

Safety Light Curtains

Finger resolution series SB4-14/*-D6

CARLO GAVAZZI



- Safety Category 4 in conformity with EN 61496-1 and /-2
- Finger resolution
- On board DIP-Switch selectable functions
- Failure diagnosis by LEDs
- Easy alignment and mounting procedure
- Compact dimensions
- Approval:



Product Description

Safety Light Curtains of Safety Category 4 in conformity with EN 61494-1 /-2. The SB4- finger resolution series is provided with partial / total muting function, automatic / manual restart mode. All the software dedicated is on board and the functions above can be

selected and adjusted through the DIP switches placed in the receiver unit. The SB4 light curtain series can be effectively adopted along with the respective safety relay NL1/3-D, obtaining a complete safety package for many industrial applications.

Ordering Key

SB4-14/161-D6

Safety Barriers _____
 Safety Category _____
 Resolution _____
 Protected Height _____
 Operating Distance _____

Type Selection

Height of the protected area	Response time (ms)	Number of beams	Overall height (h) mm	Ordering no.
161	18	21	256	SB4-14/161-D6
308	22	42	403	SB4-14/308-D6
455	26	63	550	SB4-14/455-D6
602	31	84	697	SB4-14/602-D6
749	35	105	844	SB4-14/749-D6

General Specifications

Resolution	14 mm	Other functions	Override
Scanning distance	0.2 ÷ 6 m	Response time	See Type Selection table
Dip-Switch selectable functions	Automatic or manual reset Partial or total muting		

Electrical Specifications

Power supply	24 Vdc ± 20%	Light emission	Infrared (880 nm)
Emitter consumption	70 mA max	Output function	2 PNP
Receiver consumption	100 mA max	Output current	0.5 max (on single output)

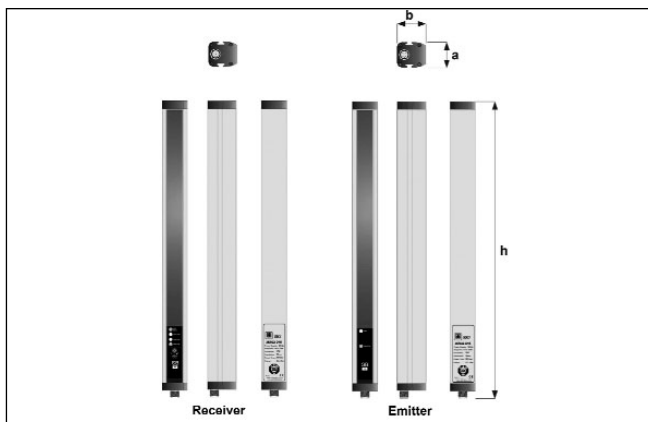
Environmental Specifications

Operating temperature	-10 ÷ + 55°C	Storage temperature	-25 ÷ + 70°C
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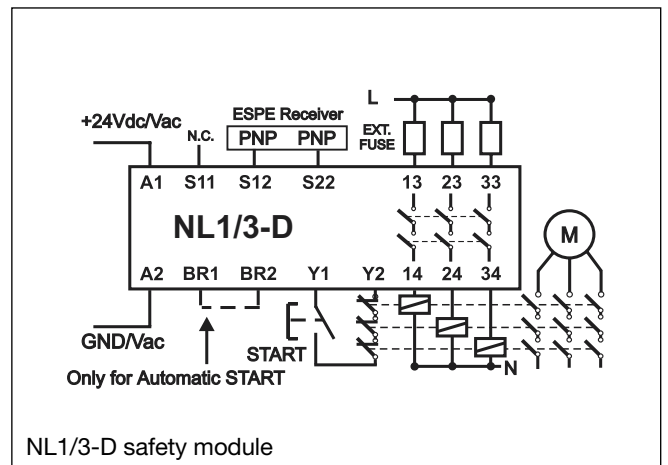
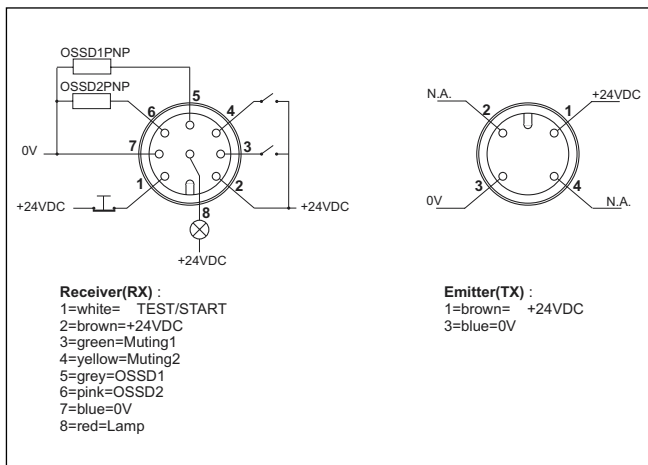
Mechanical Specifications

