MEASURING SENSORS

INTELLIGENT MONITORING AND CONTROL THROUGH MEASURING SENSORS

Measuring sensors can actively check distances, position system parts and monitor other parameters in order to intelligently and independently initiate actions and, e. g., intervene in processes for control purposes. Here, you will find a large selection of technologies and designs for as efficient and fault-free system operation as possible.

"Our secret to success has always been the intelligent multiplication of solutions that were developed for specific applications. As a result, laser distance sensors can be used, e. g., in high-bay warehouses and with automatic transport solutions, and bar code positioning systems can be used in a wide range of industrial sectors. Our application know-how ensures that your application always runs reliably."

Markus Kirchner,
Product Developer – Measuring Sensors

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/ DISTANCE SENSORS

YOUR YARDSTICK

Our distance sensors stand for maximum accuracy - over small as well as large distances. They are used everywhere geometric parameters such as height or width need to be determined. They are characterized by high resolving capacity at high measurement rates. Especially our ultrasonic sensors facilitate reliable measurement results with transparent objects – even under difficult environmental conditions.

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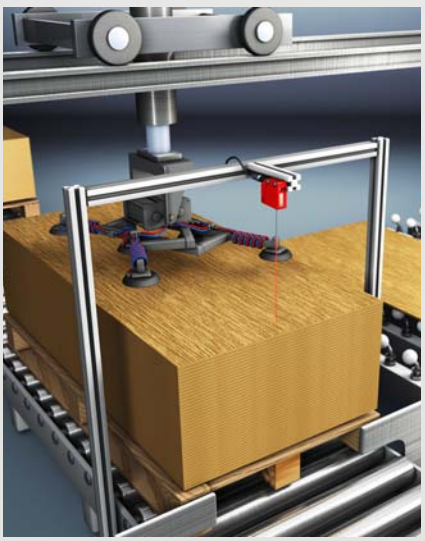
Ultrasonic Distance Sensors Page 117



//OPTICAL DISTANCE SENSORS

LIGHTS ON – MEASUREMENT STARTS

These sensors use laser or LED light to quickly and precisely measure distances on a wide range of materials, even at large ranges.

/// ODSL 8

The compact laser distance sensors of this series in a compact metal housing supply reflection-independent distance information. The sensor can be quickly commissioned through teach-in.

CE CDRH

Benefits:

- Measurement range from 20 mm to 500 mm
- Robust metal housing
- Teachable analog and switching outputs
- Turnable M12 connector

Direct access to the online product selector at **www.leuze.com/en/odsl8**

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time
50108361	ODSL 8/C66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm × 6 mm	1, current	2	0.1 ... 0.5 mm	2 ... 7 ms
50111175	ODSL 8/V66.01-500-S12	20 ... 500 mm	Laser, red, 2	2 mm × 6 mm	1, voltage	2	0.1 ... 0.5 mm	2 ... 7 ms
50101880	ODSL 8/66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm × 6 mm		2	0.1 ... 0.5 mm	2 ... 7 ms
50101879	ODSL 8/V66-500-S12	20 ... 500 mm	Laser, red, 2	2 mm × 6 mm	1, voltage	2	0.1 ... 0.5 mm	2 ... 7 ms
50108362	ODSL 8/C66-200-S12	20 ... 200 mm	Laser, red, 2	1 mm	1, current	2	0.1 ... 0.2 mm	2 ... 7 ms
50105761	ODSL 8/V66-200-S12	20 ... 200 mm	Laser, red, 2	1 mm	1, voltage	2	0.1 ... 0.2 mm	2 ... 7 ms
50108364	ODSL 8/C66-45-S12	25 ... 45 mm	Laser, red, 2	1 mm	1, current	2	0.03 mm	2 ... 7 ms
50108363	ODSL 8/V66-45-S12	25 ... 45 mm	Laser, red, 2	1 mm	1, voltage	2	0.03 mm	2 ... 7 ms

/// ODSL 9

The ODSL 9 optical distance sensors set new standards in precision and ease of use. The sensor enables accurate measurements even under difficult conditions, e.g., with glossy objects. The integrated display shows the measurement values and facilitates easy adjustment of the sensor. The distance sensors reveal their enormous potential for precision when used in combination with digital interfaces.

CE c UL us LISTED *1 CDRH

*1 only selected models: products with laser class 1, which are designated with C1 in the part number code, do not have UL approval.

Direct access to the online product selector at **www.leuze.com/en/odsl9**

ODSL 9

This series measures very precisely even over longer distances making it suitable for the positioning of actuators and robots.

Benefits:

- Large accuracy up to 650 mm
- Reflection-independent distance measurement
- Display for measured value display and configuration
- Analog current/voltage output
- Switching outputs adjustable with millimeter accuracy
- IO-Link, serial interface RS 232/485

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measure-ment time
50120825	ODSL 9/L-650-S12	50 ... 650 mm	Laser, red, 2	1 mm			IO-Link	0.1 ... 0.5 mm	2 ms
50114627	ODSL 9/V6-650-S12	50 ... 650 mm	Laser, red, 2	1 mm	1, voltage	1		0.1 ... 0.5 mm	2 ms
50113583	ODSL 9/C6-650-S12	50 ... 650 mm	Laser, red, 2	1 mm	1, current	1		0.1 ... 0.5 mm	2 ms
50120000	ODSL 9/D36-650-S12	50 ... 650 mm	Laser, red, 2	1 mm		1	RS 485	0.1 ... 0.5 mm	2 ms

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measure-ment time
50111166	ODSL 9/L-450-S12	50 ... 450 mm	Laser, red, 2	1 mm			IO-Link	0.1 mm	2 ms
50111158	ODSL 9/V6-450-S12	50 ... 450 mm	Laser, red, 2	1 mm	1, voltage	1		0.1 mm	2 ms
50111160	ODSL 9/D36-450-S12	50 ... 450 mm	Laser, red, 2	1 mm		1	RS 485	0.1 mm	2 ms
50111159	ODSL 9/D26-450-S12	50 ... 450 mm	Laser, red, 2	1 mm		1	RS 232	0.1 mm	2 ms
50111161	ODSL 9/C66-450-S12	50 ... 450 mm	Laser, red, 2	1 mm	1, current	2		0.1 mm	2 ms
50111157	ODSL 9/C6-450-S12	50 ... 450 mm	Laser, red, 2	1 mm	1, current	1		0.1 mm	2 ms
50111162	ODSL 9/V66-450-S12	50 ... 450 mm	Laser, red, 2	1 mm	1, voltage	2		0.1 mm	2 ms
50115030	ODSL 9/V6.C1-450-S12	50 ... 450 mm	Laser, red, 1	1 mm	1, voltage	1		0.1 mm	4 ms
50115029	ODSL 9/C6.C1-450-S12	50 ... 450 mm	Laser, red, 1	1 mm	1, current	1		0.1 mm	4 ms

ODSL 9 high resolution

With a resolution of 0.01 mm, the sensors are designed for the contour measurement of small objects and quality control on assembly lines.

Benefits:

- Maximum accuracy in compact design
- Resolution 0.01 mm with a measurement range of 50 mm
- Reflection-independent distance measurement
- Display for measured value display and configuration
- Analog voltage/current output, switching outputs
- IO-Link, serial interface RS 232

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measure-ment time
50111168	ODSL 9/V6-100-S12	50 ... 100 mm	Laser, red, 2	1 mm	1, voltage	1		0.01 mm	2 ms
50111174	ODSL 9/L-100-S12	50 ... 100 mm	Laser, red, 2	1 mm			IO-Link	0.01 mm	2 ms
50111167	ODSL 9/C6-100-S12	50 ... 100 mm	Laser, red, 2	1 mm	1, current	1		0.01 mm	2 ms
50111172	ODSL 9/V66-100-S12	50 ... 100 mm	Laser, red, 2	1 mm	1, voltage	2		0.01 mm	2 ms
50111171	ODSL 9/C66-100-S12	50 ... 100 mm	Laser, red, 2	1 mm	1, current	2		0.01 mm	2 ms
50111170	ODSL 9/D36-100-S12	50 ... 100 mm	Laser, red, 2	1 mm		1	RS 485	0.01 mm	2 ms
50111169	ODSL 9/D26-100-S12	50 ... 100 mm	Laser, red, 2	1 mm		1	RS 232	0.01 mm	2 ms

/// ODS 96B

Series ODS 96B distance sensors with large measurement ranges of 60 to 25000 mm are suitable for many different applications and, thanks to the metal housing, are extremely robust. They measure in the ms range. The integrated display shows the measurement values and allows the sensor to be easily adapted to the measurement task. Apart from analog current/ voltage interfaces and binary switching outputs, digital interfaces are also available. Digital interfaces prevent conversion losses in the sensor, control and during measurement data transfer.

Direct access to the online product selector at **www.leuze.com/en/ods96b**

ODS(R) 96B

Measures with either red LED light or infrared light and is suitable for large-area objects, such as bulk material.

