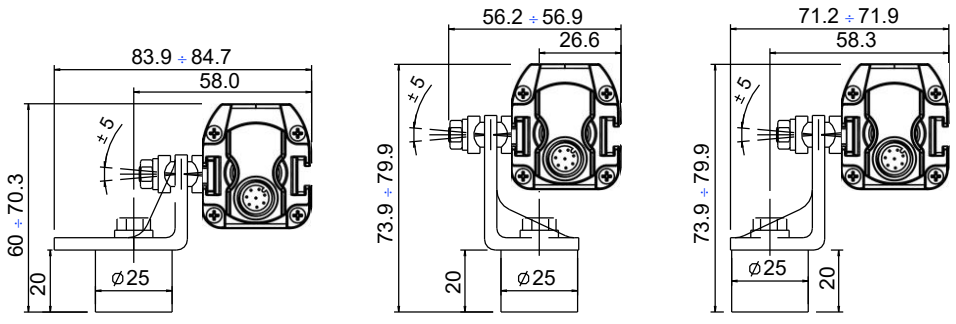
Angled fixing bracket



Angled fixing bracket + Orientable support



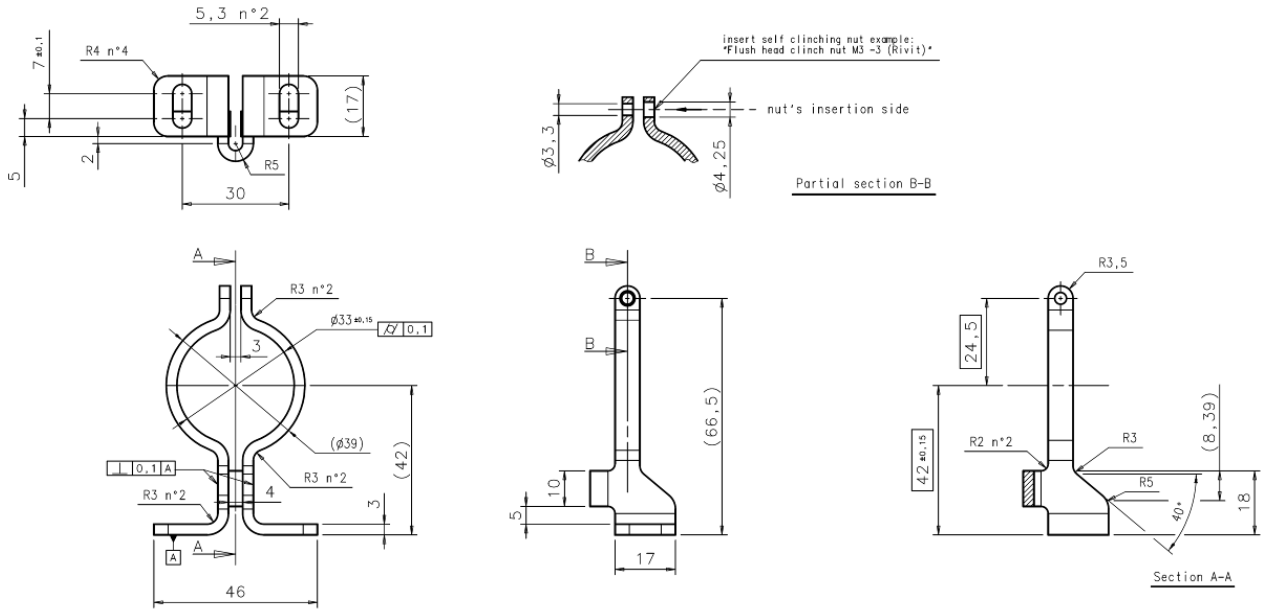
Angled fixing bracket + Antivibration support