Receiver connection	M 12 8-poles connector Standard cable length 3, 5 or 10 m	Protection Degree	IP 65
Emitter connection	M 12 4-poles connector Standard cable length 3, 5 or 10 m	Housing material	Painted aluminium (yellow Ral 1028)
		Weight	1.2 Kg max/m of total height

Dimensions



Wiring Diagrams



Safety Light Curtains

Hand resolution series SB4-35/*-D15

CARLO GAVAZZI



- Safety Category 4 in conformity with EN 61496-1 and /-2
- Hand resolution
- On board DIP-Switch selectable functions
- Failure diagnosis by LEDs
- Easy alignment and mounting procedure
- Compact dimensions
- Approval:



Product Description

Safety Light Curtains of Safety Category 4 in conformity with EN 61494-1 /-2. The SB4-35 series is characterized by hand resolution and is provided with partial / total muting function, automatic / manual restart mode. All the software dedicated is on board and the functions

above can be selected and adjusted through the DIP switches placed in the receiver unit. The SB4 light curtain series can be effectively adopted along with the respective safety relay NL1/3-D, obtaining a complete safety package for many industrial applications.

Ordering Key

SB4-35/187-D15

Safety Barriers _____
 Safety Category _____
 Resolution _____
 Protected Height _____
 Operating Distance _____

Type Selection

Height of the protected area	Response time (ms)	Number of beams	Overall height (h) mm	Ordering no.
187	15	8	256	SB4-35/187-D15
334	17	16	403	SB4-35/334-D15
481	18	24	550	SB4-35/481-D15
628	20	32	697	SB4-35/628-D15
775	22	40	844	SB4-35/775-D15
922	23	48	991	SB4-35/922-D15
1069	25	56	1138	SB4-35/1069-D15
1216	27	64	1285	SB4-35/1216-D15
1363	28	72	1432	SB4-35/1363-D15
1510	30	80	1579	SB4-35/1510-D15
1657	32	88	1726	SB4-35/1657-D15

General Specifications

Resolution	35 mm	Other functions	Override
Scanning distance	0,2 ÷ 15 m	Response time	See Type Selection table
Dip-Switch selectable functions	Automatic or manual reset Partial or total muting		



Electrical Specifications

Power supply	24 Vdc ± 20%	Light emission	Infrared (880 nm)
Emitter consumption	70 mA max	Output function	2 PNP
Receiver consumption	100 mA max	Output current	0.5 max (on single output)

