# Leuze

## **Technical data sheet Light curtain receiver** Part no.: 50119999 CML720i-R05-1200.R/L-M12



### **Technical data**

# Leuze

Operating principle         Throughbeam principle           Device type         Receiver           Contains         Accessories for the use of the BT-2R*           Application         Object measurement           Special version         Crossed-beam scanning           Diagonal-beam scanning         Parallel-beam scanning           Operating range         0.1 3.5 m           Operating range         0.1 4.5 m           Operating range         0.1 4.5 m           Operating range         Guaranteed operating range           Operating range         0.1 4.5 m           Operating range         0.1 4.5 m           Operating range         5 mm           Measurement field length         1.200 mm           Number of beams         240 Piece(s)           Beam spacing         5 mm           Measurement data         Short circuit protection           Short circuit protected         Transient protection           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 ref to the entire package consisting of tra mitter and receiver.           Type         Inputs/outputs selectable           Output current, max. </th <th>Series</th> <th>720</th>	Series	720
Device type         Receiver           Contains         Accessories for the use of the BT-2R <sup>2</sup> Application         Object measurement           Special version         Crossed-beam scanning           Diagonal-beam scanning         Diagonal-beam scanning           Operating range         0.1 3.5 m           Operating range         0.1 4.5 m           Operating range limit         0.1 4.5 m           Operating range limit         0.1 200 mm           Number of beams         240 Piece(s)           Beam spacing         5 mm           Measurement field length         1.200 mm           Number of beams         240 Piece(s)           Beam spacing         5 mm           Measurement data         Polarity reversal protection           Short circuit protected         Transient protection           Performance data         Supply voltage Ug           Supply voltage Ug         18 30 V, DC           Residual ripple         0 15 %, From Ug           Open-circuit current         0 270 mA, The specified values refine to the entire package consisting of tra         mitter and receiver.           Type         Inputs/outputs selectable         Openci(s)           Voltage type, outputs         DC <t< td=""><td></td><td></td></t<>		
Contains         Accessories for the use of the BT-2R- Application           Application         Object measurement           Special version         Crossed-beam scanning Diagonal-beam scanning           Special data         Doperating range         0.1 3.5 m           Operating range         0.1 3.5 m         Operating range           Operating range         0.1 4.5 m         Operating range           Operating range limit         0.1 4.5 m         Operating range           Operating range limit         1,200 mm         Mumber of beams           Beam spacing         5 mm         Measurement field length         1,200 mm           Number of beams         240 Piece(s)         Beams spacing         5 mm           Measurement data         Polarity reversal protection         Short circuit protected           Transient protection         Short circuit protection         Short circuit protected           Residual ripple         0 15 %, From U <sub>b</sub> Open-circuit current         0 270 mA, The specified values ref to the entire package consisting of tra         mitter and receiver.           Inputs/outputs selectable         Output current, max.         100 mA         Minuter and receiver.           Type         Inputs/outputs selectable         Piece(s)         Type         Inputs/output selectable		
Special version       Crossed-beam scanning         Diagonal-beam scanning       Diagonal-beam scanning         Parallel-beam scanning       Parallel-beam scanning         Operating range       0.1 3.5 m         Operating range       0.1 3.5 m         Operating range limit       0.1 4.5 m         Operating range limit       0.1 4.5 m         Operating range limit       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement field length       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Polarity reversal protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Short circuit current       0 15 %, From U <sub>B</sub> Open-circuit current       0 10 mA         Inputs/outputs selectable       0 10 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       0         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, in		Accessories for the use of the BT-2R1
Special version       Crossed-beam scanning         Diagonal-beam scanning         Parallel-beam scanning         Operating range       0.1 3.5 m         Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement field length       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Short circuit protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Performance data       0 15 %, From U <sub>B</sub> Open-circuit current       0 270 mA, The specified values ref         future resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: 26V low: ≤ 4 V         Input/output 1	Application	Object measurement
Special version       Crossed-beam scanning         Diagonal-beam scanning         Parallel-beam scanning         Operating range       0.1 3.5 m         Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement field length       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Short circuit protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Performance data       0 15 %, From U <sub>B</sub> Open-circuit current       0 270 mA, The specified values ref         future resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: 26V low: ≤ 4 V         Input/output 1	Special version	
Diagonal-beam scanning           Parallel-beam scanning           Operating range         0.1 3.5 m           Operating range         Guaranteed operating range           Operating range limit         0.1 4.5 m           Operating range limit         1,200 mm           Number of beams         240 Piece(s)           Beam spacing         5 mm           Measurement field length         1,200 mm           Number of beams         240 Piece(s)           Beam spacing         5 mm           Measurement data         Polarity reversal protection           Short circuit protected         Transient protection           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 ref           Output current, max.         100 mA           Input resistance         6,000 Ω           Number of inputs/outputs selectable         Piece(s)           Type         Inputs/outputs           Voltage type, outputs         DC <td></td> <td></td>		
