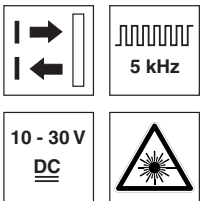


**RTL 318**

**Energetic diffuse reflection laser scanner**

cg en 07-2014/07 50108672-01

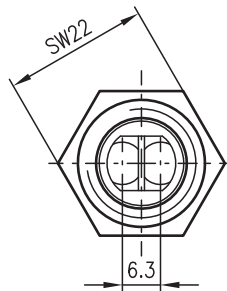
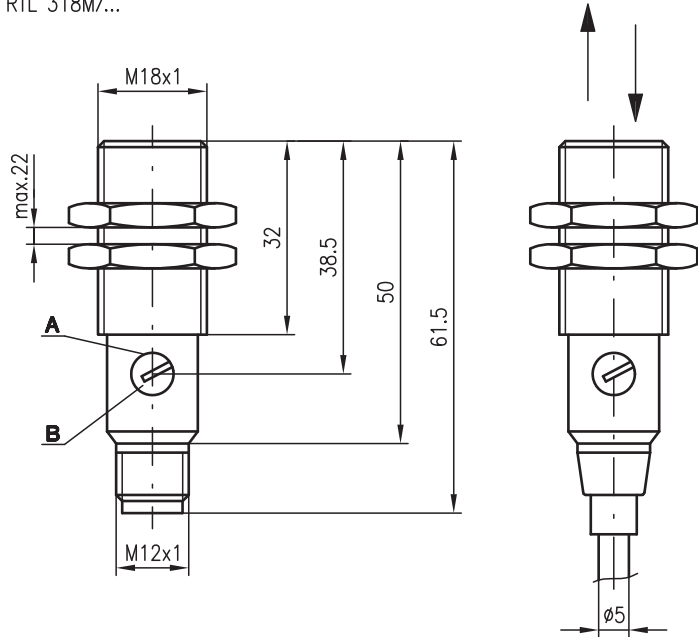


**0 ... 350mm**

- Energetic diffuse reflection light scanner with red laser light and straight optics
- Robust cylindrical stainless steel housing M18x1, protection class IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Complementary switching outputs for light/dark switching or as a control function
- Very short construction for application in limited spaces

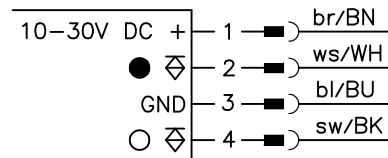
**Dimensioned drawing**

RTL 318M/...

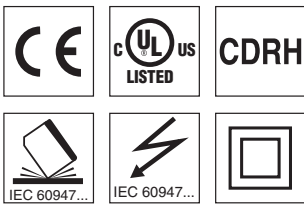


- A** Indicator diode
- B** Sensitivity adjustment

**Electrical connection**



We reserve the right to make changes • DS\_RTL318\_en\_50108672\_01.fm



**Accessories:**

(available separately)

- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

## Specifications

### Optical data

Typ. scanning range limit (white 90%) <sup>1)</sup>	0 ... 350mm
Scanning range <sup>2)</sup>	see tables
Adjustment range	120 ... 350mm
Light spot diameter	see diagrams
Light source	laser
Wavelength	650nm (visible red light)
Impulse duration	3µs
Max. power	5mW

### Timing

Switching frequency	5000Hz
Response time	0.1ms
Delay before start-up	≤ 30ms

### Electrical data

Operating voltage $U_B$ <sup>3)</sup>	10 ... 30VDC
Residual ripple	≤ 10% of $U_B$
Open-circuit current	≤ 20mA
Switching output	2 transistor outputs, complementary
Function	light/dark switching
Signal voltage high/low	≥ ( $U_B - 1.6V$ ) / ≤ 1.6V
Output current	max. 100mA
Sensitivity	adjustable

### Indicators

Red LED	reflection
LED red flashing	reflection, no performance reserve

### Mechanical data

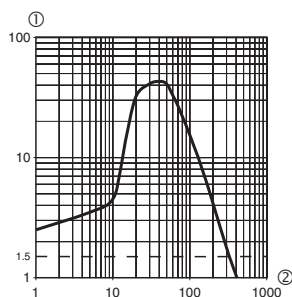
Housing	stainless steel
Optics cover	polyamide 12
Weight	20g (M12)
Connection type	M12 connector, 4-pin

### Environmental data

Ambient temp. (operation/storage)	-25°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>4)</sup>	1, 2, 3, 4
VDE safety class <sup>5)</sup>	II, all-insulated
Protection class	IP 67
Laser class	2 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508, C22.2 No.14-13 <sup>3)</sup> <sup>6)</sup>

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) For UL applications: for use in class 2 circuits according to NEC only
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 5) Rating voltage 250VAC
- 6) 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)

