



## deTec HG

SAFETY FOR ENVIRONMENTS WHERE COOLANTS, LUBRICANTS  
AND CLEANING AGENTS ARE USED

Safety light curtains

**SICK**  
Sensor Intelligence.



## RUGGED AND RESISTANT – EVEN IN EXTREME CONDITIONS

IN THE MACHINE TOOL INDUSTRY, THERE ARE STRICT MACHINING REQUIREMENTS ON THE RESISTANCE OF THE COMPONENTS USED TO CHEMICALS IN THE FORM OF COOLANTS, LUBRICANTS AND CLEANING AGENTS.

The chemicals used in machine building can lead to premature aging of common plastics such as polycarbonate. The formation of oil mist means that even machine components which are not located in the processing chamber come into contact with these materials. For this reason, the resistance of the components to chemicals plays an important role regarding processing quality and productivity.

The deTec Core HG safety light curtains from SICK therefore have a front screen made of hardened glass. This ensures maximum reliability and a long service life even in extreme conditions, making this product even more economically efficient.

Measurement, detecting, identification, protection: SICK offers a wide range of solutions which are perfectly suited for use in the machine tool industry.



#### Save time and money

Easy mounting, installation and commissioning in your system thanks to the alignment quality display using LEDs, plus standardized connectivity and accessories.



#### Ensure safety on all levels

The front screen made of hardened glass ensures maximum reliability, even in extreme conditions.



#### New opportunities for more productivity

Implement short downtimes and increased machine availability thanks to the high resistance of the product components to aggressive chemicals.

## SAFETY FOR ENVIRONMENTS WHERE COOLANTS, LUBRICANTS AND CLEANING AGENTS ARE USED



### Product description

In the machine tool industry, there are strict requirements on the resistance of safety light curtains to chemicals in the form of coolants, lubricants and cleaning agents. In order to fulfill these requirements, SICK offers the deTec Core HG special variants with a chemically-hardened front screen made of float glass.

Thanks to the high resistance to aggressive chemicals, they are perfectly suited for use under harsh industrial conditions. The deTec Core HG therefore provides maximum reliability and a very high level of safety for employees - even in environments where coolants, lubricants and cleaning agents are used.

### At a glance

- Hardened glass front screen
- Innovative bracket concept
- No blind zones
- Automated calibration of the protective field width
- LEDs with alignment quality display
- Standardized connectivity: M12 male connector, 5-pin connection, compatible with Flexi Loop
- Enclosure ratings: IP65 and IP67

### Your benefits

- The hardened glass front screen offers high resistance to coolants, lubricants and cleaning agents and therefore maximum reliability
- Innovative bracket concept for easy mounting saves installation time and costs
- No blind zones for very high flexibility and space-saving machine design
- Quick installation thanks to integrated LED display and automated calibration of the protective field width save time and money
- Standardized connectivity for Flexi Loop integration saves time and money when it comes to installation
- Enclosure ratings IP65, IP67 and temperature resistance offer long sensor life times and therefore even more efficiency



### Additional information

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→ [www.sick.com/deTec](http://www.sick.com/deTec)

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



## Detailed technical data

More detailed data can be found in the operating instructions. Download → [www.sick.com](http://www.sick.com)

### Features

<b>Application</b>	Areas with coolants, lubricants or cleaning agents
<b>Resolution</b>	14 mm / 30 mm (depending on type)
<b>Protective field height</b>	300 mm ... 1,800 mm (depending on type)
<b>Scanning range</b>	10 m / 15 m (depending on type)
<b>No blind zones</b>	Yes
<b>Synchronization</b>	Optical synchronisation

### Safety-related parameters

	deTec4 Core HG	deTec2 Core HG
<b>Type</b>	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)
<b>Safety integrity level</b>	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)
<b>Category</b>	Category 4 (ISO 13849-1)	Category 2 (ISO 13849-1)
<b>Performance level</b>	PL e (ISO 13849-1)	PL c (ISO 13849-1)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$3.7 \times 10^{-9}$	$3.1 \times 10^{-8}$
<b>T<sub>M</sub> (mission time)</b>	20 years (ISO 13849-1)	
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.	