Benefits:

- For measurements on objects with large surface area, e. g. bulk material, band materials, plate materials
- Robust metal housing
- High accuracy – reflection-independent distance measurement
- Display for measured value display and configuration

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time
50110231	ODS 96B M/V6-1400-S12	120 ... 1,400 mm	LED, infrared	15 mm × 15 mm	1, voltage	1	0.1 ... 2.0 mm	1 ... 5 ms
50106727	ODS 96B M/C66.01-1400-S12	120 ... 1,400 mm	LED, infrared	15 mm × 15 mm	1, current	2	0.1 ... 0.5 mm	1 ... 5 ms
50106730	ODSR 96B M/C6-600-S12	100 ... 600 mm	LED, red	15 mm × 15 mm	1, current	1	0.1 ... 0.5 mm	1 ... 5 ms
50106731	ODSR 96B M/V6-600-S12	100 ... 600 mm	LED, red	15 mm × 15 mm	1, voltage	1	0.1 ... 0.5 mm	1 ... 5 ms
50106720	ODS 96B M/C6-600-S12	100 ... 600 mm	LED, infrared	15 mm × 15 mm	1, current	1	0.1 ... 0.5 mm	1 ... 5 ms
50106721	ODS 96B M/V6-600-S12	100 ... 600 mm	LED, infrared	15 mm × 15 mm	1, voltage	1	0.1 ... 0.5 mm	1 ... 5 ms

ODSL 96B-S

Small laser light spot for the precise measurement of small objects, objects with color structures or for glossy surfaces.

Benefits:

- Small laser light spot
- Precise measurement on small objects and objects with colored structure
- For measurement on metallic surfaces

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measurement time
50123687	ODSL 96B M/C6.C1S-1500-S12	150 ... 1,500 mm	Laser, red, 1	1 mm	1, current	1		0.1 ... 2.0 mm	12 ... 60 ms
50123686	ODSL 96B M/V6.C1S-1500-S12	150 ... 1,500 mm	Laser, red, 1	1 mm	1, voltage	1		0.1 ... 2.0 mm	12 ... 60 ms
50106729	ODSL 96B M/V6.S-800-S12	150 ... 800 mm	Laser, red, 2	1 mm	1, voltage	1		0.1 ... 0.8 mm	1 ... 5 ms
50112065	ODSL 96B M/D36.S-800-S12	150 ... 800 mm	Laser, red, 2	1 mm		1	RS 485	0.1 ... 0.8 mm	1 ... 5 ms
50111035	ODSL 96B M/D26.S-800-S12	150 ... 800 mm	Laser, red, 2	1 mm		1	RS 232	0.1 ... 0.8 mm	1 ... 5 ms
50106728	ODSL 96B M/C6.S-800-S12	150 ... 800 mm	Laser, red, 2	1 mm	1, current	1		0.1 ... 0.8 mm	1 ... 5 ms

ODSL 96B-XL

Elongated light spot for precise measurements on porous objects and objects with openings (e. g. corrugated cardboard) as well as on objects that are not aligned precisely.

Benefits:

- Elongated light spot for precise measurement

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time
50106737	ODSL 96B M/V6.XL-1200-S12	150 ... 1,200 mm	Laser, red, 2	15 mm × 4 mm	1, voltage	1	0.1 ... 1.5 mm (XL)	1 ... 5 ms
50106736	ODSL 96B M/C6.XL-1200-S12	150 ... 1,200 mm	Laser, red, 2	15 mm × 4 mm	1, current	1	0.1 ... 1.5 mm (XL)	1 ... 5 ms

ODSL(R) 96B

Even over large ranges of up to 2 m, this sensor measures in the ms range with millimeter precision. High resolving power in compact, robust design.

Benefits:

- For measurements in ms cycle at large ranges
- Stable and precise measurement values, even at varying temperatures and objects
- Robust: IP 67, IP 69K

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measurement time
50106732	ODSLR 96B M/C6-2000-S12	60 ... 2,000 mm	Laser, red, 2 / LED, red	2 mm × 6 mm	1, current	1		1.0 ... 5.0 mm	1 ... 5 ms
50106733	ODSLR 96B M/V6-2000-S12	60 ... 2,000 mm	Laser, red, 2 / LED, red	2 mm × 6 mm	1, voltage	1		1.0 ... 5.0 mm	1 ... 5 ms
50106594	ODSL 96B M/V6-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm	1, voltage	1		1.0 ... 3.0 mm	1 ... 5 ms
50106735	ODSL 96B M/C6-2000 Ex d	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm	1, current	1		1.0 ... 3.0 mm	1 ... 5 ms
50106599	ODSL 96B M/66-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm		2		1.0 ... 3.0 mm	1 ... 5 ms
50106598	ODSL 96B M/D36-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm		1	RS 485	1.0 ... 3.0 mm	1 ... 5 ms
50106593	ODSL 96B M/C6-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm	1, current	1		1.0 ... 3.0 mm	1 ... 5 ms
50111164	ODSL 96B M/L-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm			IO-Link	1.0 ... 3.0 mm	1 ... 5 ms
50106597	ODSL 96B M/D26-2000-S12	150 ... 2,000 mm	Laser, red, 2	2 mm × 6 mm		1	RS 232	1.0 ... 3.0 mm	1 ... 5 ms

ODSL 96-Teach

For simple applications, these sensors with plastic housing offer a large measurement range. The sensor can be quickly commissioned through teach-in.

Benefits:

- Reflection-independent distance information
- 2 teachable switching outputs (push-pull)
- Easy alignment through visible red light
- Degree of protection IP 67
- Measurement range/operating range up to 2300 mm

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Resolution	Measurement time
50101882	ODSL 96K/66-2300-S12	150 ... 2,300 mm	Laser, red, 2	3 mm × 8 mm		2	1.0 ... 5.0 mm	2 ... 7 ms
50101881	ODSL 96K/V66-2300-S12	150 ... 2,300 mm	Laser, red, 2	3 mm × 8 mm	1, voltage	2	1.0 ... 5.0 mm	2 ... 7 ms

ODSL 96B-TOF

Large range also with dark objects. Measurement according to the “time of flight” principle.

Benefits:

- Large range even with dark objects
- Various operating modes for fast or precise measurement
- Robust measurement procedure
- Very high immunity to ambient light
- Display for measured value display and configuration

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measurement time
50109292	ODSL 96B M/D26-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm		1	RS 232	3.0 mm	1.4 ... 50 ms
50109294	ODSL 96B M/L-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm			IO-Link	3.0 mm	1.4 ... 50 ms
50109291	ODSL 96B M/V6-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm	1, voltage	1		3.0 mm	1.4 ... 50 ms
50109293	ODSL 96B M/D36-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm		1	RS 485	3.0 mm	1.4 ... 50 ms
50109295	ODSL 96B M/C66-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm	1, current	2		3.0 mm	1.4 ... 50 ms
50109290	ODSL 96B M/C6-S12	300 ... 10,000 mm	Laser, red, 2	7 mm × 7 mm	1, current	1		3.0 mm	1.4 ... 50 ms
50109303	ODSIL 96B M/V6-S12	300 ... 10,000 mm	Laser, infrared, 1	7 mm × 7 mm	1, voltage	1		3.0 mm	2.8 ... 100 ms
50109302	ODSIL 96B M/C6-S12	300 ... 10,000 mm	Laser, infrared, 1	7 mm × 7 mm	1, current	1		3.0 mm	2.8 ... 100 ms

ODKL 96B

A visible light spot ensures easy alignment. By measuring on reflectors, ranges of up to 25 m are no problem.

Benefits:

- Fast and easy alignment due to highly visible laser light spot
- Very high range by measuring on reflective tape
- Compact design

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measurement time
50109300	ODKL 96B M/D36-S12	300 ... 25,000 mm	Laser, red, 2	7 mm × 7 mm		1	RS 485	3.0 mm	1.4 ... 50 ms
50109299	ODKL 96B M/D26-S12	300 ... 25,000 mm	Laser, red, 2	7 mm × 7 mm		1	RS 232	3.0 mm	1.4 ... 50 ms
50109298	ODKL 96B M/V6-S12	300 ... 25,000 mm	Laser, red, 2	7 mm × 7 mm	1, voltage	1		3.0 mm	1.4 ... 50 ms
50109297	ODKL 96B M/C6-S12	300 ... 25,000 mm	Laser, red, 2	7 mm × 7 mm	1, current	1		3.0 mm	1.4 ... 50 ms
50109301	ODKL 96B M/L-S12	300 ... 25,000 mm	Laser, red, 2	7 mm × 7 mm			IO-Link	3.0 mm	1.4 ... 50 ms

/// ODSL 30

The ODSL 30 measures distances on black objects up to 30 m away and on bright objects as far as 65 m away. The sensor resolution of 1 mm enables highly accurate measurements over the complete measurement range. The integrated display shows the measurement values and allows the sensor to be easily adapted to the measurement task. Apart from analog current/voltage interfaces and binary switching outputs, digital interfaces are also available. The distance sensors reveal their enormous potential for precision when used in combination with digital interfaces.

