



the sensor people





Figure can vary

Part no.: 50123327 CML730i-R20-310.A/D3-M12 Light curtain receiver





# **Contents**

- Technical data
- Dimensioned drawings
- Electrical connection
- · Operation and display
- Suitable receivers
- · Part number code
- Notes
- Accessories



### **Technical data**

Basic data			
Series	730		
Operating principle	Throughbeam principle		
Device type	Receiver		
Contains	2x BT-NC sliding block		
Application	Detection of transparent objects		
	Object measurement		
Special design			
Special design	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning		
Optical data			
Operating range	Guaranteed operating range		
Operating range	0.3 9.5 m		
Operating range, transparent media	0.3 3.5 m		
Operating range limit	Typical operating range		
Operating range limit	0.2 12 m		
Measurement field length	310 mm		
Number of beams	16 Piece(s)		
Beam spacing	20 mm		
Measurement data			
Minimum object diameter	30 mm		
iviliminani object diameter	00 11111		
Electrical data			
Protective circuit	Polarity reversal protection		
Totective circuit	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	0 135 mA , The specified values refer to the entire package consisting of transmitter and receiver.		
Inputs/outputs selectable			
Number of inputs/outputs selectable	2 Piece(s)		
Туре	Inputs/outputs selectable		
Voltage type, outputs	DC		
Switching voltage, outputs	Typ. U <sub>B</sub> / 0 V		
Switching voltage, inputs	high: ≥6V		
Input/output 1	low: ≤4V		
Timing			
Cycle time	1 ms		
Response time per beam	10 μs		
Interface			
Туре	RS 485		
×1			