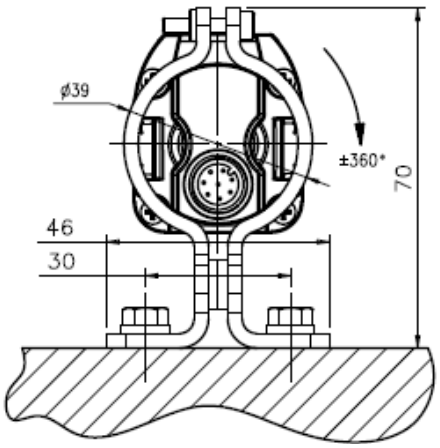
Angled fixing bracket + Orientable support + Antivibration support

12.3 ROTATIVE FIXING BRACKET (ST-K4ROT-SG BODY COMPACT)

MODEL	DESCRIPTION	CODE
ST-K4ROT-SG BODY COMPACT	Metal rotative fixing bracket (4 pcs kit)	95ASE2040



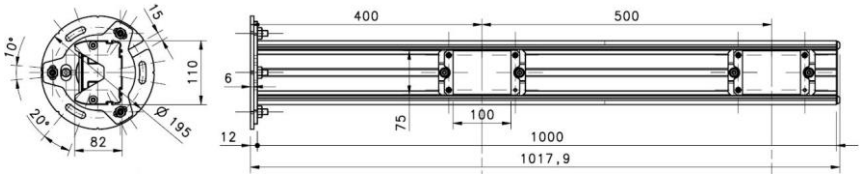
Rotative fixing bracket mounting



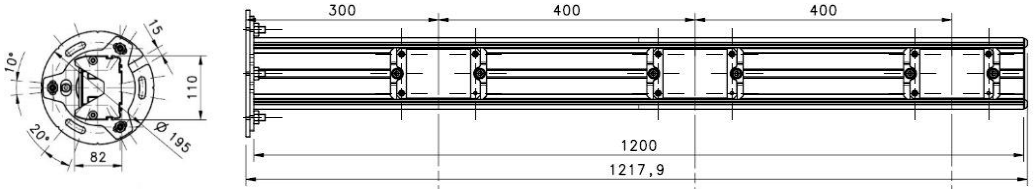
12.4 PROTECTIVE STANDS (SG-PSM)

MODEL	DESCRIPTION	CODE
SG-PSM-2-500	Protective stand with 2 mirrors H=500mm	95ASE2300
SG-PSM-3-800	Protective stand with 3 mirrors H=800mm	95ASE2310
SG-PSM-4-900	Protective stand with 4 mirrors H=900mm	95ASE2320
SG-PSM-4-1200	Protective stand with 4 mirrors H=1200mm	95ASE2330