Benefits:

- Absolute measurement accuracy +/- 2 mm over the entire measuring range
- Distances of 0.2–30 m on bright and black objects
- Referencing function for preventing fluctuations in measurement values
- Display for measured value display and configuration
- Ex model available

Direct access to the online product selector at **www.leuze.com/en/odsl30**

Part no.	Part description	Measurement range	Light source Laser protection class	Light spot dimensions	Analog outputs	Digital switching outputs	Interface	Resolution	Measurement time
50041204	ODSL 30/D485-30M-S12	0 ... 65,000 mm	Laser, red, 2	6 mm		2	RS 485	1.0 mm	30 ... 100 ms
50041203	ODSL 30/D232-30M-S12	0 ... 65,000 mm	Laser, red, 2	6 mm		2	RS 232	1.0 mm	30 ... 100 ms
50122319	ODSL 30/V-30M Ex d	0 ... 30,000 mm	Laser, red, 2	6 mm	2, current, voltage	1		1.0 mm	30 ... 100 ms
50039447	ODSL 30/V-30M-S12	0 ... 30,000 mm	Laser, red, 2	6 mm	2, current, voltage	1		1.0 mm	30 ... 100 ms
50040720	ODSL 30/24-30M-S12	0 ... 30,000 mm	Laser, red, 2	6 mm		3		1.0 mm	30 ... 100 ms

//ULTRASONIC DISTANCE SENSORS

WHEN LIGHT ISN'T ENOUGH

With ultrasonic technology, it is possible to reliably detect even partially or completely transparent objects and to perform reliable distance measurements. In addition, measurements can be performed in dusty, hazy or humid environments.

/// 418 Series

With its small, cylindrical design, this ultrasonic distance sensor can be integrated problem-free. The full-metal housing and temperature compensation make use possible under adverse conditions.

CE

Benefits:

- Color and transmission independent detection of objects
- Current or voltage output configurable via PC software
- To avoid mutual interference, max. 10 sensors may be synchronized via one cable
- Sensitivity, average value calculation, reduction of the response time and outputs configurable via IO-Link
- Teach button

Direct access to the online product selector at **www.leuze.com/en/br418mu**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Interface	Connection	Resolution
50124261	DMU418B-400.X3/LTV-M12	25 ... 400 mm	Transistor, push-pull, break-contact/ make-contact	Voltage	IO-Link	Connector, M12	1.0 mm
50124260	DMU418B-400.X3/LTC-M12	25 ... 400 mm	Transistor, push-pull, break-contact/ make-contact	Current	IO-Link	Connector, M12	1.0 mm
50124263	DMU418B-1300.X3/LTC-M12	150 ... 1,300 mm	Transistor, push-pull, break-contact/ make-contact	Current	IO-Link	Connector, M12	1.0 mm
50124264	DMU418B-1300.X3/LTV-M12	150 ... 1,300 mm	Transistor, push-pull, break-contact/ make-contact	Voltage	IO-Link	Connector, M12	1.0 mm

/// 430 Series

The new M30 models in metal housing are much more compact and ideal for detecting levels of liquids and bulk material. High accuracy through temperature compensation.

CE c UL us LISTED

Benefits:

- Ideal for detection of levels of liquids, bulk material, transparent media and highly reflective objects
- Distance information largely independent of surface properties
- Current or voltage output and a switching output configurable via PC software
- To avoid mutual interference, max. 10 sensors may be synchronized via one cable
- Sensitivity, average value calculation, reduction of the response time and outputs configurable via IO-Link
- Teach button

Direct access to the online product selector at **www.leuze.com/en/br430mu**

Part no.	Part description	Measurement range	Digital switching output	Analog output	Connection	Resolution
50040771	VRTU 430M/V-5510-300-S12	60 ... 300 mm	Transistor	Voltage	Connector, M12	1.0 mm
50036266	VRTU 430M/V-5710-300-S12	60 ... 300 mm	Transistor	Current	Connector, M12	1.0 mm
50040772	VRTU 430M/V-3510-1300-S12	200 ... 1,300 mm	Transistor	Voltage	Connector, M12	1.0 mm
50036267	VRTU 430M/V-3710-1300-S12	200 ... 1,300 mm	Transistor	Current	Connector, M12	1.0 mm
50036268	VRTU 430M/V-2710-3000-S12	400 ... 3,000 mm	Transistor	Current	Connector, M12	1.0 mm
50107096	VRTU 430M/V-2510-3000-S12	400 ... 3,000 mm	Transistor	Voltage	Connector, M12	1.0 mm
50036269	VRTU 430M/V-1710-6000-S12	600 ... 6,000 mm	Transistor	Current	Connector, M12	1.0 mm

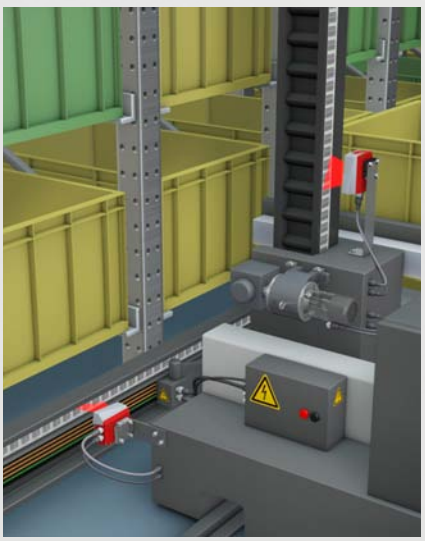
/ SENSORS FOR POSITIONING

AT THE RIGHT POSITION WITH MILLIMETER ACCURACY

With moving system parts that need to automatically work together, the positioning of parts or work pieces with millimeter accuracy is of great importance. We offer devices here with two operating principles. One is a laser distance measurement device that measures against a reflector and the other is a bar code positioning system that has a red light laser which determines the position and speed relative to a bar code tape.

Optical Laser Measurement Systems **Page 119**

Bar Code Positioning Systems **Page 121**



//OPTICAL LASER MEASUREMENT SYSTEMS

THE POWER OF OPTICAL LASER DISTANCE MEASUREMENT

The AMS 300i sensor calculates distances to moving system parts contact-free, fast and with absolute precision at ranges up to 300 m. In cycles lasting just milliseconds, the laser distance measuring system provides the distances required for dynamic control functions with millimeter accuracy using a unique selection of Industrial Ethernet and fieldbus interfaces.

/// AMS 300i

With the AMS 300i, distances of up to 300 m can be calculated with maximum accuracy and in intervals on the order of milliseconds through the use of the latest signal processors. Borderline situations are detected and indicated with the integrated, extensive functionality catalog.

Benefits:

- Repeatability of 1 mm, with tested absolute measurement accuracy from ± 2 mm to ± 5 mm at a range of 300 m
- Simultaneous calculation and monitoring of position and speed
- Integrated interface diversity for problem-free integration into a large array of systems
- Red light laser for simple alignment and real-time position measurement
- Integrated intelligent mounting solution for simple alignment and fastening
- Plain-text display in five languages for international use

Direct access to the online product selector at **www.leuze.com/en/ams300i**

Part no.	Part description	Measurement range	Reproducibility (1 sigma)	Interface	Light source	Housing material	Functions
CANopen interface							
50113693	AMS 335i 40	200 ... 40,000 mm	0.3 mm	CANopen	Laser, red	Metal	
50113697	AMS 335i 40 H	200 ... 40,000 mm	0.3 mm	CANopen	Laser, red	Metal	Heating
50113694	AMS 335i 120	200 ... 120,000 mm	0.5 mm	CANopen	Laser, red	Metal	
50113698	AMS 335i 120 H	200 ... 120,000 mm	0.5 mm	CANopen	Laser, red	Metal	Heating
50113695	AMS 335i 200	200 ... 200,000 mm	0.7 mm	CANopen	Laser, red	Metal	
50113699	AMS 335i 200 H	200 ... 200,000 mm	0.7 mm	CANopen	Laser, red	Metal	Heating
50113696	AMS 335i 300	200 ... 300,000 mm	1 mm	CANopen	Laser, red	Metal	
50113700	AMS 335i 300 H	200 ... 300,000 mm	1 mm	CANopen	Laser, red	Metal	Heating
DeviceNet interface							
50113717	AMS 355i 40	200 ... 40,000 mm	0.3 mm	DeviceNet	Laser, red	Metal	
50113721	AMS 355i 40 H	200 ... 40,000 mm	0.3 mm	DeviceNet	Laser, red	Metal	Heating
50113718	AMS 355i 120	200 ... 120,000 mm	0.5 mm	DeviceNet	Laser, red	Metal	
50113722	AMS 355i 120 H	200 ... 120,000 mm	0.5 mm	DeviceNet	Laser, red	Metal	Heating
50113719	AMS 355i 200	200 ... 200,000 mm	0.7 mm	DeviceNet	Laser, red	Metal	
50113723	AMS 355i 200 H	200 ... 200,000 mm	0.7 mm	DeviceNet	Laser, red	Metal	Heating
50113720	AMS 355i 300	200 ... 300,000 mm	1 mm	DeviceNet	Laser, red	Metal	
50113724	AMS 355i 300 H	200 ... 300,000 mm	1 mm	DeviceNet	Laser, red	Metal	Heating
EtherCAT interface							
50113701	AMS 338i 40	200 ... 40,000 mm	0.3 mm	EtherCAT	Laser, red	Metal	
50113705	AMS 338i 40 H	200 ... 40,000 mm	0.3 mm	EtherCAT	Laser, red	Metal	Heating
50113702	AMS 338i 120	200 ... 120,000 mm	0.5 mm	EtherCAT	Laser, red	Metal	
50113706	AMS 338i 120 H	200 ... 120,000 mm	0.5 mm	EtherCAT	Laser, red	Metal	Heating
50113703	AMS 338i 200	200 ... 200,000 mm	0.7 mm	EtherCAT	Laser, red	Metal	
50113707	AMS 338i 200 H	200 ... 200,000 mm	0.7 mm	EtherCAT	Laser, red	Metal	Heating
50113704	AMS 338i 300	200 ... 300,000 mm	1 mm	EtherCAT	Laser, red	Metal	
50113708	AMS 338i 300 H	200 ... 300,000 mm	1 mm	EtherCAT	Laser, red	Metal	Heating

