



Figure can vary

**Part no.: 50139554**  
**PRK25C.D/6G-200-M8**  
**Polarized retro-reflective photoelectric sensor**



## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
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## Technical data

| <b>Basic data</b>                   |   |
|-------------------------------------|---|
| Series                              | 25C   |
| Operating principle                 | Reflection principle                                    |
| Application                         | Detection of stretch-wrapped objects                    |
| <b>Optical data</b>                 |   |
| Operating range                     | Guaranteed operating range                              |
| Operating range                     | 0.05 ... 8 m, With reflector TK(S) 100x100              |
| Operating range limit               | Typical operating range                                 |
| Operating range limit               | 0.05 ... 10 m, With reflector TK(S) 100x100             |
| Light source                        | LED, Red  |
| LED light wavelength                | 640 nm  |
| LED group                           | Exempt group (in acc. with EN 62471)                    |
| Transmitted-signal shape            | Pulsed  |
| <b>Electrical data</b>              |   |
| Protective circuit                  | Polarity reversal protection<br>Short circuit protected |
| <b>Performance data</b>             |   |
| Supply voltage $U_B$                | 10 ... 30 V, DC, Incl. residual ripple                  |
| Residual ripple                     | 0 ... 15 %, From $U_B$                                  |
| Open-circuit current                | 0 ... 20 mA   |
| <b>Outputs</b>                      |   |
| Number of digital switching outputs | 2 Piece(s)  |
| <b>Switching outputs</b>            |   |
| Voltage type                        | DC  |
| Switching current, max.             | 100 mA  |
| Switching voltage                   | high: $\geq(U_B-2.5V)$<br>low: $\leq 2.5V$              |
| <b>Switching output 1</b>           |   |
| Assignment                          | Connection 1, pin 4                                     |
| Switching element                   | Transistor, Push-pull                                   |
| Switching principle                 | Light switching (PNP)/dark switching (NPN)              |
| <b>Switching output 2</b>           |   |
| Assignment                          | Connection 1, pin 2                                     |
| Switching element                   | Transistor, Push-pull                                   |
| Switching principle                 | Dark switching (PNP)/light switching (NPN)              |
| <b>Timing</b>                       |   |
| Switching frequency                 | 1,500 Hz  |
| Response time                       | 0.33 ms   |
| Readiness delay                     | 300 ms  |
| <b>Connection</b>                   |   |

**Connection 1**

|                    |                              |
|--------------------|------------------------------|
| Type of connection | Cable with connector         |
| Function           | Voltage supply<br>Signal OUT |
| Cable length       | 200 mm                       |
| Sheathing material | PUR                          |
| Cable color        | Black                        |
| Wire cross section | 0.2 mm <sup>2</sup>          |
| Thread size        | M8                           |
| Type               | Male                         |
| Material           | PUR                          |
| No. of pins        | 4 -pin                       |

**Mechanical data**

|                            |  |
|----------------------------|--|
| Dimension (W x H x L)      | 15 mm x 42.7 mm x 30 mm  |
| Housing material           | Plastic, ABS   |
| Lens cover material        | Plastic  |
| Net weight                 | 3 g  |
| Housing color              | Red  |
| Type of fastening          | Via optional mounting device<br>Through-hole mounting with M4 thread |
| Compatibility of materials | ECOLAB   |