Parallel-beam scanning         Optical data         Operating range       0.1 3.5 m         Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       10 mm         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protected         Transient protection       Short circuit protected         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 refine to the entire package consisting of tramitter and receiver.         Input solutputs selectable       Output current, max.         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Piece(s)         Type       Inputs/output         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/o	Special version	
Optical data       0.13.5 m         Operating range       0.14.5 m         Operating range limit       0.14.5 m         Operating range limit       100 mm         Measurement field length       1.200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       10 mm         Minimum object diameter       10 mm         Electrical data       Potactity reversal protection         Short circuit protected       Transient protection         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 ref         inter and receiver.       mitter and receiver.         Inputs/outputs selectable       0 270 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Piece(s)         Type       Inputs/outputs         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC		
Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       1,200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit       Polarity reversal protection         Short circuit protected       Transient protected         Performance data       Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current         Open-circuit current       0 270 mA, The specified values ref         for the entire package consisting of tra       mitter and receiver.         Inputs/outputs selectable       Output current, max.       100 mA         Input resistance       6,000 Ω       Number of inputs/outputs         Number of inputs/outputs       DC       Switching voltage, outputs         Switching voltage, outputs       Typ. U <sub>B</sub> / 0 V       Voltage type, inputs         DC       Switching voltage, inputs       DC         Switching voltage, inputs		Parallel-beam scanning
Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       1,200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       10 mm         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB         Open-circuit current       0 270 mA, The specified values ref         to the entire package consisting of tra       mitter and receiver.         Inputs/outputs selectable       0 270 mA, The specified values ref         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs         Voltage type, outputs       DC         Switching voltage, unputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activatio/disable de	Optical data	
Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       1,200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protected         Performance data       Supply voltage 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 ref         to the entire package consisting of tra mitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Voltage type, outputs         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disabl	Operating range	0.1 3.5 m
Operating range limit       Typical operating range         Measurement field length       1,200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       10 mm         Electrical data       Polarity reversal protection         Short circuit       Polarity reversal protected         Protective circuit       Polarity reversal protection         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         Open-circuit current       0 270 mA, The specified values ref to the entire package consisting of tra mitter and receiver.         Inputs/outputs selectable       Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Piece(s)         Type       Inputs/outputs         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output	Operating range	Guaranteed operating range
Measurement field length       1,200 mm         Number of beams       240 Piece(s)         Beam spacing       5 mm         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protected         Performance data       Supply voltage 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 ref to the entire package consisting of tramitter and receiver.         Inputs/outputs selectable       Output current, max.         Output corrent, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       0	Operating range limit	0.1 4.5 m
Number of beams       240 Piece(s)         Beam spacing       5 mm         Measurement data       Innimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Protective circuit       Polarity reversal protection         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 ref         to the entire package consisting of tra       mitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Input/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Response time per beam	Operating range limit	Typical operating range
Beam spacing       5 mm         Measurement data       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Short circuit protected         Transient protection       Short circuit protected         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 reft to the entire package consisting of tramitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable 4 Piece(s)       Type         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage type, inputs       DC         Switching voltage type, inputs       DC         Switching voltage type, input	Measurement field length	1,200 mm
Measurement data         Minimum object diameter       10 mm         Electrical data         Protective circuit       Polarity reversal protection         Short circuit protected         Transient protection         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 ref to the entire package consisting of tramitter and receiver.         Inputs/outputs selectable       Output current, max.         Input resistance       6,000 Ω         Number of inputs/outputs selectable 4 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       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs	Number of beams	240 Piece(s)
Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         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 refit to the entire package consisting of tramitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Voltage type, outputs         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       0 1 ms         Time behavior       7.6 ms         Readiness delay       400 ms         Cycle time       7.6 ms         Response time per beam       30 µs	Beam spacing	5 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         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current         Open-circuit current       0 270 mA, The specified values ref to the entire package consisting of tra mitter and receiver.         Inputs/outputs selectable       Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs	Measurement data	