Part no.	Part description	Measurement range	Reproducibility (1 sigma)	Interface	Light source	Housing material	Functions
EtherNet IP interface							
50113725	AMS 358i 40	200 ... 40,000 mm	0.3 mm	EtherNet IP	Laser, red	Metal	
50113729	AMS 358i 40 H	200 ... 40,000 mm	0.3 mm	EtherNet IP	Laser, red	Metal	Heating
50113726	AMS 358i 120	200 ... 120,000 mm	0.5 mm	EtherNet IP	Laser, red	Metal	
50113730	AMS 358i 120 H	200 ... 120,000 mm	0.5 mm	EtherNet IP	Laser, red	Metal	Heating
50113727	AMS 358i 200	200 ... 200,000 mm	0.7 mm	EtherNet IP	Laser, red	Metal	
50113731	AMS 358i 200 H	200 ... 200,000 mm	0.7 mm	EtherNet IP	Laser, red	Metal	Heating
50113728	AMS 358i 300	200 ... 300,000 mm	1 mm	EtherNet IP	Laser, red	Metal	
50113732	AMS 358i 300 H	200 ... 300,000 mm	1 mm	EtherNet IP	Laser, red	Metal	Heating
Ethernet interface							
50113685	AMS 308i 40	200 ... 40,000 mm	0.3 mm	Ethernet	Laser, red	Metal	
50113689	AMS 308i 40 H	200 ... 40,000 mm	0.3 mm	Ethernet	Laser, red	Metal	Heating
50113686	AMS 308i 120	200 ... 120,000 mm	0.5 mm	Ethernet	Laser, red	Metal	
50113690	AMS 308i 120 H	200 ... 120,000 mm	0.5 mm	Ethernet	Laser, red	Metal	Heating
50113687	AMS 308i 200	200 ... 200,000 mm	0.7 mm	Ethernet	Laser, red	Metal	
50113691	AMS 308i 200 H	200 ... 200,000 mm	0.7 mm	Ethernet	Laser, red	Metal	Heating
50113688	AMS 308i 300	200 ... 300,000 mm	1 mm	Ethernet	Laser, red	Metal	
50113692	AMS 308i 300 H	200 ... 300,000 mm	1 mm	Ethernet	Laser, red	Metal	Heating
Interbus-S interface							
50113733	AMS 384i 40	200 ... 40,000 mm	0.3 mm	Interbus-S	Laser, red	Metal	
50113737	AMS 384i 40 H	200 ... 40,000 mm	0.3 mm	Interbus-S	Laser, red	Metal	Heating
50113734	AMS 384i 120	200 ... 120,000 mm	0.5 mm	Interbus-S	Laser, red	Metal	
50113738	AMS 384i 120 H	200 ... 120,000 mm	0.5 mm	Interbus-S	Laser, red	Metal	Heating
50113735	AMS 384i 200	200 ... 200,000 mm	0.7 mm	Interbus-S	Laser, red	Metal	
50113739	AMS 384i 200 H	200 ... 200,000 mm	0.7 mm	Interbus-S	Laser, red	Metal	Heating
50113736	AMS 384i 300	200 ... 300,000 mm	1 mm	Interbus-S	Laser, red	Metal	
50113740	AMS 384i 300 H	200 ... 300,000 mm	1 mm	Interbus-S	Laser, red	Metal	Heating
PROFIBUS DP, SSI interface							
50113677	AMS 304i 40	200 ... 40,000 mm	0.3 mm	PROFIBUS DP, SSI	Laser, red	Metal	
50113681	AMS 304i 40 H	200 ... 40,000 mm	0.3 mm	PROFIBUS DP, SSI	Laser, red	Metal	Heating
50113678	AMS 304i 120	200 ... 120,000 mm	0.5 mm	PROFIBUS DP, SSI	Laser, red	Metal	
50113682	AMS 304i 120 H	200 ... 120,000 mm	0.5 mm	PROFIBUS DP, SSI	Laser, red	Metal	Heating
50113679	AMS 304i 200	200 ... 200,000 mm	0.7 mm	PROFIBUS DP, SSI	Laser, red	Metal	
50113683	AMS 304i 200 H	200 ... 200,000 mm	0.7 mm	PROFIBUS DP, SSI	Laser, red	Metal	Heating
50113680	AMS 304i 300	200 ... 300,000 mm	1 mm	PROFIBUS DP, SSI	Laser, red	Metal	
50113684	AMS 304i 300 H	200 ... 300,000 mm	1 mm	PROFIBUS DP, SSI	Laser, red	Metal	Heating
PROFINET interface							
50113709	AMS 348i 40	200 ... 40,000 mm	0.3 mm	PROFINET	Laser, red	Metal	
50113713	AMS 348i 40 H	200 ... 40,000 mm	0.3 mm	PROFINET	Laser, red	Metal	Heating
50113710	AMS 348i 120	200 ... 120,000 mm	0.5 mm	PROFINET	Laser, red	Metal	
50113714	AMS 348i 120 H	200 ... 120,000 mm	0.5 mm	PROFINET	Laser, red	Metal	Heating
50113711	AMS 348i 200	200 ... 200,000 mm	0.7 mm	PROFINET	Laser, red	Metal	
50113715	AMS 348i 200 H	200 ... 200,000 mm	0.7 mm	PROFINET	Laser, red	Metal	Heating
50113712	AMS 348i 300	200 ... 300,000 mm	1 mm	PROFINET	Laser, red	Metal	
50113716	AMS 348i 300 H	200 ... 300,000 mm	1 mm	PROFINET	Laser, red	Metal	Heating
RS 232, RS 422 interface							
50113661	AMS 300i 40	200 ... 40,000 mm	0.3 mm	RS 232, RS 422	Laser, red	Metal	
50113665	AMS 300i 40 H	200 ... 40,000 mm	0.3 mm	RS 232, RS 422	Laser, red	Metal	Heating
50113662	AMS 300i 120	200 ... 120,000 mm	0.5 mm	RS 232, RS 422	Laser, red	Metal	
50113666	AMS 300i 120 H	200 ... 120,000 mm	0.5 mm	RS 232, RS 422	Laser, red	Metal	Heating
50113663	AMS 300i 200	200 ... 200,000 mm	0.7 mm	RS 232, RS 422	Laser, red	Metal	
50113667	AMS 300i 200 H	200 ... 200,000 mm	0.7 mm	RS 232, RS 422	Laser, red	Metal	Heating
50113664	AMS 300i 300	200 ... 300,000 mm	1 mm	RS 232, RS 422	Laser, red	Metal	
50113668	AMS 300i 300 H	200 ... 300,000 mm	1 mm	RS 232, RS 422	Laser, red	Metal	Heating
RS 485 Interface							
50113669	AMS 301i 40	200 ... 40,000 mm	0.3 mm	RS 485	Laser, red	Metal	
50113673	AMS 301i 40 H	200 ... 40,000 mm	0.3 mm	RS 485	Laser, red	Metal	Heating
50113670	AMS 301i 120	200 ... 120,000 mm	0.5 mm	RS 485	Laser, red	Metal	
50113674	AMS 301i 120 H	200 ... 120,000 mm	0.5 mm	RS 485	Laser, red	Metal	Heating
50113671	AMS 301i 200	200 ... 200,000 mm	0.7 mm	RS 485	Laser, red	Metal	
50113675	AMS 301i 200 H	200 ... 200,000 mm	0.7 mm	RS 485	Laser, red	Metal	Heating
50113672	AMS 301i 300	200 ... 300,000 mm	1 mm	RS 485	Laser, red	Metal	
50113676	AMS 301i 300 H	200 ... 300,000 mm	1 mm	RS 485	Laser, red	Metal	Heating

//BAR CODE POSITIONING SYSTEMS

POSITION DATA WITHOUT LIMIT – "INFINITE", CURVE-GOING AND WITH MILLIMETER ACCURACY

The read head of the bar code positioning system is moved along a bar code tape. It calculates the absolute position data in the direction of travel with millimeter accuracy up to a distance of 10,000 m. The bar code tape is extremely simple to use and can be bonded both in straight lines and in curves. Maximum flexibility, simple mounting, transparent diagnosis as well as a large selection of integrated interfaces are the strengths of this system.

/// BPS 8

Our BPS 8 compact bar code positioning system convinces with its robust metal housing and turnable M12 connector. The RS 232 or RS 485 interface allows the system to be incorporated in your system architecture. The BPS8 is available with either front beam exit or with a deflection mirror.