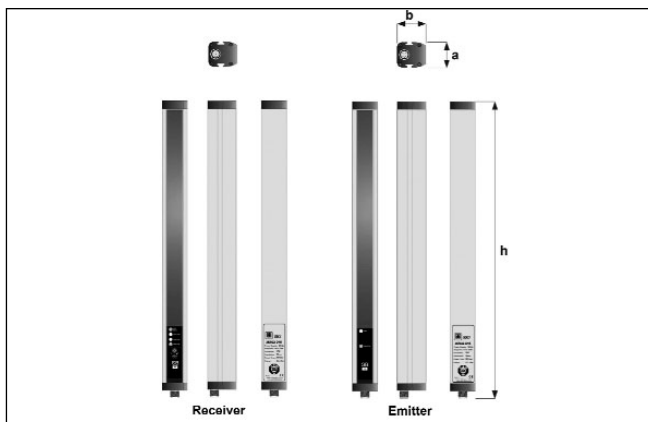
Environmental Specifications

Operating temperature	-10 ÷ + 55°C	Storage temperature	-25 ÷ + 70°C
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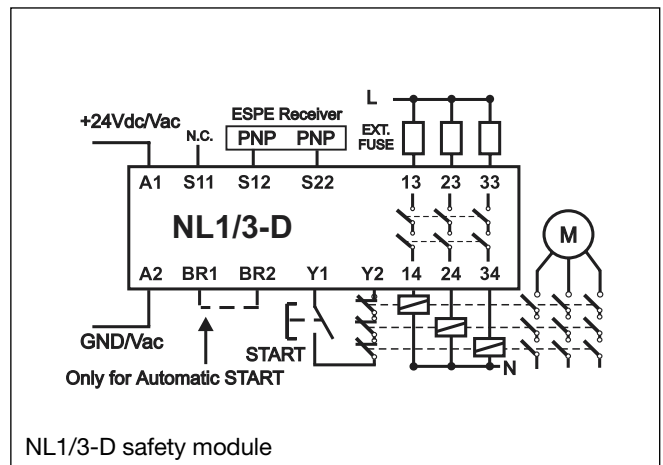
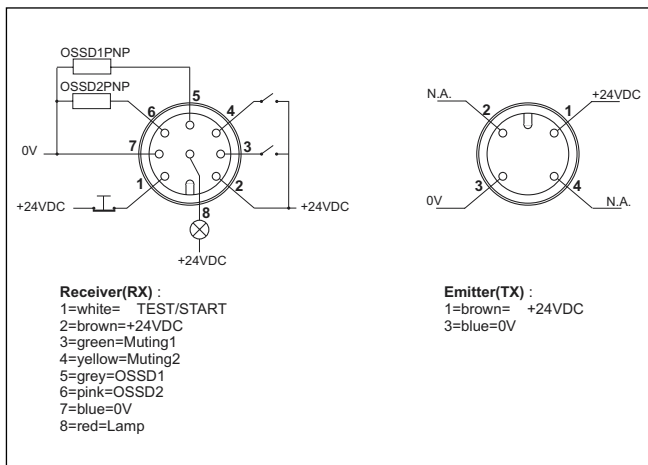
Mechanical Specifications

Receiver connection	M 12 8-poles connector Standard cable length 3, 5 or 10 m	Protection Degree	IP 65
Emitter connection	M 12 4-poles connector Standard cable length 3, 5 or 10 m	Housing material	Painted aluminium (yellow Ral 1028)
		Weight	1.2 Kg max/m of total height

Dimensions



Wiring Diagrams



Safety Light Curtains

Body resolution series

SB4-*/*-D50 and SB4-*/*-D25



- Safety Category 4 in conformity with EN 61496-1 and /-2
- Body resolution
- On board DIP-Switch selectable functions
- Failure diagnosis by LEDs
- Easy alignment and mounting procedure
- Compact dimensions
- Approval:



Product Description

Safety Light Curtains of Safety Category 4 in conformity with EN 61494-1 /-2.

The SB4- body resolution series is provided with partial / total muting function, automatic / manual restart mode. All the software dedicated is on board and the functions above can be selected and

adjusted through the DIP switches placed in the receiver unit. The SB4 light curtain series can be effectively adopted along with the respective safety relay NL1/3-D, obtaining a complete safety package for many industrial applications.