Protective circuit       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       I8 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 270 mA, The specified values refite to the entire package consisting of trainitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Inputs/outputs selectable       6,000 Ω         Number of inputs/outputs selectable 4 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       0 1 ms         Time behavior       7.6 ms         Readiness delay       400 ms         Cycle time       7.6 ms         Readiness time per beam       30 µs	Minimum object diameter	10 mm
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 reft to the entire package consisting of trainitter and receiver.         Inputs/outputs selectable       0 unput current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs	Electrical data	
Transient protectionPerformance dataSupply voltage UB1830 V, DCResidual ripple015 %, From UBOpen-circuit current0270 mA, The specified values ref to the entire package consisting of tra mitter and receiver.Inputs/outputs selectable00 mAOutput current, max.100 mAInput resistance6,000 QNumber of inputs/outputs selectable4 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCInput/output 1 Activation/disable delay0 1 msTime behavior400 msReadiness delay400 msCycle time7.6 msResponse time per beam30 µs	Protective circuit	Polarity reversal protection
Performance dataSupply voltage UB18 30 V, DCResidual ripple0 15 %, From UBOpen-circuit current0 270 mA, The specified values reft to the entire package consisting of trainitter and receiver.Inputs/outputs selectable0 mAOutput current, max.100 mAInput resistance6,000 QNumber of inputs/outputs selectable4 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCInput/output 1 Activation/disable delay0 1 msTime behavior7.6 msReadiness delay400 msCycle time7.6 msResponse time per beam30 µs		Short circuit protected
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 refite the entire package consisting of trainitter and receiver.         Inputs/outputs selectable       0 270 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 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       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs		Transient protection
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 refite to the entire package consisting of trainitter and receiver.         Inputs/outputs selectable       0 270 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       Typ. U <sub>B</sub> / 0 V         Voltage type, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness delay       400 ms         Cycle time       7.6 ms         Response time per beam       30 µs		
Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 270 mA, The specified values refite to the entire package consisting of trainiter and receiver.         Inputs/outputs selectable       0 0 mA         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 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       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs	Performance data	
Open-circuit current0 270 mA, The specified values ref to the entire package consisting of tra mitter and receiver.Inputs/outputs selectable100 mAOutput current, max.100 mAInput resistance $6,000 \Omega$ Number of inputs/outputs selectable4 Piece(s)YpeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsTyp. Ug / 0 VVoltage type, inputsDCSwitching voltage, inputsInput currentInput/output 1Input/output 1Activation/disable delay0 1 msTime behavior400 msReadiness delay400 msCycle time7.6 msResponse time per beam30 µs	Supply voltage U <sub>B</sub>	18 30 V, DC
to the entire package consisting of tramitter and receiver.         Inputs/outputs selectable         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Input/output 1         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs		5
Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6∨         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms	Open-circuit current	to the entire package consisting of trans
Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6∨         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms	Inputs/outputs selectable	
Number of inputs/outputs selectable       4 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       Typ. U <sub>B</sub> / 0 V         Voltage type, inputs       DC         Switching voltage, inputs       high: ≥6V         Input/output 1       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness time per beam       30 µs		100 mA
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       Activation/disable delay         Activation/disable delay       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 μs	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∨       Input/output 1     Input/output 1       Activation/disable delay     0 1 ms       Time behavior     7.6 ms       Readiness delay     30 μs	Number of inputs/outputs selectable	4 Piece(s)
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       0 1 ms         Time behavior       7.6 ms         Readiness delay       30 µs	Туре	Inputs/outputs selectable
Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6V       low: ≤ 4 V       Input/output 1       Activation/disable delay     0 1 ms       Time behavior       Readiness delay     400 ms       Cycle time     7.6 ms       Response time per beam     30 μs	Voltage type, outputs	DC
Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨       Input/output 1       Activation/disable delay     0 1 ms       Time behavior       Readiness delay     400 ms       Cycle time     7.6 ms       Response time per beam     30 μs	Switching voltage, outputs	Typ. U <sub>B</sub> / 0 V
Input/output 1       Activation/disable delay       0 1 ms       Time behavior       Readiness delay       400 ms       Cycle time       7.6 ms       Response time per beam       30 μs	Voltage type, inputs	DC
Input/output 1       Activation/disable delay     0 1 ms       Time behavior       Readiness delay     400 ms       Cycle time     7.6 ms       Response time per beam     30 µs	Switching voltage, inputs	high: ≥6V
Activation/disable delay0 1 msTime behavior400 msReadiness delay400 msCycle time7.6 msResponse time per beam30 µs		low: ≤ 4 V
Activation/disable delay     0 1 ms       Time behavior       Readiness delay     400 ms       Cycle time     7.6 ms       Response time per beam     30 µs		
Time behavior       Readiness delay     400 ms       Cycle time     7.6 ms       Response time per beam     30 µs		
Readiness delay400 msCycle time7.6 msResponse time per beam30 µs	Activation/disable delay	u 1 ms
Cycle time     7.6 ms       Response time per beam     30 µs	Time behavior	
Response time per beam 30 µs	Readiness delay	400 ms
	Cycle time	7.6 ms
Interface		30.05
	Response time per beam	50 μs
Type IO-Link		30 µS

