



**Model Number**

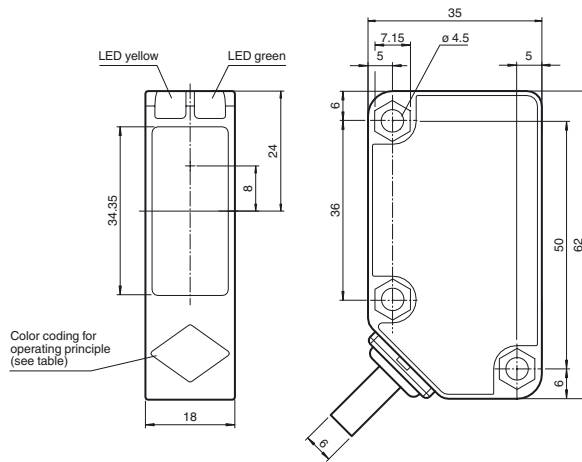
LD31/LV31/76a/115/136

Thru-beam sensor  
with 2 m fixed cable

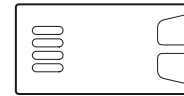
**Features**

- Highly visible LED
- Powerful push-pull output
- Compact and stable housing
- Protection class II

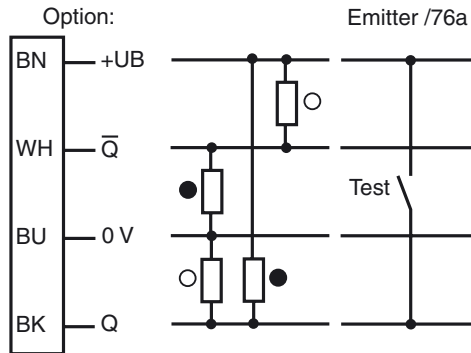
**Dimensions**



Operating principle	color
Retroreflective sensor with polarisation filter	green
Retroreflective sensor	blue
Diffusive mode sensor	white
Thru-beam sensor	grey
Diffusive mode sensor with background suppression	red



**Electrical connection**



- = Light on
- = Dark on

Release date: 2020-01-20 03:08 Date of issue: 2020-01-20 187672\_eng.xml

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

**Technical data****System components**

Emitter	LD31/76a/115
Receiver	LV31/115/136

**General specifications**

Effective detection range	0 ... 30 m
Threshold detection range	43 m
Light source	LED
Light type	modulated visible red light , 630 nm
Alignment aid	LED yellow: 1. LED illuminates: Sufficient light signal received, emitter and receiver alignment is correct 2. LED flashes: Reaching switching point 3. LED off: Light beam is interrupted or the alignment is out
Diameter of the light spot	approx. 800 mm at a distance of 30 m
Angle of divergence	Emitter: 1.5 ° , Receiver: 1.5 °
Ambient light limit	50000 Lux ; according EN 60947-5-2

**Functional safety related parameters**

MTTF <sub>d</sub>	750 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	90 %

**Indicators/operating means**

Operation indicator	LED green: power on
Function indicator	LED yellow: 1. LED lit constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal between 1 x switching point and 2 x switching point 3. LED off: signal < switching point

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	Emitter: ≤ 18 mA Receiver: ≤ 18 mA

**Input**

Test input	emitter deactivation at +U <sub>B</sub>
------------	---

**Output**

Switching type	dark on	
Signal output	2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Voltage drop	U <sub>d</sub>	≤ 1.5 V
Switching frequency	f	≤ 250 Hz
Response time		≤ 2 ms

**Conformity**

Product standard	EN 60947-5-2
------------------	--------------

**Ambient conditions**

Ambient temperature	-30 ... 55 °C (-22 ... 131 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

**Mechanical specifications**

Housing width	18 mm
Housing height	62 mm
Housing depth	35 mm
Degree of protection	IP67
Connection	Emitter: 2 m fixed cable , 3-wire Receiver: 2 m fixed cable , 4-wire
Material	
Housing	Polycarbonate
Optical face	PMMA
Mass	Emitter: 98 g Receiver: 132 g

**Approvals and certificates**

Protection class	II , rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC
UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

**Accessories**

**OMH-RL31-01**  
Mounting bracket

**OMH-RL31-02**  
Mounting bracket narrow

**OMH-RL31-03**  
Mounting bracket narrow

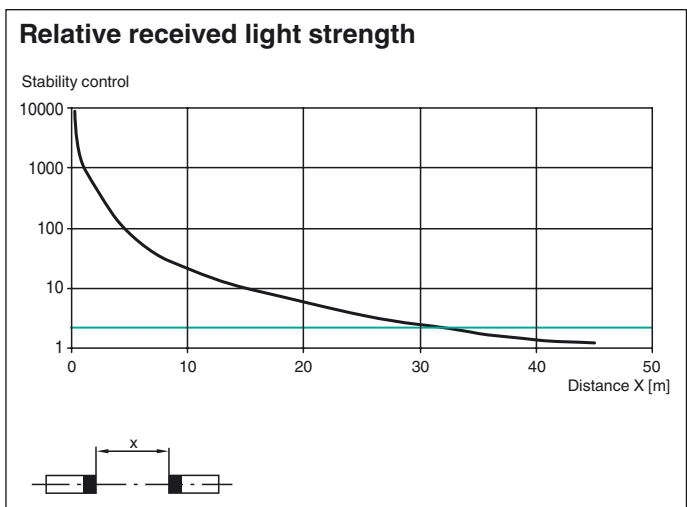
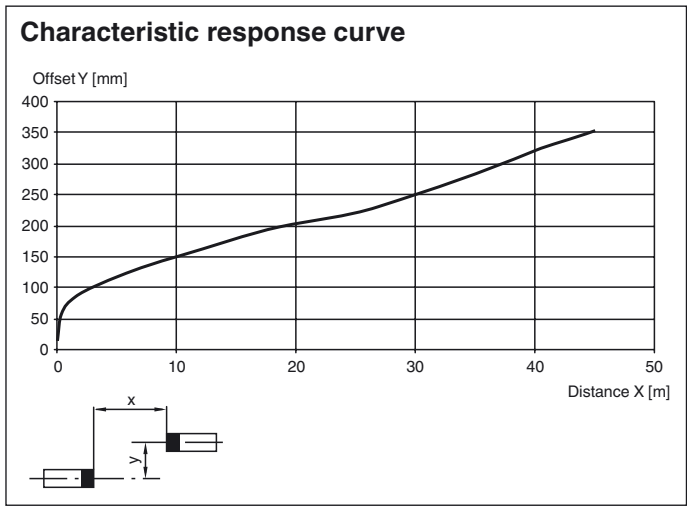
**OMH-RL31-04**  
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-RL31-05**  
Mounting bracket for mounting on flat surfaces with 2 M4 screws

**OMH-RL31-06**  
Stainless steel mounting bracket with adjustable half clamp on the side

Additional accessories can be found in the Internet.

**Curves/Diagrams**



Release date: 2020-01-20 03:08 Date of issue: 2020-01-20 187672\_eng.xml

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com