



OPTO-ELECTRONIC PROTECTIVE DEVICES

OVERVIEW OF THE PRODUCTS

Safety laser scanners, safe radar sensors, safety light curtains, multiple light beam safety devices, single-beam photoelectric safety switches, mirror columns and device columns

SICK
Sensor Intelligence.



OPTICAL PROTECTION – FOR MAXIMUM FREEDOM OF MOVEMENT AND PRODUCTIVITY

Opto-electronic protective devices are the first choice for implementing maximum productivity for machines and plants. Unlike fences and doors, they do not limit during handling or material transport and provide a better view in the machine room. The broad portfolio comprehensively meets the requirements of hazardous point protection, access protection, and hazardous area protection. Coordinated complete systems can be built using a SICK-specific interface.



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Selection guide

Product		Safety application							Safety-related parameters	
		Hazardous point protection with finger or hand detection	Hazardous point protection with hand and personnel detection	One-sided access protection with personnel detection	Multi-sided access protection with personnel detection	One-sided access protection with differentiation between personnel and material/muting	Stationary hazardous area protection with person detection	Mobile hazardous area protection with person detection when approaching	Type (IEC 61496)	Performance level (EN ISO 13849)
Safety laser scanner										
	nanoScan3			■		■	■	■	3	d
	microScan3			■		■	■	■	3	d
	S300 Mini			■		■	■	■	3	d
	S300			■		■	■	■	3	d
	S3000			■		■	■	■	3	d
	TiM-S			■		■	■	■	1	b
	outdoorScan3						■	■	3	d
Safe radar sensors										
	safeRS			■			■			d
Safety light curtains										
	deTec	■	■	■		■	■		2 / 4	c / e
	miniTwin	■	■	■		■	■		2 / 4	c / e
	TWINOX4	■	■	■		■	■		4	e
	C4000	■	■	■		■	■		4	e
Multiple light beam safety devices										
	deTem			■	■	■	■		2 / 4	c / e
	M4000			■	■	■	■		4	e
Single-beam photoelectric safety switches										
	WSU/WEU26-3			■					4	e
	L4000 systems / L41			■					4	e
	L21 / L25 / L26 / L29			■					2	c

Optical properties							Interfaces and integration							Page
Scanning range (protective field) (m)	Scanning angle	Number of fields	Protective field height (mm)	Resolution or beam separation (mm)	Number of beams	NFC	Measurement data output via RS-422	Measurement data output via Ethernet	Local inputs and outputs (I/O)	CIP Safety™ via EtherNet/IP™	PROFINET PROFIsafe	EFI-pro	EFI	
3	275°	128						■	■					→ 6
9	275°	128						■	■	■	■	■		→ 7
3	270°	48							■				■	→ 8
3	270°	48					■		■				■	→ 9
7	190°	64					■		■		■		■	→ 10
5	270°	48						■	■					→ 12
4	275°	128						■	■	■				→ 12
4	110°								■					→ 13
30			300 ... 2,100	14 ... 30		■		■						→ 14
5			120 ... 1,200	14 ... 34				■						→ 18
4.5			300 ... 600	14				■						→ 18
21			150 ... 1,800	14 ... 40				■						→ 19
90				300 ... 500	2 ... 4	■		■						→ 22
90				80 ... 600	2 ... 8			■						→ 24
70					1			■						→ 26
60					1			■						→ 26
50					1			■						→ 27

					
	<p>nanoScan3 Core I/O</p> <p>nanoScan3 Pro I/O</p>		<p>microScan3 Core I/O</p> <p>microScan3 Core - EFI-pro</p>		
	<p>The world's smallest safety laser scanner – highly precise and extremely robust</p>		<p>The rugged safety laser scanner – extremely intelligent</p>		

Technical data overview

Protective field range	3 m	3 m	4 m / 5.5 m / 9 m	4 m / 5.5 m / 9 m
Warning field range	10 m	10 m	40 m / 64 m	40 m / 64 m
Scanning angle	275°	275°	275°	275°
Number of fields	8	128	8	8
Number of monitoring cases	2	128	2	8
Response time	≥ 70 ms	≥ 70 ms	≥ 70 ms / ≥ 90 ms	≥ 95 ms / ≥ 115 ms
OSSD pairs	1	2	1	0
Safety outputs via network	0	0	0	8 / 4
Integration in the control	Local inputs and outputs (I/O)	Local inputs and outputs (I/O)	Local inputs and outputs (I/O)	EFI-pro
Performance level	PL d (EN ISO 13849)	PL d (EN ISO 13849)	PL d (ISO 13849)	PL d (ISO 13849)

At a glance

- The smallest safety laser scanner for easy and space-saving design for mobile platforms
- High availability for the prevention of downtime
- 2-In-1: reliable safety and precise localization
- Saves time during configuration and diagnostics thanks to user-friendly Safety Designer software
- The highest level of flexibility when adjusting the vehicle speed and direction
- Flexible connection to different control systems with standardized interfaces
- Quick device exchange without rewiring or reconfiguration



- Very high plant availability and productivity thanks to the patented safeHDDM® scan technology
- Flexibility for safe automation processes due to simultaneous protective fields, contour detection fields and detailed data output
- Safe integration into different control systems via EtherNet/IP™ CIP Safety™ or PROFINET PROFI-safe, IO/, etc.
- Saves time during commissioning and diagnostics thanks to the intuitive Safety Designer software, multi-color display and system plug