### Functions

<b>Protective operation</b>	✓
<b>Automatic calibration of the protective field width</b>	✓

### Interfaces

<b>Connection type</b>	Male connector M12, 5-pin
<b>Display elements</b>	LEDs
<b>Fieldbus, industrial network</b>	
Integration via Flexi Soft safety controller	CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET <sup>1)</sup>

<sup>1)</sup> For additional information on Flexi Soft → [www.sick.com/Flexi\\_Soft](http://www.sick.com/Flexi_Soft).

### Electrical data

<b>Protection class</b>	III (IEC 61140)
<b>Supply voltage V<sub>S</sub></b>	24 V DC (19.2 V ... 28.8 V)
<b>Ripple</b>	≤ 10 %
<b>Output signal switching devices (OSSDs)</b>	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored <sup>1)</sup>
ON state, switching voltage HIGH	24 V DC (V <sub>S</sub> – 2.25 V DC ... V <sub>S</sub> )
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 300 mA

<sup>1)</sup> Applies to the voltage range between –30 V and +30 V.

## Mechanical data

Dimensions	See dimensional drawing
Housing material	Aluminum extruded profile
Front screen material	Chemically prestressed float glass

## Ambient data

Enclosure rating	IP65 (IEC 60529) IP67 (IEC 60529)
Ambient operating temperature	-30 °C ... +55 °C
Storage temperature	-30 °C ... +70 °C
Air humidity	15 % ... 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz ... 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (IEC 60068-2-27)

## Other information

Wave length	850 nm
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## Ordering information

## deTec4 Core HG

- **Resolution:** 14 mm
- **Scanning range:** 10 m

Protective field height	Sender		Receiver	
	Type	Part no.	Type	Part no.
300 mm	C4C-SG03010A10000	1220365	C4C-EG03010A10000	1220376
450 mm	C4C-SG04510A10000	1220366	C4C-EG04510A10000	1220377
600 mm	C4C-SG06010A10000	1220367	C4C-EG06010A10000	1220378
750 mm	C4C-SG07510A10000	1220368	C4C-EG07510A10000	1220379
900 mm	C4C-SG09010A10000	1220369	C4C-EG09010A10000	1220380
1,050 mm	C4C-SG10510A10000	1220370	C4C-EG10510A10000	1220381
1,200 mm	C4C-SG12010A10000	1220371	C4C-EG12010A10000	1220382
1,350 mm	C4C-SG13510A10000	1220372	C4C-EG13510A10000	1220383
1,500 mm	C4C-SG15010A10000	1220373	C4C-EG15010A10000	1220384
1,650 mm	C4C-SG16510A10000	1220374	C4C-EG16510A10000	1220385
1,800 mm	C4C-SG18010A10000	1220375	C4C-EG18010A10000	1220386

- **Resolution:** 30 mm
- **Scanning range:** 15 m

Protective field height	Sender		Receiver	
	Type	Part no.	Type	Part no.
300 mm	C4C-SG03030A10000	1220387	C4C-EG03030A10000	1220398
450 mm	C4C-SG04530A10000	1220388	C4C-EG04530A10000	1220399
600 mm	C4C-SG06030A10000	1220389	C4C-EG06030A10000	1220400
750 mm	C4C-SG07530A10000	1220390	C4C-EG07530A10000	1220401
900 mm	C4C-SG09030A10000	1220391	C4C-EG09030A10000	1220402
1,050 mm	C4C-SG10530A10000	1220392	C4C-EG10530A10000	1220403
1,200 mm	C4C-SG12030A10000	1220393	C4C-EG12030A10000	1220404
1,350 mm	C4C-SG13530A10000	1220394	C4C-EG13530A10000	1220405



