



Figure can vary

**Part no.: 66536300**  
**MLD510-R4L**  
**Multiple light beam safety device receiver**



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**Technical data**

<b>Basic data</b>	
Series	MLD 500
Device type	Receiver

<b>Special design</b>	
Special design	Reflective element for laser alignment aid

<b>Functions</b>	
Functions	Automatic restart

<b>Characteristic parameters</b>	
Type	4 , IEC/EN 61496
SIL	3 , IEC 61508
SILCL	3 , IEC/EN 62061
Performance Level (PL)	e , EN ISO 13849-1
MTTF <sub>d</sub>	204 years , EN ISO 13849-1
PFH <sub>D</sub>	6.6E-09 per hour
Mission time T <sub>M</sub>	20 years , EN ISO 13849-1
Category	4 , EN ISO 13849

<b>Optical data</b>	
Number of beams	4 Piece(s)
Beam spacing	300 mm

<b>Electrical data</b>	
Protective circuit	Overvoltage protection Short circuit protected

<b>Performance data</b>	
Supply voltage U <sub>B</sub>	24 V , DC , -20 ... 20 %
Current consumption, max.	150 mA , Without external load
Fuse	External with max. 3 A

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**Outputs**

Number of safety-related switching outputs (OSSDs) 2 Piece(s)

**Safety-related switching outputs**

Type Safety-related switching output OSSD

Switching voltage high, min. 18.2 V

Switching voltage low, max. 2.5 V

Switching voltage, typ. 23 V

Voltage type DC

Current load, max. 380 mA

Load inductivity 2,200,000 µH

Load capacity 0.3 µF

Residual current, max. 0.2 mA

Residual current, typ. 0.002 mA

Voltage drop 1 V

**Safety-related switching output 1**

Assignment Connection 1, pin 2

Switching element Transistor , PNP

**Safety-related switching output 2**

Assignment Connection 1, pin 4

Switching element Transistor , PNP

**Timing**

Response time 25 ms

Restart delay time 100 ms

**Connection**

Number of connections 1 Piece(s)

**Connection 1**

Type of connection Connector

Function Machine interface

Thread size M12

Material Metal

No. of pins 5 -pin

**Cable properties**

Permissible conductor cross section, typ. 0.25 mm<sup>2</sup>

Length of connection cable, max. 100 m

Permissible cable resistance to load, max. 200 Ω

**Mechanical data**

Dimension (W x H x L) 52 mm x 1,000 mm x 64.7 mm

Housing material Metal , Aluminum

Lens cover material Plastic / PMMA

Material of end caps Diecast zinc

Net weight 2,200 g

Housing color Yellow, RAL 1021

Type of fastening Groove mounting  
Swivel mount

**Operation and display**

Type of display LED

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Number of LEDs	1 Piece(s)
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**Environmental data**

Ambient temperature, operation	-30 ... 55 °C
Ambient temperature, storage	-40 ... 75 °C
Relative humidity (non-condensing)	0 ... 95 %

**Certifications**

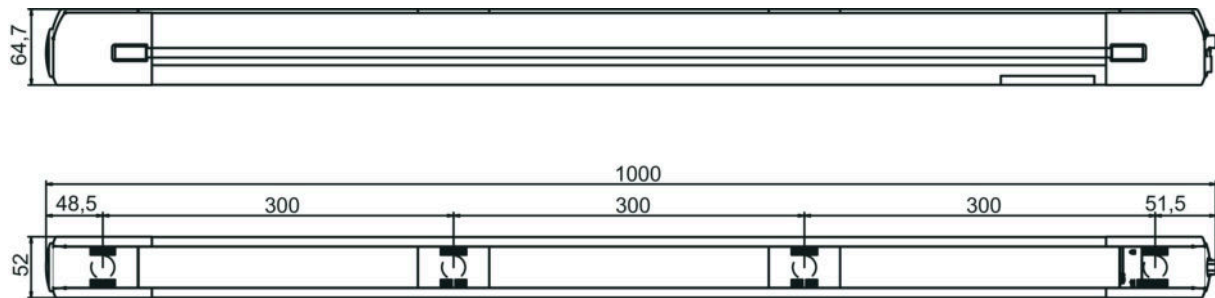
Degree of protection	IP 67
Protection class	III
Certifications	c CSA US c TÜV NRTL US TÜV Süd
US patents	US 6,418,546 B US 7,741,595 B

**Classification**

Customs tariff number	85365019
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832

### Dimensioned drawings

All dimensions in millimeters

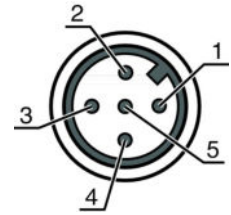


### Electrical connection

Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

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Pin	Pin assignment	Conductor color
1	+24V	Brown
2	OSSD1	White
3	0 V	Blue
4	OSSD2	Black
5	n.c.	Gray




## Operation and display

### LEDs

LED	Display	Meaning
1	Red, continuous light	OSSD off.
	Green, continuous light	OSSD on
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	Weak signal, device not optimally aligned or soiled.

## Suitable transmitters

	Part no.	Designation	Article	Description
	66502300	MLD500-T4L	Multiple light beam safety device transmitter	Operating range: 0.5 ... 50 m Number of beams: 4 Piece(s) Beam spacing: 300 mm Connection: Connector, M12, Metal, 5 -pin Special design: Integrated laser alignment aid

## Part number code

Part designation: MLDxyy-zab/t

MLD	Multiple light beam safety device
x	<b>Series:</b> 3: MLD 300 5: MLD 500
yy	<b>Function classes:</b> 00: transmitter 10: automatic restart 12: external testing 20: EDM/RES 30: muting 35: timing controlled 4-sensor muting
z	<b>Device type:</b> T: transmitter R: receiver RT: transceiver xT: transmitter with high range xR: receiver for high range
a	Number of beams

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<b>MLD</b>	<b>Multiple light beam safety device</b>
b	<b>Option:</b> L: integrated laser alignment aid (for transmitter/receiver) M: integrated status indicator (MLD 320, MLD 520) or integrated status and muting indicator (MLD 330, MLD 335, MLD 510/A, MLD 530, MLD 535) E: connection socket for external muting indicator (AS-i models only)
/t	<b>Safety-related switching outputs (OSSDs), connection technology:</b> -: transistor output, M12 plug A: integrated AS-i interface, M12 plug, (safety bus system)

### Note



A list with all available device types can be found on the Leuze electronic website at [www.leuze.com](http://www.leuze.com).

## Accessories

### Connection technology - Connection cables



	Part no.	Designation	Article	Description
	50133859	KD S-M12-5A-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50133860	KD S-M12-5A-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50136146	KD S-M12-5A-P1-250	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PVC

### Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
	560340	BT-SET-240BC	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal
	540350	BT-SET-240BC-E	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal, Plastic

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## Services

	Part no.	Designation	Article	Description
	S981050	CS40-I-140	Safety inspection "Safety light barriers"	<p>Details: Checking of a safety light barrier application in accordance with current standards and guidelines. Inclusion of the device and machine data in a database, production of a test log per application.</p> <p>Conditions: It must be possible to stop the machine, support provided by customer's employees and access to the machine for Leuze employees must be ensured.</p> <p>Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.</p>
	S981046	CS40-S-140	Start-up support	<p>Details: For safety devices including stopping time measurement and initial inspection.</p> <p>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.</p> <p>Restrictions: Max. 2 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.</p>

### Note

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