Detailed information

→ www.sick.com/nanoScan3

→ www.sick.com/microScan3



**microScan3 Core –
PROFINET**



**microScan3 Core –
EtherNet/IP™**



**microScan3 Pro –
EFI-pro**



**microScan3 Pro –
PROFINET**



**microScan3 Pro –
EtherNet/IP™**

The rugged safety laser scanner – extremely intelligent

4 m / 5.5 m / 9 m	4 m / 5.5 m / 9 m	4 m / 5.5 m / 9 m	4 m / 5.5 m / 9 m	4 m / 5.5 m / 9 m
40 m / 64 m	40 m / 64 m	40 m / 64 m	40 m / 64 m	40 m / 64 m
275°	275°	275°	275°	275°
8	8	128	128	128
8	8	128	128	128
≥ 95 ms / ≥ 115 ms	≥ 95 ms / ≥ 115 ms	≥ 95 ms / ≥ 115 ms	≥ 95 ms / ≥ 115 ms	≥ 95 ms / ≥ 115 ms
0	0	0	0	0
8 / 4	8 / 4	8 / 4	8 / 4	8 / 4
PROFINET PROFI-safe	CIP Safety™ over EtherNet/IP™	EFI-pro	PROFINET PROFI-safe	CIP Safety™ over EtherNet/IP™
PL d (ISO 13849)	PL d (ISO 13849)	PL d (ISO 13849)	PL d (ISO 13849)	PL d (ISO 13849)

- Very high plant availability and productivity thanks to the patented safeHDDM® scan technology
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→ www.sick.com/microScan3

			
	S300 Mini Standard	S300 Mini Remote	
	Economical yet reliable	Very high functionality in mini format	

Technical data overview			
Protective field range	1 m / 2 m / 3 m	2 m / 3 m	
Warning field range	8 m	8 m	
Scanning angle	270°	270°	
Number of fields	3	48	
Number of monitoring cases	1	32	
Response time	≥ 80 ms	≥ 80 ms	
OSSD pairs	1	0	
Safety outputs via network	0	1	
Integration in the control	Local inputs and outputs (I/O)	EFI	
Performance level	PL d (ISO 13849)	PL d (ISO 13849)	

At a glance

- Simple integration due to ultra-compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Easy to manage, reducing costs and work time
- Reduction of downtime and brake wear thanks to triple field function
- Simple alignment and reliable operation in vertical mode



- Simple integration due to ultra-compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Variety of field sets guarantees safety and productivity when protecting vehicles or moving machine parts
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Simple alignment and reliable operation in vertical mode



Detailed information	→ www.sick.com/S300_Mini_Standard	→ www.sick.com/S300_Mini_Remote
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S300 Standard

Economical yet reliable



S300 Advanced

Optimize production processes safely



S300 Professional

High-performance – the right protection for any speed



S300 Expert

Flexible and pioneering – for challenging applications

2 m / 3 m

8 m

270°

3

1

≥ 80 ms

1

1

Local inputs and outputs (I/O)
EFI

PL d (ISO 13849)

2 m / 3 m

8 m

270°

12

4

≥ 80 ms

1

1

Local inputs and outputs (I/O)
EFI

PL d (ISO 13849)

2 m / 3 m

8 m

270°

24

32

≥ 80 ms

1

1

Local inputs and outputs (I/O)
EFI

PL d (ISO 13849)

2 m / 3 m

8 m

270°

48

32

≥ 80 ms

1

1

Local inputs and outputs (I/O)
EFI

PL d (ISO 13849)

- Simple integration due to compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Safety technology – with no loss of productivity
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Simple alignment and reliable operation in vertical mode

- Simple integration due to compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Variety of field sets guarantees safety and productivity when protecting vehicles or moving machine parts
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- The correct protective field at any speed avoids unnecessary stops
- Personnel protection and navigation support in one device



→ www.sick.com/S300_Standard



→ www.sick.com/S300_Advanced



→ www.sick.com/S300_Professional



→ www.sick.com/S300_Expert

				
	S3000 Standard	S3000 Advanced	S3000 Professional	S3000 Expert
	Economical yet reliable	Optimize production processes safely	High-performance – the right protection for any speed	Safety gaps have no chance – with 64 fields

Technical data overview				
Protective field range	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m
Warning field range	49 m	49 m	49 m	49 m
Scanning angle	190°	190°	190°	190°
Number of fields	4	12	24	64
Number of monitoring cases	1	4	16	32
Response time	≥ 60 ms / ≥ 120 ms			
OSSD pairs	1	1	1	1
Safety outputs via network	4	4	4	4
Integration in the control	Local inputs and outputs (I/O) EFI			
Performance level	PL d (ISO 13849)			

At a glance

- Large protective field range of 7 m makes it suitable for a wide range of applications
- Safety technology – with no loss of productivity
- Quick recommissioning via configuration memory
- Modular expansion modules, simple cabling, and additional functions such as simultaneous monitoring of up to four protective fields by SICK safety controllers via EFI
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Simple alignment and reliable operation in vertical mode

- Large protective field range of 7 m makes it suitable for a wide range of applications
- Variety of field sets guarantees safety and productivity when protecting vehicles or moving machine parts
- Quick recommissioning via configuration memory
- Modular expansion modules, simple cabling, and additional functions such as simultaneous monitoring of up to four protective fields using SICK safety controllers via EFI
- The correct protective field at any speed avoids unnecessary stops
- Personnel protection and navigation support in one device
- Easy installation, commissioning, and maintenance for stationary and mobile applications



Detailed information	→ www.sick.com/S3000_Standard	→ www.sick.com/S3000_Advanced	→ www.sick.com/S3000_Professional	→ www.sick.com/S3000_Expert
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S3000 Remote

The scanner for more safety



S3000 PROFINET IO Advanced

Always available – safety technology in your network



S3000 PROFINET IO Professional

Always available – safety technology in your network

4 m / 5.5 m / 7 m

49 m

190°

64

32

≥ 60 ms / ≥ 120 ms

0

4

EFI

PL d (ISO 13849)

4 m / 5.5 m / 7 m

49 m

190°

8

4

≥ 68 ms / ≥ 128 ms

0

2

PROFINET PROFIsafe

PL d (ISO 13849)

4 m / 5.5 m / 7 m

49 m

190°

16

16

≥ 68 ms / ≥ 128 ms

0

2

PROFINET PROFIsafe

PL d (ISO 13849)

- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Large protective field range of 7 m makes it suitable for a wide range of applications
- Variety of field sets guarantees safety and productivity when protecting vehicles or moving machine parts
- Quick recommissioning via configuration memory
- Modular expansion modules, simple cabling, and additional functions such as simultaneous monitoring of up to four protective fields by SICK safety controllers via EFI
- Personnel protection and navigation support in one device



