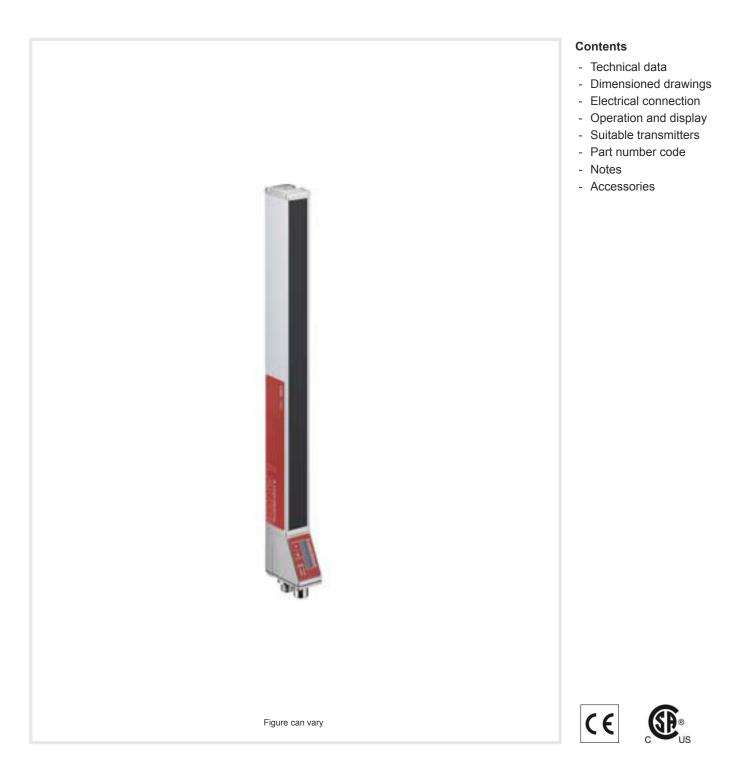


## **Technical data sheet** Light curtain receiver Part no.: 50119668 CML720i-R20-1270.A/CN-M12



The Sensor People In der Braike 1, 73277 Owen

Leuze electronic GmbH + Co. KG info@leuze.com • www.leuze.com

Phone: +49 7021 573-0 • Fax: +49 7021 573-199

#### **Technical data**

# Leuze

Parating principle         Throughbeam principle           evice type         Receiver           ontains         2x BT-NC sliding block           pplication         Object measurement           pacial version         Crossed-beam scanning           pacial version         Crossed-beam scanning           parallel-beam scanning         Parallel-beam scanning           parallel-beam scanning         Parallel-beam scanning           perating range         Outaranteed operating range           perating range limit         Typical operating range           perating range limit         0.2 9 m           easurement field length         1,270 mm           umber of beams         64 Piece(s)           ease spacing         20 mm           lectrical data         Short circuit protected           rotective circuit         Polarity reversal protection           Short circuit protected         Transient protection           Short circuit protected         Transient protection           Performance data         Supply voltage Ug         18 30 V, DC           Residual ripple         O 15 %, From Ug         Open-circuit current           Open-circuit current         100 mA         Inputs/outputs selectable           Output current, max.		
evice type         Receiver           ontains         2x BT-NC sliding block           pplication         Object measurement           pecial version         Crossed-beam scanning           pagnal-beam scanning         Parallel-beam scanning           perating range         Guaranteed operating range           perating range limit         0.2 9 m           umber of beams         64 Piece(s)           peam spacing         20 mm           lectrical data         Short circuit protected           ransent protection         Short circuit protected           spely voltage U <sub>b</sub> 18 30 V, DC           Residual ripple         0 270 mA, The specified values refer           open-circuit current         100 mA           liput / selectable         0 270 m           Output current, max.         100 mA           liput resistance         6.000 Ω           Number of inputs/outputs selectable         0 270 m, The specified values refer	Series	
available         2x BT-NC sliding block           pplication         Object measurement           pecial version         Crossed-beam scanning           pecial version         Diagonal-beam scanning           perating range         Guaranteed operating range           perating range         0.3 7 m           perating range         0.3 7 m           perating range limit         7.00 perating range           perating range limit         0.2 9 m           easurement field length         1.270 mm           umber of beams         64 Piece(s)           easurement data         30 mm           inimum object diameter         30 mm           lectrical data         VDC           rotective circuit         Polarity reversal protection           Short circuit protected         Transient protection           Short circuit protected         Transient protection           Short circuit current         0 270 mA. The specified values refer           Open-circuit current         0 270 mA. The specified values refer           to the entire package consisting of tran         mitter and receiver.           Input foutputs selectable         0.00 Ω           Vulput current, max.         100 mA           Inputrosistance		
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ptical data           perating range         Guaranteed operating range           perating range limit         Typical operating range           perating range limit         0.2 9 m           perating range limit         0 100 mM           perating range limit         0 100 mA           perating range limit         0 100 mA           perating range limit         0.0 270 mA, The specified values refer to the entire package consisting of transmitter and receiver.           Pupe         0 100 mA           Input for inputs/outputs selectable         0 200 Q           Number of inputs/outputs         DC           Switching voltage, inputs         DC		Diagonal-beam scanning
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umber of beams         64 Piece(s)           eam spacing         20 mm           inimum object diameter         30 mm           lectrical data         Polarity reversal protection           short circuit protected Transient protection         Short circuit protected Transient protection           Performance data         0 15 %, From U <sub>B</sub> Supply voltage U <sub>B</sub> 18 30 V, DC           Residual ripple         0 15 %, From U <sub>B</sub> Open-circuit current         0 270 mA, The specified values refer to the entire package consisting of tran mitter and receiver.           Inputs/outputs selectable         Output current, max.           Output current, max.         100 mA           Input solutputs selectable         2 Piece(s)           Type         Inputs/outputs selectable           Voltage type, outputs         DC           Switching voltage, inputs         DC           Switching voltage telay         1 ms           ime behavio	Measurement field length	