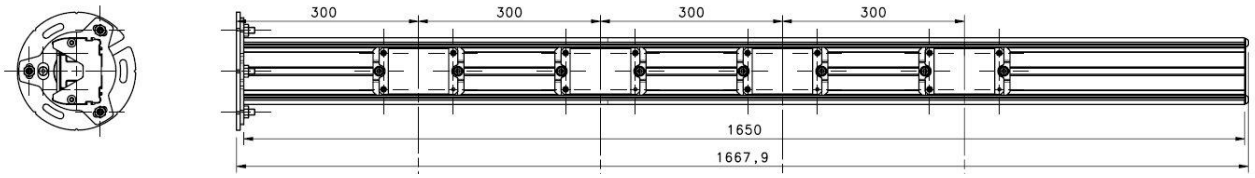
SG-PSM-2-500



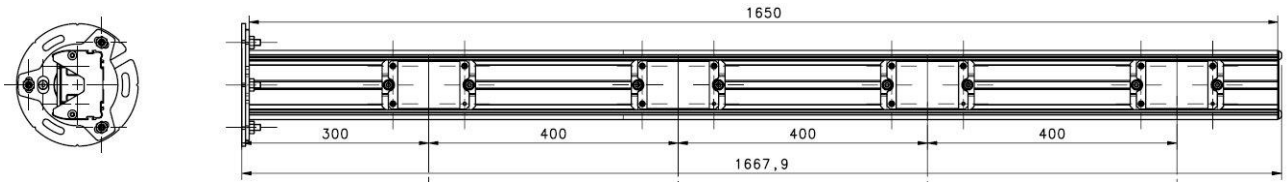
SG-PSM-3-800



SG-PSM-4-900



SG-PSM-4-1200



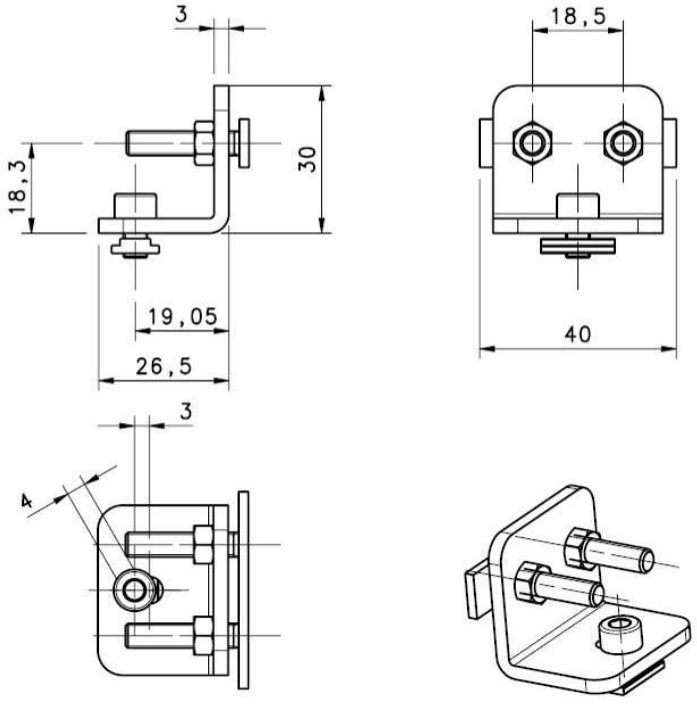
12.5 PROTECTIVE STANDS (SG-PSB)

MODEL	DESCRIPTION	L (mm)	CODE
SG-PSB 600	Protective stand H=600mm	600	95ASE2240
SG-PSB 1000	Protective stand H=1000mm	1000	95ASE2250
SG-PSB 1200	Protective stand H=1200mm	1200	95ASE2260
SG-PSB 1650	Protective stand H=1650mm	1650	95ASE2270
SG-PSB 1900	Protective stand H=1900mm	1900	95ASE2280



