

## Technical data sheet Safety light curtain receiver

Part no.: 68023909

MLC520R90-900MG



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## Technical data

### Basic data

|             |                                         |
|-------------|-----------------------------------------|
| Series      | MLC 500                                 |
| Device type | Receiver                                |
| Cascading   | Middle Guest                            |
| Contains    | 2x BT-NC sliding block                  |
| Application | Access guarding<br>Danger zone guarding |

### Characteristic parameters

|                             |                          |
|-----------------------------|--------------------------|
| Type                        | 4, IEC/EN IEC 61496      |
| SIL                         | 3, IEC 61508             |
| SIL                         | 3, IEC/EN IEC 62061      |
| Performance Level (PL)      | e, EN ISO 13849-1        |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1 |
| Category                    | 4, EN ISO 13849          |

### Protective field data

|                         |        |
|-------------------------|--------|
| Resolution              | 90 mm  |
| Protective field height | 900 mm |

### Optical data

|                 |             |
|-----------------|-------------|
| Number of beams | 12 Piece(s) |
|-----------------|-------------|

### Time behavior

|               |                                                         |
|---------------|---------------------------------------------------------|
| Response time | 3 ms, plus response times of the Host/<br>Guest devices |
|---------------|---------------------------------------------------------|

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
|-----------------------|------------|

#### Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Cascade, Host In     |
| Type of connection | Cable with connector |
| Cable length       | 330 mm               |
| Sheathing material | PUR                  |
| Thread size        | M12                  |
| Material           | Plastic              |
| No. of pins        | 8 -pin               |

#### Connection 2

|                    |                      |
|--------------------|----------------------|
| Function           | Cascade, Guest Out   |
| Type of connection | Cable with connector |
| Cable length       | 330 mm               |
| Sheathing material | PUR                  |
| Thread size        | M12                  |
| Material           | Plastic              |
| No. of pins        | 8 -pin               |

### Mechanical data

|                       |                                                      |
|-----------------------|------------------------------------------------------|
| Dimension (W x H x L) | 29 mm x 914 mm x 53 mm                               |
| Housing material      | Metal                                                |
| Metal housing         | Aluminum                                             |
| Lens cover material   | Plastic / PMMA                                       |
| Material of end caps  | Diecast zinc                                         |
| Net weight            | 1,098 g                                              |
| Housing color         | Yellow, RAL 1021                                     |
| Type of fastening     | Groove mounting<br>Mounting brackets<br>Swivel mount |

### Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | 0 ... 55 °C   |
| Ambient temperature, storage       | -30 ... 70 °C |
| Relative humidity (non-condensing) | 0 ... 95 %    |

### Certifications

|                      |                                     |
|----------------------|-------------------------------------|
| Degree of protection | IP 65                               |
| Protection class     | III                                 |
| Approvals            | c TÜV NRTL US<br>c UL US<br>TÜV Süd |
| Vibration resistance | 50 m/s <sup>2</sup>                 |
| Shock resistance     | 100 m/s <sup>2</sup>                |
| US patents           | US 6,418,546 B                      |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27272704 |
| ECLASS 8.0            | 27272704 |
| ECLASS 9.0            | 27272704 |
| ECLASS 10.0           | 27272704 |
| ECLASS 11.0           | 27272704 |
| ECLASS 12.0           | 27272704 |
| ECLASS 13.0           | 27272704 |
| ECLASS 14.0           | 27272704 |
| ECLASS 15.0           | 27272704 |
| ECLASS 16.0           | 27272704 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
| ETIM 10.0             | EC002549 |
| UNSPSC 26.08          | 46171620 |

## Dimensioned drawings

All dimensions in millimeters

Calculation of the effective protective field height  $H_{PFE} = H_{PFN} + B + C$



$H_{PFE}$  Effective protective field height = 990 mm

$H_{PFN}$  Nominal protective field height = 900 mm

A Total height = 914 mm

B 50 mm

C 40 mm

R Effective protective field height  $H_{PFE}$  goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

## Electrical connection

### Connection 1

|                    |                               |
|--------------------|-------------------------------|
| Function           | Cascade, Host In              |
| Type of connection | Cable with connector          |
| Cable length       | 330 mm                        |
| Sheathing material | PUR                           |
| Cable color        | Black                         |
| Type of stranding  | Pair stranding (twisted pair) |
| Wire cross section | 0.14 mm <sup>2</sup>          |
| Thread size        | M12                           |
| Type               | Male                          |
| Material           | Plastic                       |
| No. of pins        | 8 -pin                        |
| Encoding           | A-coded                       |