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inimum object diameter 30 mm lectrical data rotective circuit and the second	Measurement data	
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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       0 270 mA, The specified values refere to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       0 270 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         ime behavior       2.32 ms         eadiness delay       450 ms         terface       30 μs	Electrical data	
Performance data         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 270 mA, The specified values refere to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       0 0 Ω         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         ime behavior       2.32 ms         eadiness delay       450 ms         oy μs       450 ms         referace       70 μs	Protective circuit	Polarity reversal protection
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Type     Inputs/outputs selectable       Voltage type, outputs     DC       Switching voltage, outputs     Typ. U <sub>B</sub> / 0 ∨       Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       Input/output 1     Input/output 1       Activation/disable delay     1 ms       ime behavior     2.32 ms       eadiness delay     30 μs       eterface     CANopen	Input resistance	6,000 Ω
Voltage type, outputs     DC       Switching voltage, outputs     Typ. U <sub>B</sub> / 0 ∨       Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨     low: ≤ 4 ∨       Input/output 1     Activation/disable delay       Activation/disable delay     1 ms       eadiness delay     450 ms       sycle time     2.32 ms       esponse time per beam     30 μs       tterface     CANopen	Number of inputs/outputs selectable	2 Piece(s)
Switching voltage, outputs     Typ. U <sub>B</sub> / 0 ∨       Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨     low: ≤ 4 ∨       Input/output 1     Activation/disable delay       Activation/disable delay     1 ms       ime behavior     2.32 ms       esponse time per beam     30 μs       tterface     CANopen	Туре	Inputs/outputs selectable
Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨       Input/output 1       Activation/disable delay     1 ms       ime behavior       eadiness delay     450 ms       ycle time     2.32 ms       esponse time per beam     30 μs       tterface       ype     CANopen	Voltage type, outputs	DC
Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨       Input/output 1       Activation/disable delay     1 ms       ime behavior       eadiness delay     450 ms       ycle time     2.32 ms       esponse time per beam     30 μs       iterface       ype     CANopen		
low: ≤ 4 V low: ≤ 4	Switching voltage, outputs	Тур. U <sub>В</sub> / 0 V
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Activation/disable delay 1 ms and behavior eadiness delay 450 ms esponse time per beam 30 µs atterface rpe CANopen	Voltage type, inputs	DC
Activation/disable delay 1 ms and behavior eadiness delay 450 ms esponse time per beam 30 µs atterface rpe CANopen	Voltage type, inputs	DC high: ≥6V
ime behavior eadiness delay 450 ms ycle time 2.32 ms esponse time per beam 30 µs nterface ype CANopen	Voltage type, inputs Switching voltage, inputs	DC high: ≥6V
eadiness delay 450 ms ycle time 2.32 ms esponse time per beam 30 μs hterface ype CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1	DC high: ≥6V low: ≤ 4 V
ycle time 2.32 ms esponse time per beam 30 μs tterface ype CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1	DC high: ≥6V low: ≤ 4 V
sesponse time per beam 30 μs tterface vpe CANopen CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay	DC high: ≥6V low: ≤ 4 V
rpe CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior	DC high: ≥6∨ low: ≤ 4 ∨ 1 ms
CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay	DC high: ≥6∨ low: ≤ 4 ∨ 1 ms 450 ms
CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time	DC high: ≥6V low: ≤ 4 V 1 ms 450 ms 2.32 ms
CANopen	Voltage type, inputs Switching voltage, inputs Input/output 1	DC high: ≥6V low: ≤ 4 V 1 ms 450 ms 2.32 ms
•	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time Response time per beam	DC high: ≥6∨ low: ≤ 4 ∨ 1 ms 450 ms 2.32 ms 30 μs
FUNCTION PROCESS	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time Response time per beam Interface	DC high: ≥6∨ low: ≤ 4 ∨ 1 ms 450 ms 2.32 ms 30 μs
	Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time Response time per beam Interface Type CANopen	DC high: ≥6∨ low: ≤ 4 ∨ 1 ms 450 ms 2.32 ms 30 μs CANopen

