

## **Technical data sheet Light curtain receiver** Part no.: 50123644 CML720i-R20-2390.R/D3-M12



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 changes

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### **Technical data**

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Series	700
	720
	Throughbeam principle
	Receiver
	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	0.3 7 m
	Guaranteed operating range
	0.2 9 m
	Typical operating range
	2,390 mm
Number of beams	120 Piece(s)
	20 mm
Measurement data	
	20 mm
winimum 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
	0 15 %, From U <sub>R</sub>
	$0 \dots 435 \text{ mA}$ , The specified values refer
	to the entire package consisting of trans mitter and receiver.
Inputs/outputs selectable	mitter and receiver.
Inputs/outputs selectable Output current, max.	mitter and receiver. 100 mA
Inputs/outputs selectable Output current, max. Input resistance	mitter and receiver. 100 mA 6,000 Ω
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	mitter and receiver. 100 mA 6,000 Ω 2 Piece(s)
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs	mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs	mitter and receiver. 100 mA 6,000 $\Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq$ 6V
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs	mitter and receiver. 100 mA 6,000 $\Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq$ 6V
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Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay	mitter and receiver. 100 mA 6,000 $\Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq$ 6V Iow: $\leq$ 4 V
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior	mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time	mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms 4 ms
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time Response time per beam	mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time	mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms 4 ms
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Cycle time Response time per beam Interface	mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms 4 ms
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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	
Turns of composition	Voltage supply	
Type of connection Thread size	Connector M12	
	Male	
Type Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	
Encoung	A coded	
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	
Mechanical data		
Design	Cubic	
Dimension (W x H x L)	29 mm x 35.4 mm x 2,423 mm	
Housing material	Metal	
Metal housing	Aluminum	
Lens cover material	Plastic	
Net weight	2,500 g	
Housing color	Silver	
Type of fastening	Groove mounting	
	Via optional mounting device	
Operation and display		
Type of display	LED	
· · · ·	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	

### **Technical data**

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#### Certifications

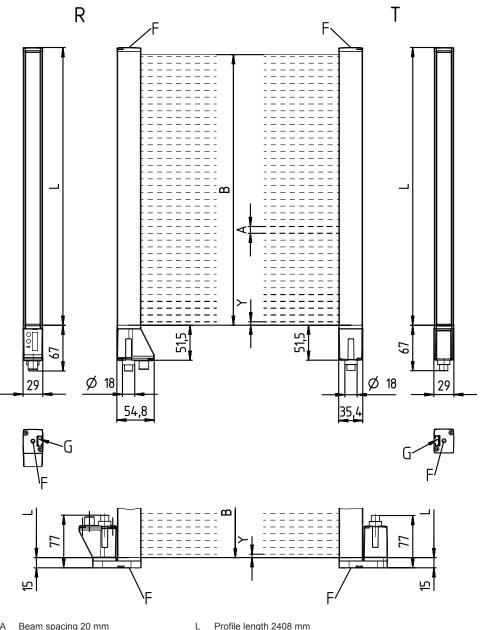
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

#### 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
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549

#### **Dimensioned drawings**

All dimensions in millimeters

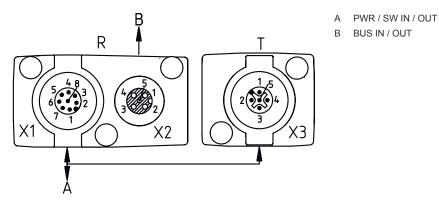


- Beam spacing 20 mm А
- В Measurement field length 2390 mm
- F M6 thread G
  - Fastening groove
- Profile length 2408 mm Т
  - Transmitter
- R Receiver
- 5 mm Υ

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#### **Dimensioned drawings**





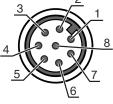
### **Electrical connection**

**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

1 2

3

4

5

#### Pin assignment V+ Tx-PB GND Tx+ FE/SHIELD



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
50119519	CML720i-T20- 2390.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	<b>Beam spacing</b> 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
RR.	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
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
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the A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.