IO-Link	
COM mode	COM2
Min. cycle time	COM2 = 2.3 ms
Specification	V1.0.1
	V1.1
Service interface	
Туре	IO-Link
IO-Link	
Function	Configuration via software
	Service
Connection	
Number of connections	2 Piece(s)
Plug outlet	Rear side
O successfield A	
Connection 1 Function	Configuration interface
T difetion	Signal IN
	Signal OUT
	0
Tune of connection	Voltage supply
Type of connection	Connector
Thread size	M12 Male
Туре	
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
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 1,223 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	1,400 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
Environmental data	
	30 60 °C
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C

### **Technical data**

#### Certifications

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

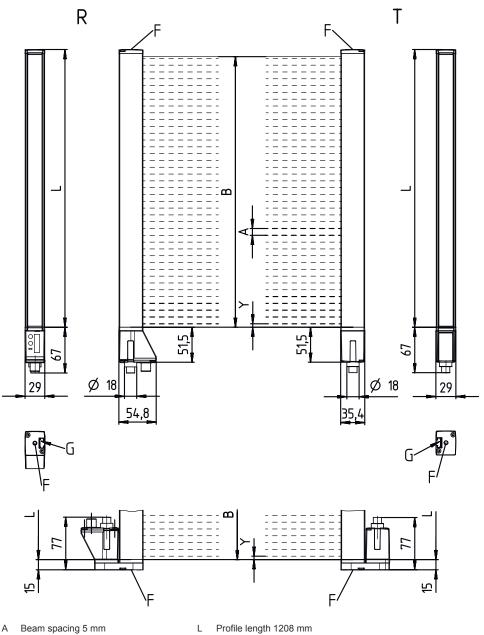
#### Classification

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



- Beam spacing 5 mm А
- В Measurement field length 1200 mm
- F M6 thread G Fastening groove
- Т R Receiver
  - 2.5 mm Υ

Transmitter

#### 4/8

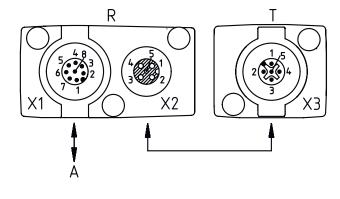
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### **Dimensioned drawings**



## \_

A PWR / SW IN / OUT



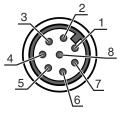
### **Electrical connection**

**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	103
7	104
8	GND

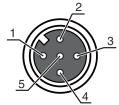


#### **Connection 2**

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**

Constitution and display		Leuze
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
50119463	CML720i-T05- 1200.R-M12	Light curtain transmitter	Operating range: 0.1 3.5 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.

#### 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.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  Only use the product in accordance with its intended use.

	For
1	∜ F ∜ T C

UL app	lications:	
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b 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. LEWIS	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 Connection 2: Open end
Ŭ				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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## Mounting technology - Mounting brackets

**Accessories** 

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