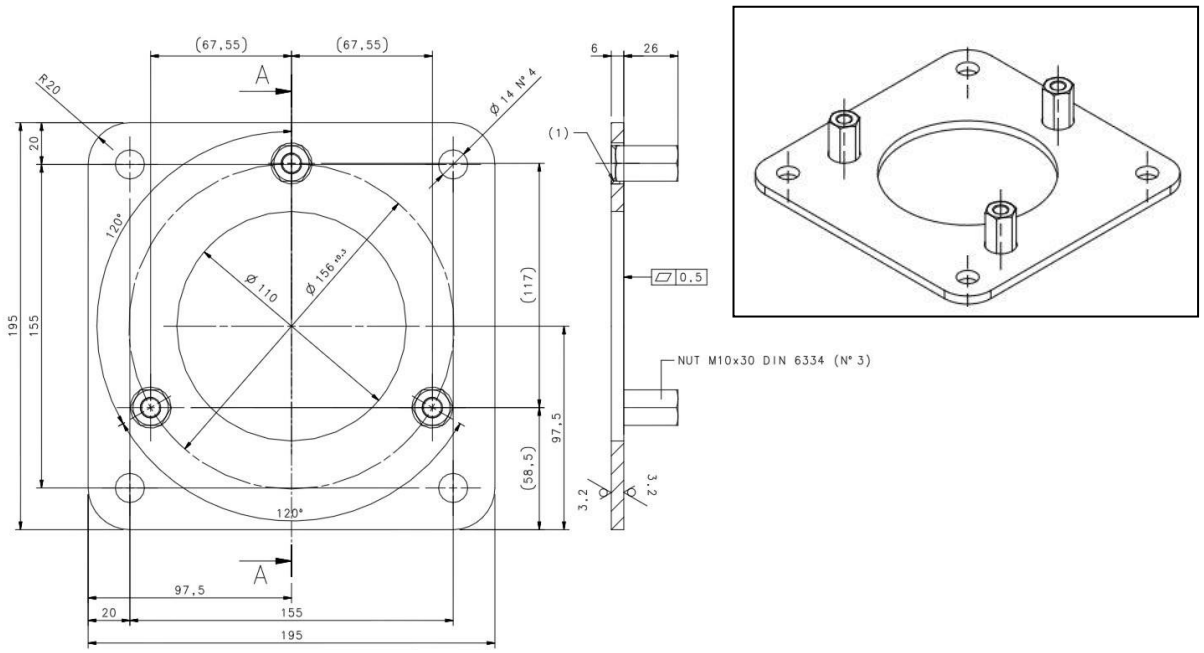
Fixing kit

MODEL	DESCRIPTION	CODE
ST-PS4-SG-SE	Mounting kit (4 pcs kit)	95ASE1750
ST-PS6-SG-SE	Mounting kit (6 pcs kit)	95ASE1760