Protective field height	Sender		Receiver	
	Type	Part no.	Type	Part no.
1,500 mm	C4C-SG15030A10000	1220395	C4C-EG15030A10000	1220406
1,650 mm	C4C-SG16530A10000	1220396	C4C-EG16530A10000	1220407
1,800 mm	C4C-SG18030A10000	1220397	C4C-EG18030A10000	1220408

**deTec2 Core HG**

- **Resolution:** 14 mm
- **Scanning range:** 10 m

Protective field height	Sender		Receiver	
	Type	Part no.	Type	Part no.
300 mm	C2C-SG03010A10000	1220489	C2C-EG03010A10000	1220500
450 mm	C2C-SG04510A10000	1220490	C2C-EG04510A10000	1220501
600 mm	C2C-SG06010A10000	1220491	C2C-EG06010A10000	1220502
750 mm	C2C-SG07510A10000	1220492	C2C-EG07510A10000	1220503
900 mm	C2C-SG09010A10000	1220493	C2C-EG09010A10000	1220504
1,050 mm	C2C-SG10510A10000	1220494	C2C-EG10510A10000	1220505
1,200 mm	C2C-SG12010A10000	1220495	C2C-EG12010A10000	1220506
1,350 mm	C2C-SG13510A10000	1220496	C2C-EG13510A10000	1220507
1,500 mm	C2C-SG15010A10000	1220497	C2C-EG15010A10000	1220508
1,650 mm	C2C-SG16510A10000	1220498	C2C-EG16510A10000	1220509
1,800 mm	C2C-SG18010A10000	1220499	C2C-EG18010A10000	1220510

- **Resolution:** 30 mm
- **Scanning range:** 15 m






Protective field height	Sender		Receiver	
	Type	Part no.	Type	Part no.
300 mm	C2C-SG03030A10000	1220511	C2C-EG03030A10000	1220522
450 mm	C2C-SG04530A10000	1220512	C2C-EG04530A10000	1220523
600 mm	C2C-SG06030A10000	1220513	C2C-EG06030A10000	1220524
750 mm	C2C-SG07530A10000	1220514	C2C-EG07530A10000	1220525
900 mm	C2C-SG09030A10000	1220515	C2C-EG09030A10000	1220526
1,050 mm	C2C-SG10530A10000	1220516	C2C-EG10530A10000	1220527
1,200 mm	C2C-SG12030A10000	1220517	C2C-EG12030A10000	1220528
1,350 mm	C2C-SG13530A10000	1220518	C2C-EG13530A10000	1220529
1,500 mm	C2C-SG15030A10000	1220519	C2C-EG15030A10000	1220530
1,650 mm	C2C-SG16530A10000	1220520	C2C-EG16530A10000	1220531
1,800 mm	C2C-SG18030A10000	1220521	C2C-EG18030A10000	1220532

## Accessories

### Mounting systems

Terminal and alignment brackets


Alignment brackets

Figure	Description	Packing unit	Type	Part no.
	FlexFix replacement kit (mounting kit for replacement of swivel mount brackets 2019649 and 2019659 or side bracket 2019506 with the FlexFix bracket when using the wells provided)	4 pieces	BEF-1SHABS004	2100345
	FlexFix replacement kit (mounting kit for replacement of swivel mount brackets 2030510 or side bracket 2019506 with the FlexFix bracket when using the wells provided)	4 pieces	BEF-1SHABU004	2099282
	FlexFix bracket for 1 device (e.g. sender or receiver), plastic, can be aligned $\pm 15^\circ$ , including screw M5, Plastic	2 pieces	BEF-1SHABPKU2	2098709
	FlexFix bracket for 2 devices (e.g. sender and receiver), plastic, can be aligned $\pm 15^\circ$ , including screw M5, Plastic	4 pieces	BEF-1SHABPKU4	2066614
	QuickFix bracket for 1 device (e.g. sender or receiver), Plastic	2 pieces	BEF-3SHABPKU2	2066048
	QuickFix bracket for 2 devices (e.g. sender and receiver), Plastic	4 pieces	BEF-3SHABPKU4	2098710
	FlexFix brackets including alignment tool and mounting material suitable for fastening to device columns, plastic	2 pieces	BEF-1SHABBKU2	2073543