Process	RS 485				
Service Interface   Interfac		Process			
Color   Color   Connection   Configuration via software					
Color   Color   Connection   Configuration via software	Samilaa intarfaaa				
		IO-Link			
Function  Connection  Number of connections  2 Piece(s)  Plug outlet  Axial  Connection 1  Function  Configuration interface Connection to transmitter Signal IN Signa		IO-LIIIK			
Service					
Number of connections   2   Piece(s)	Function				
Number of connections   2   Piece(s)	Connection				
Plug outlet  Connection 1 Function  Configuration interface Connection transmitter Signal IN Signal OUT Voltage supply  Type of connection  Thread size  M12 Type Material No. of pins Bus IN Bus OUT Function  Bus IN Bus OUT Type of connection  Function  Bus IN Bus OUT Type of connection  Function  Bus IN Bus OUT Type of connection  Function  Bus IN Bus OUT  Type of connection  Connector  Function  Bus IN Bus OUT  Type of connection  Connector  Function  Bus IN Bus OUT  Type of connection  Connector  Thread size  M12 Type Female Material Metal Meta		2 Piece(s)			
Connection 1	Plug outlet				
Function  Configuration interface Connection transmitter Signation Variance Signation Variansmitter Variansmitter Variansmitter Variansmitter Signation Variansmitter Signatio					
Thread size M12 Type Male  Material Metal No. of pins 8-pin Encoding A-coded  Connection 2 Function BUS IN BUS OUT Type of connection  Tread size M12 Type Female  Material Metal No. of pins 5-pin Encoding B-coded  Metal No. of pins 5-pin Encoding B-coded  Connector  Thread size M12 Type 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 395 mm Housing material Metal, Aluminum Lens cover material Plastic Net weight 550 g Housing color Silver Type of fastening Groove mounting via optional mounting device  Operation and display Type of display  LED OLED display  LED OLED display  LED OLED display  Number of LEDS 2 Piece(s) Type of configuration  Software Teach-in		Connection to transmitter Signal IN Signal OUT			
Male	Type of connection	Connector			
Material         Metal           No. of pins         8 -pin           Encoding         A-coded           Connection 2         Function           Function         BUS IN BUS OUT           Type of connection         Connector           Thread size         M12           Type         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 395 mm           Housing material         Metal , Aluminum           Lens cover material         Plastic           Net weight         550 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	Thread size	M12			
No. of pins 8 -pin Encoding A-coded  Connection 2  Function BUS IN BUS OUT  Type of connection Connector  Thread size M12  Type 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 395 mm Housing material Metal, Aluminum Lens cover material Plastic Net weight 550 g Housing color Silver  Type of fastening Groove mounting via optional mounting device  Operation and display  Via pof odisplay  Number of LEDs 2 Piece(s)  Type of configuration  BUS IN	Туре	Male			
Encoding A-coded  Connection 2 Function BUS IN BUS OUT  Type of connection Connector  Thread size M12  Type 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 395 mm  Housing material Metal, Aluminum  Lens cover material Plastic  Net weight 550 g  Housing color Silver  Type of fastening Grove mounting Via optional mounting device  Operation and display  Type of display  Number of LEDS 2 Piece(s)  Type of configuration  BUS IN  BUS	Material	Metal			
Function BUS IN BUS OUT Type of connection Connector Thread size M12 Type Female Material Metal No. of pins Encoding Bus Metal No. of pins Cubic Dimension (W x H x L) Dimension (W x H x L) Lens cover material Net weight Food g Housing color Type of fastening Cubic Silver Type of display CDeration and display Type of display Number of LEDs Type of configuration BUS IN BUS	No. of pins	8 -pin			
Function BUS IN BUS OUT  Type of connection Connector Thread size M12 Type Female Material No. of pins Encoding B-coded  Mechanical data Design Cubic Dimension (W x H x L) Design Cubic Dimension (W x H x L) Plastic Housing material Metal , Aluminum Lens cover material Plastic Net weight S50 g Housing color Siliver Type of fastening  Operation and display Type of display Number of LEDs Type of configuration Software Teach-in  Software Teach-in					
Type of connection  Thread size  M12  Type  Female  Material  No. of pins  Encoding  Mechanical data  Design  Cubic  Dimension (W x H x L)  Housing material  Lens cover material  Net weight  Housing color  Type of fastening  Coperation and display  Type of configuration  BUS OUT  Connector  M12  M12  M12  M12  M12  Metal  Metal  Metal  Aluminum  Lens cover material  Plastic  Groove mounting Via optional mounting device	Connection 2				
Thread size M12 Type 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 395 mm  Housing material Metal , Aluminum Lens cover material Plastic Net weight 550 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	Function				
Type 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 395 mm  Housing material Metal , Aluminum  Lens cover material Plastic  Net weight 550 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	Type of connection	Connector			
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 395 mm  Housing material Metal , Aluminum  Lens cover material Plastic Net weight 550 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	Thread size	M12			
No. of pins  Encoding  B-coded  Mechanical data  Design  Cubic  Dimension (W x H x L)  Dimension (W x H x L)  Housing material  Lens cover material  Net weight  For poor solver  Type of fastening  Cubic  Plastic  Plastic  Silver  Type of display  Croover mounting Via optional mounting device  LED OLED display  Number of LEDs  2 Piece(s)  Type of configuration  Software Teach-in	Туре	Female			
Encoding  Mechanical data  Design  Cubic  Dimension (W x H x L)  129 mm x 35.4 mm x 395 mm  Housing material  Metal , Aluminum  Lens cover material  Net weight  1550 g  Housing color  Type of fastening  Groove mounting Via optional mounting device  Coperation and display  Type of display  Number of LEDs  2 Piece(s)  Type of configuration  Software Teach-in	Material	Metal			
Mechanical data  Design Cubic  Dimension (W x H x L) 29 mm x 35.4 mm x 395 mm  Housing material Metal , Aluminum  Lens cover material Plastic  Net weight 550 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	No. of pins	5 -pin			
Design Cubic  Dimension (W x H x L) 29 mm x 35.4 mm x 395 mm  Housing material Metal , Aluminum  Lens cover material Plastic  Net weight 550 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	Encoding	B-coded			
Dimension (W x H x L)  29 mm x 35.4 mm x 395 mm  Housing material  Metal , Aluminum  Lens cover material  Plastic  Net weight  550 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	Mechanical data				
Housing material Metal , Aluminum  Lens cover material Plastic  Net weight 550 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	Design	Cubic			
Lens cover material Plastic  Net weight 550 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	Dimension (W x H x L)	29 mm x 35.4 mm x 395 mm			
Net weight 550 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	Housing material	Metal , Aluminum			
Housing color  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	Lens cover material	Plastic			
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		550 g			
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	Housing color	Silver			
Type of display  LED OLED display  Number of LEDs  2 Piece(s)  Type of configuration  Software Teach-in	Type of fastening	Groove mounting Via optional mounting device			
OLED display  Number of LEDs 2 Piece(s)  Type of configuration Software Teach-in	Operation and display				
Type of configuration Software Teach-in	Type of display				
Teach-in	Number of LEDs	2 Piece(s)			
Operational controls Membrane keyboard					
	Operational controls	Membrane keyboard			