→ www.sick.com/S3000_Remote

- Reliable, fault-tolerant communication with an FPLC controller using state-of-the-art optical fiber technology
- Efficient, cost-effective protection – networked through direct integration into PROFINET IO networks
- Rapid diagnosis by means of remote access prevents downtime
- Standardized integration in FPLC controllers, thanks to GSDML generic station description
- Large protective field range of 7 m makes it suitable for a wide range of applications
- Quick recommissioning via configuration memory
- Easy installation, commissioning, and maintenance for stationary and mobile applications



→ www.sick.com/S3000_PROFINET_IO_Advanced



→ www.sick.com/S3000_PROFINET_IO_Professional

	 <p>TiM-S</p>	 <p>outdoorScan3 Core I/O</p>	 <p>outdoorScan3 Pro – EtherNet/IP™</p>
	Safety-related sensors for mobile and stationary applications		The safety laser scanner for outdoor automation

Technical data overview			
Protective field range	4 m / 5 m	4 m	4 m
Warning field range	10 m / 25 m	40 m	40 m
Scanning angle	270°	275°	275°
Number of fields	48	8	128
Number of monitoring cases	16	2	128
Response time	≥ 134 ms	≥ 90 ms	≥ 115 ms
OSSD pairs	-	1	0
Safety outputs via network	-	0	8
Integration in the control	Local inputs and outputs (I/O)	Local inputs and outputs (I/O)	CIP Safety™ over EtherNet/IP™
Performance level	PL b (EN ISO 13849-1:2015)	PL d (EN ISO 13849)	PL d (EN ISO 13849)

At a glance		
	<ul style="list-style-type: none"> • Coverage of large measuring ranges • Safety-related dynamic field evaluation and raw data output combined with the newest ROS drivers enable the use of TiM-S devices in nearly any application, both mobile and stationary • Easy commissioning with rotatable connections and accessories perfectly attuned to the sensors; only a few adjustable SOPAS software parameters are necessary for commissioning • Certification according to ISO 13849 allows for the use of the safety-relevant 2D LiDAR sensors in personal protection applications in which performance level b is required, among others 	<ul style="list-style-type: none"> • High productivity due to safe human-machine cooperation in outdoors areas • Outstanding availability even under unfavorable weather conditions • Flexibility for safe, customized automation processes • User-friendly and suitable for outdoor use • Easy access to diagnostic data • Precise localization due to highly precise measurement data • Continuous material flow due to intralogistics processes beyond the limits of the factory 

Detailed information	→ www.sick.com/TiM-S	→ www.sick.com/outdoorScan3
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safeRS

Safe radar system for hazardous area protection in raw environments

Technical data overview

Protective field range	4 m
Warning field range	4 m
Field of view (wide)	110° (horizontal plane) 30° (vertical plane)
Field of view (thin)	50° (horizontal plane) 15° (vertical plane)
Recording method	FMCW radar for detecting movement
Response time	100 ms
Integration in the control	Local inputs and outputs (I/O)
Performance level	PL d (EN ISO 13849)

At a glance

- Modular system for adjusting to your protection tasks up to Performance Level d / Category 2 / SIL 2, in accordance with ISO 13849-1 and IEC 62061
- Extended hazardous area protection thanks to three-dimensional protective field
- Very high machine and plant productivity, even under harsh ambient conditions
- Reliable use even at extreme temperatures
- Radar sensors with long cleaning intervals
- Quick and easy commissioning



Detailed information

→ www.sick.com/safeRS

	 deTec4	 deTec4 Core	 deTec2 Core
	Because we take safety to the next level	Efficient integration. Quick installation. Simply safe.	

Technical data overview				
Scanning range	30 m	15 m	15 m	
Protective field height	300 mm ... 2,100 mm	300 mm ... 2,100 mm	300 mm ... 2,100 mm	
Resolution	14 mm / 30 mm	14 mm / 30 mm	14 mm / 30 mm	
Type	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)	
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)	
Performance level	PL e (ISO 13849)	PL e (ISO 13849)	PL c (ISO 13849)	
Enclosure rating	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)	
Ambient operating temperature	-30 °C ... +55 °C	-30 °C ... +55 °C	-30 °C ... +55 °C	

At a glance	
<ul style="list-style-type: none"> • Increased productivity and short downtimes thanks to extensive and innovative diagnostic options • Safety and automation united: IO-Link makes a cost-effective system design possible • Muting provides maximum productivity and safety in differentiating between people and material • Highest availability: smart presence detection prevents unwanted switch-offs • Flexibility and safety for dynamic applications during machine operation • Easy commissioning and configuration without the need for software, saving time and money 	<ul style="list-style-type: none"> • Simple assembly with innovative mounting and no blind zones • Quick commissioning thanks to integrated LED display and automated distance measurement of up to 10 m • Simply safe: rugged and reliable thanks to IP65 / IP67 enclosure rating and an ambient operating temperature down to -30 °C, enabling use in harsh ambient conditions • Intelligently standardized: M12 connectivity, 5-pin, reduces costs and enables safe series connection with Flexi Loop • Basic function with minimal configuration effort enables quick replacement when servicing is required





