# Technical data sheet
# Throughbeam photoelectric sensor set
Part no.: 50156082
SETLS+LE20-1000/P



For Illustration purposes only

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# Technical data

## Basic data

| | |
|---|---|
| **Series** | 20 slim |
| **Operating principle** | Throughbeam principle |
| **Device type** | Set (transmitter and receiver) |

## Optical data

| | |
|---|---|
| **Operating range** | 0 ... 1 m (guaranteed operating range) |
| **Operating range limit** | 0 ... 1 m (typical operating range) |
| **Beam path** | Divergent |
| **Light source** | LED, Red |
| **Wavelength** | 630 nm |
| **LED group** | Exempt group (in acc. with EN 62471) |
| **Type of light spot geometry** | square |
| **Minimum detectable object size** | typ. 2 mm |
| **Light beam exit** | Lateral |

## Electrical data

| | |
|---|---|
| **Protective circuit** | Overload protection |
| | Polarity reversal protection |
| **Open-circuit current, max. Receiver** | 10 mA |
| **Open-circuit current, max. Transmitter** | 15 mA |

### Performance data

| | |
|---|---|
| **Supply voltage $U_B$** | 10 ... 30 V, DC |
| **Residual ripple** | 0 ... 10 %, From $U_B$ |

### Outputs

| | |
|---|---|
| **Number of digital switching outputs** | 1 Piece(s) |

### Switching outputs

| | |
|---|---|
| **Type** | Digital switching output |
| **Switching voltage, type.** | 30 V |
| **Voltage type** | DC |
| **Switching current, max.** | 50 mA |

#### Switching output 1

| | |
|---|---|
| **Assignment** | Connection 2, conductor 2 |
| **Switching element** | Transistor, PNP |
| **Switching principle** | Dark switching |

## Time behavior

| | |
|---|---|
| **Switching frequency** | 1,000 Hz |
| **Response time** | 0.5 ms |
| **Switch-on delay string** | < 100 ms |

## Connection

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

### Connection 1

| | |
|---|---|
| **Function** | Voltage supply |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Gray |
| **Number of conductors** | 2 -wire |
| **Wire cross section** | 0.1 mm² |

### Connection 2

| | |
|---|---|
| **Function** | Signal OUT |
| | Voltage supply |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Wire cross section** | 0.1 mm² |
| **Number of conductors** | 3 -wire |

## Mechanical data

| | |
|---|---|
| **Transmitter width** | 5.2 mm x 19 mm x 10 mm |
| **Receiver width** | 5.2 mm x 20.5 mm x 10 mm |
| **Housing material** | Plastic |
| **Plastic housing** | PBT+ABS |
| **Lens cover material** | Plastic / PMMA |
| **Transmitter net weight** | 10 g |
| **Receiver net weight** | 10 g |
| **Housing color** | Red |
| **Type of fastening** | Through-hole mounting, 2 x ø 2.2 mm |

## Operation and display

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

## Environmental data

| | |
|---|---|
| **Ambient temperature, operation** | -25 ... 55 °C |
| **Ambient temperature, storage** | -30 ... 70 °C |