## Diagrams



Typical behaviour object distance / relative intensity of received light (with white 90%, 10x10cm)

1 Relative intensity of received light  
2 Object distance in [mm]

## Order guide

Selection table		RTL 318M/P-300-S12 Part no. 500 83188					
Order code →							
Equipment ↓							
Housing	stainless steel	●					
Scanning range	300mm	●					
Connection	M12 connector	●					
Switching output	PNP	●					
Connection diagram		1					

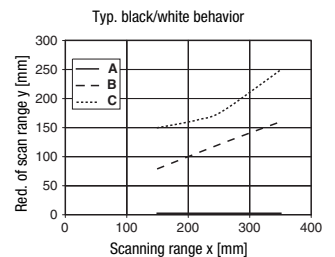
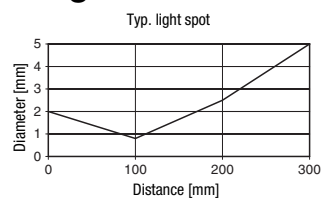
## Tables

1	0	300	350
2	13	140	180
3	18	75	100

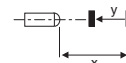
1	white 90%
2	gray 18%
3	black 6%

Scanning range [mm]  
Typ. scanning range limit [mm]

## Diagrams



A white 90%  
B gray 18%  
C black 6%



## Remarks

### Operate in accordance with intended use!

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

- With the set scanning range, a tolerance of the upper and lower scanning range limit is possible depending on the reflection properties of the material surface.

**Laser safety notices**

**⚠ ATTENTION, LASER RADIATION – LASER CLASS 2**

**Never look directly into the beam!**

The device fulfills the EN 60825-1:2008-05 (IEC 60825-1:2007) safety regulations for a product in **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

- ↳ Never look directly into the laser beam or in the direction of reflecting laser beams!  
If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- ↳ Do not point the laser beam of the device at persons!
- ↳ Intercept the laser beam with an opaque, non-reflective object if the laser beam is accidentally directed towards a person.
- ↳ When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- ↳ **CAUTION!** Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.  
The use of optical instruments or devices (e.g., magnifying glasses, binoculars) with the product will increase eye hazard.
- ↳ Adhere to the applicable legal and local regulations regarding protection from laser beams acc. to EN 60825 (IEC 60825) in its latest version.
- ↳ The device must not be tampered with and must not be changed in any way.  
There are no user-serviceable parts inside the device.  
Repairs must only be performed by Leuze electronic GmbH + Co. KG.


**NOTE**

**Affix laser information and warning signs!**

No laser information or warning sign is affixed to the device (see ①). Self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages (see ②).

- ↳ Affix the laser information sheet with the language appropriate for the place of use to the device.  
When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" notice.
- ↳ Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
- ↳ Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

①



**A** Laser exit opening

②

**50106176-02**

LASERSTRAHLUNG NICHT IN DEN STRAHL BLICKEN	
Max. Leistung (peak):	5 mW
Impulsdauer:	3 µs
Wellenlänge:	650 nm
LASER KLASSE 2 DIN EN 60825-1:2008-05	

RADIACION LASER NO MIRAR FIJAMENTE AL HAZ	
Potencia máx. (peak):	5 mW
Duración del impulso:	3 µs
Longitud de onda:	650 nm
PRODUCTO LASER DE CLASE 2 EN 60825-1:2007	

AVOID EXPOSURE – LASER RADIATION  
IS EMITTED FROM THIS APERTURE

RADIACIÓN LASER NÃO OLHAR FIXAMENTE O FEIXE	
Potência máx. (peak):	5 mW
Período de pulso:	3 µs
Comprimento de onda:	650 nm
EQUIPAMENTO LASER CLASSE 2 EN 60825-1:2007	

LASER RADIATION DO NOT STARE INTO BEAM	
Maximum Output (avg):	<1 mW
Pulse duration:	3 µs
Wavelength:	650 nm
CLASS 2 LASER PRODUCT EN 60825-1:2007 Complies with 21 CFR 1040.10	

RADIACION LASER NON FISSARE IL FASCIO	
Potenza max. (peak):	5 mW
Durata dell'impulso:	3 µs
Lunghezza d'onda:	650 nm
APPARECCHIO LASER DI CLASSE 2 EN 60825-1:2007	

RAYONNEMENT LASER NE PAS REGARDER DANS LE FASCEAU	
Puissance max. (crête):	5 mW
Durée d'impulsion:	3 µs
Longueur d'onde:	650 nm
APPAREIL À LASER DE CLASSE 2 EN 60825-1:2007	

EXPOSITION DANGEREUSE – UN RAYONNEMENT  
LASER EST EMIS PAR CETTE OUVERTURE

激光辐射 勿直视光束	
最大输出 (峰值):	5 mW
脉冲持续时间:	3 µs
波长:	650 nm
2 类激光产品 GB7247.1-2012	