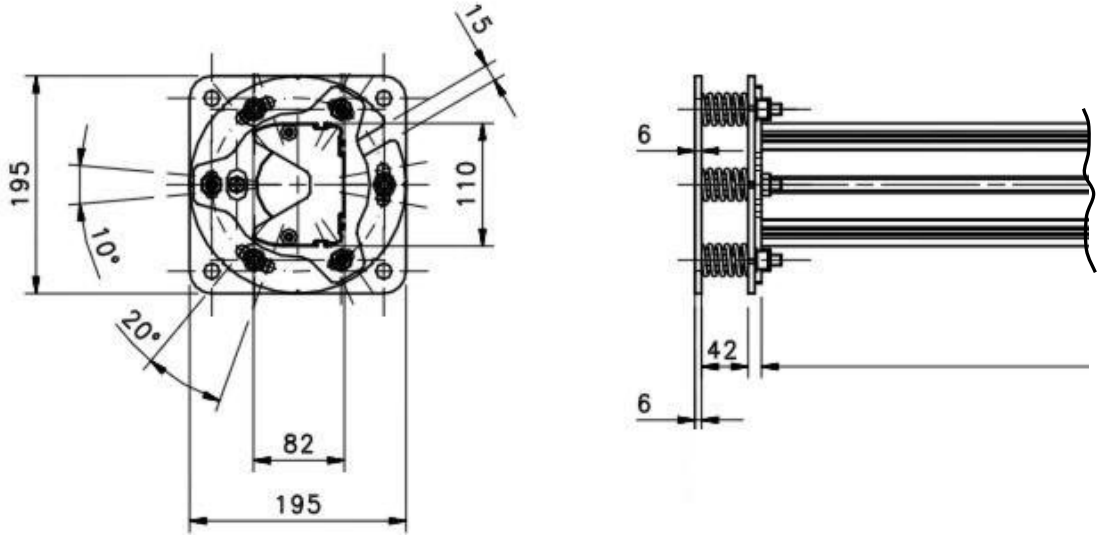


12.6 PLATE KIT FOR PROTECTIVE STANDS (SG-P)

MODEL	DESCRIPTION	CODE
SG-P	Plate kit for SG-PSB/SG-PSM	95ASE2290

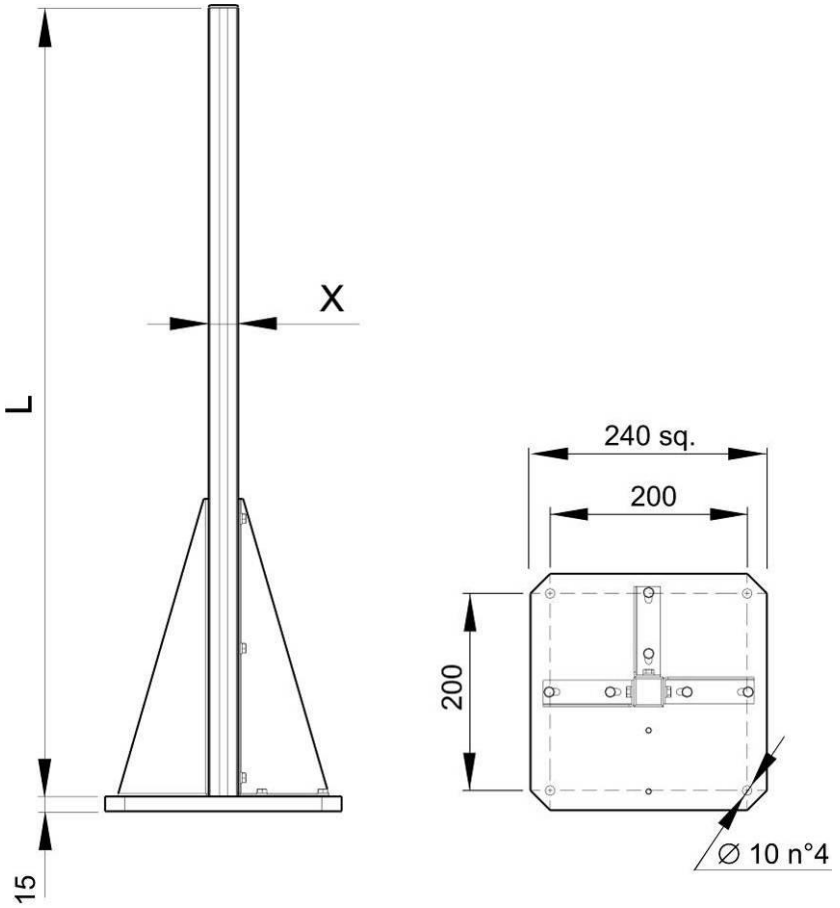


Mounting with SG-PSB/SG-PSM



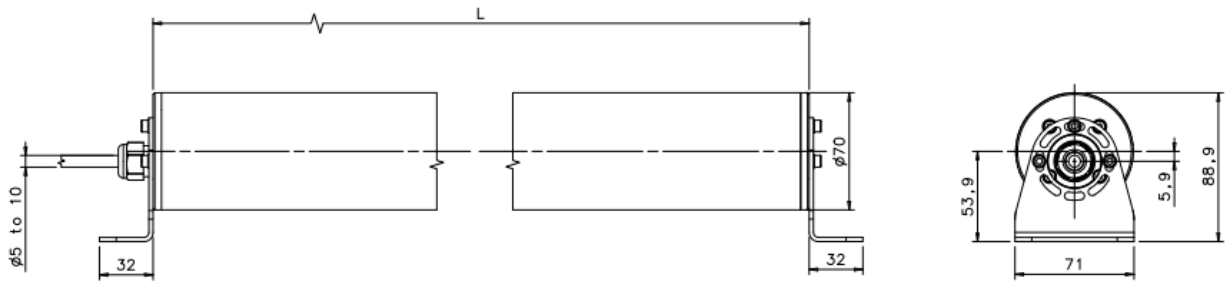
12.7 COLUMNS AND FLOOR STANDS (SE-S)

MODEL	DESCRIPTION	L (mm)	X (mm)	CODE
SE-S 800	Column and floor stand H= 800 mm	800	30x30	95ACC1730
SE-S 1000	Column and floor stand H= 1000 mm	1000	30x30	95ACC1740
SE-S 1200	Column and floor stand H= 1200 mm	1200	30x30	95ACC1750
SE-S 1500	Column and floor stand H= 1500 mm	1500	45x45	95ACC1760
SE-S 1800	Column and floor stand H= 1800 mm	1800	45x45	95ACC1770

