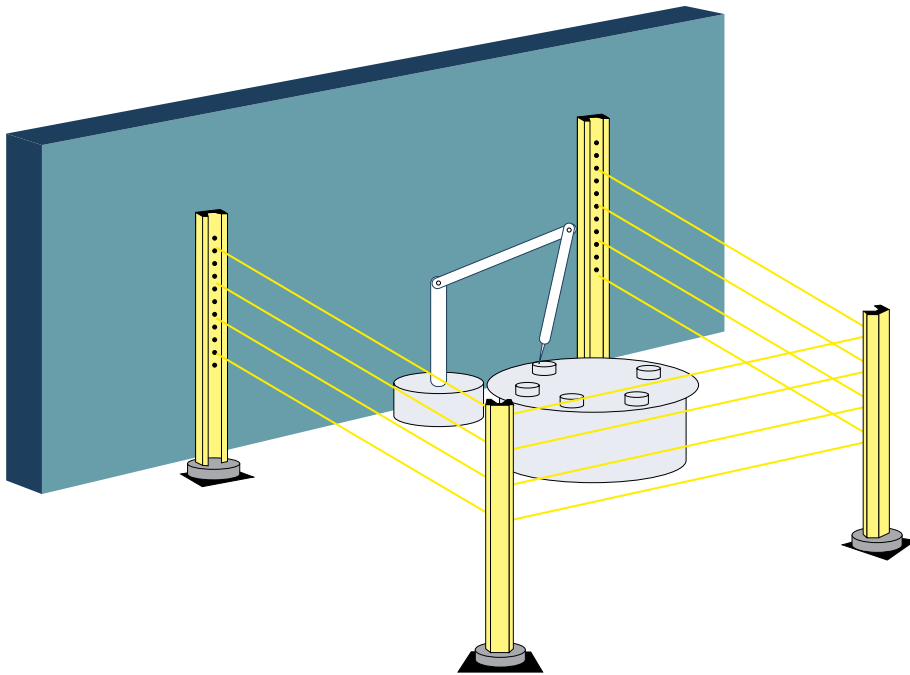


# MIRRORS AND STANDS



In applications where the monitoring of an area is required, safety light curtains can be used together with mirror for perimetral protection.

DATALOGIC offers a series of stands with adjustable mirrors already in place for 2, 3, 4 beam safety light curtains (SG-PSM), or the option to build a configuration, applying SG-DM mirrors to SE-S or SG-PSB stands.

## GUIDELINE FOR THE USE OF MIRRORS WITH SAFETY LIGHT CURTAINS

The alignment of safety light curtains can sometimes be critical because of the long distance that beams have to cover or because of environmental conditions like for example the presence of dust or the irregularity of the floor on which the stands are placed.

The reason behind this difficulty is that the beams of a safety light curtain can span in an angle that must be, for safety reasons, limited to values defined by technical standards, harmonized with Machine Directive (i.e. at 3 meters, the angle is 2.5° for a Type 4 safety light curtain).

If mirrors are used to deflect the beams between emitter and receiver, the intensity of the beams is reduced, and by consequence also the maximum reachable distance. Moreover, for inevitable tolerances in opto-mechanical assembly, it's not possible to guarantee that all light curtains beams are parallel to each other, and the use of mirrors always amplifies those unevennesses.

By consequence, the higher is the number of the beams, the bigger is the risk to lose alignment of one of them and, even if alignment is reached, to have an unstable alignment: if the light curtain or a mirror is hit, the alignment can be lost.

Finger and hand protection safety light curtains have so many beams that in case of several mirrors reflections, the risk of losing alignment is extremely high.

For all these reasons, since for finger or hand protection safety light curtains it is impossible to guarantee a stable alignment with more than one mirror, we exclude in these cases the use of more than one mirror.

The use of more than one mirror is possible only for body protection safety light curtains (that is, with 2, 3 or 4 beams), and when the mirrors used are belonging to DATALOGIC SG-PSM series, that allow the orientation of each single mirror independently.

The correct operating distance calculation (i.e. the maximum trajectory length of the beams between emitter and receiver, passing by the mirrors, in condition of perfect alignment and without presence of dust and fog), must consider a reflection factor of 80%, like in the following table:

Mirrors	Range between transmitter and receiver					
	FINGER HAND/RESOLUTION (SG-DM mirrors used)			BODY RESOLUTION (SG-PSM mirrors used)		
0	6,0	7,0	19,0	20,0	50,0	60,0
1	4,8	5,6	15,2	16,0	40,0	48,0
2	N/A	N/A	N/A	N/A	32,0	38,4
3	N/A	N/A	N/A	N/A	25,6	30,7

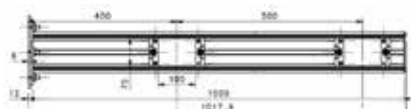
# Stands with adjustable mirrors (DG-PSM)

Stands with adjustable pre-mounted mirrors, to protect them from accidental collisions.