Dimensional drawings → [page 12](#)


Device protection (mechanical)

Front screen protection

Figure	Description	Suitable for	Packing unit	Type	Part no.
	Self-adhesive protective film for the front screen (protects sensors from damage by flying sparks and welding beads)	Sufficient for two sensors with a protective field height of 2.100 mm	1 piece	Self-adhesive protective film	2069268

Other mounting accessories

Mounting tools

Figure	Description	Packing unit	Type	Part no.
	Alignment tool for deTec and deTem in areas with limited accessibility	1 piece	Alignment tool	4084133





## Connection systems

### Plug connectors and cables

#### Connecting cables

- **Model:** PUR, halogen-free, unshielded

Figure	Connection type		Conductor cross-section	Length of cable	Type	Part no.
	Female connector, M12, 5-pin, straight	Flying leads	0.34 mm <sup>2</sup>	2 m	YF2A15-020UB5XLEAX	2095617
				5 m	YF2A15-050UB5XLEAX	2095618
				10 m	YF2A15-100UB5XLEAX	2095619
				15 m	YF2A15-150UB5XLEAX	2095620
				20 m	YF2A15-200UB5XLEAX	2095614
				30 m	YF2A15-300UB5XLEAX	2095621
	Female connector, M12, 5-pin, angled	Flying leads	0.34 mm <sup>2</sup>	2 m	YG2A15-020UB5XLEAX	2095772
				5 m	YG2A15-050UB5XLEAX	2095773
				10 m	YG2A15-100UB5XLEAX	2095774


#### Connection cables

- **Model:** PVC, unshielded
- **Length of cable:** 0.25 m

Figure	Connection type		Conductor cross-section	Items supplied	Type	Part no.
	Female connector, M12, 5-pin, straight	Male connector, M12, 8-pin, straight	0.34 mm <sup>2</sup>	Packaging unit: 2 pcs.	DSL-1285GM25034KM1	2070987
		Male connector, M26, 12-pin, straight	0.34 mm <sup>2</sup>	Packaging unit: 2 pcs.	DSL-6182GM25034KM1	2070989
		Male connector, M26, 7-pin, straight	0.34 mm <sup>2</sup>	Packaging unit: 2 pcs.	DSL-6187GM25034KM1	2070988

### Adapters and distributors


#### T-junctions

Figure	Description	Type	Part no.
	T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver, 5-pin	DSC-1205T000025KM0	6030664

#### Other adapters and distributors



Figure	Description	Type	Part no.
	Terminal with 2.15 kOhm resistance	Terminal with resistor 2.15 ohm	2073807

### Power supply units and power supply cables

Figure	Input voltage	Output voltage	Output current	Type	Part no.
 Illustration may differ	100 V AC ... 240 V AC	24 V DC	≤ 2.1 A	PS50WE24V	7028789
			≤ 3.9 A	PS95WE24V	7028790



## Reflectors and optics

### Alignment aids

Figure	Description	Type	Part no.
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!	AR60	1015741
	Adapter AR60 for deTec4, deTec2 and MLG-2	AR60 adapter, deTec, deTem, MLG-2	4070854