Ordering Key

SB4-315/915-D50

Safety Barriers _____
 Safety Category _____
 Resolution _____
 Protected Height _____
 Operating Distance _____

Type Selection

Height of the protected area	Resolution (mm)	Number of beams	Ov. height (h) mm	Ordering no. Operating distance 25 m	Ordering no. Operating distance 50 m
515	515	2	652	SB4-515/515-D25	SB4-515/515-D50
815	415	3	952	SB4-415/815-D25	SB4-415/815-D50
915	315	4	1052	SB4-315/915-D25	SB4-315/915-D50
1215	415	4	1342	SB4-415/1215-D25	SB4-415/1215-D50

General Specifications

Resolution	See Type Selection table	Other functions	Override
Scanning distance	See Type Selection table	Response time	14 ms
Dip-Switch selectable functions	Automatic or manual reset Partial or total muting		



Electrical Specifications

Power supply	24 Vdc ± 20%	Light emission	Infrared (880 nm)
Emitter consumption	70 mA max	Output function	2 PNP
Receiver consumption	100 mA max	Output current	0.5 max (on single output)

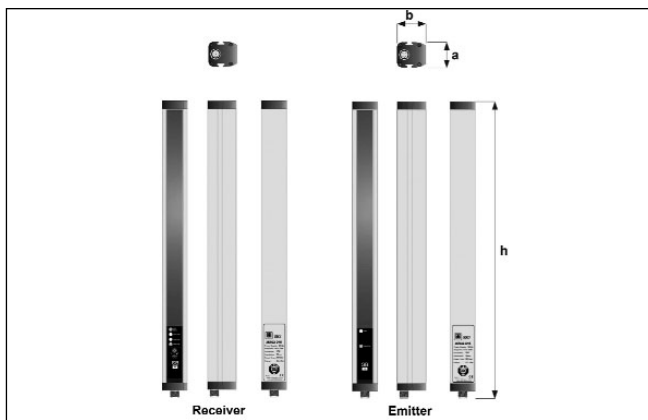
Environmental Specifications

Operating temperature	-10 ÷ + 55°C	Storage temperature	-25 ÷ + 70°C
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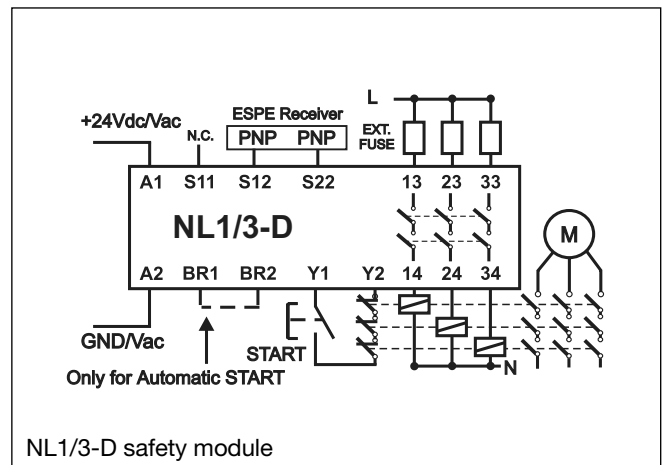
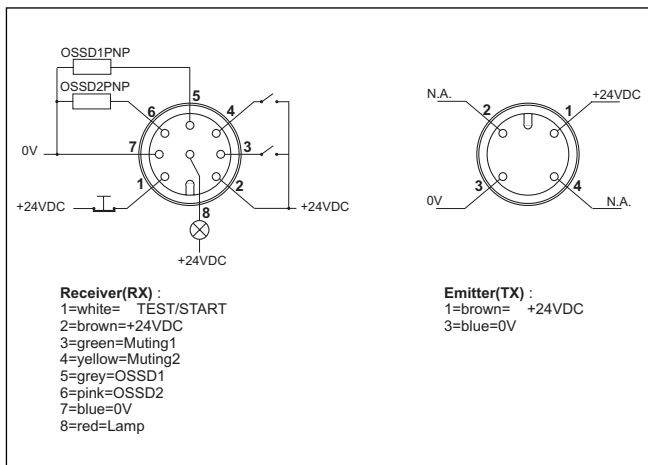
Mechanical Specifications

Receiver connection	M 12 8-poles connector Standard cable length 3, 5 or 10 m	Protection Degree	IP 65
Emitter connection	M 12 4-poles connector Standard cable length 3, 5 or 10 m	Housing material	Painted aluminium (yellow Ral 1028)
		Weight	1.2 Kg max/m of total height