deTec4 Core IP69K



deTec2 Core IP69K



deTec4 Core Vibes



deTec2 Core Vibes

Safest under high pressure

Maximum reliability when exposed to shocks and vibrations

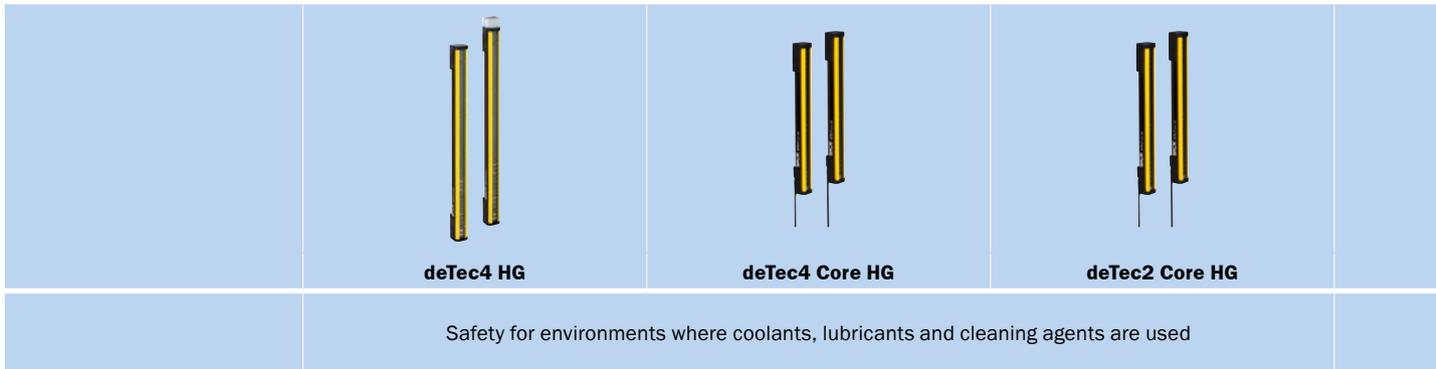
12.5 m	12.5 m	15 m	15 m
300 mm ... 1,800 mm	300 mm ... 1,800 mm	300 mm ... 2,100 mm	300 mm ... 2,100 mm
14 mm / 30 mm	30 mm	30 mm	30 mm
Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)
SIL3 (IEC 61508)	SIL1 (IEC 61508)	SIL3 (IEC 61508)	SIL1 (IEC 61508)
SILCL3 (IEC 62061)	SILCL1 (IEC 62061)	SILCL3 (IEC 62061)	SILCL1 (IEC 62061)
PL e (ISO 13849)	PL c (ISO 13849)	PL e (ISO 13849)	PL c (ISO 13849)
IP65, IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP65, IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)
-30 °C ... +55 °C	-30 °C ... +55 °C	-30 °C ... +55 °C	-30 °C ... +55 °C

- Enclosure rating IP69K offers high resistance and long service life, making it more economical
- Certified material resistance for maximum reliability
- The ideal design for efficient cleaning in the food industry – it ensures high process and production quality while reducing the risk of contamination
- Replaceable protective housing offers flexibility and saves money in the event that service is needed
- Breathable membrane ensures the highest availability
- Reduction of cleaning times and costs compared to a mechanical protective device

- Maximum reliability when constantly exposed to shocks and strong vibrations
- No abrasion-related wear and tear thanks to glued optics module
- High availability: three different scanning ranges can be selected, which avoids interference between the individual light curtains and allows the machines to be positioned close to each other.
- Quick commissioning thanks to integrated LED display and automated measurement of the protective field width
- Very durable thanks to IP65 and IP67 enclosure ratings; withstands ambient operating temperatures down to -30 °C



→ www.sick.com/deTec



Technical data overview			
Scanning range	15 m	15 m	15 m
Protective field height	300 mm ... 2,100 mm	300 mm ... 2,100 mm	300 mm ... 2,100 mm
Resolution	14 mm / 30 mm	14 mm / 30 mm	14 mm / 30 mm
Type	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)
Performance level	PL e (ISO 13849)	PL e (ISO 13849)	PL c (ISO 13849)
Enclosure rating	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)
Ambient operating temperature	-30 °C ... +55 °C	-30 °C ... +55 °C	-30 °C ... +55 °C
Ex approvals			

At a glance

- 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 installation time and costs
- Enclosure ratings IP65, IP67 and temperature resistance offer long sensor life times and therefore even more efficiency



Detailed information

→ www.sick.com/deTec



deTec4 EX II 3GD



deTec4 Core EX II 3GD



deTec2 Core EX II 3GD



deTec4 EX



deTec4 Core EX

Ready for explosive atmospheres

15 m	15 m	15 m	25.2 m	10 m
300 mm ... 2,100 mm	300 mm ... 2,100 mm	300 mm ... 2,100 mm	450 mm / 600 mm / 900 mm / 1,200 mm / 1,500 mm	600 mm / 900 mm / 1,200 mm / 1,500 mm
14 mm / 30 mm	14 mm / 30 mm	14 mm / 30 mm	30 mm	30 mm
Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)
SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)
SILCL3 (IEC 62061)	SILCL3 (IEC 62061)	SILCL3 (IEC 62061)	SILCL3 (IEC 62061)	SILCL3 (IEC 62061)
PL e (ISO 13849)	PL e (ISO 13849)	PL c (ISO 13849)	PL e (ISO 13849)	PL e (ISO 13849)
IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)	IP65, IP66 (IEC 60529)	IP65, IP66 (IEC 60529)
0 °C ... +55 °C	0 °C ... +55 °C	0 °C ... +55 °C	-20 °C ... +55 °C	-20 °C ... +55 °C
ATEX II 3G / 3D	ATEX II 3G / 3D	ATEX II 3G / 3D	ATEX II 2G / 2D, NFPA 70 / NEC 500, Classes I, II, III, Div. 1	ATEX II 2G / 2D, NFPA 70 / NEC 500, Classes I, II, III, Div. 1

- Uniform housing and accessory concept for standard and special industrial environments saves time and money when planning systems
- 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 installation time and costs
- Enclosure ratings IP65, IP67 and temperature resistance offer long sensor life times and therefore even more efficiency

- Compatibility with numerous SICK safety light curtains makes high flexibility in the application solution possible
- Durable housing
- Simple installation and alignment with the special mounting system
- Quick commissioning of pre-mounting systems, composed of light curtain and housing
- Low downtime thanks to resistance to water and dust due to IP66 enclosure rating
- Highly visible LED status indicator for quick fault diagnosis
- Global availability and support for the entire safety solution



→ www.sick.com/deTec

		
miniTwin4	miniTwin2	TWINOX4
The smallest light curtain with the highest protection level, PL e	Small design, great flexibility, and universal possibilities	Compact design for maximum reliability