Benefits:

- Absolute position measurement up to 10,000 m
- Curve-going, horizontal as well as vertical
- Degree of protection: IP 67
- Various protocols on RS 232, RS 485 via MA 8
- Reproducibility: +/- 1 mm
- Exact positioning at switches by means of special labels

Direct access to the online product selector at **www.leuze.com/en/bps8**

Part no.	Part description	Working range	Reproducibility (3 sigma)	Measurement value output	Interface	Light beam exit	Display element	Ambient temperature, operation
50104784	BPS 8 SM 100-01	60 ... 120 mm	1 mm	3.3 ms	RS 232	Lateral with deflection mirror	LED	0 ... 40 °C
50104783	BPS 8 SM 102-01	80 ... 140 mm	1 mm	3.3 ms	RS 232	Front	LED	0 ... 40 °C

Necessary accessories: A bar code tape is required for operation!

/// BPS 300i

The BPS 300i is the second generation of bar code positioning and sets standards both in performance characteristics and in handling. The new "availability control" function allows diagnosis to be performed during operation. The large working range of +/- 60 mm makes mechanical installation easier and precise measurements possible even if the distance to the tape varies.

Benefits:

- Availability control: To reliably prevent failures resulting from contamination, the device constantly reports its performance reserve, thereby indicating possible problems due to contamination
- Easy handling: Fast, secure mounting and precise positioning of replacement devices through easy-mount mounting technology
- Absolute positioning up to 10,000 m with reproducible accuracy of +/- 0.15 mm
- Maximum speed 10 m/s
- Modularity: three selectable connection technologies, heating and display

Direct access to the online product selector at **www.leuze.com/en/bps300i**

Part no.	Part description	Working range	Reproducibility (3 sigma)	Measurement value output	Interface	Light beam exit	Display element	Ambient temperature, operation
50124983	BPS 348i SM 100	50 ... 170 mm	0.15 mm	1 ms	PROFINET	Lateral	LED	-5 ... 50 °C
50124982	BPS 348i SM 100 D	50 ... 170 mm	0.15 mm	1 ms	PROFINET	Lateral	LED Monochromatic graphic display 128 x 32 pixels	-5 ... 50 °C
50124981	BPS 348i SM 100 D H	50 ... 170 mm	0.15 mm	1 ms	PROFINET	Lateral	LED Monochromatic graphic display 128 x 32 pixels	-35 ... 50 °C

Necessary accessories: A modular connector hood or terminal hood and a bar code tape are required for operation of the BPS 300i!

/// BPS 34/37

The BPS 34 (with PROFIBUS interface) and BPS 37 (with SSI interface) bar code positioning systems are used wherever the system places complex demands in the areas of configuration, velocity measurement and traverse rate. In addition, optional optics heating facilitates the use of the devices even at temperatures below the freezing point.

CE cULus LISTED CDRH

Benefits:

- Absolute positioning up to 10,000 m
- Curve-going, horizontal as well as vertical
- Degree of protection: IP 65
- With PROFIBUS or SSI interface
- Maximum speed 10 m/s
- If areas of the bar code tape are damaged, a repair kit can be downloaded from the Internet
- Special labels permit the precise and problem-free positioning on/at switches

Direct access to the online product selector at **www.leuze.com/en/bps34_37**

Part no.	Part description	Working range	Reproducibility (3 sigma)	Measurement value output	Interface	Light beam exit	Ambient temperature, operation
50038007	BPS 34 S M 100	90 ... 170 mm	1 mm	2 ms	PROFIBUS DP	Lateral at angle less than 100 °	0 ... 40 °C
50038008	BPS 34 S M 100 H	90 ... 170 mm	1 mm	2 ms	PROFIBUS DP	Lateral at angle less than 100 °	-30 ... 40 °C
50103179	BPS 34 S M 100 HT	90 ... 170 mm	1 mm	2 ms	PROFIBUS DP	Lateral at angle less than 100 °	0 ... 50 °C
50037188	BPS 37 S M 100	90 ... 170 mm	1 mm	2 ms	SSI	Lateral at angle less than 100 °	0 ... 40 °C
50038009	BPS 37 S M 100 H	90 ... 170 mm	1 mm	2 ms	SSI	Lateral at angle less than 100 °	-30 ... 40 °C
50103180	BPS 37 S M 100 HT	90 ... 170 mm	1 mm	2 ms	SSI	Lateral at angle less than 100 °	0 ... 50 °C

Necessary accessories: A bar code tape is required for operation!

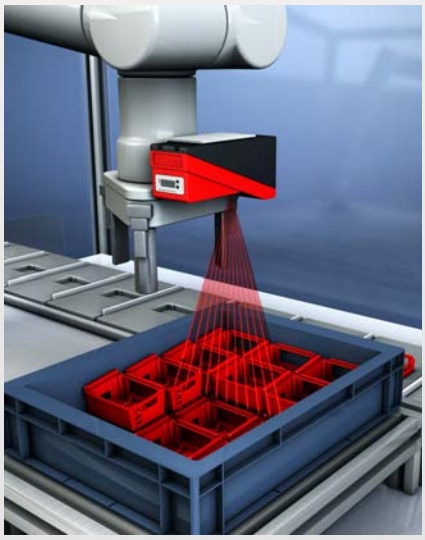
/ 3D SENSORS

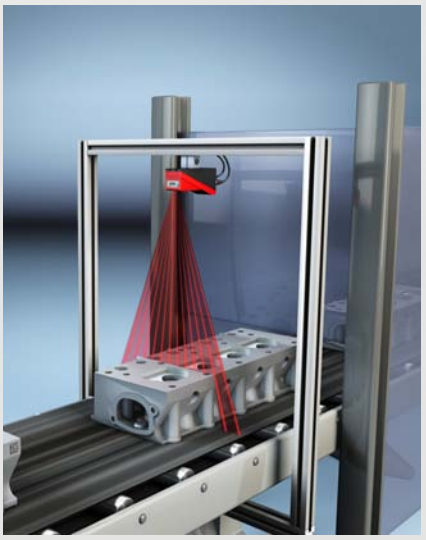
WOULD YOU LIKE ANOTHER DIMENSION WITH THAT?

These sensors determine height contours. 3D data can be easily generated for moving objects or by moving the sensor. The measurement data can either be output for external processing or preprocessed in the sensor for convenient object measurement or detection.

Light Section Sensors Page 124

Laser Scanners Page 126





//LIGHT SECTION SENSORS

ALONG THE LINE

Light section sensors measure height profiles along a projected laser line. With these sensors, objects with high resolution can be detected quickly and reliably in 3D. Depending on the model, the function range extends from simply presence monitoring to edge measurement to 3D measurement of objects.

/// LPS 36

The LPS 36 profile camera is used wherever height profiles need to be determined for moving or static objects. An additional encoder port supports the generation of calibrated 3D data. This opens numerous application possibilities, such as robot guidance as well as contour/volume measurements.

CE cULus LISTED CDRH

Benefits:

- Laser measurement technology with light-section method
- Laser line 600 mm at a distance of 800 mm
- Measurement time: 10 ms
- Measurement range: 200–800 mm
- Compact construction: 160 × 74 × 56 mm
- Interface: Ethernet
- Optional: encoder input

Direct access to the online product selector at **www.leuze.com/en/lps36**

Part no.	Part description	Measurement range, z-axis	Measurement range, x-axis	Resolution	Interface	Light source Laser protection class	Switching inputs Switching outputs
50111325	LPS 36	200 ... 800 mm	150 ... 600 mm	1 ... 3 mm	Ethernet	Laser, red, 2M	2 2
50111324	LPS 36/EN	200 ... 800 mm	150 ... 600 mm	1 ... 3 mm	Ethernet	Laser, red, 2M	2 2
50111334	LPS 36HI/EN	200 ... 600 mm	46 ... 140 mm	0.1 ... 0.9 mm	Ethernet	Laser, red, 2M	2 2

Measurement ranges: luminosity coefficient 6 … 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range U_B
Resolution: minimum and maximum value depend on measurement distance

/// LES 36

The integrated edge detection of LES sensors determines the dimensions of objects or measures the exterior edges of web material products. The calibrated measurement data can easily be further processed via Ethernet, analog interface or fieldbus. Height, width and position measurements can be quickly and easily realized through configuration.