**Operation and display**

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

**Environmental data**

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

**Certifications**

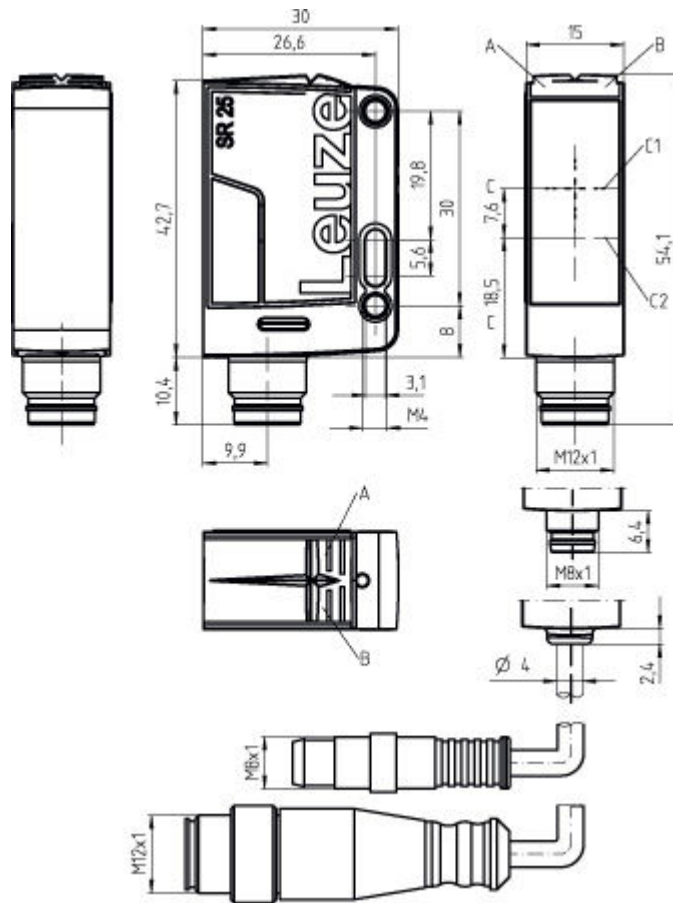
|                      |                 |
|----------------------|-----------------|
| Degree of protection | IP 67<br>IP 69K |
| Protection class     | III             |
| Certifications       | c UL US         |
| Standards applied    | IEC 60947-5-2   |

**Classification**

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27270902 |
| eCl@ss 9.0            | 27270902 |
| ETIM 5.0              | EC002717 |
| ETIM 6.0              | EC002717 |

## Dimensioned drawings

All dimensions in millimeters

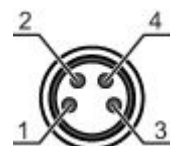


- A Green LED
- B Yellow LED
- C Optical axis
- C1 Receiver
- C2 Transmitter

## Electrical connection

| Connection 1       |                              |
|--------------------|------------------------------|
| Type of connection | Cable with connector         |
| Function           | Voltage supply<br>Signal OUT |
| Cable length       | 200 mm                       |
| Sheathing material | PUR                          |
| Cable color        | Black                        |
| Wire cross section | 0.2 mm <sup>2</sup>          |
| Thread size        | M8                           |
| Type               | Male                         |
| Material           | PUR                          |
| No. of pins        | 4 -pin                       |

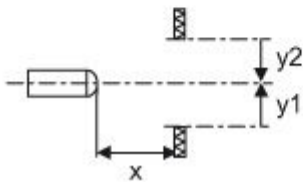
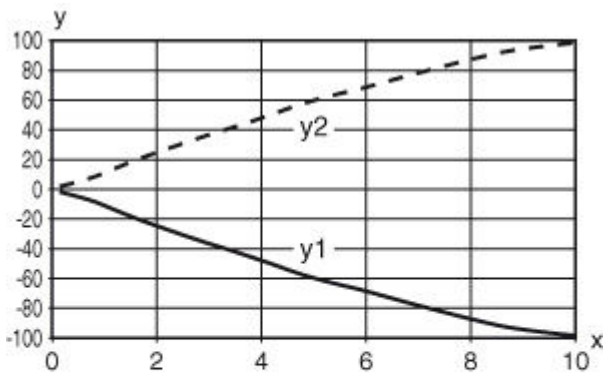
| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | OUT 2          |
| 3   | GND            |



| Pin | Pin assignment |
|-----|----------------|
| 4   | OUT 1          |

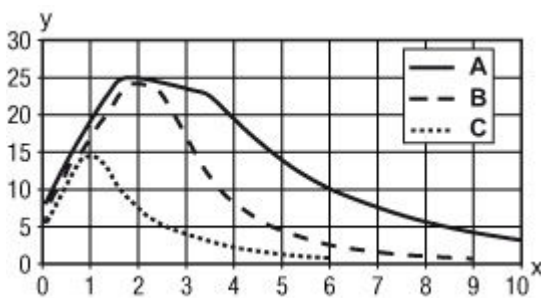
## Diagrams

Typ. response behavior (TKS100x100)



x Distance [m]  
y Misalignment [mm]

