Safety Light Curtains

Integrated and flexible solutions for safety applications
The C4000 and miniTwin: The Next Generation of Light Curtains

The SICK safety light curtain family safeguards personnel and machines in automated production areas and optimizes work processes. SICK safety light curtains can be used vertically, horizontally or diagonally for safeguarding areas with potential hazards with workers or equipment. With a flexible design to fit all applications, SICK safety light curtains are simple to commission, maintain and very easy to use.

Efficient and Cost-effective Solutions

- **Flexibility.** There is a SICK safety light curtain solution for every application, from the simplest to the most advanced.

- **Simplified machine integration and lower wiring cost.** Models available with standard M12 connectors, DIP switches and software configuration.

- **Advanced functions.** Self-diagnostics, E-stop, and reset controls all integrated into the light curtain on some models.

- **Universal interface.** SICK safety light curtains work with a variety of interface and control architectures: from relay and safe PLC control to safety fieldbus.
Benefits

Safety and Availability

• **State-of-the-art technology.** Type 4 third-party certification in accordance with ANSI/UL/IEC/EN 61496-1, -2. The C4000 models are the first safety light curtains that are also third-party certified to IEC 61508.

• **Maximum availability.** Shorter downtime through local diagnostic indication (seven-segment display on C4000s). Beam coding minimizes optical interference from machines in close proximity.

• **Seven-segment display on C4000s.** Alphanumeric display panel can rotate 180°.

• **Fastest response time in the industry.** Improved safety and productivity. Shorter safety distances, less floor space.

• **Complete suite of advanced functions.** Comprehensive and flexible blanking configurations, reduced resolution, and muting through Flexi safety controllers.

• **Flexibility.** With resolutions of 14 to 40 mm, and protective heights from 120 to 1800 mm, the system can be applied to most safety applications.

Engineering and Maintenance

• **Rapid installation and commissioning.** Software, DIP switch, and automatic configuration available depending on model. Simplified alignment via signal strength indicators. Preconfigured versions available so that no software is required.

• **Easy integration, low wiring cost.** Cascadeable design, up to 3 linked protective fields are possible with one pair of output signals.

• **Simplified machine integration.** Small, compact design. No additional control unit required. Advanced functions, self-diagnostics, E-stop and reset controls are all integrated in some models.

• **Shorter refitting times.** Selectable user-modes (with UE 402) reduce re-tooling times and shorten downtime during operating mode changes. “Real-time” user-mode changes.

• **Teach-in blanking.** Simple teach-in at the press of a button to shorten tool change times and enable greater availability with the advanced version.

• **Simple mounting and adjustment.** Corner mirrors, device columns, and protective screens reduce repair and maintenance cost.

Operational

• **All-inclusive solution.** Fewer parts to stock.

• **Universal interface.** The same light curtain can be used with various interface and control architectures: from relay and safe PLC control to safety fieldbus.

• **Cost-effective.** Integrated safety platform.

• **Common software platform.** Includes scanners, bus nodes, etc.
SICK Safety Light Curtain Family At a Glance

SICK Safety Light Curtain Features

C4000 Select
- Integrated laser and alignment bar graph system
- DIP switch configuration
- Condensed “what-to-do” local diagnostics
- Cascadable with an S300/S3000 safety laser scanner and other C4000 select safety light curtains
- Optional integrated LED status indicator for 360 degree viewing

miniTwin
- Smallest safety light curtain on the market
- End-to-end protective field coverage with no “dead zone”
- Each stick is both sender and receiver

C4000 Standard/Advanced
- Complete self-diagnostics
- Integrated control capabilities
- Programmable configurations via CDS software
- Compatible with a range of interfaces

C4000 Advanced
- Most advanced light curtain solution
- Complete blanking and reduced resolution
- Teach-in blanking capabilities

C4000 Palletizer
- Innovative pattern recognition technology eliminates need for muting
- Self-learning or manual object size definition and tolerance
- Detect multiple small or large objects
- Can be positioned horizontally or at an angle

C4000 ECO/Basic Plus/Micro
- Simple point-of-operation safeguarding
- Most economical solution for tasks to Safety Category 4

