

# Technical data sheet Throughbeam photoelectric sensor transmitter

Part no.: 50137198

LS3CL1/8X-M8



#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Suitable receivers
- Part number code
- Notes
- Further information
- Accessories















### **Technical data**



#### Basic data

Series	3C
Operating principle	Throughbeam principle
Device type	Transmitter
Special version	
Special version	Activation input
Optical data	

Operating range	0 5 m (guaranteed operating range)
Operating range limit	0 10 m (typical operating range)
Beam path	Collimated
Light source	Laser, Red
Wavelength	650 nm
Laser class	1, in accordance with IEC 60825-1:2014 (EN 60825-1:2014)
Transmitted-signal shape	Pulsed

elliptic

2.5 mm x 2 mm [1,000 mm]

### Type of light spot geometry

Light spot size [at sensor distance]

Elec	trical data	
Protective circuit	Polarity reversal protection	
		Short circuit protected
Pe	erformance data	
Su	pply voltage U <sub>B</sub>	10 30 V, DC, Incl. residual ripple
Re	sidual ripple	0 15 %, From U <sub>B</sub>
Ор	en-circuit current	0 20 mA
lnı	puts	
	imber of activation inputs	1 Piece(s)
	Activation inputs	
	Туре	Activation input
	Voltage type	DC
	Switching voltage	high: ≥8V

Activation input 1		
Assignment	Connection 1, pin 4	
Active switching state	High	

low: ≤ 2 V

### Time behavior

Readiness delay	300 ms

### Connection

Number of connections	1 Piece(s)
-----------------------	------------

Connection	1

Connection 1	
Function	Signal IN
	Voltage supply
Type of connection	Connector
Thread size	M8
Туре	Male
Material	Metal
No. of pins	4 -pin

#### Mechanical data

Dimension (W x H x L)	11.4 mm x 34.2 mm x 18.3 mm
Housing material	Plastic
Plastic housing	PC-ABS
Lens cover material	Plastic / PMMA
Net weight	10 g
Housing color	Red
Type of fastening	Through-hole mounting
	Via optional mounting device
Recommended tightening torque for M3 fastening	0.9 N·m
Compatibility of materials	ECOLAB

### Operation and display

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

#### **Environmental data**

Ambient temperature, operation	-40 55 °C	
Ambient temperature, storage	-40 70 °C	

#### Certifications

Degree of protection	IP 67
	IP 69K
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

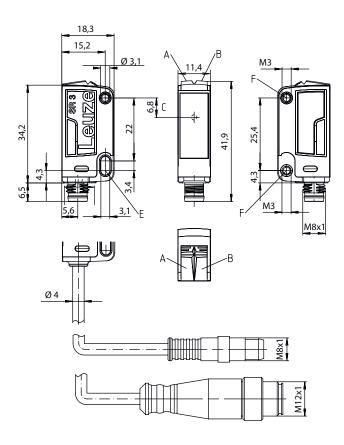
#### Classification

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
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
ETIM 9.0	EC002716
ETIM 10.0	EC002716

### **Dimensioned drawings**

Leuze

All dimensions in millimeters



- Green LED
- Yellow LED В
- С Optical axis
- Mounting sleeve (standard)
- Threaded sleeve (3C.B series)

### **Electrical connection**

### **Connection 1**

Function	Signal IN
	Voltage supply
Type of connection	Connector
Thread size	M8
Туре	Male
Material	Metal
No. of pins	4 -pin

Pin	Pin assignment
1	V+
2	n.c.
3	GND
4	IN 1

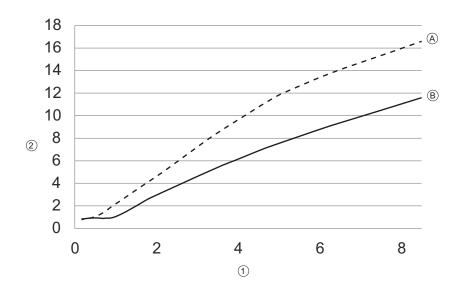


info@leuze.com • www.leuze.com

### **Diagrams**

## Leuze

### Typ. light spot size



- Distance [m]
- Diameter [mm]
- Distance [m]
- A Vertical
- Diameter [mm]
- Horizontal

### **Operation and display**

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Transmitted beam active

### Suitable receivers

Part no.	Designation	Operating range Operating range limit	Description
50137205	LE3CL1.1/4W-M8	0 5 m 0 0 m	Special version: Warning output Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, PNP, Light switching Switching output 2: Transistor, PNP, UB switching Switching frequency: 3,000 Hz Connection: Connector, M8, Metal, 4 -pin Operational controls: 270° potentiometer
50137201	LE3CL1.1/6G-M8	0 5 m 0 0 m	Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, Push-pull, Light switching (PNP)/dark switching (NPN) Switching output 2: Transistor, Push-pull, Dark switching (PNP)/light switching (NPN) Switching frequency: 3,000 Hz Connection: Connector, M8, Metal, 4 -pin Operational controls: 270° potentiometer

### Part number code



Part designation: AAA 3C d EE-f.GG H/i J-K

AAA3C	Operating principle / construction HT3C: Diffuse reflection sensor with background suppression LS3C: Throughbeam photoelectric sensor transmitter LE3C: Throughbeam photoelectric sensor receiver PRK3C: Retro-reflective photoelectric sensor with polarization filter ODT3C: Distance diffuse sensor with background suppression
d	Light type n/a: red light I: infrared light
EE	Light source n/a: LED L1: laser class 1 L2: laser class 2 PP: Power PinPoint® LED
f	Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] 2M: operating range of 2 meters
GG	Equipment n/a: standard A: Autocollimation principle (single lens) for positioning tasks B: Housing model with two M3 threaded sleeves, brass F: Permanently set range L: Long light spot S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: Extra long light spot X: extended model HF: Suppression of HF illumination (LED)
Н	Operating range adjustment n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button 6: auto-teach
i	Switching output/function OUT 1/IN: Pin 4 or black conductor  2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP)
J	Switching output / function OUT 2/IN: pin 2 or white conductor  2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching W: warning output X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) T: teach-in via cable

### Part number code



Κ

#### Electrical connection

n/a: cable, standard length 2000 mm, 4-wire 5000: cable, standard length 5000 mm, 4-wire

M8: M8 connector, 4-pin (plug) M8.3: M8 connector, 3-pin (plug)

200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)

#### 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).
- 🖖 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)

#### **WARNING! LASER RADIATION - CLASS 1 LASER PRODUCT**



The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of laser class 1 and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

- below the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way. There are no user-serviceable parts inside the device. Repairs must only be performed by Leuze electronic GmbH + Co. KG.

### **Further information**

· Light source: Average life expectancy 50,000 h at an ambient temperature of 25 °C

### Accessories



### Connection technology - Connection cables

	Part no.	Designation	Article	Description
W	50130850	KD U-M8-4A-V1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC
	50130871	KD U-M8-4W-V1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC

### Mounting technology - Mounting brackets

Part no.	Designation	Article	Description
50060511	BT 3	Mounting device	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal

### Mounting technology - Rod mounts

0	,			
	Part no.	Designation	Article	Description
a s	50117829	BTP 200M-D12	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50117255	BTU 200M-D12	Mounting system	Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

info@leuze.com • www.leuze.com

#### Note



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