Dimensions



Wiring Diagrams



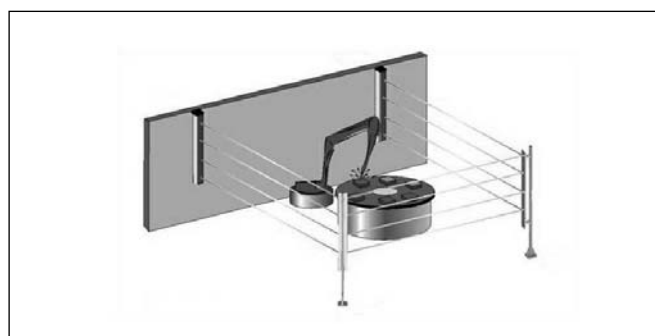
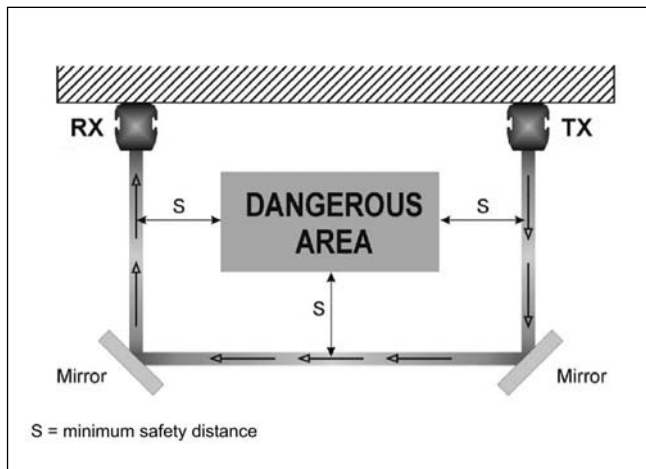
Safety Light Curtains Accessories



Deviating Mirrors

By installing the safety light curtains by direct alignment, it is possible to cover a dangerous area. The **SRN** mirrors, placed in right position, allow to reflect the beams emitted by the light curtains and consequently can be used to control more contiguous sides of hazardous zones, as shown in the pictures sideways and below.

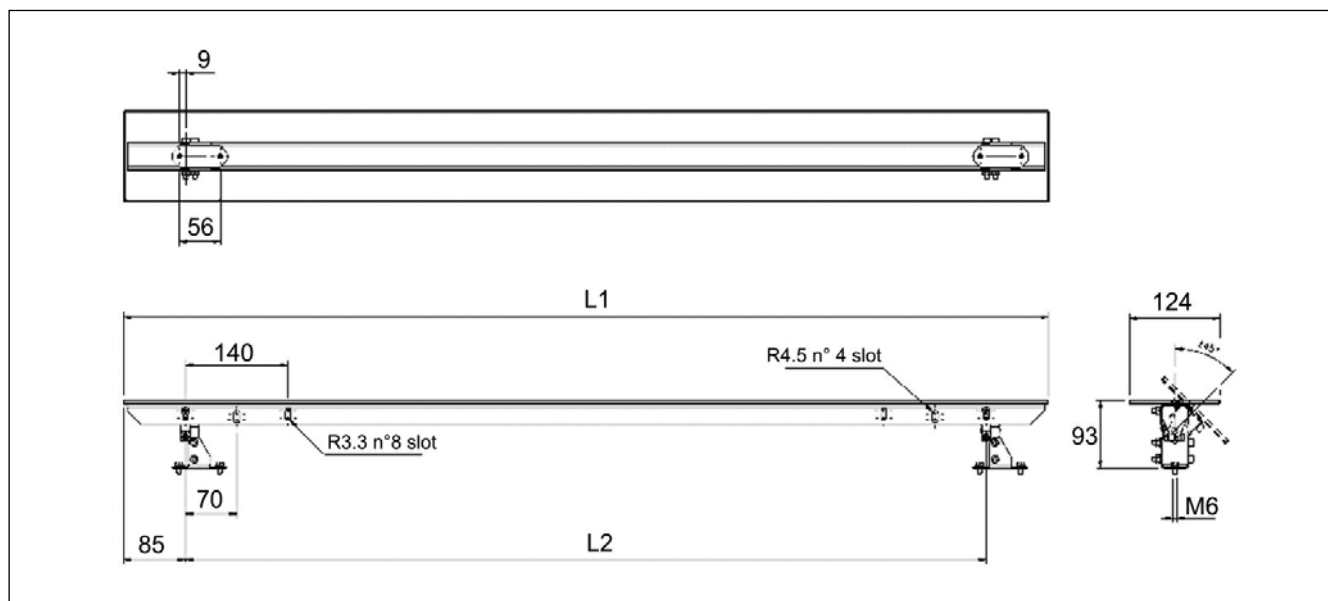
It is important to take into consideration that the introduction of mirrors causes the decrease of the operating distance of the safety light curtains by 15% for each reflection. Where needed, the use of the LASP laser pointer is advisable to make easier the alignment procedure.