## Certifications

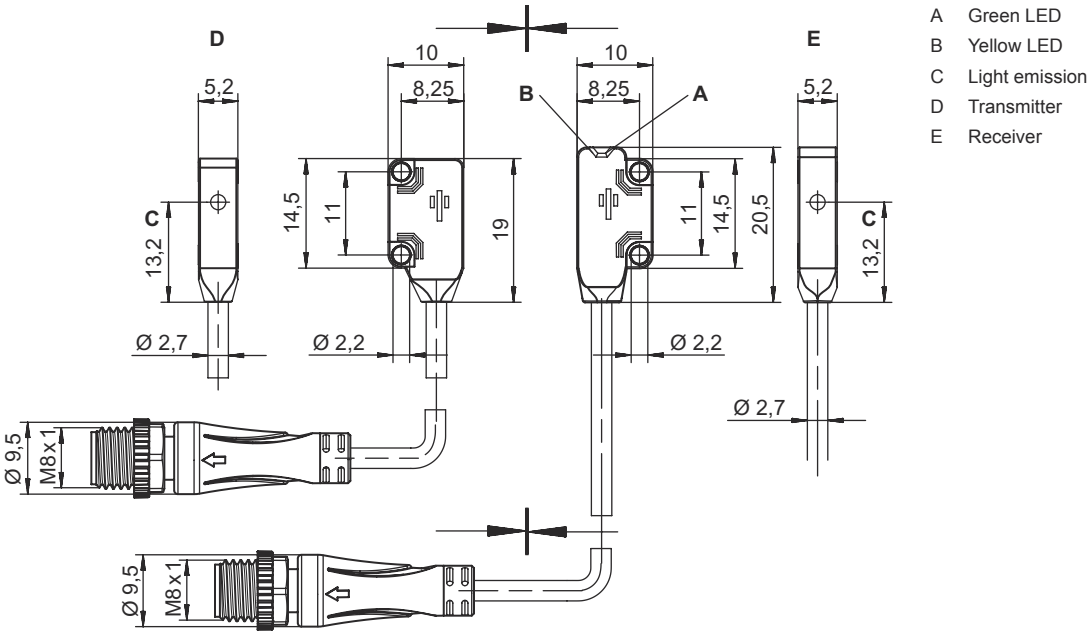
| | |
|---|---|
| **Degree of protection** | IP 67 |
| **Protection class** | III |
| **Approvals** | c UL US |
| | CE |
| **Standards applied** | IEC 60947-5-2 |

## Classification

| | |
|---|---|
| **Customs tariff number** | 85365019 |
| **ECLASS 5.1.4** | 27270901 |
| **ECLASS 8.0** | 27270901 |
| **ECLASS 9.0** | 27270901 |
| **ECLASS 10.0** | 27270901 |
| **ECLASS 11.0** | 27270901 |
| **ECLASS 12.0** | 27270901 |
| **ECLASS 13.0** | 27270901 |
| **ECLASS 14.0** | 27270901 |
| **ECLASS 15.0** | 27270901 |
| **ECLASS 16.0** | 27270901 |
| **ETIM 5.0** | EC002716 |
| **ETIM 6.0** | EC002716 |
| **ETIM 7.0** | EC002716 |
| **ETIM 8.0** | EC002716 |
| **ETIM 9.0** | EC002716 |
| **ETIM 10.0** | EC002716 |
| **UNSPSC 26.08** | 39121528 |

# Dimensioned drawings

All dimensions in millimeters




A Green LED
B Yellow LED
C Light emission
D Transmitter
E Receiver

# Electrical connection

| Connection 1 | Transmitter |
|---|---|
| **Function** | Voltage supply |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Gray |
| **Number of conductors** | 2 -wire |
| **Wire cross section** | 0.1 mm² |

| Conductor color | Conductor assignment |
|---|---|
| **Brown** | V+ |
| **Blue** | GND |

| Connection 2 | Receiver |
|---|---|
| **Function** | Signal OUT |
| | Voltage supply |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Wire cross section** | 0.1 mm² |
| **Number of conductors** | 3 -wire |

| Conductor color | Conductor assignment |
|---|---|
| **Brown** | V+ |
| **Black** | OUT |
| **Blue** | GND |

# Operation and display

| LED | Display | Meaning |
|---|---|---|
| 1 | Green | Operational readiness / Stability indicator |
| 2 | Orange | Switching output function |

# Part number code

Part designation: **AAA20 D-E/GG.HH-JJ**

| | |
|---|---|
| **AAA20** | **Operating principle / construction**<br>SETLS+LE20: Throughbeam photoelectric sensor transmitter + receiver<br>HT20: Diffuse reflection sensor with background suppression |
| **D** | **Light type**<br>n/a: red light |
| **E** | **Preset range (optional)**<br>15F: 15 mm<br>30F: 30 mm<br>150: operating range 150 mm<br>500: operating range 500 mm<br>1000: operating range 1000 mm |
| **GG** | **Switching output / Function**<br>2: NPN transistor output, light switching<br>4: PNP transistor output, light switching<br>N: NPN transistor output, dark switching<br>P: PNP transistor output, dark switching<br>X: n.c. |
| **HH** | **Electrical connection**<br>n/a: Cable, standard length 2000 mm, 2 wire (LS), 3 wire (LE, HT)<br>M8: M8 connector, 4-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) |
| **JJ** | **Design detail**<br>n/a: Slim<br>FL: Flat |

**Note**

- A list with all available device types can be found on the Leuze website at 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:**

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).