### Deflector mirrors

#### • Mirror material: Glass

Figure	Description	Items supplied	Suitable for protective field height	Type	Part no.
	Horizontal deflection	Incl. mounting kit swivel mount	150 mm ... 300 mm	PNS125-034	1019425
			150 mm ... 450 mm	PNS125-049	1019426
			150 mm ... 600 mm	PNS125-064	1019427
			150 mm ... 750 mm	PNS125-079	1019428
			150 mm ... 900 mm	PNS125-094	1019429
			150 mm ... 1,050 mm	PNS125-109	1019430
			150 mm ... 1,200 mm	PNS125-124	1019431
			150 mm ... 1,350 mm	PNS125-139	1019432
			150 mm ... 1,500 mm	PNS125-154	1019433
			150 mm ... 1,650 mm	PNS125-169	1019434
			150 mm ... 1,800 mm	PNS125-184	1019435
			150 mm ... 1,950 mm	PNS125-199	1092964
			150 mm ... 2,100 mm	PNS125-214	1092965
			150 mm ... 300 mm	PNS75-034	1019414
			150 mm ... 450 mm	PNS75-049	1019415
			150 mm ... 600 mm	PNS75-064	1019416
			150 mm ... 750 mm	PNS75-079	1019417
			150 mm ... 900 mm	PNS75-094	1019418
			150 mm ... 1,050 mm	PNS75-109	1019419
			150 mm ... 1,200 mm	PNS75-124	1019420
			150 mm ... 1,350 mm	PNS75-139	1019421
			150 mm ... 1,500 mm	PNS75-154	1019422
			150 mm ... 1,650 mm	PNS75-169	1019423
			150 mm ... 1,800 mm	PNS75-184	1019424
			150 mm ... 1,950 mm	PNS75-199	1092962
			150 mm ... 2,100 mm	PNS75-214	1092963

Dimensional drawings → [page 13](#)

### Optics cloths


Figure	Description	Type	Part no.
	Cloth for cleaning the front screen	Lens cloth	4003353

## Further accessories

## Test and monitoring tools


Figure	Description	Type	Part no.
	14 mm diameter	Test rod 14 mm	2022599
	30 mm diameter	Test rod 30 mm	2022602
	Test rod holder	BEF-3WNAAAAL1	2052249

## Cleaning agent

Figure	Description	Type	Part no.
	Plastic cleaner and care product, anti-static, 0.5 liter	Plastic cleaner	5600006

## Mirror columns and device columns

## Mirror columns with protective field height mirror

Figure	Suitable for protective field height	Mirror length	Column height	Type	Part no.
	≤ 1,050 mm	1,082 mm	1,281.5 mm	PM3C13-00030000	1043453
	≤ 1,350 mm	1,382 mm	1,569 mm	PM3C15-00030000	1077525
	≤ 1,500 mm	1,532 mm	1,716.5 mm	PM3C17-00030000	1043454
	≤ 1,650 mm	1,682 mm	2,016.5 mm	PM3C19-00030000	1043455
	≤ 1,800 mm	1,832 mm	2,216.5 mm	PM3C20-00030000	1043456
	≤ 1,950 mm	1,982 mm	2,269 mm	PM3C22-00030000	1093216
	≤ 2,100 mm	2,132 mm	2,419 mm	PM3C24-00030000	1093217

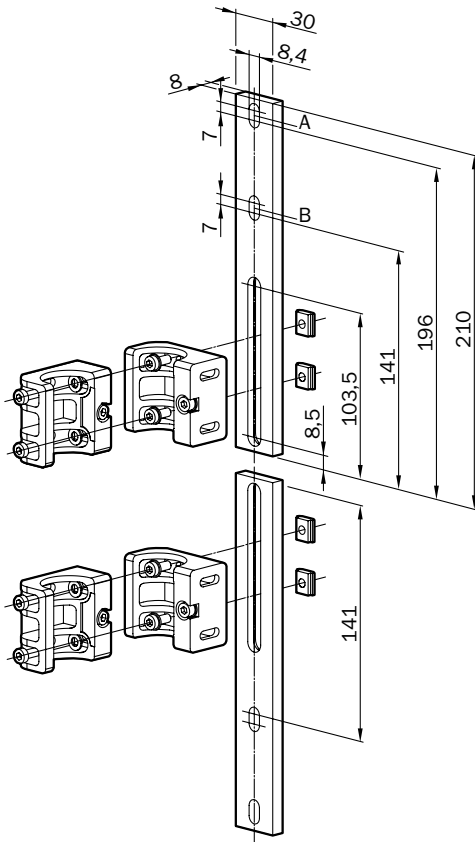
## Device columns with two external mounting grooves