Technical data overview

Scanning range	5 m	8 m	4.5 m
Protective field height	120 mm ... 1,200 mm	120 mm ... 1,200 mm	300 mm / 420 mm / 600 mm
Resolution	14 mm / 24 mm / 34 mm	14 mm / 24 mm / 34 mm	14 mm
Type	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)	Type 4 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)	SIL3 (IEC 61508) SILCL3 (IEC 62061)
Performance level	PL e (ISO 13849)	PL c (ISO 13849)	PL e (ISO 13849)
Enclosure rating	IP65 (IEC 60529)	IP65 (IEC 60529)	IP65, IP67 (IEC 60529)
Ambient operating temperature	-20 °C ... +55 °C	-20 °C ... +55 °C	-20 °C ... +55 °C
Ex approvals	-	-	-

At a glance

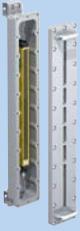
- Cost-effective machine integration: the miniature design, cascading, and fine stepping of the protective field lengths enable flexible adaptation to the machine design
- Standardization saves time and resources by making logistics, order processing, and service more straightforward
- Exemplary handling: software-free, almost fully automated commissioning and intuitive operation with sustainable optics
- LED-guided start-up together with colored LEDs for quick alignment and unequivocal protective field visualization ensure rapid diagnostics
- A continuous protective field for cascade applications eliminates blind zones, reduces the safety distance, and thereby increases productivity



- The small, elegant stainless-steel housing saves space, enables optimum integration into the machine design, and offers great flexibility
- Highest level of media resistance for maximum reliability
- Efficient cleaning ensures high process and production quality and a low risk of contamination
- Efficient ordering process and cost savings due to reduced storage needs and spare parts maintenance
- Adjustable brackets ensure the highest availability
- Quick on-site diagnostics with LED status indicators over the entire protective field height

Detailed information	→ www.sick.com/miniTwin4	→ www.sick.com/miniTwin2	→ www.sick.com/TWINOX4
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 <p>C4000 Advanced</p>	 <p>C4000 Advanced ATEX II 3G / 3D</p>	 <p>C4000 Advanced Ex</p>
Increased productivity with greater machine safety	Ready for explosive atmospheres	Ready for explosive atmospheres
<p>21 m</p> <p>300 mm ... 1,800 mm</p> <p>14 mm / 20 mm / 30 mm / 40 mm</p> <p>Type 4 (IEC 61496-1)</p> <p>SIL3 (IEC 61508)</p> <p>SILCL3 (EN 62061)</p> <p>PL e (ISO 13849)</p> <p>IP65 (EN 60529)</p> <p>0 °C ... +55 °C</p> <p>-</p>	<p>21 m</p> <p>450 mm ... 1,800 mm</p> <p>14 mm / 30 mm / 40 mm</p> <p>Type 4 (IEC 61496-1)</p> <p>SIL3 (IEC 61508)</p> <p>SILCL3 (EN 62061)</p> <p>PL e (ISO 13849)</p> <p>IP65 (EN 60529)</p> <p>0 °C ... +55 °C</p> <p>ATEX II 3G / 3D</p>	<p>16 m</p> <p>600 mm / 900 mm / 1,200 mm</p> <p>30 mm</p> <p>Type 4 (IEC 61496-1)</p> <p>SIL3 (IEC 61508)</p> <p>SILCL3 (EN 62061)</p> <p>PL e (ISO 13849)</p> <p>IP65, IP66 (EN 60529)</p> <p>0 °C ... +55 °C</p> <p>ATEX II 2G / 2D, NFPA 70 / NEC 500, Classes I, II, III, Div. 1</p>
<ul style="list-style-type: none"> • The blanking functions ensure reliable and stable object detection, thereby increasing productivity • Time-saving alignment and diagnostics by means of 7-segment display • Beam coding protects the systems against mutual interference and thus offers a high level of availability • The clone plug allows quick and easy duplication of configurations, thus saving time and costs • Increased flexibility and reduced wiring complexity via cascading of up to a maximum of three systems • Convenient configuration and diagnostics ensure increased availability 		<ul style="list-style-type: none"> • Compatibility with numerous SICK safety light curtains makes high flexibility in the application solution possible • Durable housing • Simple installation and alignment with the special mounting system • Quick commissioning of pre-mounting systems, composed of light curtain and housing • Low downtime thanks to resistance to water and dust due to IP66 enclosure rating • Highly visible LED status indicator for quick fault diagnosis • Global availability and support for the entire safety solution
 <p>→ www.sick.com/C4000_Advanced</p>	 <p>→ www.sick.com/C4000_Advanced_ATEX_II_3G_3D</p>	 <p>→ www.sick.com/C4000_Advanced_Ex</p>

			
	C4000 Fusion	C4000 Fusion ATEX II 3G / 3D	C4000 Fusion Ex
	Multi-functional and user-friendly, high availability and reliability	Ready for explosive atmospheres	Ready for explosive atmospheres

Technical data overview			
Scanning range	21 m	21 m	17.6 m
Protective field height	300 mm ... 1,800 mm	600 mm ... 1,800 mm	600 mm / 900 mm / 1,200 mm
Resolution	20 mm	20 mm	30 mm
Type	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)
Performance level	PL e (ISO 13849)	PL e (ISO 13849)	PL e (ISO 13849)
Enclosure rating	IP65 (EN 60529)	IP65 (EN 60529)	IP65, IP66 (EN 60529)
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C	0 °C ... +55 °C
Ex approvals	-	ATEX II 3G / 3D	ATEX II 2G / 2D, NFPA 70 / NEC 500, Classes I, II, III, Div. 1

At a glance			
	<ul style="list-style-type: none"> • Increased system productivity, since the safety light curtain is not shut down as a result of falling chips • Dependable: skids are detected, interference objects such as cables are blanked • Cost-effective due to the savings made on additional muting sensors or other protective measures • Maximum safety for access protection with automated material transport – the system reliably differentiates between man and material • Easy integration and quick commissioning save time and costs since secondary sensors are not required • Safe: also offers protection in areas where there is no object, in contrast to conventional muting solutions 	<ul style="list-style-type: none"> • The way the device is assembled – complete with cable and pre-installed within the explosion-proof enclosure – not only saves on installation time but also on certification costs • Maximum safety and automation in explosive atmospheres thanks to compliance with stringent regulations and strict safety requirements • Straightforward installation and alignment • Maximum safety for access protection with automated material transport – the system reliably differentiates between personnel and materials without the need for an additional muting sensor • Maximum availability thanks to regular blanking: skids are detected and interference objects such as cables are blanked 	
			