Ordering Key

SRN-900

Deviating Mirror Series
Dimensions



Type Selection

Item number	L1 (mm)	L2 (mm)
SRN-500	554	384
SRN-600	704	534
SRN-800	904	734
SRN-900	1004	834
SRN-1200	1234	1094
SRN-1500	1604	1434
SRN-1650	1804	1634

Connectors

M12 Shielded connectors to be used for wiring the safety light curtains. Connectors for emitter units are provided with 4 poles while the version dedicated to receiver

units with 8 poles. Three standard cable lengths are given below, other lengths are available upon request.

Ordering Key

CFB-1A4/3MT

Female Connector _____

Diameter 12 mm _____

Axial _____

4 poles _____

Cable length _____

Type Selection

Cable Length

3
5
10

Ordering number 4-pole connector

CFB-1A4/3MT
CFB-1A4/5MT
CFB-1A4/10MT

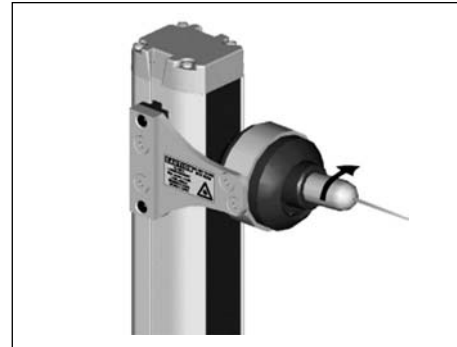
Ordering number 8-pole connector

CFB-1A8/3MT
CFB-1A8/5MT
CFB-1A8/10MT

Laser pointer

For all those applications where the alignment of the safety light curtains can be difficult as consequence of the long distance between the emitter and the receiver units or the adoption of one or more deviating mirrors to protect contiguous sides of a dangerous area, the **LASP** laser pointer can be used. By inserting the **LASP** laser

pointer in the upper part of the emitting unit (and then in the lower one), using one of the two side slots of the profile (refer to drawing), the right alignment can be easily achieved thanks to the visible indication. The **LASP** laser pointer is powered by three 1.5 V LR-44 type batteries.



Floor stands

The floor stand of the **SPT** series can be used for the installation of both emitter and receiver units of the **SB2** and **SB4** safety light curtains series, as well as for the **SRN** deviating mirror series. Five versions with different

lengths are available in order to satisfy all application needs. Where needed, the **SPT** floor stand series can be also equipped with protective stands of the **CPZ** series.