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

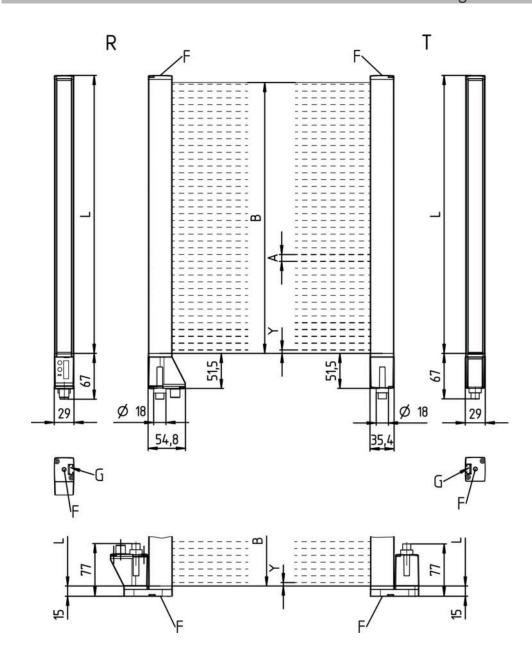
Certifications	
Degree of protection	IP 65
Protection class	III
Certifications	c CSA US
Standards applied	IEC 60947-5-2

Classification	
Customs tariff number	90314990
eCl@ss 8.0	27270910
eCl@ss 9.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549

### **Dimensioned drawings**

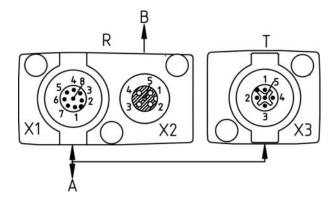
All dimensions in millimeters





- A Beam spacing 20 mm B Measurement field length 310 mm
- F M6 thread
- G Fastening groove
- L Profile length 328 mm
- T Transmitter
- R Receiver
- Y 5 mm



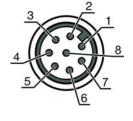


A PWR / SW IN/OUT B BUS IN / OUT

### **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	

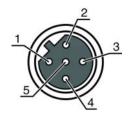
Pin	Pin assignment
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD



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



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



### **Operation and display**

#### **LEDs**

LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
		Measurement frequency display
2 Yellow, continuous light Light path free, with function reserve		Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected

### Suitable receivers

	Part no.	Designation	Article	Description
	50118630	CML730i- T20-310.A-M12	Light curtain transmitter	Operating range: 0.3 9.5 m Connection: Connector, M12, Axial, 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	
ZZ	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 with all available device types can be found on the Leuze electronic website at www.leuze.com.

#### **Notes**

#### Observe intended use!

- · This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- · Only use the product in accordance with its intended use.

#### 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 Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

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### 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
	50123265	K-YPB M12A-5m- M12A-S-PUR	Interconnection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, B-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, B-coded, 5 -pin Shielded: Yes Cable length fork 1: 5,000 mm Cable length fork 2: 250 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
EE.	429046	BT-2R1	Mounting bracket set	Contains: 2x BT-R swivel mount, 1 cylinder 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

### 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 electronic website in the Download tab of the article detailed page.