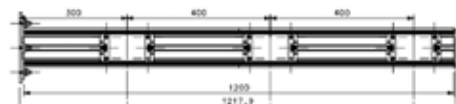
An industrial steel base made with 2 plates, dowels and spheric level for adjustment of the vertical axis, slots for angular adjustment. The effect of collisions, vibrations and uneven floor surfaces can be compensated by using SG-P plate kit (to be ordered separately).

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

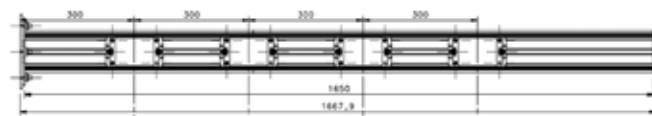
## SG-PSM-2-500



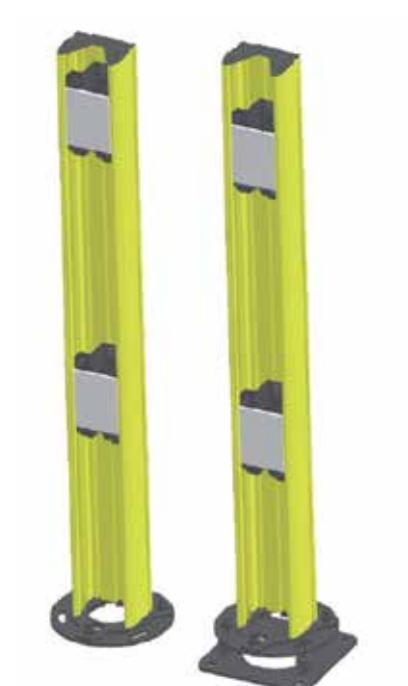
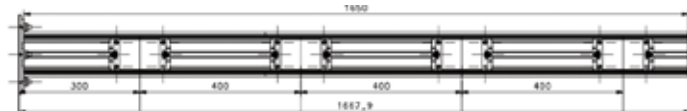
## SG-PSM-3-800



## SG-PSM-4-900



## SG-PSM-4-1200

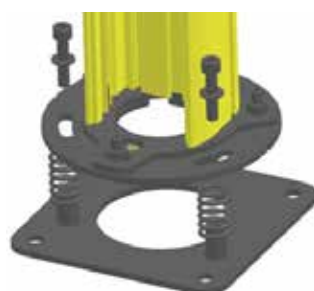


## PLATE KIT SGP \*

MODEL	DESCRIPTION	ORDER NUMBER
SG-P	Plate kit for protective stands	9485342
<b>COMPATIBILITY</b>		
SG-PSM-4-900	protection stands SG-PSB mirror stands SG-PSM	95ASE2320
SG-PSM-4-1200	Protective stand with 4 mirrors H=1200 mm	95ASE2330

\* The kit includes two plates and three springs, to compensate the effect of collisions, vibrations and uneven floor surfaces.

The plate kit can be used with protection stands SG-PSB and with mirror stands SG-PSM



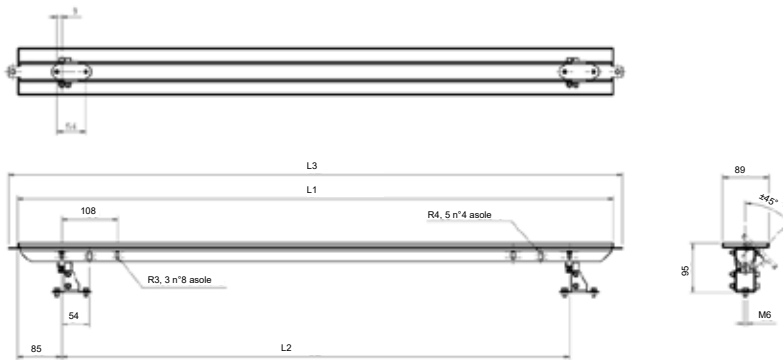
# Mirrors

## MIRRORS FOR FINGER AND HAND PROTECTION SAFETY LIGHT CURTAINS (SG-DM)

MODEL	DESCRIPTION	ORDER NUMBER
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

### NOTES

1. To mount these mirrors into the stands SG-PSB, order ST-PS-DM mounting kit
2. To mount these mirrors to columns SE-S, order one ST-DM mounting kit
3. The mirror length has to be at least 100 mm greater than the length of the light curtain's protected area.  
Ex. For a SG2-30-090-00-E (protection height = 900 mm), choose a SG-DM 1200



The image includes the mirror SG-DM and the bracket mounting kits ST-DM that includes two brackets.