Detailed information	→ www.sick.com/C4000_Fusion	→ www.sick.com/C4000_Fusion_ATEX_II_3G_3D	→ www.sick.com/C4000_Fusion_Ex

			
C4000 Palletizer	C4000 Palletizer ATEX II 3G / 3D	C4000 Entry/Exit	C4000 Entry/Exit ATEX II 3G / 3D
Innovative alternative to muting for access protection	Ready for explosive atmospheres	Revolutionary access protection with differentiation between people and material	Ready for explosive atmospheres

7 m	7 m	19 m	19 m
750 mm ... 1,800 mm	1,350 mm	900 mm ... 1,500 mm	900 mm
30 mm / 40 mm	40 mm	20 mm	20 mm
Type 4 (IEC 61496-1)			
SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)
SILCL3 (EN 62061)	SILCL3 (EN 62061)	SILCL3 (EN 62061)	SILCL3 (EN 62061)
PL e (ISO 13849)			
IP65 (EN 60529)	IP65 (EN 60529)	IP65 (EN 60529)	IP65 (EN 60529)
0 °C ... +55 °C			
-	ATEX II 3G / 3D	-	ATEX II 3G / 3D

- Cost-effective due to the savings made on additional muting sensors or other protective measures
- With the dynamic and self-teaching blanking function, the system can reliably differentiate between man and material – this provides maximum safety
- Mixed pallet operation allows mesh boxes, Euro pallets, and half pallets to pass, significantly increasing plant availability
- Saves storage space: pallets can be parked permanently in the protective field
- One system monitors multiple conveyor belts, reducing sensor costs
- Quick commissioning: detects Euro pallets, mesh boxes etc. without any programming
- A compact sensor pair significantly reduces mounting effort – additional muting sensors are not required



→ www.sick.com/C4000_Palletizer



→ www.sick.com/C4000_Palletizer_ATEX_II_3G_3D

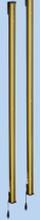
- Cost-effective due to the savings made on additional muting sensors or other protective measures
- With the dynamic and self-teaching blanking function, the system can reliably differentiate between man and material – this provides maximum safety
- Beam coding protects the systems against mutual interference and thus offers a high level of availability
- Time-saving alignment and diagnostics by means of 7-segment display
- A compact sensor pair significantly reduces mounting effort – additional muting sensors are not required



→ www.sick.com/C4000_Entry_Exit



→ www.sick.com/C4000_Entry_Exit_ATEX_II_3G_3D

			
deTem4 A/P deTem4 Core A/P	deTem2 Core A/P	deTem4 Core	deTem2 Core
Access protection: easy and efficient			

Technical data overview				
Scanning range	8 m	8 m	90 m	90 m
Number of beams	2 / 4	2 / 4	2 / 3 / 4	2 / 3 / 4
Beam separation or resolution	500 mm / 300 mm	500 mm / 300 mm	500 mm / 400 mm / 300 mm	500 mm / 400 mm / 300 mm
Type	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)	SIL3 (IEC 61508) SILCL3 (IEC 62061)	SIL1 (IEC 61508) SILCL1 (IEC 62061)
Performance level	PL e (ISO 13849-1)	PL c (ISO 13849-1)	PL e (ISO 13849-1)	PL c (ISO 13849-1)
Enclosure rating	IP65, IP67 (IEC 60529)			
Ex approvals	-	-	-	-
Integrated laser alignment aid	-	-	-	-
End cap with integrated LED	✓	-	-	-

At a glance

- Increase your productivity in access protection and entry/exit monitoring (muting) thanks to process optimization options with real-time diagnostic data
- Stay flexible when selecting the appropriate scanning range, number of beams and muting sensors
- Minimize your wiring and installation efforts
- Benefit from the possibility of a compact plant layout and simple integration
- Save time and money due to easy commissioning and configuration
- Respond quickly to machine downtime thanks to the all-round visibility of the status display
- Protection of large access areas with multiple beam deflections as well
- Little space required
- The same quick and easy mounting and commissioning as the deTec: the same accessories and connectivity
- Reduced variant diversity
- Reliable in challenging environments



Detailed information → www.sick.com/deTem



deTem4 Core IP69K



deTem2 Core IP69K



deTem4 Core Ex II 3GD



deTem2 Core Ex II 3GD

Safest under high pressure

Ready for explosive atmospheres

15.5 m	15.5 m	90 m	90 m
2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4
500 mm / 400 mm / 300 mm	500 mm / 400 mm / 300 mm	500 mm / 400 mm / 300 mm	500 mm / 400 mm / 300 mm
Type 4 (IEC 61496)	Type 2 (IEC 61496)	Type 4 (IEC 61496-1)	Type 2 (IEC 61496-1)
SIL3 (IEC 61508)	SIL1 (IEC 61508)	SIL3 (IEC 61508)	SIL1 (IEC 61508)
SILCL3 (IEC 62061)	SILCL1 (IEC 62061)	SILCL3 (IEC 62061)	SILCL1 (IEC 62061)
PL e (ISO 13849)	PL c (ISO 13849)	PL e (ISO 13849-1)	PL c (ISO 13849-1)
IP65, IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP65, IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP65, IP67 (IEC 60529)	IP65, IP67 (IEC 60529)
-	-	ATEX II 3G / 3D	ATEX II 3G / 3D
-	-	-	-
-	-	-	-

- Enclosure rating IP69K offers high resistance and long service life, making it more economical
- Certified material resistance for maximum reliability
- The ideal design for efficient cleaning in the food industry – it ensures high process and production quality while reducing the risk of contamination
- Replaceable protective housing offers flexibility and saves money in the event that service is needed
- Breathable membrane ensures the highest availability
- Reduction of cleaning times and costs compared to a mechanical protective device