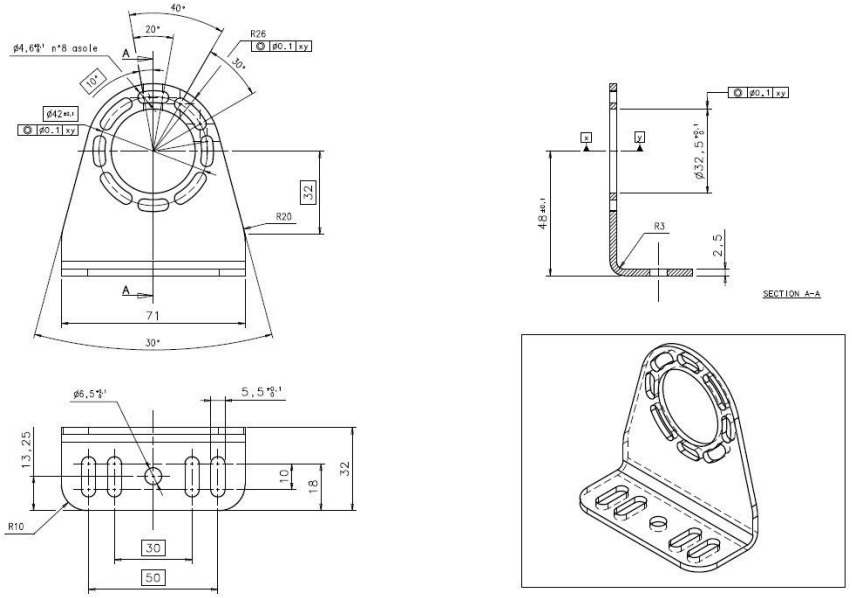


12.8 PROTECTION TUBES (SG-IP69K)

MODEL	DESCRIPTION	L (mm)	CODE
SG-IP69K-2-050	Tubular IP69K H=500mm	808	95ASE1410
SG-IP69K-3-080	Tubular IP69K H=800mm	1108	95ASE1420
SG-IP69K-4-090	Tubular IP69K H=900mm	1208,5	95ASE1430
SG-IP69K-4-120	Tubular IP69K H=1200mm	1508,5	95ASE1440



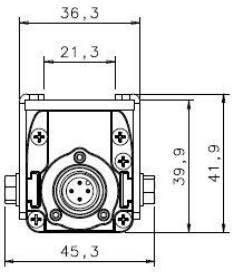
Fixing kit

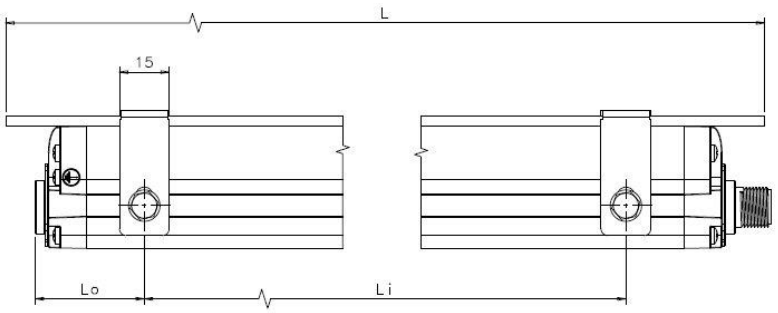


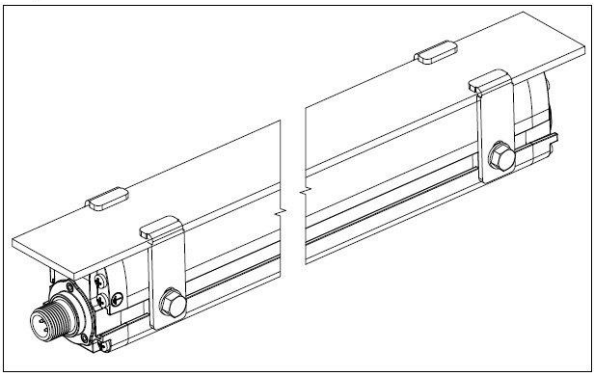
12.9 LENS SHIELD (SG-LS)

