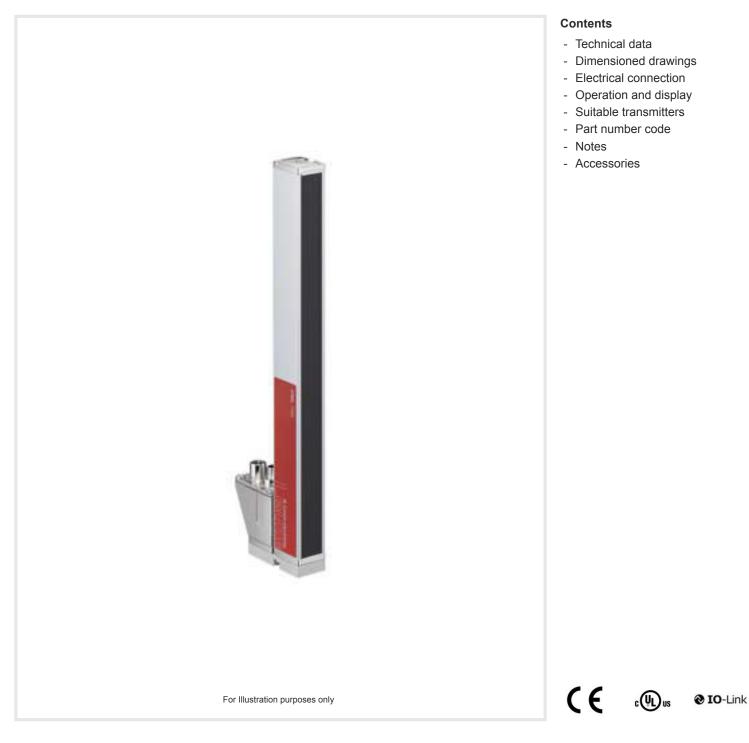
# **Technical data sheet** Light curtain receiver Part no.: 50120095 CML720i-R20-310.R/L-M12



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# **Technical data**

# Leuze

Series	720
Operating principle	Throughbeam principle
	Receiver
	Accessories for the use of the BT-2R1
	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
	310 mm
Number of beams	16 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
	0 15 %, From U <sub>B</sub>
	<ol> <li>135 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.</li> </ol>
Inputs/outputs selectable	
Output current, max.	100 mA
Input resistance	6,000 Ω
Number of inputs/outputs selectable	4 Piece(s)
Туре	Inputs/outputs selectable
1 1 <b>3</b> 1 <b>3</b> 1 <b>3</b> 1 <b>1 1 1 1 1</b>	DC
Switching voltage, outputs	Тур. U <sub>В</sub> / 0 V
	DC
Voltage type, inputs	
	high: ≥6V
Switching voltage, inputs	high: ≥6V Iow: ≤ 4 V
Switching voltage, inputs	0
Switching voltage, inputs Input/output 1	0
Switching voltage, inputs Input/output 1 Activation/disable delay	low: ≤ 4 V
Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior	low: ≤ 4 V 0 1 ms
Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay	low: ≤ 4 V 0 1 ms 400 ms
Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time	low: ≤ 4 V 0 1 ms
Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time	low: ≤ 4 V 0 1 ms 400 ms 1 ms

IO-Link	001/0
COM mode Min. cycle time	COM2 COM2 = 2.3 ms
Specification	V1.0.1
opooniouton	V1.1
ervice interface	
уре	IO-Link
IO-Link Function	Configuration via software
Tunoton	Service
onnection	
umber of connections	2 Piece(s)
lug outlet	Rear side
Connection 1	
Function	Configuration interface
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
	M12 Male
Type	indio
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
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
lechanical data	
esign	Cubic
imension (W x H x L)	29 mm x 35.4 mm x 343 mm
ousing material	Metal
etal housing	Aluminum
ens cover material	Plastic
et weight	600 g
ousing color	Silver
ype of fastening	Groove mounting
	Via optional mounting device
peration and display	
ype of display	LED
· · · · · · · · · · · · · · · · · · ·	OLED display
umber of LEDs	2 Piece(s)
pe of configuration	Software
rps si comgulation	Teach-in
perational controls	Membrane keyboard
nvironmental data	
mbient temperature, operation	-30 60 °C
mbient temperature, storage	

## **Technical data**

#### Certifications

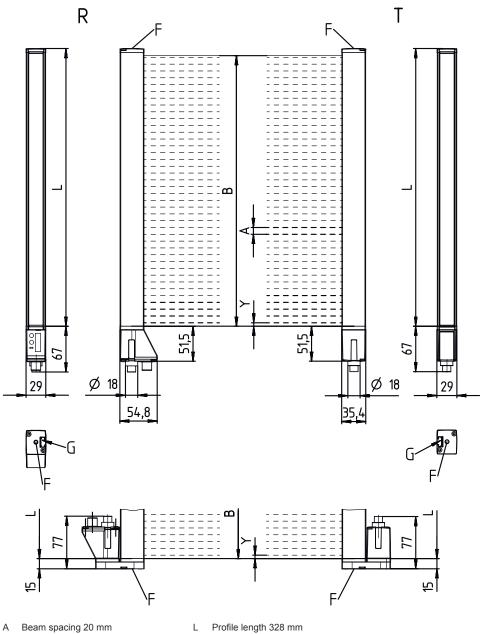
#### Classification

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



В Measurement field length 310 mm

Fastening groove

- Transmitter Т
- F M6 thread

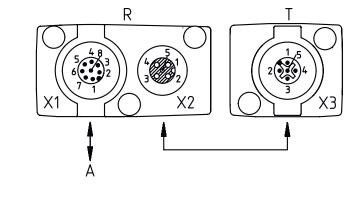
G

- R Receiver Υ
  - 5 mm



### **Dimensioned drawings**





A PWR / SW IN / OUT

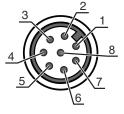
# **Electrical connection**

**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
50119506	CML720i-T20-310.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
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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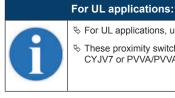
#### Notes

#### Observe intended use!

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

b The product may only be put into operation by competent persons.

 $\ensuremath{\mathfrak{b}}$  Only use the product in accordance with its intended use.



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 unit

	Part no.	Designation	Article	Description
C. LEATING	50144900	MD 798i-11-82/L5- 2222	IO-Link master	Type: IO-Link master Current consumption, max.: 11,000 mA Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67, IP 65, IP 69K

#### 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 Connector, LED: No
Ŭ				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: 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

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