

## **Technical data sheet** Light curtain receiver Part no.: 50119113 CML730i-R20-1590.R/CN-M12



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 eng • 2025-04-03

We reserve the right to make technical

### **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	0.3 9.5 m
Operating range	Guaranteed operating range
Operating range, transparent media	0.3 3.5 m
Operating range limit	0.2 12 m
Operating range limit	Typical operating range
Measurement field length	1,590 mm
Number of beams	80 Piece(s)
Beam spacing	20 mm
Measurement data	
Minimum object diameter	30 mm
Electrical data	
Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection
Performance data	
Supply voltage U <sub>B</sub>	18 30 V, DC
Supply voltage U <sub>B</sub> Residual ripple	0 15 %, From U <sub>B</sub>
Supply voltage U <sub>B</sub>	0 15 %, From $\rm U_B$ 0 350 mA, The specified values refer
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current	0 15 %, From U <sub>B</sub> 0 350 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	0 15 %, From U <sub>B</sub> 0 350 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.	0 15 %, From U <sub>B</sub> 0 350 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. Input resistance	<ul> <li>0 15 %, From U<sub>B</sub></li> <li>0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.</li> <li>100 mA</li> <li>6,000 Ω</li> </ul>
Supply voltage U <sub>B</sub> Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	<ul> <li>0 15 %, From U<sub>B</sub></li> <li>0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver.</li> <li>100 mA</li> <li>6,000 Ω</li> <li>2 Piece(s)</li> </ul>
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	<ul> <li>0 15 %, From U<sub>B</sub></li> <li>0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.</li> <li>100 mA</li> <li>6,000 Ω</li> <li>2 Piece(s)</li> <li>Inputs/outputs selectable</li> </ul>
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	0 15 %, From U <sub>B</sub> 0 350 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
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	<ul> <li>0 15 %, From U<sub>B</sub></li> <li>0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.</li> <li>100 mA</li> <li>6,000 Ω</li> <li>2 Piece(s)</li> <li>Inputs/outputs selectable</li> </ul>
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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	0 15 %, From $U_B$ 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 $\Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. $U_B$ / 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	0 15 %, From U <sub>B</sub> 0 350 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: ≤ 4 V
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	0 15 %, From U <sub>B</sub> 0 350 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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Туре

CANopen

CANopen Function	Process		
ervice interface			
уре	IO-Link		
IO-Link			
Function	Configuration via software		
	Service		
Connection			
lumber 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 2	BUS IN		
	BUS OUT		
Type of connection	Connector		
Thread size	M12		
	Female		
Type	Metal		
Material No. of pins			
	5 -pin		
Encoding	A-coded		
lechanical data			
Design	Cubic		
Dimension (W x H x L)	29 mm x 35.4 mm x 1,623 mm		
lousing material	Metal		
letal housing	Aluminum		
ens cover material	Plastic		
let weight	1,800 g		
lousing color	Silver		
ype of fastening	Groove mounting		
	Via optional mounting device		
Operation and display			
ype of display	LED		
)	OLED display		
lumber of LEDs	2 Piece(s)		
ype of configuration	Software		
ype of configuration	Teach-in		
perational controls	Membrane keyboard		
Environmental data			
	30 60 °C		
Ambient temperature, operation	-30 60 °C		
Ambient temperature, storage	-40 70 °C		

### **Technical data**

#### Certifications

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

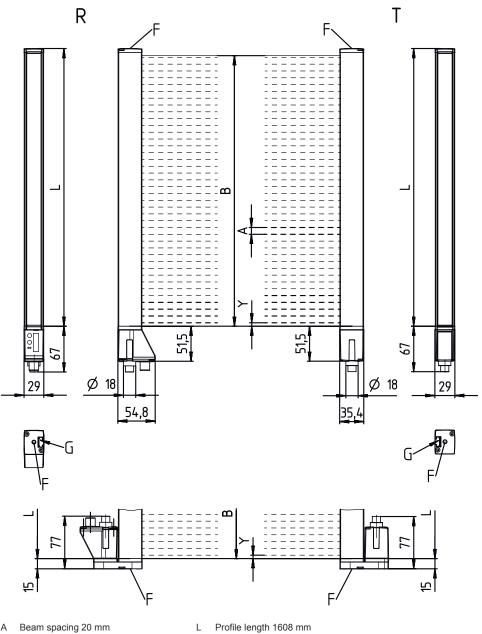
#### Classification

Customs tariff number	90314990
ECLASS 5.1.4	27270910
ECLASS 8.0	27270910
ECLASS 9.0	27270910
ECLASS 10.0	27270910
ECLASS 11.0	27270910
ECLASS 12.0	27270910
ECLASS 13.0	27270910
ECLASS 14.0	27270910
ECLASS 15.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549
ETIM 10.0	EC002549



#### **Dimensioned drawings**

All dimensions in millimeters



- Beam spacing 20 mm А
- В Measurement field length 1590 mm
- F M6 thread G Fastening groove
- R Receiver

Т

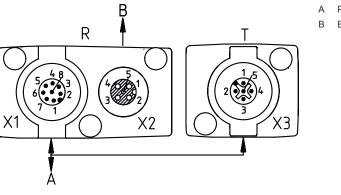
5 mm Υ

Transmitter

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#### **Dimensioned drawings**





A PWR / SW IN / OUTB BUS IN / OUT

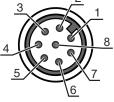
## Electrical connection

#### **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		



#### **Connection 2**

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	
	FE/SHIELD	
	n.c.	
	CAN GND	
	CAN H	
	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
50118975	CML730i-T20- 1590.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: Axial connector outlet 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



#### 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 Connector, LED: No 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: 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

## Leuze

## 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 Function: Bus termination Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin

#### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
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
æ.	429029	BT-2RG	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.

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# Accessories Part no. Designation Article

 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.

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