Typ. function reserve



x Distance [m]  
y Function reserve  
A TKS 100x100  
B TKS 40x60  
C TKS 20x40

## Operation and display


### LEDs

| LED | Display                  | Meaning                              |
|-----|--------------------------|--------------------------------------|
| 1   | Green, continuous light  | Operational readiness                |
| 2   | Yellow, continuous light | Light path free                      |
|     | Yellow, flashing         | Light path free, no function reserve |

## Reflectors & reflective tapes

|   | Part no. | Designation     | Operating range/<br>Operating range limit | Description  |
|---|----------|-----------------|---|--|
|    | 50117583 | MTKS 50x50.1    | 0.05 ... 5 m<br>0.05 ... 6 m              | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |
|   | 50106119 | REF 4-A-100x100 | 0.05 ... 2 m<br>0.05 ... 2.5 m            | Design: Rectangular<br>Reflective surface: 100 mm x 100 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive  |
|  | 50110192 | REF 6-A-50x50   | 0.05 ... 3.5 m<br>0.05 ... 4 m            | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 0.3 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive   |
|  | 50003192 | TK 100x100      | 0.05 ... 8 m<br>0.05 ... 10 m             | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Adhesive                          |
|  | 50022816 | TKS 100X100     | 0.05 ... 8 m<br>0.05 ... 10 m             | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |
|  | 50081283 | TKS 20X40       | 0.05 ... 2.5 m<br>0.05 ... 3 m            | Design: Rectangular<br>Reflective surface: 16 mm x 38 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

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|   | Part no. | Designation | Operating range/<br>Operating range limit | Description  |
|---|----------|-------------|---|--|
|  | 50040820 | TKS 40X60   | 0.05 ... 4 m<br>0.05 ... 5 m              | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

## Part number code

Part designation: **AAA25C d EE-f.GGH/IJ-K**

|        |   |
|--------|---|
| AAA25C | <b>Operating principle / construction:</b><br>HT25C: diffuse reflection sensor with background suppression<br>PRK25C: retro-reflective photoelectric sensor with polarization filter<br>LS25C: throughbeam photoelectric sensor transmitter<br>LE25C: throughbeam photoelectric sensor receiver   |
| d      | <b>Light type:</b><br>n/a: red light<br>l: infrared light   |
| EE     | <b>Light source:</b><br>n/a: LED<br>L1: laser class 1<br>L2: laser class 2  |
| f      | <b>Pre-set range (optional):</b><br>n/a: operating range acc. to data sheet<br>XXXX: pre-set range [mm]   |
| GG     | <b>Equipment:</b><br>A: autocollimation principle (single lens)<br>S: small light spot<br>D: detection of stretch-wrapped objects<br>X: extended model<br>HF: suppression of HF illumination (LED)<br>XL: extra long light spot<br>T: autocollimation principle (single lens) for highly transparent bottles without tracking<br>TT: autocollimation principle (single lens) for highly transparent bottles with tracking |
| H      | <b>Operating range adjustment:</b><br>1: 270° potentiometer<br>2: multiturn potentiometer<br>3: teach-in via button   |
| i      | <b>Switching output/function OUT 1/IN: Pin 4 or black conductor:</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>X: pin not used<br>8: activation input (activation with high signal)  |
| J      | <b>Switching output / function OUT 2/IN: pin 2 or white conductor:</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>W: warning output<br>X: pin not used  |
| K      | <b>Electrical connection:</b><br>n/a: cable, PVC, standard length 2000 mm, 4-wire<br>200-M12: cable, PVC, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M8: M8 connector, 4-pin (plug)<br>M12: M12 connector, 4-pin (plug)<br>200-M8: cable, PVC, length 200 mm with M8 connector, 4-pin, axial (plug)   |

### Note

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

## Notes

### Observe intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.






### For UL applications:

- Only for use in "class 2" circuits
- These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)








- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Sum of the output currents for both outputs 100 mA