Figure	Suitable for protective field height: C2000, C4000, M4000 Curtain	Suitable for protective field height: deTec	Max. installation length	Column height	Type	Part no.
	≤ 900 mm	≤ 1,050 mm	1,165 mm	1,185 mm	PU3H11-00000000	2045641
	≤ 1,050 mm	≤ 1,200 mm	1,265 mm	1,285 mm	PU3H13-00000000	2045642
	≤ 1,350 mm	≤ 1,500 mm	1,550 mm	1,570 mm	PU3H15-00000000	2068813
		≤ 1,650 mm	1,720 mm	1,740 mm	PU3H17-00000000	2045643
	≤ 1,650 mm	≤ 1,950 mm	2,020 mm	2,040 mm	PU3H21-00000000	2045644
	≤ 1,800 mm	≤ 2,100 mm	2,250 mm	2,270 mm	PU3H22-00000000	2045645
			2,400 mm	2,420 mm	PU3H24-00000000	2045646
	≤ 600 mm	≤ 900 mm	965 mm	985 mm	PU3H96-00000000	2045490

Dimensional drawings for accessories (Dimensions in mm (inch))

Terminal and alignment brackets

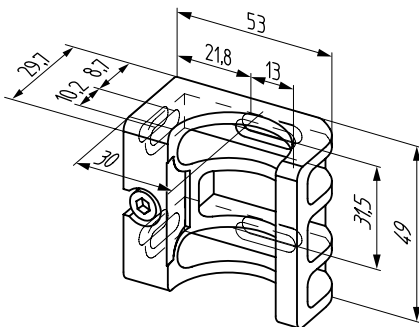
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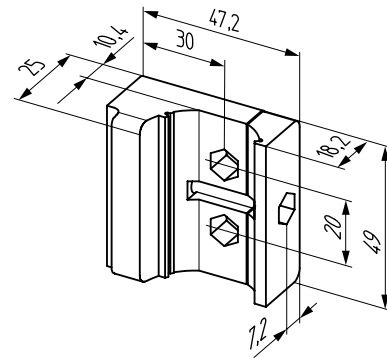
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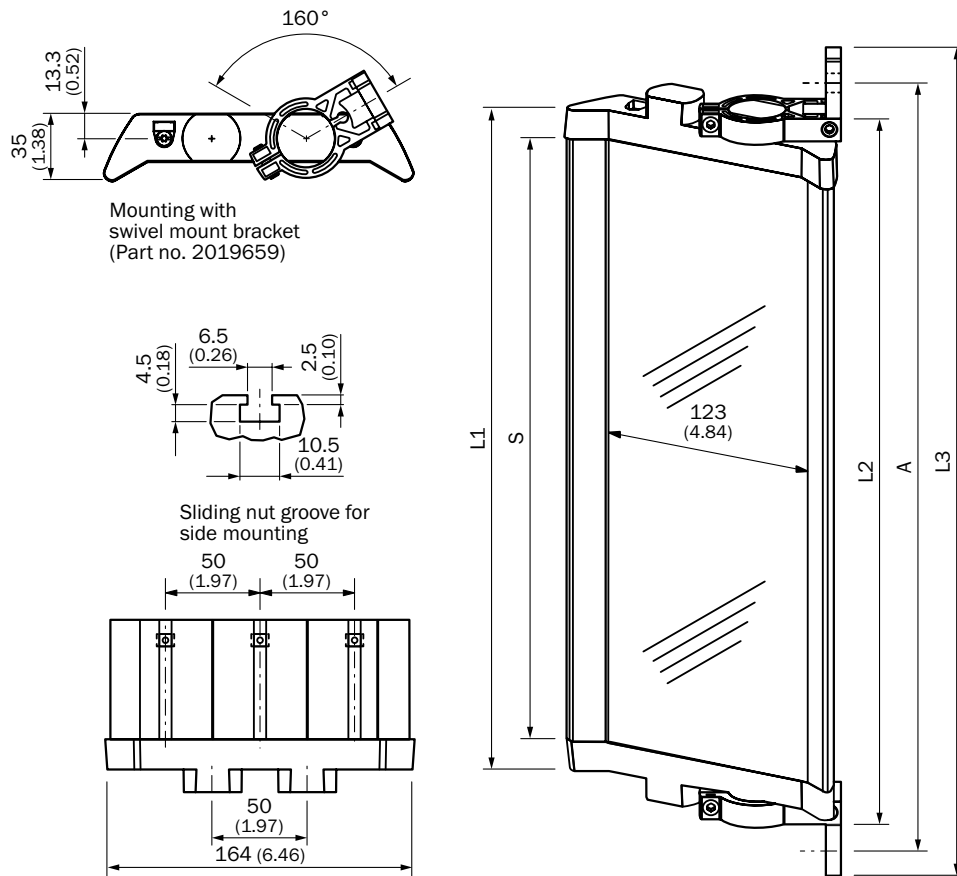
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BEF-3SHABPKU4



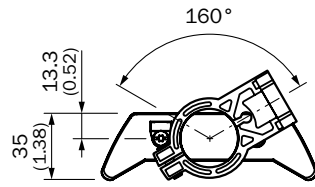
## Deflector mirrors

PNS125

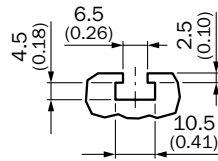


Mirror height S	L1	L2	L3	A
340	372	396	460	440
490	522	546	610	590
640	672	696	760	740
790	822	846	910	890
940	972	996	1,060	1,040
1,090	1,122	1,146	1,210	1,190
1,240	1,272	1,296	1,360	1,340
1,390	1,422	1,446	1,510	1,490
1,540	1,572	1,596	1,660	1,640
1,690	1,722	1,746	1,810	1,790
1,840	1,872	1,896	1,960	1,940
1,990	2,022	2,046	2,110	2,090
2,140	2,172	2,196	2,260	2,240

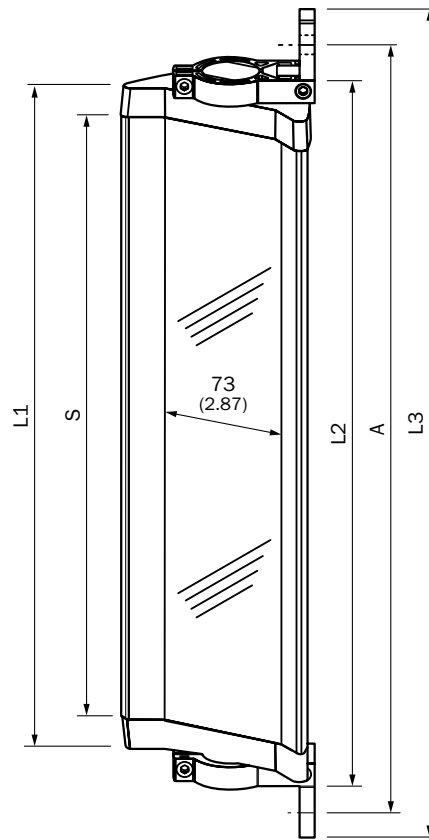
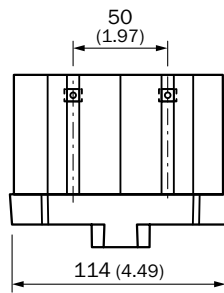
## PNS75



Mounting with  
swivel mount bracket  
(Part no. 2019659)



Sliding nut groove for  
side mounting



Mirror height S	L1	L2	L3	A
340	372	396	460	440
490	522	546	610	590
640	672	696	760	740
790	822	846	910	890
940	972	996	1,060	1,040
1,090	1,122	1,146	1,210	1,190
1,240	1,272	1,296	1,360	1,340
1,390	1,422	1,446	1,510	1,490
1,540	1,572	1,596	1,660	1,640
1,690	1,722	1,746	1,810	1,790
1,840	1,872	1,896	1,960	1,940
1,990	2,022	2,046	2,110	2,090
2,140	2,172	2,196	2,260	2,240





## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,800 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)