

# Technical data sheet Throughbeam photoelectric sensor Part no.: 50137187 LE3C/6G-200-M12

Contents - Technical data Dimensioned drawings -Electrical connection -- Diagrams - Operation and display Suitable transmitters -Part number code \_ Notes \_ Further information \_ - Accessories CE ECOLAB Figure can vary

We reserve the right to make technical changes eng • 2021-01-19

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3C

# **Technical data**

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#### **Basic data**

Series **Operating principle** Device type

#### **Optical data Operating range Operating range Operating range limit Operating range limit**

Receiver Guaranteed operating range 0.05 ... 8.5 m Typical operating range 0.05 ... 10 m

Throughbeam principle

#### **Electrical data**

Protective circuit

Polarity reversal protection Short circuit protected

Performance data	
Supply voltage U <sub>B</sub>	10 30 V, DC, Incl. residual ripple
Residual ripple	0 15 %, From U <sub>B</sub>
Open-circuit current	0 20 mA

#### Outputs

Number of digital switching outputs 2 Piece(s)

Switching outputs		
Voltage type	DC	
Switching current, max.	100 mA	
Switching voltage	high: ≥(U <sub>B</sub> -2V)	
	Low: ≤2V	
Switching output 1		
Assignment	Connection 1, pin 4	
Switching element	Transistor, Push-pull	
Switching principle	Light switching (PNP)/dark switching (NPN)	
Switching output 2		
Assignment	Connection 1, pin 2	
Switching element	Transistor, Push-pull	
Switching principle	Dark switching (PNP)/light switching (NPN)	
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#### Timing

Switching frequency	1,000 Hz
Response time	0.5 ms
Readiness delay	300 ms

#### Connection

Connection 1		
Function	Signal OUT	
	Voltage supply	
Type of connection	Cable with connector	
Cable length	200 mm	
Sheathing material	PUR	
Cable color	Black	
Wire cross section	0.2 mm²	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	4 -pin	
Encoding	A-coded	

#### 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	20 g
Housing color	Red
Type of fastening	Through-hole mounting
	Via optional mounting device
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
Degree of protection	IP 67 IP 69K
Degree of protection Protection class	
	IP 69K
Protection class	IP 69K III
Protection class Certifications	IP 69K III c UL US
Protection class Certifications Standards applied	IP 69K III c UL US
Protection class Certifications Standards applied Classification	IP 69K III c UL US IEC 60947-5-2
Protection class Certifications Standards applied Classification Customs tariff number	IP 69K III c UL US IEC 60947-5-2 85365019
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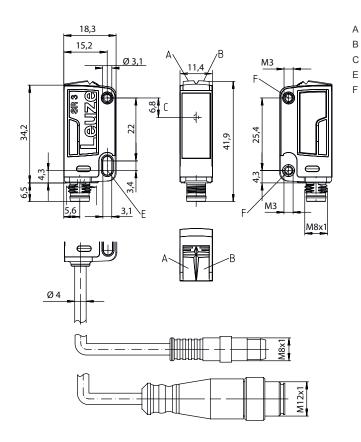
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# **Dimensioned drawings**



All dimensions in millimeters



#### **Electrical connection**

#### **Connection 1**

Function	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm <sup>2</sup>
Thread size	M12
Туре	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded

Green LED

Yellow LED

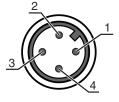
Optical axis

Mounting sleeve (standard)

Threaded sleeve (3C.B series)

# Pin Pin assignment

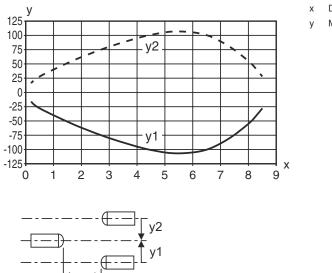
1	V+
2	OUT 2
3	GND
4	OUT 1



#### Diagrams

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#### Typ. response behavior



- Distance [m]
- Misalignment [mm]

### **Operation and display**

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

#### Suitable transmitters

 Part no.	Designation	Article	Description
50137179	LS3C/8X-200-M12	Throughbeam photoelectric sensor transmitter	Special version: Activation input Operating range limit: 0.05 10 m Light source: LED, Red Supply voltage: DC Connection: Cable with connector, 200 mm, M12, Metal, 4 -pin
50137178	LS3C/XX-200-M12	Throughbeam photoelectric sensor transmitter	Operating range limit: 0.05 10 m Light source: LED, Red Supply voltage: DC Connection: Cable with connector, 200 mm, M12, Metal, 4 -pin