MODEL	DESCRIPTION	CODE
SG-LS 1800	Lens Shield H=1800mm (5pcs)	95ASE1560
SG-LS-2-050	Lens Shield H=500mm (5pcs)	95ASE1570
SG-LS-3-080	Lens Shield H=800mm (5pcs)	95ASE1580
SG-LS-4-090	Lens Shield H=900mm (5pcs)	95ASE1590
SG-LS-4-120	Lens Shield H=1200mm (5pcs)	95ASE1600

NOTE: Each package contains what is necessary to protect a single unit (TX or RX). To protect both TX and RX , two pieces of the same code are needed





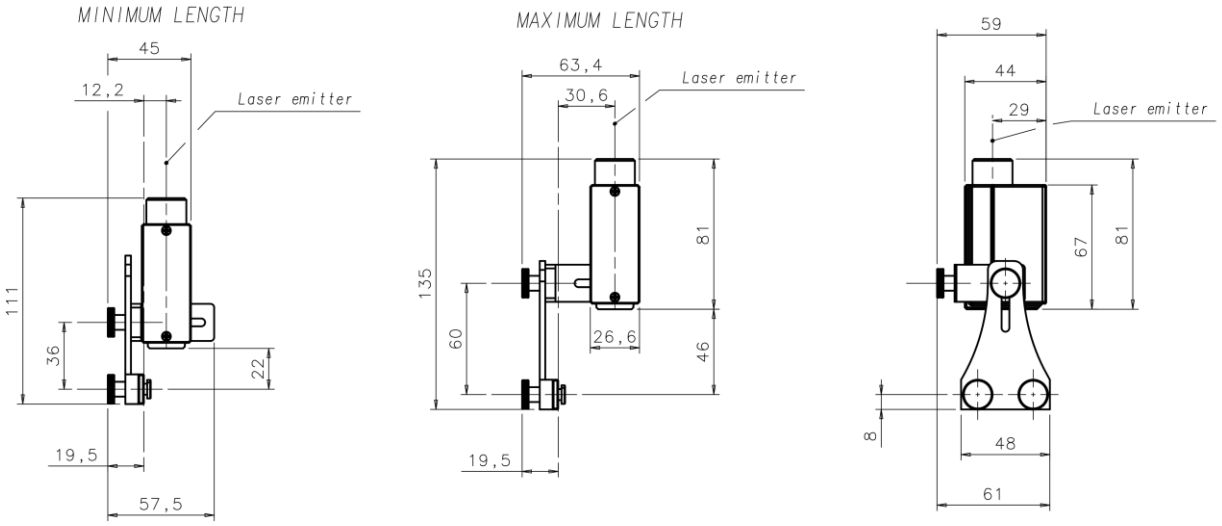


	MODELLO	L	Li	Lo
n° 2+2 brackets	2-050	642	490	75
	3-080	942	640	175
	4-090	1042	660	200
n° 3+3 brackets	4-120	1342	480	200
	180	1860	745	200

12.10 LASER POINTER (SG-LP)

MODEL	DESCRIPTION	CODE
SG-LP	Laser pointer	95ASE5590

The laser pointer of the **SG-LP** series represents a valid alignment and installation support for the safety light curtain series.
The pointer can be moved along the light curtain profile to verify the complete device alignment (top and bottom).



12.11 TEST PIECE (TP)

MODEL	DESCRIPTION	CODE
TP-14	Test piece Ø 14mm L = 300mm	95ACC1630
TP-20	Test piece Ø 20mm L=300mm	95ACC1640
TP-24	Test piece Ø 24mm L=300mm	95ASE2570
TP-30	Test piece Ø 30mm L=300mm	95ACC1650
TP-34	Test piece Ø 34mm L=300mm	95ASE2580
TP-35	Test piece Ø 35mm L=300mm	95ACC1660
TP-40	Test piece Ø 40mm L=300mm	95ACC1820
TP-50	Test piece Ø 50mm L=300mm	95ACC1790
TP-90	Test piece Ø 90mm L=300mm	95ACC1800