## Accessories



### Connection technology - Connection cables

|   | Part no. | Designation       | Article          | Description  |
|---|----------|-------------------|------------------|--|
|  | 50130854 | KD U-M8-4A-P1-020 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PUR  |
|  | 50130856 | KD U-M8-4A-P1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PUR  |
|  | 50130857 | KD U-M8-4A-P1-100 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 10,000 mm<br>Sheathing material: PUR |
|  | 50130848 | KD U-M8-4A-V1-020 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PVC  |
|  | 50130850 | KD U-M8-4A-V1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |

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|   | Part no. | Designation       | Article          | Description   |
|---|----------|-------------------|------------------|---|
|    | 50130851 | KD U-M8-4A-V1-100 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 10,000 mm<br>Sheathing material: PVC  |
|    | 50130873 | KD U-M8-4W-P1-020 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PUR  |
|    | 50130875 | KD U-M8-4W-P1-050 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PUR  |
|    | 50130876 | KD U-M8-4W-P1-100 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 10,000 mm<br>Sheathing material: PUR |
|  | 50130869 | KD U-M8-4W-V1-020 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PVC  |
|  | 50130871 | KD U-M8-4W-V1-050 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |
|  | 50130872 | KD U-M8-4W-V1-100 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 10,000 mm<br>Sheathing material: PVC |

**Connection technology - Interconnection cables**






|   | Part no. | Designation              | Article               | Description   |
|---|----------|--------------------------|-----------------------|---|
|  | 50130914 | KDS U-M8-4A-M8-4A-P1-006 | Interconnection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Connector, M8, Axial, Male, 4 -pin<br>Shielded: No<br>Cable length: 600 mm<br>Sheathing material: PUR   |
|  | 50130916 | KDS U-M8-4A-M8-4A-P1-020 | Interconnection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connection 2: Connector, M8, Axial, Male, 4 -pin<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PUR |

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## Mounting technology - Mounting brackets

|   | Part no. | Designation   | Article             | Description   |
|---|----------|---------------|---------------------|---|
|  | 50124651 | BT 205M-10SET | Mounting device set | Contains: 10x<br>Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Rigid<br>Material: Metal |
|  | 50118543 | BT 300M.5     | Mounting bracket    | Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Adjustable<br>Material: Stainless steel   |




## Mounting technology - Rod mounts

|   | Part no. | Designation  | Article         | Description   |
|---|----------|--------------|-----------------|---|
|   | 50117830 | BTP 200M-D10 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 10 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|  | 50117829 | BTP 200M-D12 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|  | 50117828 | BTP 200M-D14 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 14 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|  | 50117256 | BTU 200M-D10 | Mounting system | Contains: 2x M3 x 18 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 10 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 18 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50117254 | BTU 200M-D14 | Mounting system | Contains: 2x M3 x 18 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 14 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |


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|   | Part no. | Designation  | Article         | Description   |
|---|----------|--------------|-----------------|---|
|  | 50117252 | BTU 300M-D12 | Mounting system | Contains: 2x M4 x 25 screw, 2x M4 x 20 screw, 4x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50122797 | BTU 346M-D12 | Mounting system | Contains: 2x M4 x 25 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Turning, 360°, Clampable, Adjustable<br>Material: Metal                   |

## Standard reflectors



|   | Part no. | Designation   | Article         | Description  |
|---|----------|---------------|-----------------|--|
|    | 50108300 | REF 4-A-50x50 | Reflective tape | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive  |
|  | 50003192 | TK 100x100    | Reflector       | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Adhesive                          |
|  | 50022816 | TKS 100X100   | Reflector       | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |
|  | 50081283 | TKS 20X40     | Reflector       | Design: Rectangular<br>Reflective surface: 16 mm x 38 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |
|  | 50040820 | TKS 40X60     | Reflector       | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |

## Micro-triad-type reflectors

|   | Part no. | Designation  | Article   | Description  |
|---|----------|--------------|-----------|--|
|  | 50117583 | MTKS 50x50.1 | Reflector | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

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## Reflective tapes for standard applications

|   | Part no. | Designation     | Article         | Description  |
|---|----------|-----------------|-----------------|--|
|  | 50106119 | REF 4-A-100x100 | Reflective tape | Design: Rectangular<br>Reflective surface: 100 mm x 100 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                |
|  | 50110192 | REF 6-A-50x50   | Reflective tape | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 0.3 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive |