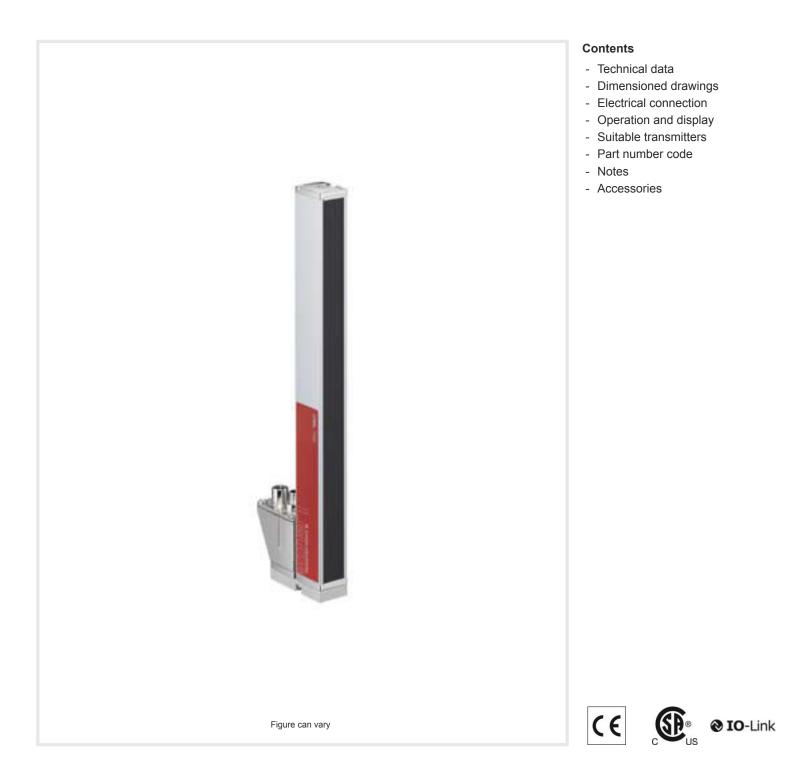
## Leuze

## **Technical data sheet** Light curtain receiver Part no.: 50120112 CML720i-R20-2870.R/L-M12



The Sensor People In der Braike 1, 73277 Owen

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## **Technical data**

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Series	720	
Operating principle	Throughbeam principle	
Device type	Receiver	
Contains	Accessories for the use of the BT-2R1	
Application	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 7 m	
Operating range limit	Typical operating range	
Operating range limit	0.2 9 m	
Measurement field length	2,870 mm	
Number of beams	144 Piece(s)	
Beam spacing	20 mm	
Measurement data		
Minimum object diameter	30 mm	
Electrical data		
Protective circuit	Polarity reversal protection	
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	100 mA	
Output current, max.	100 mA	
Output current, max. Input resistance	6,000 Ω	
Output current, max. Input resistance Number of inputs/outputs selectable	6,000 Ω 4 Piece(s)	
Output current, max. Input resistance Number of inputs/outputs selectable Type	6,000 Ω	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. $U_B$ / 0 V DC	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	$6,000 \Omega$ 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. $U_B$ / 0 V DC	
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	$6,000 \Omega$ 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V	
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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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V	
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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V	
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 Activation/disable delay	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V	
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 Activation/disable delay	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V 0 1 ms	
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 Activation/disable delay Timing Readiness delay	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V 0 1 ms 400 ms	
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 Activation/disable delay Timing Readiness delay Cycle time	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V 0 1 ms 400 ms 4.72 ms	

	IO-Link	
	COM mode	COM2
	Specification	V1.0.1
		V1.1
	Min. cycle time	COM2 = 2.3 ms
S	ervice interface	
Ty	уре	IO-Link
	IO-Link	
	Function	Configuration via software
		Service
С	onnection	
_		
	umber of connections	2 Piece(s)
Р	lug outlet	Rear side
	Connection 1	
	Function	Configuration interface
		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	Connection to transmitter
	Type of connection	Connector
	Thread size	M12 Female
	Type Material	Metal
	No. of pins	5 -pin
	Encoding	A-coded
	Elicounig	100000
N	lechanical data	
D	esign	Cubic
D	imension (W x H x L)	29 mm x 35.4 mm x 2,903 mm
н	ousing material	Metal
Μ	etal housing	Aluminum
L	ens cover material	Plastic
Ν	et weight	2,950 g
н	ousing color	Silver
Ty	ype of fastening	Groove mounting
		Via optional mounting device
0	peration and display	
_		
T	ype of display	LED
		OLED display
	umber of LEDs	2 Piece(s)
T	ype of configuration	Software
~	norational controls	Teach-in
0	perational controls	Membrane keyboard
Е	nvironmental data	
_		20 60 °C
	mbient temperature, operation	-30 60 °C -40 70 °C
A	mbient temperature, storage	

## **Technical data**

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#### Certifications

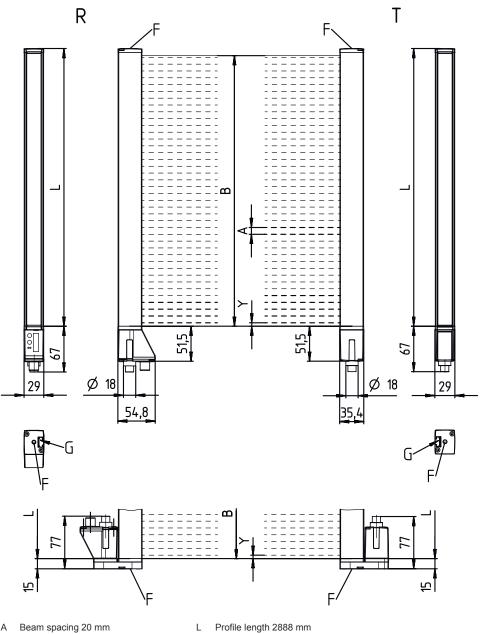
Degree of protection	IP 65
Protection class	III
Certifications	c CSA US
Standards applied	IEC 60947-5-2

#### 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
- В Measurement field length 2870 mm
- F M6 thread G Fastening groove
- R Receiver

Т

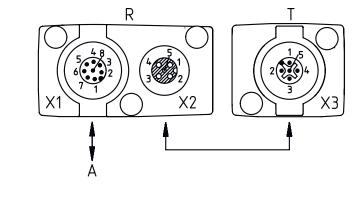
5 mm Υ

Transmitter



### **Dimensioned drawings**





A PWR / SW IN / OUT

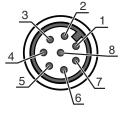
### **Electrical connection**

**Connection 1** 

Function	Configuration interface
	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	IO1		
3	GND		
4	IO-Link		
5	102		
6	IO3		
7	IO4		
8	GND		



#### **Connection 2**

Function	Connection to transmitter
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

#### Pin Pin assignment

1	FE/SHIELD
2	V+
3	GND
4	RS 485 Tx+
5	RS 485 Tx-



### **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
50119522	CML720i-T20- 2870.R-M12	Light curtain transmitter	Operating range: 0.3 6 m Connection: Connector, M12, Rear side, 5 -pin

#### Part number code

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

CML 7XXi	Operating principle Measuring light curtain 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
DDD	Special equipment -PS: Power Setting
EEE	Electrical connection M12: M12 connector
FFF	-EX: Explosion protection
Note	
A list wi	th all available device types can be found on the Leuze website at www.leuze.com.

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#### Notes



#### Observe intended use!

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

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  The product may only be put into operation by competent persons.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  Only use the product in accordance with its intended use.

	For UL applications:
A	<ul> <li>For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>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)</li> </ul>

#### Accessories

#### Connection technology - Connection cables

 Part no.	Designation	Article	Description
50135128	KD S-M12-8A-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

#### 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

#### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
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

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#### Accessories

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## 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

### 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
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.
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

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