- The way the device is assembled – complete with cable and pre-installed within the explosion-proof enclosure – not only saves on installation time but also on certification costs
- Maximum safety and automation in explosive atmospheres thanks to compliance with stringent regulations and strict safety requirements
- Long scanning range facilitates efficient access protection with minimal component requirements
- Straightforward installation and alignment



→ www.sick.com/deTem

	 <p>deTem4 Core Ex</p>	 <p>M4000 Standard</p>	
	Ready for explosive atmospheres	High efficiency and maximum availability without the need for a PC	

Technical data overview			
Scanning range	14.2 m	90 m	
Number of beams	2 / 3 / 4	2 ... 8	
Beam separation or resolution	500 mm / 400 mm / 300 mm	220 mm ... 600 mm	
Length of the monitored area	-	-	
Type	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)	
Performance level	PL e (ISO 13849)	PL e (ISO 13849)	
Enclosure rating	IP65 (EN 60529)	IP65 (EN 60529)	
Ex approvals	ATEX II 2G / 2D, NFPA 70 / NEC 500, Classes I, II, III, Div. 1	-	
Integrated laser alignment aid	-	✓	
End cap with integrated LED	-	✓	

At a glance		
	<ul style="list-style-type: none"> • The way the device is assembled – complete with cable and pre-installed within the explosion-proof enclosure – not only saves on installation time but also on certification costs • Maximum safety and automation in explosive atmospheres thanks to compliance with stringent regulations and strict safety requirements • Long scanning range facilitates efficient access protection with minimal component requirements • Straightforward installation and alignment 	<ul style="list-style-type: none"> • The broad scanning range spectrum allows the device to be standardized for the relevant application • Resilient and rugged design for high plant availability, even under exceptional ambient conditions • Reduced installation effort due to flexible protective field adjustment using deflector mirrors • Customer-friendly interfaces and status indicators facilitate commissioning and maintenance • Mounting grooves on three housing sides ensure greater mounting flexibility and facilitate integration with the machine • Fast start-up times due to easy alignment using the optional laser alignment aid and configuration directly on the device
		

Detailed information	→ www.sick.com/deTem	→ www.sick.com/M4000_Standard
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M4000 Advanced



M4000 Advanced A/P



M4000 area

Intelligent and efficient: on-site connection of the muting signals

Broad spectrum of scanning ranges for area protection or presence detection

90 m	7.5 m	70 m
2 ... 8	2 / 4	-
220 mm ... 600 mm	500 mm / 300 mm	80 mm
-	-	300 mm ... 1,800 mm
Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)
SIL3 (IEC 61508)	SIL3 (IEC 61508)	SIL3 (IEC 61508)
SILCL3 (EN 62061)	SILCL3 (EN 62061)	SILCL3 (EN 62061)
PL e (ISO 13849)	PL e (ISO 13849)	PL e (ISO 13849)
IP65 (EN 60529)	IP65 (EN 60529)	IP65 (EN 60529)
-	-	-
✓	-	-
✓	✓	-

- The broad scanning range spectrum allows the device to be standardized for the relevant application
- Resilient and rugged design for high plant availability, even under exceptional ambient conditions
- Mounting grooves on three housing sides ensure greater mounting flexibility and facilitate integration with the machine
- Customer-friendly interfaces and status indicators facilitate commissioning and maintenance
- For 2-sensor and 4-sensor muting, the on-site connection of the muting signals minimizes the wiring effort considerably and simplifies commissioning and maintenance
- Reduced downtime due to all-around-visible LED and diagnostics displays as well as the configuration memory in the UE403 muting switching amplifier

- The broad scanning range spectrum allows the device to be standardized for the relevant application
- Resilient and rugged design for high plant availability, even under exceptional ambient conditions
- Mounting grooves on three housing sides ensure greater mounting flexibility and facilitate integration with the machine
- Customer-friendly interfaces and status indicators facilitate commissioning and maintenance



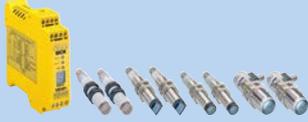
→ www.sick.com/M4000_Advanced



→ www.sick.com/M4000_Advanced_A_P



→ www.sick.com/M4000_Area

	 <p>WSU/WEU26-3</p>	 <p>L4000 systems</p>	 <p>L41</p>
	<p>Rugged design for high durability under extreme environmental conditions</p>	<p>Complete system that is highly reliable and offers fast response times</p>	<p>Universal use up to type 4, with safe control solutions from SICK</p>

Technical data overview				
Scanning range	70 m	60 m	60 m	
Light sender/light type	Infrared light	LED / visible red light	LED / visible red light	
Size	50 mm x 156 mm x 116 mm	M18 / M30	M18 / M30	
Supply voltage	+24 V DC	+24 V DC	+24 V DC	
Enclosure rating	IP67 (EN 60529)	IP67 (EN 60529)	IP67 (EN 60529)	
Ambient operating temperature	-25 °C ... +55 °C	-20 °C ... +55 °C	-40 °C ... +55 °C	
Type	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	Type 4 (IEC 61496-1)	
Performance level	PL e (ISO 13849)	PL e (ISO 13849)	PL e (ISO 13849)	

At a glance				
	<ul style="list-style-type: none"> Extremely rugged for high plant availability Well-suited to extreme ambient conditions such as heat, cold or moisture Fewer variants thanks to standard sender Easy electrical integration using cable gland and relay outputs 	<ul style="list-style-type: none"> Easy integration due to small, compact designs with maximum scanning range Flexible device integration makes it possible to set up individual access protections Fast response times reduce the safety distances and save production space Well-suited to extreme ambient conditions such as heat, cold or moisture Simple configuration without additional auxiliary means, only with the help of jumpers 	<ul style="list-style-type: none"> Simple integration thanks to small, compact designs Cost savings due to the ability to directly connect to a safety control Flexible device integration makes it possible to set up individual access protections Well-suited to extreme ambient conditions such as heat, cold or moisture 	
<p>Detailed information</p>	<p>→ www.sick.com/WSU_WEU26-3</p>	<p>→ www.sick.com/L4000_Systeme</p>	<p>→ www.sick.com/L41</p>	