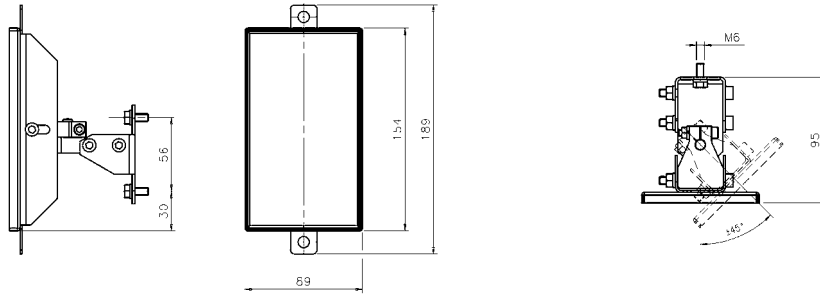
	L1 (mm)	L2 (mm)	L3 (mm)
SG -DM 600	545	376	580
SG -DM 900	845	676	880
SG -DM 1200	1145	976	1180
SG -DM 1650	1595	1426	1630
SG -DM 1900	1845	1676	1880

## SINGLE BEAM MIRROR

MODEL	DESCRIPTION	ORDER NUMBER
SG-DM 150	Deviating mirror version 150 mm	95ASE1670

### NOTES

1. To mount this mirror into the stands SG-PSB order ST-PS-DM mounting kit
2. To mount this mirrors to columns SE-S, order ST-DM mounting kit



## Stands

### PROTECTIVE STANDS (SG-PSB) AND ACCESSORIES

MODEL	DESCRIPTION	ORDER NUMBER
SG-PSB 600	Protective Stand H=600 mm	95ASE2240
SG-PSB 1000	Protective Stand H=1000 mm	95ASE2250
SG-PSB 1200	Protective Stand H=1200 mm	95ASE2260
SG-PSB 1650	Protective Stand H=1650 mm	95ASE2270
SG-PSB 1900	Protective Stand H=1900 mm	95ASE2280

#### COMPATIBILITY

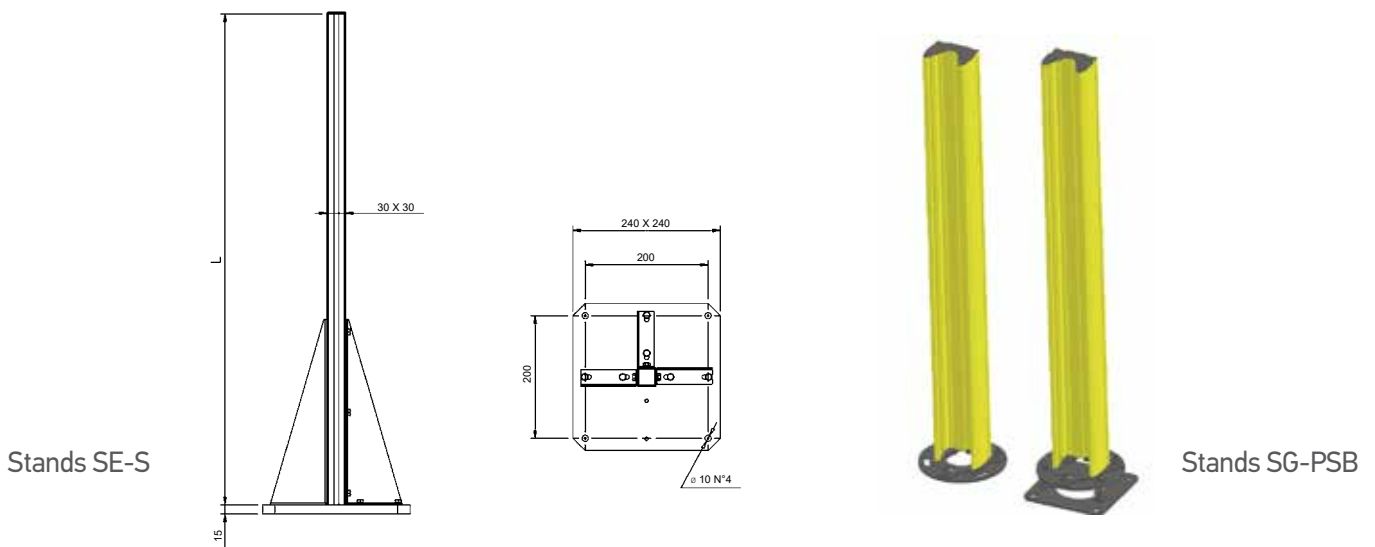
All SG Series Light Curtains SG-DM Mirrors

