

## Technical data sheet

### Light curtain receiver

Part no.: 50131861

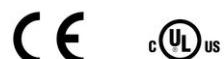
CML720i-R05-1680.R/PN-M12



For illustration purposes only

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## Technical data

### Basic data

Series	720
Operating principle	Throughbeam principle
Device type	Receiver
Contains	Accessories for the use of the BT-2R1
Application	Object measurement

### PROFINET

Function	Process
Conformance class	B
Protocol	PROFINET RT
Switch functionality	Integrated
Transmission speed	10 Mbit/s 100 Mbit/s

### Special version

Special version	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning
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### Service interface

Type	IO-Link
IO-Link	Function Configuration via software Service

### Optical data

Measurement field length	1,680 mm
Number of beams	336 Piece(s)
Beam spacing	5 mm

### Connection

Number of connections	3 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
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

### Connection 2

Function	BUS IN
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

### Connection 3

Function	BUS OUT
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

### Mechanical data

Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 1,703 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	1,850 g
Housing color	Silver
Type of fastening	Groove mounting Via optional mounting device

### Time behavior

Readiness delay	1,500 ms
Cycle time	10.48 ms
Response time per beam	30 µs

### Interface

Type	PROFINET
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## Technical data

### Operation and display

Type of display	LED
	OLED display
Number of LEDs	4 Piece(s)
Type of configuration	Software
	Teach-in

### Environmental data

Ambient temperature, operation	-30 ... 60 °C
Ambient temperature, storage	-40 ... 70 °C

### Certifications

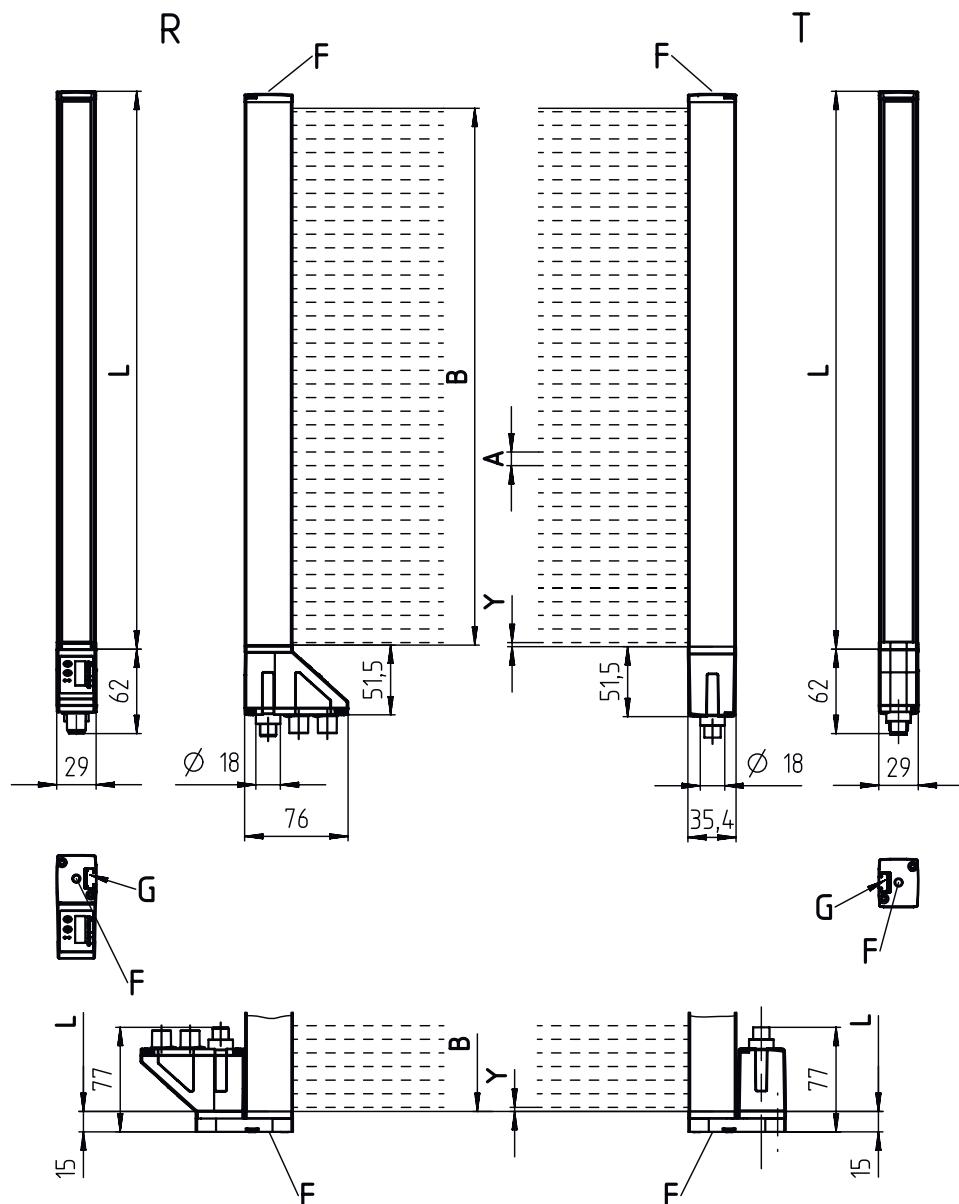
Degree of protection	IP 65
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