L21

Cylindrical design for safety applications up to type 2



L25

Flexible machine safeguarding for type 2 applications



L26

Flexible machine safeguarding for type 2 applications



L29

Small design for optimal integration into safety applications up to type 2

60 m	20 m	50 m	6 m
LED / visible red light	LED / visible red light	LED / visible red light	LED / visible red light
M18 / M30	20 mm x 42 mm x 55.4 mm	26.4 mm x 48.1 mm x 82.2 mm	12.2 mm x 50 mm x 23.6 mm
+24 V DC	+24 V DC	+24 V DC	+24 V DC
IP67 (EN 60529)	IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP66, IP67 (IEC 60529) IP69K (ISO 20653)	IP65, IP66, IP67 (IEC 60529) IP69K (ISO 20653)
-40 °C ... +55 °C	-40 °C ... +60 °C	-40 °C ... +60 °C	-40 °C ... +60 °C
Type 2 (IEC 61496-1) PL c (ISO 13849)	Type 2 (IEC 61496-1) PL c (ISO 13849)	Type 2 (IEC 61496-1) PL c (ISO 13849)	Type 2 (IEC 61496-1) PL c (ISO 13849)

- Easy integration due to small, compact designs with maximum scanning range
- Cost savings due to the ability to directly connect to a safety control
- Flexible device integration makes it possible to set up individual access protections
- Well-suited to extreme ambient conditions such as heat, cold or moisture



→ www.sick.com/L21

- Quick and precise alignment of the sender and the receiver thanks to the PinPoint LED in combination with BluePilot
- Increased productivity: Smart Sensor diagnostic functions always available via IO-Link
- Cost efficiency: IP66, IP67 and IP69K guarantee a long service life. The ultra rugged VISTAL® housing withstands extreme environmental influences with ease
- Flexibility: the large scanning range of up to 20 m (L25) or 50 m (L26) enables more application possibilities
- High availability: IR light and red light variants prevent interference and a superimposition of sensor signals
- Easy order processing thanks to the standardized connection and mounting systems



→ www.sick.com/L25

- Easy to integrate into applications due to very small dimensions
- Easy to install and reliable in operation thanks to the rugged VISTAL® housing
- Very good material resistance tested according to the Ecolab test method
- Well-suited to extreme ambient conditions such as heat, cold or moisture
- Quick and simple alignment thanks to a very highly visible PinPoint LED light spot
- Multiple mounting options with M3 slotted hole bracket



→ www.sick.com/L29

			
	Mirror columns with continuous mirror	Mirror columns with individual mirrors	
	Intelligent multi-sided protection of the area around hazardous points	Intelligent multi-sided protection of the area around hazardous points	

Technical data overview

Type	Mirror columns with continuous mirror	Mirror columns with up to 4 adjustable individual mirrors
Suitable for	Safety light curtains Multiple light beam safety devices	Multiple light beam safety devices
Suitable for protective field height	≤ 2,100 mm	-
Suitable for number of beams	Any	2 / 3 / 4
Suitable for beam separation	Any	300 mm ... 600 mm
Mirror length	1,082 mm ... 2,132 mm	90 mm
Mirror width	125 mm	100 mm
Column height	1,281.5 mm ... 2,419 mm	985 mm / 1,185 mm / 1,285 mm

At a glance

- Multi-sided protection using deflector mirrors eliminates additional active devices, which reduces cabling effort and costs
- Increased productivity due to unhindered access to the system while maintaining protection



- Multi-sided protection using deflector mirrors eliminates additional active devices, which reduces cabling effort and costs
- Increased productivity due to unhindered access to the system while maintaining protection
- Separate adjustable mirrors for simpler and more convenient commissioning



Detailed information

→ www.sick.com/mirror_columns_with_protective_field_height_mirror

→ www.sick.com/mirror_columns_with_separate_mirrors



Device columns with external grooves

Intelligent protection of access routes and areas



Device columns for outdoor applications

Heated front screen for clear view

Device columns with two externally located mounting grooves

Safety light curtains
Multiple light beam safety devices
≤ 2,100 mm

Any

Any

-

-

985 mm ... 2,420 mm

Device columns with heated front screen for outdoor applications

Multiple light beam safety devices

-

3 / 2

400 mm / 500 mm

-

-

1,223 mm

- Sturdy, torsion-free device protection prevents damage and reduces costs
- Simple, convenient installation of additional accessories due to the external mounting grooves on the device column
- Increased productivity due to unhindered access to the system while maintaining protection



→ www.sick.com/device_columns_with_external_grooves

- Sturdy, torsion-free device protection prevents damage and reduces costs
- Increased productivity due to unhindered access to the system while maintaining protection



→ www.sick.com/device_columns_for_outdoor_use

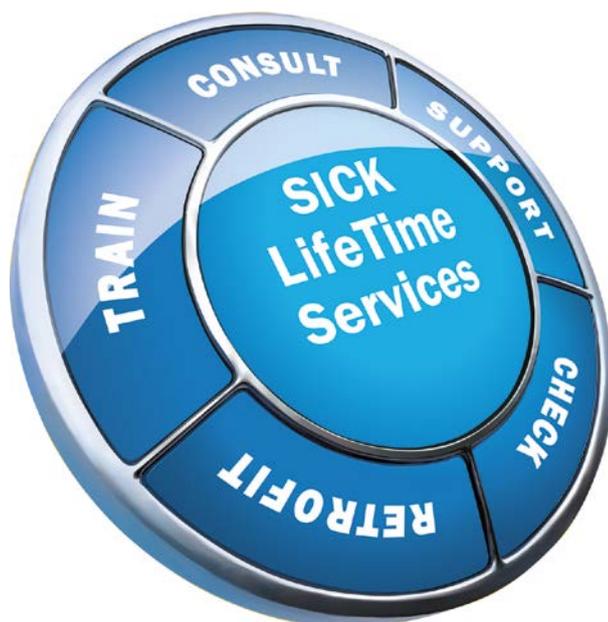
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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 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.

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Detailed addresses and further locations → www.sick.com