CE cULus LISTED CDRH

Benefits:

- Laser measurement technology with light-section method
- Up to 4 measurement fields in 16 inspection tasks
- Measurement time: 10 ms
- Measurement range: 200–800 mm
- Data calculation and processing directly inside the sensor
- Compact construction: 160 × 74 × 56 mm
- Interface: Ethernet, analog or fieldbus

Direct access to the online product selector at **www.leuze.com/en/les36**

Part no.	Part description	Measurement range, z-axis	Measurement range, x-axis	Resolution	Minimum object size	Interface	Light source Laser protection class	Analog output	Switching inputs Switching outputs
50111327	LES 36/PB	200 ... 800 mm	150 ... 600 mm	1 ... 3 mm	2 ... 6 mm	Ethernet, PROFIBUS DP	Laser, red, 2M		2 2
50111333	LES 36/VC6	200 ... 800 mm	150 ... 600 mm	1 ... 3 mm	2 ... 6 mm	Ethernet	Laser, red, 2M	Current, voltage	5 6
50111329	LES 36HI/VC6	200 ... 600 mm	50 ... 140 mm	0.1 ... 0.9 mm	0.4 ... 3 mm	Ethernet	Laser, red, 2M	Current, voltage	5 6

Measurement ranges: luminosity coefficient 6 … 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range U_B
Resolution: minimum and maximum value depend on measurement distance

/// LRS 36

Line range sensors are designed to perform scanning, two-dimensional object detection along a laser line. A maximum of 16 objects can be detected with one sensor. Through configuration settings, complex detection tasks can be mastered with just one sensor. Results are output via Ethernet, fieldbus interfaces or binary switching outputs.
A perfect solution, e. g., for multiple track transport or completeness monitoring.

CE cULus LISTED CDRH

Benefits:

- Laser scanning using the light section method
- Up to 16 detection fields in 16 inspection tasks
- Measurement time: 10 ms
- Scanning area: 200-800 mm
- Data calculation and processing directly inside the sensor
- Compact construction: 160 × 74 × 56 mm
- Interface: Ethernet, I/O or fieldbus

Direct access to the online product selector at **www.leuze.com/en/lrs36**

Part no.	Part description	Detection range, z-axis	Detection range, x-axis	Minimum object size	Interface	Light source Laser protection class	Switching inputs Switching outputs
50111330	LRS 36/6	200 ... 800 mm	150 ... 600 mm	2 ... 6 mm	Ethernet	Laser, red, 2M	5 6
50115418	LRS 36/6.10	200 ... 800 mm	150 ... 600 mm	2 ... 6 mm	Ethernet	Laser, red, 2M	5 6
50111332	LRS 36/PB	200 ... 800 mm	150 ... 600 mm	2 ... 6 mm	Ethernet, PROFIBUS DP	Laser, red, 2M	2 2

Measurement ranges: luminosity coefficient 6 ... 90 %, entire measurement range, at 20 °C after 30 minutes warmup time, medium range U_B
Resolution: minimum and maximum value depend on measurement distance

SMARTER **PRODUCT USABILITY**

A²LS.
Active ambient light suppression for reliable detection

integratedlaser alignment.
Convenient alignment function for large distances

brightvision®
Simplified commissioning of sensors through highly visible light spot

omnimount.
Integrated mounting and alignment concept without additional components

thinkmodular.
Freely selectable range of functions

integratedconnectivity.
The most important fieldbus interfaces in one unit

Additional usability highlights can be found under: **www.leuze.com/en/products**

//LASER SCANNERS

HIGH OPERATING RANGES WITH LARGE VIEWING ANGLES

Laser scanners detect their environment using a quickly-rotating laser measurement beam. This allows objects to be detected over large distances with very large viewing angles and also enables contours to be measured.

/// ROD 4

Contactless laser scanners for object detection and contour measurement. A laser measurement beam is deflected a rotating mirror and covers an area of 190° with a radius of up to 65 m. The measurement contour is output via Ethernet or a serial interface. In addition, there are models for object detection in up to four simultaneous detection fields.

Benefits:

- Measurement range 0 … 65 m with detection field radius of up to 50 m
- 7 configurable and selectable detection field pairs (near and far) for object detection
- Simple device exchange without PC by means of config. connector
- Reference contour for presence/ absence checks of objects
- Independent, simultaneous monitoring of 4 detection fields
- Interference suppression in the event of particles in the air
- ROD 4-36 with heating and ROD 4-38 with heating, dust-insensitive version.

Direct access to the online product selector at **www.leuze.com/en/rod4**

Part no.	Part description	Measurement range	Light source Laser protection class	Scanning rate	Digital switching outputs	Number of connections	Interface	Special design
50106481	ROD4 plus	0 ... 65,000 mm	Laser, 1	25 scans/s	4	4	Ethernet, RS 232, RS 422	Warning output
50106480	ROD4-08 plus	0 ... 25,000 mm	Laser, 1	25 scans/s	4	4	Ethernet, RS 232, RS 422	Dust suppression Heating Warning output
50113226	ROD4-50 plus	0 ... 65,000 mm	Laser, 1	50 scans/s		4	Ethernet, RS 232, RS 422	Warning output
50113225	ROD4-58 plus	0 ... 25,000 mm	Laser, 1	50 scans/s		4	Ethernet, RS 232, RS 422	Dust suppression Heating Warning output
50110238	ROD4-30	0 ... 65,000 mm	Laser, 1	25 scans/s	4	2	RS 232, RS 422	Warning output
50110666	ROD4-36	0 ... 65,000 mm	Laser, 1	25 scans/s	4	2	RS 232, RS 422	Heating Warning output
50110667	ROD4-38	0 ... 25,000 mm	Laser, 1	25 scans/s	4	2	RS 232, RS 422	Dust suppression Heating Warning output

SMARTER **CUSTOMER SERVICE**

Added value made attainable!

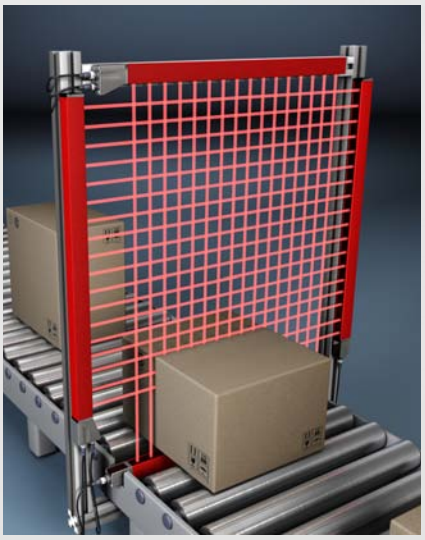
We offer specific and measurable added value in the areas of usability, application know-how and service – to help make our customers more successful. In the future, these areas will also be our yardstick for new product developments, innovative service offerings and extensive market expertise.

More information on our active customer orientation: **www.leuze.com/en/ssb**

/ LIGHT CURTAINS

MANY BEAMS SEE MORE THAN ONE

Our measuring light curtains monitor a large measurement field and output measurement information from this field. Depending on the configuration and model, the devices are suitable for a variety of measurement tasks with various resolutions and can be integrated in different fieldbus environments.



/// CML700i

Integrated interfaces enable the quick and easy integration of these measuring light curtains into fieldbus environments without additional gateway boxes and corresponding space requirements and mounting effort. Cascade mounting with a dead zone of just 23 mm between beams, fast response times and the detection of transparent media enable e.g. continuous object tracing on a transport system.

Direct access to the online product selector at **www.leuze.com/en/cml700i**

PART NUMBER CODES – *measuring light curtains CML 720i*

CML 7x0i-T05-1920.A -M12

CML 7x0i-R05-1920.A/CN-M12

Operating principle

CML	Measuring light curtain

Series

720i	720i series
730i	730i series

Function

T	Transmitter
R	Receiver

Beam spacing

05	5 mm
10	10 mm
20	20 mm
40	40 mm

Measurement field length

xxxx	Measurement field length [mm], dependent on beam spacing

Equipment

A	Plug outlet axial
R	Plug outlet rear side

Interface

L	IO-Link
CN	CANopen
PB	PROFIBUS-DP
CV	Analog, current and voltage
D3	RS 485

Electrical connection

M12	M12 connector

CML720i

6 m operating range and a response time of 30 µs per beam make the light curtains of the CML720i series the perfect introduction to reliable detection and measurement even of moving objects.

Benefits:

- Operating range of up to 6 m for larger performance reserve
- Response time of 30 µs per beam for the reliable detection of even fast processes
- Integrated Profibus, CANopen, RS485 and IO-Link interfaces for direct configuration via the control
- Large, easy-to-read display with robust membrane keyboard and bar graph display for easy alignment
- Maximum measurement field length of nearly 3 m for measurement on large objects
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation

Part no.	Part description	Beam spacing	No. of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50119458	► CML720i-T05-800.R-M12	5 mm	160	800 mm	5.2 ms	0.1 ... 3 m				Connector, M12, rear side
50120131	◄ CML720i-R05-800.R/CV-M12	5 mm	160	800 mm	5.2 ms			Voltage, current	2	Connector, M12, rear side
50119913	◄ CML720i-R05-800.R/CN-M12	5 mm	160	800 mm	5.2 ms		CANopen		2	Connector, M12, rear side
50119994	◄ CML720i-R05-800.R/L-M12	5 mm	160	800 mm	5.2 ms		IO-Link		4	Connector, M12, rear side
50122957	◄ CML720i-R05-800.R/PB-M12	5 mm	160	800 mm	5.2 ms		PROFIBUS DP		2	Connector, M12, rear side
50123584	◄ CML720i-R05-800.R/D3-M12	5 mm	160	800 mm	5.2 ms		RS 485		2	Connector, M12, rear side
50119377	► CML720i-T05-800.A-M12	5 mm	160	800 mm	5.2 ms	0.1 ... 3 m				Connector, M12, axial
50119805	◄ CML720i-R05-800.A/CV-M12	5 mm	160	800 mm	5.2 ms			Voltage, current	2	Connector, M12, axial
50119615	◄ CML720i-R05-800.A/CN-M12	5 mm	160	800 mm	5.2 ms		CANopen		2	Connector, M12, axial
50119724	◄ CML720i-R05-800.A/L-M12	5 mm	160	800 mm	5.2 ms		IO-Link		4	Connector, M12, axial
50122954	◄ CML720i-R05-800.A/PB-M12	5 mm	160	800 mm	5.2 ms		PROFIBUS DP		2	Connector, M12, axial
50123449	◄ CML720i-R05-800.A/D3-M12	5 mm	160	800 mm	5.2 ms		RS 485		2	Connector, M12, axial
50119409	► CML720i-T10-800.A-M12	10 mm	80	800 mm	2.8 ms	0.3 ... 6 m				Connector, M12, axial
50119837	◄ CML720i-R10-800.A/CV-M12	10 mm	80	800 mm	2.8 ms			Voltage, current	2	Connector, M12, axial
50119647	◄ CML720i-R10-800.A/CN-M12	10 mm	80	800 mm	2.8 ms		CANopen		2	Connector, M12, axial
50119756	◄ CML720i-R10-800.A/L-M12	10 mm	80	800 mm	2.8 ms		IO-Link		4	Connector, M12, axial
50122989	◄ CML720i-R10-800.A/PB-M12	10 mm	80	800 mm	2.8 ms		PROFIBUS DP		2	Connector, M12, axial
50123482	◄ CML720i-R10-800.A/D3-M12	10 mm	80	800 mm	2.8 ms		RS 485		2	Connector, M12, axial
50119491	► CML720i-T10-800.R-M12	10 mm	80	800 mm	2.8 ms	0.3 ... 6 m				Connector, M12, rear side
50120164	◄ CML720i-R10-800.R/CV-M12	10 mm	80	800 mm	2.8 ms			Voltage, current	2	Connector, M12, rear side
50119945	◄ CML720i-R10-800.R/CN-M12	10 mm	80	800 mm	2.8 ms		CANopen		2	Connector, M12, rear side
50120080	◄ CML720i-R10-800.R/L-M12	10 mm	80	800 mm	2.8 ms		IO-Link		4	Connector, M12, rear side
50122998	◄ CML720i-R10-800.R/PB-M12	10 mm	80	800 mm	2.8 ms		PROFIBUS DP		2	Connector, M12, rear side
50123616	◄ CML720i-R10-800.R/D3-M12	10 mm	80	800 mm	2.8 ms		RS 485		2	Connector, M12, rear side
50119427	► CML720i-T20-790.A-M12	20 mm	40	790 mm	1.6 ms	0.3 ... 6 m				Connector, M12, axial
50119855	◄ CML720i-R20-790.A/CV-M12	20 mm	40	790 mm	1.6 ms			Voltage, current	2	Connector, M12, axial
50119665	◄ CML720i-R20-790.A/CN-M12	20 mm	40	790 mm	1.6 ms		CANopen		2	Connector, M12, axial
50119774	◄ CML720i-R20-790.A/L-M12	20 mm	40	790 mm	1.6 ms		IO-Link		4	Connector, M12, axial
50123046	◄ CML720i-R20-790.A/PB-M12	20 mm	40	790 mm	1.6 ms		PROFIBUS DP		2	Connector, M12, axial
50123553	◄ CML720i-R20-790.A/D3-M12	20 mm	40	790 mm	1.6 ms		RS 485		2	Connector, M12, axial
50119509	► CML720i-T20-790.R-M12	20 mm	40	790 mm	1.6 ms	0.3 ... 6 m				Connector, M12, rear side
50120182	◄ CML720i-R20-790.R/CV-M12	20 mm	40	790 mm	1.6 ms			Voltage, current	2	Connector, M12, rear side
50119963	◄ CML720i-R20-790.R/CN-M12	20 mm	40	790 mm	1.6 ms		CANopen		2	Connector, M12, rear side
50120098	◄ CML720i-R20-790.R/L-M12	20 mm	40	790 mm	1.6 ms		IO-Link		4	Connector, M12, rear side
50123037	◄ CML720i-R20-790.R/PB-M12	20 mm	40	790 mm	1.6 ms		PROFIBUS DP		2	Connector, M12, rear side
50123634	◄ CML720i-R20-790.R/D3-M12	20 mm	40	790 mm	1.6 ms		RS 485		2	Connector, M12, rear side

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Part no.	Part description	Beam spacing	No. of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50119525	► CML720i-T40-930.R-M12	40 mm	24	930 mm	1.12 ms	0.3 ... 6 m				Connector, M12, rear side
50120198	◄ CML720i-R40-930.R/CV-M12	40 mm	23	930 mm	1.09 ms			Voltage, current	2	Connector, M12, rear side
50119979	◄ CML720i-R40-930.R/CN-M12	40 mm	23	930 mm	1.09 ms		CANopen		2	Connector, M12, rear side
50120115	◄ CML720i-R40-930.R/L-M12	40 mm	23	930 mm	1.09 ms		IO-Link		4	Connector, M12, rear side
50123062	◄ CML720i-R40-930.R/PB-M12	40 mm	23	930 mm	1.09 ms		PROFIBUS DP		2	Connector, M12, rear side
50123652	◄ CML720i-R40-930.R/D3-M12	40 mm	23	930 mm	1.09 ms		RS 485		2	Connector, M12, rear side
50119443	► CML720i-T40-930.A-M12	40 mm	24	930 mm	1.12 ms	0.3 ... 6 m				Connector, M12, axial
50119871	◄ CML720i-R40-930.A/CV-M12	40 mm	23	930 mm	1.09 ms			Voltage, current	2	Connector, M12, axial
50119681	◄ CML720i-R40-930.A/CN-M12	40 mm	23	930 mm	1.09 ms		CANopen		2	Connector, M12, axial
50119790	◄ CML720i-R40-930.A/L-M12	40 mm	23	930 mm	1.09 ms		IO-Link		4	Connector, M12, axial
50123057	◄ CML720i-R40-930.A/PB-M12	40 mm	23	930 mm	1.09 ms		PROFIBUS DP		2	Connector, M12, axial
50123569	◄ CML720i-R40-930.A/D3-M12	40 mm	23	930 mm	1.09 ms		RS 485		2	Connector, M12, axial

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CML730i

In addition to its integrated interfaces and the innovative plug outlets for gapless object tracing, the CML730i measuring light curtain stands out in particular due to its range of up to 8 m and a unique measurement cycle of 10 µs per beam. In addition, it reliably detects even transparent objects up to 3.5 m.

Benefits:

- Integrated Profibus, CANopen, RS485 and IO-Link interfaces for direct configuration via the control
- Large, easy-to-read display with robust membrane keyboard and bar graph display for easy alignment
- Reliable detection of even transparent media up to 3.5 m
- Operating range of up to 8 m for larger performance reserves
- Extremely short response time of 10 µs per beam for the reliable detection of even fast processes
- Maximum measurement field length of nearly 3 m for measurement on large objects.
- Sturdy metal housing also for use in rough industrial environments
- Connection via M12 connector for fast installation

Part no.	Part description	Beam spacing	No. of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50118921	► CML730i-T05-800.R-M12	5 mm	160	800 mm	1.8 ms	0.1 ... 4 m				Connector, M12, rear side
50119219	◄ CML730i-R05-800.R/CV-M12	5 mm	160	800 mm	1.75 ms			Voltage, current	2	Connector, M12, rear side
50119002	◄ CML730i-R05-800.R/CN-M12	5 mm	160	800 mm	1.75 ms		CANopen		2	Connector, M12, rear side
50119139	◄ CML730i-R05-800.R/L-M12	5 mm	160	800 mm	1.75 ms		IO-Link		4	Connector, M12, rear side
50123137	◄ CML730i-R05-800.R/PB-M12	5 mm	160	800 mm	1.75 ms		PROFIBUS DP		2	Connector, M12, rear side
50123362	◄ CML730i-R05-800.R/D3-M12	5 mm	160	800 mm	1.75 ms		RS 485		2	Connector, M12, rear side
50118585	► CML730i-T05-800.A-M12	5 mm	160	800 mm	1.8 ms	0.1 ... 4 m				Connector, M12, axial
50118827	◄ CML730i-R05-800.A/CV-M12	5 mm	160	800 mm	1.75 ms			Voltage, current	2	Connector, M12, axial
50118664	◄ CML730i-R05-800.A/CN-M12	5 mm	160	800 mm	1.75 ms		CANopen		2	Connector, M12, axial
50118746	◄ CML730i-R05-800.A/L-M12	5 mm	160	800 mm	1.75 ms		IO-Link		4	Connector, M12, axial
50123130	◄ CML730i-R05-800.A/PB-M12	5 mm	160	800 mm	1.75 ms		PROFIBUS DP		2	Connector, M12, axial
50123279	◄ CML730i-R05-800.A/D3-M12	5 mm	160	800 mm	1.75 ms		RS 485		2	Connector, M12, axial
50118616	► CML730i-T10-800.A-M12	10 mm	80	800 mm	1 ms	0.3 ... 8 m				Connector, M12, axial
50118872	◄ CML730i-R10-800.A/CV-M12	10 mm	80	800 mm	1 ms			Voltage, current	2	Connector, M12, axial
50118697	◄ CML730i-R10-800.A/CN-M12	10 mm	80	800 mm	1 ms		CANopen		2	Connector, M12, axial
50118778	◄ CML730i-R10-800.A/L-M12	10 mm	80	800 mm	1 ms		IO-Link		4	Connector, M12, axial
50123173	◄ CML730i-R10-800.A/PB-M12	10 mm	80	800 mm	1 ms		PROFIBUS DP		2	Connector, M12, axial
50123312	◄ CML730i-R10-800.A/D3-M12	10 mm	80	800 mm	1 ms		RS 485		2	Connector, M12, axial