#### 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

### Part number code



d       Light type marked light         eE       Light type marked light         f       Prectange (pational) marked light         f       Prectange (pational) marked light         f       Registion (pational) marked light         GG       Equipment marked light light spation to use the spation of the spation of the spation of the spation of the spation of the spation marked light spation to use the spation of the spation of the spation of the spation of the spation of the spation of the spation of the spation of the spation of the spation of the spation of the spa		
In the LED It. Is beer class 1 L2: beer class 2         f       Price operating range (optional) in it: operating range aco. to data sheet over: protect range (min) Price operating range aco. to data sheet over: protect range (min)         GG       Equipment in: standard N: A buccompared on the first point of principle (single lass) for righty transparent bottles without tracking T: autocollination principle (single lass) for highty transparent bottles without tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single lass) for highty transparent bottles with tracking T: autocollination principle (single with the NT N N N N N N N N N N N N N N N N N N	d	n/a: red light
or containing intring acci, to data sheet         OS       Reprint Introduction principle (single lens) for positioning tasks         A autocolimation principle (single lens) for positioning tasks       B tossing model with two MS threaded sleeves, brass         P perminently set range       E long light spot         D standard       Standard         T autocolimation principle (single lens) for highly transparent bottles without tracking         T autocolimation principle (single lens) for highly transparent bottles with tracking         V volotis         X. externed model         H         Operating range adjustable via 8-turn potentionmeter         na with HT: range adjustable via 8-turn potentionmeter         na with HT: range adjustable via 8-turn potentionmeter         na with HT: range adjustable via 8-turn potentionmeter         1       Statching output/function OUT 11N: Pin 4 or black conductor         2. VPN transistor output, light switching         P. PNP Transistor output, light switching         P. PNP Transistor output, light switching         C patch pull switching output/function OUT 11N: Pin 4 or black conductor         2. VPN transistor output, light switching         P. PNP Transistor output, light switching         P. PNP Transistor output, light switching         C patch-pull switching output, PNP dark switching, NPN dark switching	EE	n/a: LED L1: laser class 1
Image: Standard A. Autocollimation principle (single lens) for positioning tasks       B: housing model with two M3 threaded sleeves, brass         B: chousing model with two M3 threaded sleeves, brass       B: grandlight spot         S: small light spot       S: small light spot         S: small light spot       S: small light spot         B: autocollimation principle (single lens) for highly transparent bottles without tracking       Tracking (single lens) for highly transparent bottles without tracking         H: A: autocollimation principle (single lens) for highly transparent bottles without tracking       Tracking (single lens) for highly transparent bottles without tracking         H: A: autocollimation principle (single lens) for highly transparent bottles without tracking       Transparent bottles without tracking         I: A: A: autocollimation principle (single lens) for highly transparent bottles without tracking       Transparent bottles without tracking         I: A:	f	n/a: operating range acc. to data sheet
n <sup>i</sup> a with HT: arroge adjustable via 8-turn potentiometer         n <sup>i</sup> a with HT: arroge adjustable via 8-turn 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         9: P. PNP transistor output, light switching         9: P. PNP transistor output, light switching         9: D. PNP transistor output, light switching         1: Output switching output, PNP dark switching         1: D. Link / Light switching (NPN)         2: D. PNP transistor output, light switching, NPN dark switching         1: D. Link / Light switching (NPN)         2: D. Switching output, PNP vight switching, NPN dark switching)         2: D. Link interface (SIO mode: PNP)         3: Switching output / Interion OUT 2/IN: pin 2 or white conductor         2: NPN transistor output, light switching         3: D. Link interface (SIO mode: PNP)         3: Switching output / Interion OUT 2/IN: pin 2 or white conductor         2: NPN transistor output, light switching         3: D. Link interface addition gutput / PNP dark switching         4: PNP transistor output, dark switching         9: D. NPN transistor output, dark switching         9: D. NPN transistor output, dark switching         1: D-Link / Interface additon input (deviation with high signal) <td>GG</td> <td>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</td>	GG	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
2: NPN transistor output, lays switching, NPN dark switching, SPN dark switching, 2: push-pull switching output, PNP lays switching, NPN dark switching, SPN transistor output, light switching, SPN transistor output, light switching, SPN dark switching, SPN transistor output, light switching, SPN dark switching, SPN dark switching, SPN dark switching, SPN transistor output, light switching, SPN dark SPN dark switching, SPN dark switching, SPN dark switching, SPN dark swit	Η	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
2: NPN transistor output, light switching         N: NPN transistor output, dark switching         4: PNP transistor output, dark switching         6: push-pull switching output, PNP light switching, NPN dark switching         6: 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)         9: deactivation input (deactivation with high signal)         7: teach-in via cable         K         Electrical connection         na': cable, standard length 5000 mm, 4-wire         500: cable, standard length 5000 mm, 4-wire         M8: M8 connector, 3-pin (plug)         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: cable, length 200 mm with M12 connector, 4-pin, axial (plug)         200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)         200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)         200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)	i	<ul> <li>2: NPN transistor output, light switching</li> <li>N: NPN transistor output, dark switching</li> <li>4: PNP transistor output, light switching</li> <li>P: PNP transistor output, dark switching</li> <li>6: push-pull switching output, PNP light switching, NPN dark switching</li> <li>G: push-pull switching output, PNP dark switching, NPN light switching</li> <li>L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching)</li> <li>8: activation input (activation with high signal)</li> <li>X: pin not used</li> </ul>
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	J	<ul> <li>2: NPN transistor output, light switching</li> <li>N: NPN transistor output, dark switching</li> <li>4: PNP transistor output, light switching</li> <li>P: PNP transistor output, dark switching</li> <li>6: push-pull switching output, PNP light switching, NPN dark switching</li> <li>G: push-pull switching output, PNP dark switching, NPN light switching</li> <li>W: warning output</li> <li>X: pin not used</li> <li>8: activation input (activation with high signal)</li> <li>9: deactivation input (deactivation with high signal)</li> </ul>
	К	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)
A list with all available device types can be found on the Leuze website at www.leuze.com.	Note	
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# Notes



#### Observe intended use!

✤ This product is not a safety sensor and is not intended as personnel protection.

b The product may only be put into operation by competent persons.



For UL applications:

b 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)

# **Further information**

- The push-pull switching outputs must not be connected in parallel.
- · Response time: For short decay times, an ohmic load of approx. 5 kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

# Accessories

#### Connection technology - Connection cables

		Part no.	Designation	Article	Description
	W	50130652	KD U-M12-4A-V1- 050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
	L	50130690	KD U-M12-4W-V1-	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin
Ţ	Ŵ		050		Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

### Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
de	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

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 Part no.	Designation	Article	Description
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

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

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