### 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

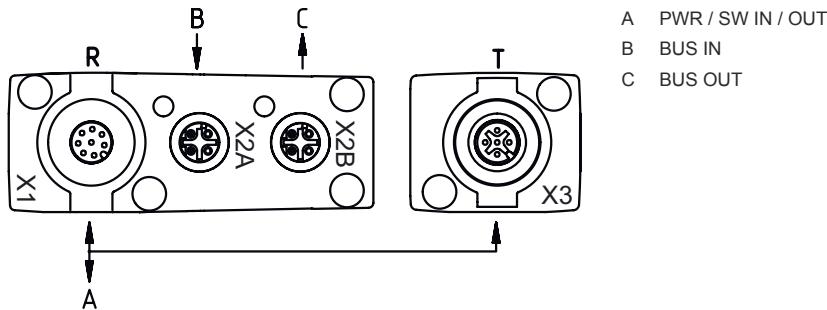
All dimensions in millimeters



A Beam spacing 5 mm  
 B Measurement field length 1680 mm  
 F M6 thread  
 G Fastening groove

L Profile length 1688 mm  
 T Transmitter  
 R Receiver  
 Y 2.5 mm

## Dimensioned drawings



## Electrical connection

## Connection 1

## X1

## Function

Configuration interface

Connection to transmitter

Signal IN

Signal OUT

Voltage supply

Connector

## Type of connection

## Thread size

M12

## Type

Male

## Material

Metal

## No. of pins

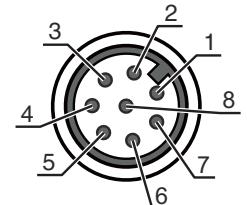
8 -pin

## 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 Rx+
8	FE/SHIELD



## Connection 2

## X2A

## Function

BUS IN

## Type of connection

Connector

## Thread size

M12

## Type

Female

## Material

Metal

## No. of pins

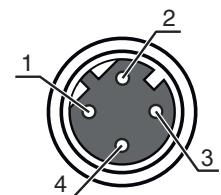
4 -pin

## Encoding

D-coded

## Pin Pin assignment

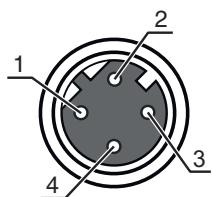
1	TD0+
2	RD0+
3	TD0-
4	RD0-



## Electrical connection

Connection 3	X2B
Function	BUS OUT
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

Pin	Pin assignment
1	TD0+
2	RD0+
3	TD0-
4	RD0-



## 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
3	Green, continuous light (at the X2A / X2B connector)	Link
4	Yellow, continuous light (at the X2A / X2B connector)	Activity

## Suitable transmitters

Part no.	Designation	Operating range Operating range limit	Description
50119469	CML720i-T05-1680.R-M12	0.1 ... 3.5 m 0.1 ... 4.5 m	Operating range: 0.1 ... 3.5 m Connection: Connector, M12, Rear side, 5 -pin

## Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCCCDD-EEEEFF

CML	Operating principle Measuring light curtain
7XXi	Series 720i: 720i series 730i: 730i series
Y	Device type T: transmitter R: receiver
ZZ	Beam spacing 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm
AAAA	Measurement field length [mm], dependent on beam spacing

## Part number code

<b>B</b>	<b>Equipment</b> A: Axial connector outlet R: Rear connector outlet
<b>CCC</b>	<b>Interface</b> L: IO-Link /CN: CANopen /PB: PROFIBUS /PN: PROFINET /CV: Analog current and voltage output /D3: RS 485 Modbus
<b>DDD</b>	<b>Special equipment</b> -PS: Power Setting
<b>EEE</b>	<b>Electrical connection</b> M12: M12 connector
<b>FFF</b>	<b>-EX: Explosion protection</b>
<b>Note</b>	
	↳ A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> .

## Notes

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

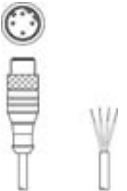
	<b>For UL applications:</b>
	<p>↳ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</p> <p>↳ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)</p>

## Accessories

### Connection technology - Connection cables

Part no.	Designation	Article	Description
	50132079	KD U-M12-5A-V1-050	Connection cable Application: Chemical resistant 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

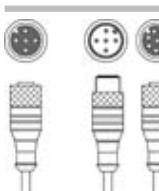
## Accessories

Part no.	Designation	Article	Description
	50135074 KS ET-M12-4A-P7-050	Connection cable	Application: Oil and lubricant resistant Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

## Connection technology - Interconnection cables

Part no.	Designation	Article	Description
	50135081 KSS ET-M12-4A-RJ45-A-P7-050	Interconnection cable	Application: Oil and lubricant resistant Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

## 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

## Mounting technology - Mounting brackets

Part no.	Designation	Article	Description
	50142900 BT 700M.5-2SET	Mounting device set	Contains: 2x mounting brackets, 1 teach template, 4 M6 x 10 screws 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	Contains: 2x BT-R swivel mount, 2 cylinders for mounting on the light curtain Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

## Accessories

### Configuration devices

Part no.	Designation	Article	Description
	50121098 SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Supply voltage: DC 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**

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