## Leuze

## **Technical data sheet** Light curtain receiver Part no.: 50119109 CML730i-R20-950.R/CN-M12



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#### **Technical data**

# Leuze

Series	730
Operating principle	Throughbeam principle
Device type	Receiver
Contains	Accessories for the use of the BT-2R1
Application	Detection of transparent objects
	Object measurement
Special version	
Special version	Crossed-beam scanning
	Diagonal-beam scanning
	Parallel-beam scanning
Optical data	
Operating range	Guaranteed operating range
Operating range	0.3 9.5 m
Operating range, transparent media	0.3 3.5 m
Operating range limit	Typical operating range
Operating range limit	0.2 12 m
Measurement field length	950 mm
Number of beams	48 Piece(s)
Beam spacing	20 mm
Measurement data	
Minimum object diameter	30 mm
Electrical data	
Protective circuit	Polarity reversal protection
	Short circuit protected
	enert en eart protocted
	Transient protection
Performance data	
Performance data	Transient protection
Supply voltage U <sub>B</sub>	Transient protection 18 30 V, DC
	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver.
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max.	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA 6,000 Ω
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA 6,000 Ω 2 Piece(s)
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable
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Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC
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Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	Transient protection 18 30 V, DC 0 15 %, From U <sub>B</sub> 0 215 mA, The specified values refer to the entire package consisting of trans mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V
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CANopen	
Function	Process
Service interface	
Туре	IO-Link
IO-Link	
Function	Configuration via software
	Service
Connection	
Number of connections	2 Piece(s)
Plug outlet	Rear side
Connection 1	
Function	Configuration interface
	Connection to transmitter
	Signal IN
	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connection 2	
Function	BUS IN
<b>T</b>	BUS OUT
Type of connection Thread size	Connector M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 983 mm Metal
Housing material Metal housing	Aluminum
Lens cover material	Plastic
Net weight	1,200 g
Housing color	Silver
Type of fastening	Groove mounting
	Via optional mounting device
Operation and display	
Type of display	LED
Type of display	OLED display
Number of LEDs	2 Piece(s)
Type of configuration	Software
	Teach-in
Operational controls	Membrane keyboard
-	
Environmental data	
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C

Туре

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CANopen

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### **Technical data**

## Leuze

#### Certifications

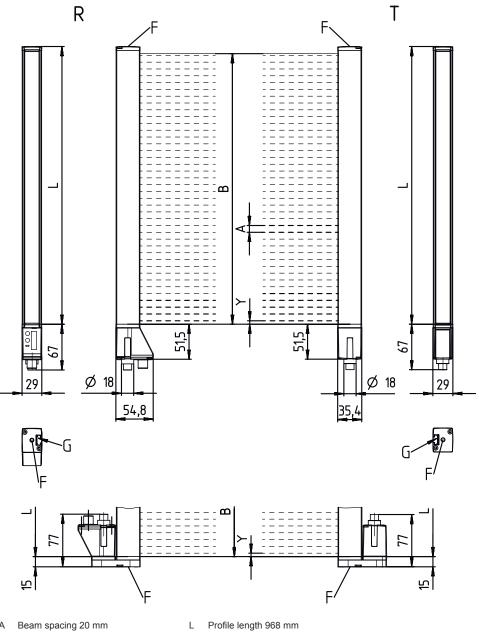
Degree of protection	IP 65
Protection class	III
Certifications	c CSA US
Standards applied	IEC 60947-5-2

#### Classification

Customs tariff number	90314990
eCl@ss 5.1.4	27270910
eCl@ss 8.0	27270910
eCl@ss 9.0	27270910
eCl@ss 10.0	27270910
eCl@ss 11.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
Cl@ss 10.0 Cl@ss 11.0 FIM 5.0 FIM 6.0	27270910 27270910 EC002549 EC002549