### Connection 2


|                    |                      |
|--------------------|----------------------|
| Function           | Cascade, Guest Out   |
| Type of connection | Cable with connector |
| Cable length       | 330 mm               |
| Sheathing material | PUR                  |
| Cable color        | Black                |
| Wire cross section | 0.14 mm <sup>2</sup> |

## Electrical connection

### Connection 2

|                   |                               |
|-------------------|-------------------------------|
| Type of stranding | Pair stranding (twisted pair) |
| Thread size       | M12                           |
| Type              | Female                        |
| Material          | Plastic                       |
| No. of pins       | 8 -pin                        |
| Encoding          | A-coded                       |

## Suitable transmitters

|                                                                                   | Part no. | Designation     | Article                          | Description                                                                                                                                                |
|-----------------------------------------------------------------------------------|----------|-----------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 68022909 | MLC500T90-900MG | Safety light curtain transmitter | Resolution: 90 mm<br>Protective field height: 900 mm<br>Operating range: 0 ... 20 m<br>Connection: Cable with connector, M12, Plastic, 8 -pin, 330 mm, PUR |

## Part number code

Part designation: **MLC**xyy-za-hhhh-e-i-ooo

**MLC** Safety light curtain

|             |                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>x</b>    | <b>Series</b><br>3: MLC 300<br>5: MLC 500                                                                                                                                                                                                                                                                                             |
| <b>yy</b>   | <b>Function classes</b><br>00: transmitter<br>01: transmitter (AIDA)<br>02: transmitter with test input<br>10: basic receiver - automatic restart<br>11: basic receiver - automatic restart (AIDA)<br>20: standard receiver - EDM/RES selectable<br>30: Extended receiver blanking/muting or gating<br>35: Extended receiver – Gating |
| <b>z</b>    | <b>Device type</b><br>T: transmitter<br>R: receiver                                                                                                                                                                                                                                                                                   |
| <b>a</b>    | <b>Resolution</b><br>14: 14 mm<br>20: 20 mm<br>30: 30 mm<br>40: 40 mm<br>90: 90 mm                                                                                                                                                                                                                                                    |
| <b>hhhh</b> | <b>Protective field height</b><br>150 ... 3000: from 150 mm to 3000 mm                                                                                                                                                                                                                                                                |
| <b>e</b>    | <b>Host/Guest (optional)</b><br>H: Host<br>MG: Middle Guest<br>G: Guest                                                                                                                                                                                                                                                               |
| <b>i</b>    | <b>Interface (optional)</b><br>/A: AS-i                                                                                                                                                                                                                                                                                               |
| <b>ooo</b>  | <b>Option</b><br>/V: high Vibration-proof<br>EX2: explosion protection (zones 2 + 22)<br>SPG: Smart Process Gating<br>SPG RR: Smart Process Gating – Reduced resolution                                                                                                                                                               |

### Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://www.leuze.com).

## Notes

|                              |                                                                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Observe intended use!</b> |                                                                                                                                                                                           |
|                              | <ul style="list-style-type: none"> <li>↪ The product may only be put into operation by competent persons.</li> <li>↪ Only use the product in accordance with its intended use.</li> </ul> |

## Accessories

### Connection technology - Interconnection cables

|  | Part no. | Designation      | Article               | Description                                                                                                                                                                                                                                  |
|--|----------|------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 429278   | CB-M12-2000E-8TP | Interconnection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 8 -pin<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |

### Mounting technology - Mounting brackets

|  | Part no. | Designation | Article             | Description                                                |
|--|----------|-------------|---------------------|------------------------------------------------------------|
|  | 429006   | BT-2L-HG    | Mounting device set | Mounting bracket, at device: Screw type<br>Material: Metal |

### Mounting technology - Swivel mounts

|  | Part no. | Designation | Article              | Description                                                                                                                                                                                                                                   |
|--|----------|-------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 429395   | BT-2HF-G    | Mounting bracket set | Contains: 2x BT-HF swivel mount, 2 cylinders for mounting on the light curtain<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

## Services

|  | Part no. | Designation | Article           | Description                                                                                                                                                                                                                                                                                                                                                                    |
|--|----------|-------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | S981050  | CS40-I-140  | Safety inspection | Details: Checking of a safety light barrier application in accordance with current standards and guidelines. Inclusion of the device and machine data in a database, production of a test log per application.<br>Conditions: It must be possible to stop the machine, support provided by customer's employees and access to the machine for Leuze employees must be ensured. |

## Accessories

|                                                                                  | Part no. | Designation | Article          | Description                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------|----------|-------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | S981046  | CS40-S-140  | Start-up support | Details: For safety devices including stopping time measurement and initial inspection.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. |

| Note                                                                             |                                                                                                                           |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|  | A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page. |