

## **Technical data sheet Light curtain receiver** Part no.: 50123032 CML720i-R20-2710.R/PB-M12



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 changes

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 eng • 2025-04-04

We reserve the right to make technical changes

#### **Technical data**

# Leuze

Series	720
Operating principle	Throughbeam principle Receiver
Device type Contains	Accessories for the use of the BT-2R1
Application	Object measurement
Application	Object measurement
Special version	
Special version	Crossed-beam scanning
	Diagonal-beam scanning
	Parallel-beam scanning
Optical data	
Operating range	0.3 7 m
Operating range	Guaranteed operating range
Operating range limit	0.2 9 m
	Typical operating range
	2,710 mm
Number of beams	136 Piece(s)
Beam spacing	20 mm
Measurement data	
Minimum object diameter	30 mm
-	50 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
Residual ripple	0 15 %, From U <sub>B</sub>
Open-circuit current	0 435 mA, The specified values refer to the entire package consisting of trans mitter and receiver.
Inputs/outputs selectable	
Output current, max.	100 mA
Output current, max.	100 mA 6 000 Q
Input resistance	6,000 Ω
Input resistance Number of inputs/outputs selectable	6,000 Ω 2 Piece(s)
Input resistance Number of inputs/outputs selectable Type	6,000 Ω 2 Piece(s) Inputs/outputs selectable
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. $U_B$ / 0 V DC
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms 4.48 ms
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time Response time per beam	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time Response time per beam	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms 4.48 ms 30 μs
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time Response time per beam Interface	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms 4.48 ms
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤ 4 V 1 ms 4.48 ms 30 μs

	IO-Link	
	Configuration via software	
	Service	
on		
connections	2 Piece(s)	
	Rear side	
	Configuration interface	
	Connection to transmitter	
	Signal IN	
	Signal OUT	
onnaction	Voltage supply Connector	
	M12	
120	Male	
	Metal	
ns	8 -pin	
	A-coded	
2		
tion 2		
	BUS IN	
	BUS OUT	
	Connector	
ize	M12	
	Female	
	Metal	
	5 -pin	
Encoding B-coded		
al data		
	Cubic	
(W x H x L)	29 mm x 35.4 mm x 2,743 mm	
	Metal	
•	Aluminum	
material	Plastic	
lar	2,800 g	
	Silver Groove mounting	
lennig	Via optional mounting device	
	via optional mounting device	
and display		
play	LED	
	OLED display	
	2 Piece(s)	
figuration	Software	
	Teach-in	
controls	Membrane keyboard	
ental data		
nperature, operation	-30 60 °C	
nperature, storage	-40 70 °C	
	and display (W x H x L) aterial ing material i	

## **Technical data**

#### Certifications

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

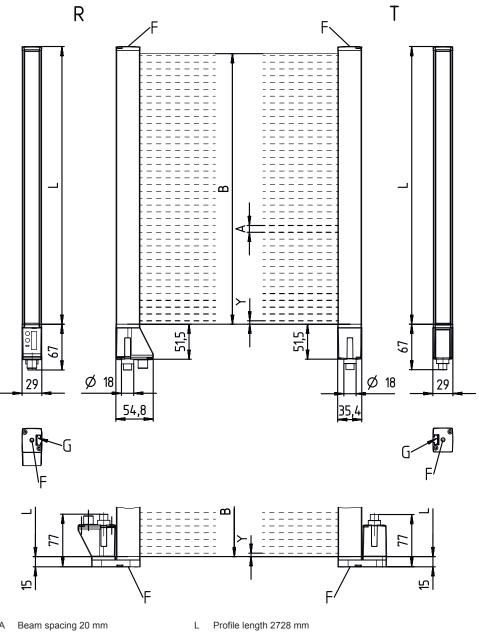
#### Classification

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

Fastening groove

- В Measurement field length 2710 mm
- F M6 thread

G

R Receiver

Т

5 mm Υ

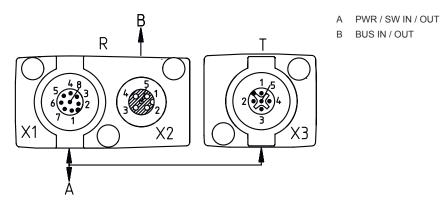
Transmitter

We reserve the right to make technical Leuze electronic GmbH + Co. KG info@leuze.com • www.leuze.com changes 
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#### **Dimensioned drawings**





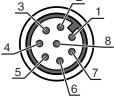
## **Electrical connection**

**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		



#### **Connection 2**

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

## **Electrical connection**

# Pin Pin assignment 1 V+ 2 Tx 3 PB GND 4 Tx+ 5 FE/SHIELD

## **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
50119521	CML720i-T20- 2710.R-M12	Light curtain transmitter	Operating range: 0.3 7 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	S A list with all available device types can be found on the Leuze website at www.leuze.com.

#### Notes

Observe intended use!
<ul> <li>This product is not a safety sensor and is not intended as personnel protection.</li> <li>The product may only be put into operation by competent persons.</li> <li>Only use the product in accordance with its intended use.</li> </ul>



#### 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 - 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

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#### Accessories

## Mounting technology - Mounting brackets

 Part no.	Designation	Article	Description
 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.	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

## Configuration devices

 Part no.	Designation	Article	Description
50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

#### Services

	Part no.	Designation	Article	Description
y: U	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.
	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	☆ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.