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Part no.	Part description	Beam spacing	No. of beams	Measurement field length	Cycle time	Operating range	Interface	Analog outputs	Switching inputs/outputs	Connection
50118953	► CML730i-T10-800.R-M12	10 mm	80	800 mm	1 ms	0.3 ... 8 m				Connector, M12, rear side
50119251	◄ CML730i-R10-800.R/CV-M12	10 mm	80	800 mm	1 ms			Voltage, current	2	Connector, M12, rear side
50119090	◄ CML730i-R10-800.R/CN-M12	10 mm	80	800 mm	1 ms		CANopen		2	Connector, M12, rear side
50119171	◄ CML730i-R10-800.R/L-M12	10 mm	80	800 mm	1 ms		IO-Link		4	Connector, M12, rear side
50123179	◄ CML730i-R10-800.R/PB-M12	10 mm	80	800 mm	1 ms		PROFIBUS DP		2	Connector, M12, rear side
50123394	◄ CML730i-R10-800.R/D3-M12	10 mm	80	800 mm	1 ms		RS 485		2	Connector, M12, rear side
50118633	► CML730i-T20-790.A-M12	20 mm	40	790 mm	1 ms	0.3 ... 8 m				Connector, M12, axial
50118890	◄ CML730i-R20-790.A/CV-M12	20 mm	40	790 mm	1 ms			Voltage, current	2	Connector, M12, axial
50118715	◄ CML730i-R20-790.A/CN-M12	20 mm	40	790 mm	1 ms		CANopen		2	Connector, M12, axial
50118796	◄ CML730i-R20-790.A/L-M12	20 mm	40	790 mm	1 ms		IO-Link		4	Connector, M12, axial
50123206	◄ CML730i-R20-790.A/PB-M12	20 mm	40	790 mm	1 ms		PROFIBUS DP		2	Connector, M12, axial
50123330	◄ CML730i-R20-790.A/D3-M12	20 mm	40	790 mm	1 ms		RS 485		2	Connector, M12, axial
50118970	► CML730i-T20-790.R-M12	20 mm	40	790 mm	1 ms	0.3 ... 8 m				Connector, M12, rear side
50119269	◄ CML730i-R20-790.R/CV-M12	20 mm	40	790 mm	1 ms			Voltage, current	2	Connector, M12, rear side
50119108	◄ CML730i-R20-790.R/CN-M12	20 mm	40	790 mm	1 ms		CANopen		2	Connector, M12, rear side
50119188	◄ CML730i-R20-790.R/L-M12	20 mm	40	790 mm	1 ms		IO-Link		4	Connector, M12, rear side
50123221	◄ CML730i-R20-790.R/PB-M12	20 mm	40	790 mm	1 ms		PROFIBUS DP		2	Connector, M12, rear side
50123412	◄ CML730i-R20-790.R/D3-M12	20 mm	40	790 mm	1 ms		RS 485		2	Connector, M12, rear side
50118649	► CML730i-T40-930.A-M12	40 mm	24	930 mm	1 ms	0.3 ... 8 m				Connector, M12, axial
50118906	◄ CML730i-R40-930.A/CV-M12	40 mm	23	930 mm	1 ms			Voltage, current	2	Connector, M12, axial
50118731	◄ CML730i-R40-930.A/CN-M12	40 mm	23	930 mm	1 ms		CANopen		2	Connector, M12, axial
50118812	◄ CML730i-R40-930.A/L-M12	40 mm	23	930 mm	1 ms		IO-Link		4	Connector, M12, axial
50123216	◄ CML730i-R40-930.A/PB-M12	40 mm	23	930 mm	1 ms		PROFIBUS DP		2	Connector, M12, axial
50123346	◄ CML730i-R40-930.A/D3-M12	40 mm	23	930 mm	1 ms		RS 485		2	Connector, M12, axial
50118986	► CML730i-T40-930.R-M12	40 mm	24	930 mm	1 ms	0.3 ... 8 m				Connector, M12, rear side
50119285	◄ CML730i-R40-930.R/CV-M12	40 mm	23	930 mm	1 ms			Voltage, current	2	Connector, M12, rear side
50119124	◄ CML730i-R40-930.R/CN-M12	40 mm	23	930 mm	1 ms		CANopen		2	Connector, M12, rear side
50119204	◄ CML730i-R40-930.R/L-M12	40 mm	23	930 mm	1 ms		IO-Link		4	Connector, M12, rear side
50123231	◄ CML730i-R40-930.R/PB-M12	40 mm	23	930 mm	1 ms		PROFIBUS DP		2	Connector, M12, rear side
50123432	◄ CML730i-R40-930.R/D3-M12	40 mm	23	930 mm	1 ms		RS 485		2	Connector, M12, rear side

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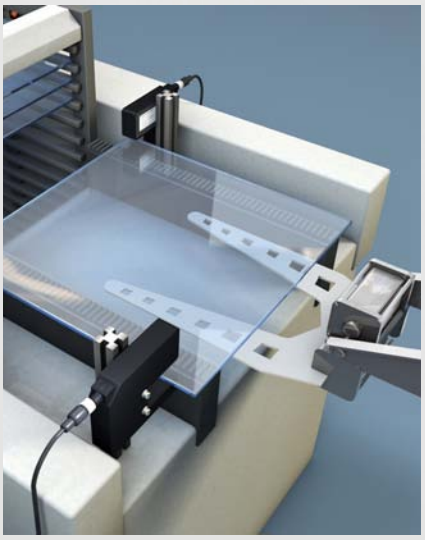
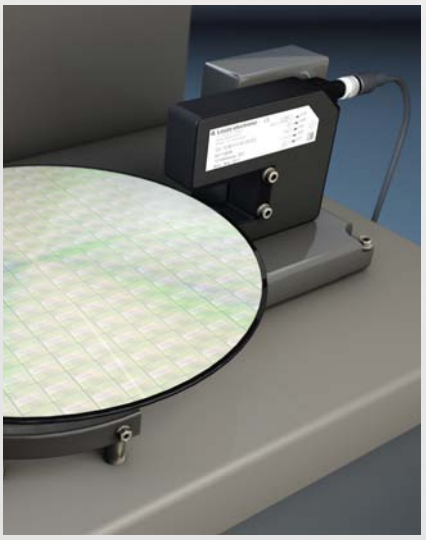
/ MEASURING FORKED SENSORS

FORK IS JUST ANOTHER WORD FOR EXACT

The forked shape offers measurement resolutions as great as 0.014 mm with high reproducibility without time-consuming alignment. An infrared light-band illuminates a line-scan camera (CCD line) and returns analog or digital output signals depending on the illuminated pixels and configuration.





/// GS 754B

With mouth widths of 27 or 100 mm, this forked photoelectric sensor delivers accurate measurement results over a 25 mm long measurement range thanks to its CCD line. Depending on the configuration, it is possible to measure transparent edges, the diameters of wires, threads and much more.

Benefits:

- Measurement range 25 mm
- Resolution: 14 µm
- Configurable measurement range and measure mode
- Teach-in function, switching or warning output
- Multiple object detection
- Standard interface (RS 232) for configuration and visualization
- M12 data interface (process interface) with analog or digital data output
- M12 turning connector

Direct access to the online product selector at **www.leuze.com/en/gs754b**

Part no.	Part description	Mouth width	Mouth depth	Measurement field length	Light source	Analog output	Switching inputs/outputs	Interface
50117818	GS 754B/V4-98-S12	98 mm	42 mm	25 mm	LED, infrared	Voltage	Switching output/switching state Teach input	
50119710	GS 754B/D24-98-S12	98 mm	42 mm	25 mm	LED, infrared		Switching output/switching state Teach input	RS 232
50119712	GS 754B/C4-98-S12	98 mm	42 mm	25 mm	LED, infrared	Current	Switching output/switching state Teach input	
50119711	GS 754B/D3-98-S12	98 mm	42 mm	25 mm	LED, infrared			RS 422
50115807	GS 754B/D24-27-S12	27 mm	42 mm	25 mm	LED, infrared		Teach input Switching output/switching state	RS 232
50115806	GS 754B/D3-27-S12	27 mm	42 mm	25 mm	LED, infrared			RS 422
50115809	GS 754B/V4-27-S12	27 mm	42 mm	25 mm	LED, infrared	Voltage	Teach input Switching output/switching state	
50115803	GS 754B/C4-27-S12	27 mm	42 mm	25 mm	LED, infrared	Current	Teach input Switching output/switching state	