#### **Dimensioned drawings**

All dimensions in millimeters



Beam spacing 20 mm А

Fastening groove

- В Measurement field length 950 mm
- F M6 thread

G

R Receiver

Т

Υ 5 mm

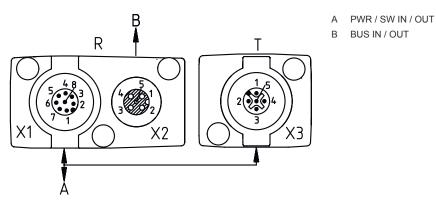
Transmitter





#### **Dimensioned drawings**





### **Electrical connection**

**Connection 1** 

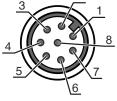
Function	Configuration interface
	Connection to transmitter
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

#### Pin Pin assignment

1	V+		
2	I/O 1		
3	GND		
4	IO-Link		
5	I/O 2		
6	RS 485 Tx+		
7	RS 485 Tx+		
8	FE/SHIELD		



Function	BUS IN
	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded



### **Electrical connection**

Pin	Pin assignment	2
1	FE/SHIELD	1
2	n.c.	
3	CAN GND	S ~ ~
4	CAN H	
5	CAN L	

### **Operation and display**

LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
2	Yellow, continuous light	Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected

#### Suitable transmitters

 Part no.	Designation	Article	Description
50118971	CML730i-T20-950.R- M12	Light curtain transmitter	Operating range: 0.3 9.5 m Connection: Connector, M12, Rear side, 5 -pin

#### Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCCDDD-EEEFFF

CML	Operating principle Measuring light curtain
7XXi	Series           720i: 720i series           730i: 730i series
Y	Device type T: transmitter R: receiver
22	Beam spacing           05: 5 mm           10: 10 mm           20: 20 mm           40: 40 mm
AAAA	Measurement field length [mm], dependent on beam spacing
В	Equipment A: connector outlet, axial R: rear connector outlet
ccc	Interface L: IO-Link /CN: CANopen /PB: PROFIBUS /PN: PROFINET /CV: Analog current and voltage output /D3: RS 485 Modbus

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#### Part number code



DDD	Special equipment -PS: Power Setting
EEE	Electrical connection M12: M12 connector
FFF	-EX: Explosion protection
	Note
A	∜ A list with all available device types can be found on the Leuze website at www.leuze.com.

#### Notes

Observe intended use!
Image: Second



#### 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)

#### Accessories

#### Connection technology - Connection cables

 Part no.	Designation	Article	Description
50132079	KD U-M12-5A-V1- 050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

#### Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50129781	KDS DN-M12-5A- M12-5A-P3-050	Interconnection cable	Suitable for interface: IO-Link, DeviceNet, CANopen Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

#### Accessories

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### Connection technology - Y distribution cables

	Part no.	Designation	Article	Description
	50118183	K-Y1 M12A-5m- M12A-S-PUR	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Connection 3: Connector, M12, Axial, Female, A-coded, 8 -pin Shielded: Yes Cable length fork 1: 5,000 mm Cable length fork 2: 150 mm Sheathing material: PUR
	50118185	K-YCN M12A-M12A- S-PUR	Interconnection cable	Suitable for interface: CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length fork 1: 250 mm Cable length fork 2: 350 mm Sheathing material: PUR

#### Connection technology - Terminating resistors

 Part no.	Designation	Article	Description
50040099	TS 01-5-SA	Terminator plug	Suitable for: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Function: Bus termination

#### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
1.1. 1.1	50142900	BT 700M.5-2SET	Mounting device set	Design of mounting device: Bracket mounting Fastening, at system: Through-hole mounting, T slotted hole Mounting bracket, at device: Screw type, Sliding block Type of mounting device: Rigid Material: Steel

### Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ęę.	429046	BT-2R1	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

#### Services

 Part no.	Designation	Article	Description
S981001	CS10-S-110	Start-up support	Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.

#### Accessories

## Leuze

 Part no.	Designation	Article	Description
S981005	CS10-T-110	Product training	Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.

	Note
6	Note: 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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