### FLOOR COLUMNS (SE-S) AND ACCESSORIES

MODEL	DESCRIPTION	ORDER NUMBER
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

#### COMPATIBILITY

All SG Series Light Curtains SG-DM Mirrors



Stands SE-S

Stands SG-PSB

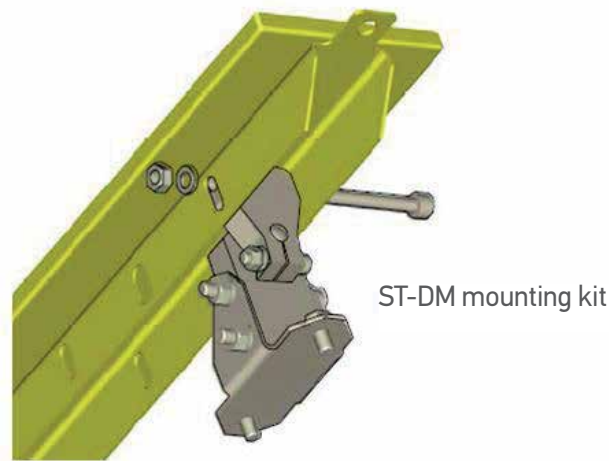
# Mounting kits for mirrors

## MOUNTING KIT FOR SG-DM MIRRORS ON SE-S FLOOR COLUMNS

MODEL	DESCRIPTION	ORDER NUMBER
ST-DM	Deviating mirror SG-DM mounting kit	95ASE1940
<b>COMPATIBILITY</b>		
SG-DM Mirrors on SE-S floor columns		

**NOTE**

For each mirror (SG-DMxxx) order 1 kit.

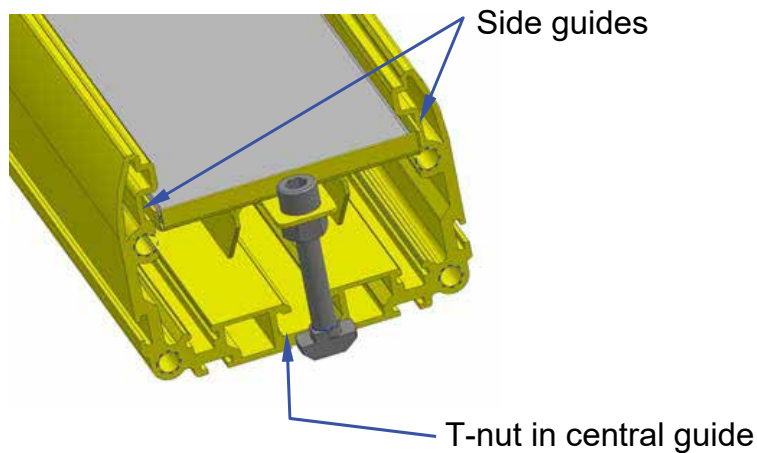


## MOUNTING KIT FOR SG-DM MIRRORS AND SG-PSB PROTECTIVE STANDS

MODEL	DESCRIPTION	ORDER NUMBER
ST-PS-DM	Deviating mirror mounting kit (contains 2 T-nuts)	95ASE1770
<b>COMPATIBILITY</b>		
SG-DM Mirrors in SG-PSB protective stands		

**NOTE**

For each mirror (SG-DM xxx) order 1 kit.



# Mounting kits for safety light curtains

MODEL	DESCRIPTION	ORDER NUMBER
ST-PS4-SG BODY	Protective stand mounting kit for SG BODY BIG (4 brackets)	95ASE1730
ST-PS6-SG BODY	Protective stand mounting kit for SG BODY BIG (6 brackets)	95ASE1740
ST-PS4-SG-SE	Protective stands mounting kit for SG/SE (4 brackets)	95ASE1750
ST-PS6-SG-SE	Protective stands mounting kit for SG/SE (6 brackets)	95ASE1760
<b>COMPATIBILITY</b>		
ST-PSx-SG-SE	SG2 BASE SG2 EXTENDED SG2 MUTING SG4 BASE SG4 EXTENDED SG BODY COMPACT	
ST-PSx-SG BODY	SG BODY BIG SG BODY REFLECTOR	

## NOTES

1) Each kit allows to install an element (emitter or receiver, active part or passive part) of a light curtain.  
To install both elements of the light curtain, order 2 kits of the same type.

2) For light curtains with height  $\geq 1200$  mm, order the 6 brackets kits (ST-PS6-SG xxxx)