00	IO-Link
O-Link	
Function	Configuration via software
	Service
nnection	
mber of connections	2 Piece(s)
g outlet	Axial
Connection 1	Configuration interface
Function	Configuration interface Connection to transmitter
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Гуре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connection 2	
Function	BUS IN
	BUS OUT
Type of connection	Connector
Thread size	M12
Гуре Matarial	Female
Material No. of pins	Metal 5 -pin
Encoding	5 -pin A-coded
chanical data	
sign	Cubic
nension (W x H x L)	29 mm x 35.4 mm x 1,355 mm
using material	Metal
tal housing	Aluminum
ns cover material	Plastic
weight	1,450 g
using color	Silver
e of fastening	Groove mounting
	Via optional mounting device
eration and display	
e of display	LED
- F A	OLED display
mber of LEDs	2 Piece(s)
e of configuration	Software
-	Teach-in
erational controls	Membrane keyboard
vironmental data	
bient temperature, operation	-30 60 °C
sion tomporatore, operation	JU JU U

#### **Technical data**

## Leuze

#### Certifications

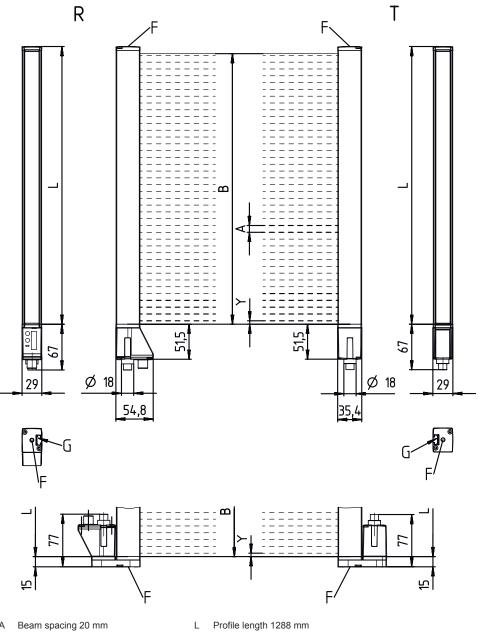
Degree of protection	IP 65
Protection class	III
Certifications	c CSA US
Standards applied	IEC 60947-5-2

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

#### **Dimensioned drawings**

All dimensions in millimeters



Beam spacing 20 mm А

Fastening groove

- В Measurement field length 1270 mm
- F M6 thread

G

R Receiver

Т

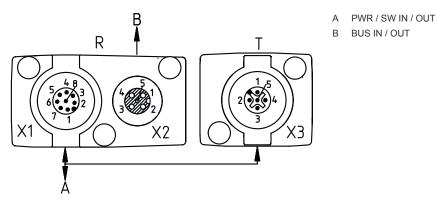
5 mm Υ

Transmitter



#### **Dimensioned drawings**





## **Electrical connection**

**Connection 1** 

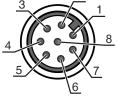
Function	Configuration interface
	Connection to transmitter
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

#### 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		



Function	BUS IN
	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded



#### **Electrical connection**

Pin	Pin assignment	
1	FE/SHIELD	
2	n.c.	
3	CAN GND	
4	CAN H	
5	CAN L	

#### **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
50119430	CML720i-T20- 1270.A-M12	Light curtain transmitter	Operating range: 0.3 7 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
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

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#### Part number code



DDD	Special equipment -PS: Power Setting
EEE	Electrical connection M12: M12 connector
FFF	-EX: Explosion protection
	Note
A	∜ 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 - 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

#### Accessories

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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
	50118185	K-YCN M12A-M12A- S-PUR	Interconnection cable	Suitable for interface: CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length fork 1: 250 mm Cable length fork 2: 350 mm Sheathing material: PUR

### Connection technology - Terminating resistors

 Part no.	Designation	Article	Description
50040099	TS 01-5-SA	Terminator plug	Suitable for: DeviceNet, CANopen Function: Bus termination Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin

### 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

#### 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. 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.

#### Accessories





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