SICK Safety Light Curtain Product Selection

<table>
<thead>
<tr>
<th>Available Resolutions (mm)</th>
<th>14, 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Protective Heights (mm)</td>
<td>300...1800</td>
</tr>
<tr>
<td>Maximum Distance Between Sender and Receiver Units (Range)</td>
<td></td>
</tr>
<tr>
<td>14 mm Resolution (m)</td>
<td>5</td>
</tr>
<tr>
<td>20 mm Resolution (m)</td>
<td>NA</td>
</tr>
<tr>
<td>30 mm Resolution (m)</td>
<td>6</td>
</tr>
<tr>
<td>40 mm Resolution (m)</td>
<td>NA</td>
</tr>
<tr>
<td>Housing Cross-Sectional Dimensions (mm)</td>
<td>40 x 48</td>
</tr>
<tr>
<td>Type Designation per 61496 (ANSI/UL/IEC)</td>
<td>Type 4</td>
</tr>
<tr>
<td>Safety Integrity Level (SIL) per EN 61508</td>
<td>SIL 3</td>
</tr>
<tr>
<td>Approvals</td>
<td>NA</td>
</tr>
<tr>
<td>SICK Configuration and Diagnostic Software (provided at no charge when available)</td>
<td>Yes**</td>
</tr>
<tr>
<td>Seven-segment Diagnostic Display</td>
<td>Yes**</td>
</tr>
<tr>
<td>Extern Device Monitoring</td>
<td>Yes**</td>
</tr>
<tr>
<td>Restart Interlock</td>
<td></td>
</tr>
<tr>
<td>Automatic Restart</td>
<td>Yes**</td>
</tr>
<tr>
<td>Manual Restart</td>
<td>Yes**</td>
</tr>
<tr>
<td>Restart Required Output</td>
<td>Yes**</td>
</tr>
<tr>
<td>Cascadability</td>
<td></td>
</tr>
<tr>
<td>Stand Alone</td>
<td>Yes</td>
</tr>
<tr>
<td>Host-Guest Configurations</td>
<td>NA</td>
</tr>
<tr>
<td>Host-Middle Guest-End Guest Configurations</td>
<td>NA</td>
</tr>
<tr>
<td>Direct Connection Emergency Stop/Interlock</td>
<td>NA</td>
</tr>
<tr>
<td>Application Diagnostic Output (only one)</td>
<td>NA</td>
</tr>
<tr>
<td>Emergency Stop or Interlock Status</td>
<td>NA</td>
</tr>
<tr>
<td>Front Lens Contamination Detection</td>
<td>NA</td>
</tr>
<tr>
<td>OSSD* Status</td>
<td>NA</td>
</tr>
<tr>
<td>Beam Coding</td>
<td>NA</td>
</tr>
<tr>
<td>Blanking Functionality (up to four areas)</td>
<td>NA</td>
</tr>
<tr>
<td>Fixed Blanking</td>
<td>NA</td>
</tr>
<tr>
<td>Floating Blanking</td>
<td>NA</td>
</tr>
<tr>
<td>Reduced Resolution</td>
<td>NA</td>
</tr>
<tr>
<td>Teach-in Functionality</td>
<td>NA</td>
</tr>
<tr>
<td>Dynamic Floating Blanking</td>
<td>NA</td>
</tr>
<tr>
<td>Connectivity Options (Sold Separately)</td>
<td>NA</td>
</tr>
<tr>
<td>UE 10 Series Safety Relay Modules</td>
<td>NA</td>
</tr>
<tr>
<td>UE 48 Series Safety Module</td>
<td>Yes</td>
</tr>
<tr>
<td>UE 100 Series Intelligent Interfaces</td>
<td>NA</td>
</tr>
<tr>
<td>UE 1000 Safety Bus Interfaces</td>
<td>NA</td>
</tr>
</tbody>
</table>

* OSSD: Output Signal Switching Device
** With UE48 or UE410 Flexi series
*** With S3000/S300 Scanner or C4000 Select
<table>
<thead>
<tr>
<th>C4000 Basic Plus</th>
<th>C4000 Micro</th>
<th>C4000 Standard</th>
<th>C4000 Select</th>
<th>C4000 Advanced</th>
<th>C4000 Entry/Exit</th>
<th>C4000 Palletizer Advanced</th>
<th>miniTwin</th>
</tr>
</thead>
<tbody>
<tr>
<td>14, 30</td>
<td>14, 30</td>
<td>14, 20, 30, 40</td>
<td>14, 30</td>
<td>14, 20, 30, 40</td>
<td>20</td>
<td>30</td>
<td>14, 24, 34</td>
</tr>
<tr>
<td>300...1800</td>
<td>150...1200</td>
<td>300...1800</td>
<td>300...1800</td>
<td>300...1800</td>
<td>900...1500</td>
<td>750...1800</td>
<td>120...1200</td>
</tr>
<tr>
<td>40 x 48</td>
<td>25.8 x 33.5</td>
<td>40 x 48</td>
<td>52 x 55.5</td>
<td>40 x 48</td>
<td>40 x 48</td>
<td>40 x 48</td>
<td>32 x 15</td>
</tr>
<tr>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
</tr>
<tr>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
<td>SIL 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OSSD:</strong> Output Signal Switching Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
</tr>
<tr>
<td><strong>With UE48 or UE410 Flexi series</strong></td>
</tr>
<tr>
<td><strong>With S3000/S300 Scanner or C4000 Select</strong></td>
</tr>
</tbody>
</table>

**NOTE:** Not all features can be combined. Refer to Installation and Operation Instructions for additional detail. When an Emergency Stop or Interlock is connected to an approved C4000 version, External Muting of the C4000 is NOT ALLOWED.
SICK Safety Light Curtain Application Examples:
Automatic assembly or handling systems

Safeguard against hazards in a robot cell

Safe automatic entry/exit of products

Flexibility to fit all safety applications
Safety Solutions with Integrated Controls and Diagnostics

**SICK Safety Light Curtains Benefits**

- Monitoring of safety outputs along entire cable length through the semi-conductor outputs of the safety light curtain
- Reduced installation time due to signal strength indicators and alignment aides
- Uniform diagnostics and configuration
- Less control cabinet space required
- Lower wiring costs
- Easier engineering, fewer components are required
- Reduced inventory costs – fewer parts to stock

**Customary savings per machine — minimum $200**

**Savings per 100 machines — minimum $20,000**

Direct connection to control elements (e.g., E-stop, Reset, Interlock)

Up to 30% space saved by reducing the need for supplementary safety relay evaluation units

Lower wiring costs
SICK at a glance

Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.

Unique product range

- Non-contact detecting, counting, classifying and positioning of any type of object
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids

Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

Worldwide presence with subsidiaries in the following countries:

- Australia
- Belgium/Luxembourg
- Brasil
- Ceská Republika
- China
- Danmark
- Deutschland
- España
- France
- Great Britain
- India
- Israel
- Italia

Japan
Nederland
Norge
Österreich
Polska
Republic of Korea
România
Russia
Schweiz
Singapore
South Africa
Suomi
Sverige
Taiwan
Türkiye
United Arab Emirates
USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com