Ordering Key

SPT-1200

Floor stand _____
Length (mm) _____

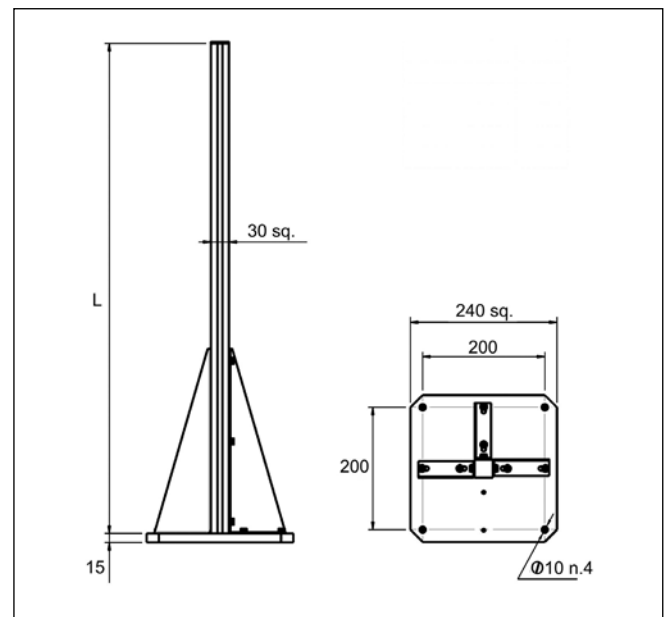
Type Selection

Item number

SPT-800
SPT-1000
SPT-1200
SPT-1500
SPT-1800

L (mm)

800
1000
1200
1500
1800



Protective stands

The protective stands of the **CPZ** series can be mounted on the **SPT** floor stands by using two M6 x 10 screws, and relative washers and square nuts.

The **CPZ** series includes a complete range of protective stands in terms of different lengths, allowing to choose the right model for each safety light curtain.

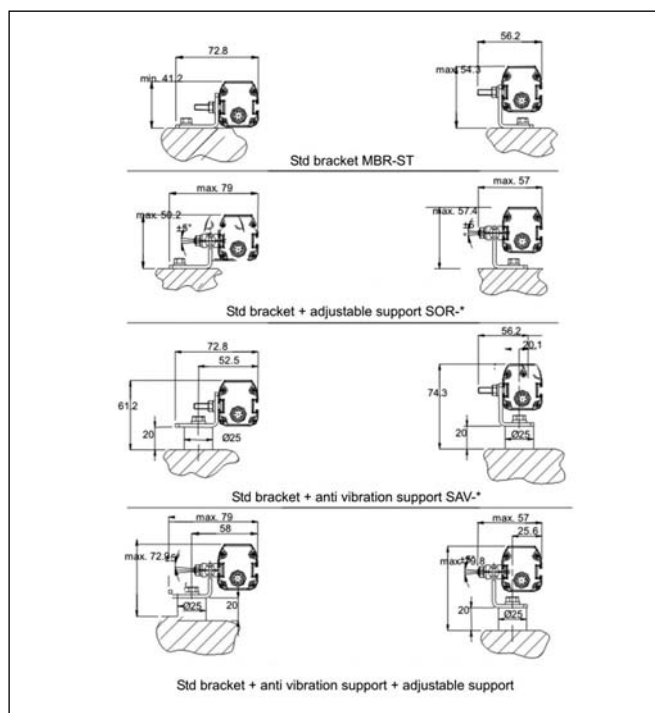
Type Selection

Item number	Overall length L (mm)
CPZ-150	273
CPZ-300	420
CPZ-450	567
CPZ-600	714
CPZ-750	861
CPZ-800	969
CPZ-900	1069
CPZ-1050	1155
CPZ-1200	1369
CPZ-1350	1449
CPZ-1500	1596
CPZ-1650	1743

Ordering Key

Protective stand series _____
Dimensions _____

CPZ-1500



Brackets and supports

The model **MBR-ST** is the standard mounting brackets. The series **SOR-*** of adjustable mounting supports is used to allow the orientation of the safety light curtains in a range of $\pm 5^\circ$ with respect to the longitudinal axis, while the **SAV-*** version of supports is addressed to applications where the absorption of the vibrations caused by the machinery on which the safety light curtains are installed is necessary.

The model **SAV-*** version of supports is addressed to applications where the absorption of the vibrations caused by the machinery on which the safety light curtains are installed is necessary.

Type Selection

Type	4 pcs. kit	6 pcs. kit
standard	MBR-ST	-
adjustable	SOR-4	SOR-6
anti-vibration	SAV-4	SAV-6

Muting signalling lamp LSM

The **LSM** muting lamp must be used in order to signal properly when **SB2** or **SB4** safety light curtains are operated in partial or total muting mode. To avoid inappropriate and unsafe use of the muting

function, if the lamp is not connected, the muting request causes the opening of the safety outputs and the device gets stopped due to lamp anomaly.