



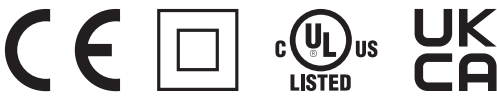
# Thru-beam sensor

## LD31/LV31/76a/115/136

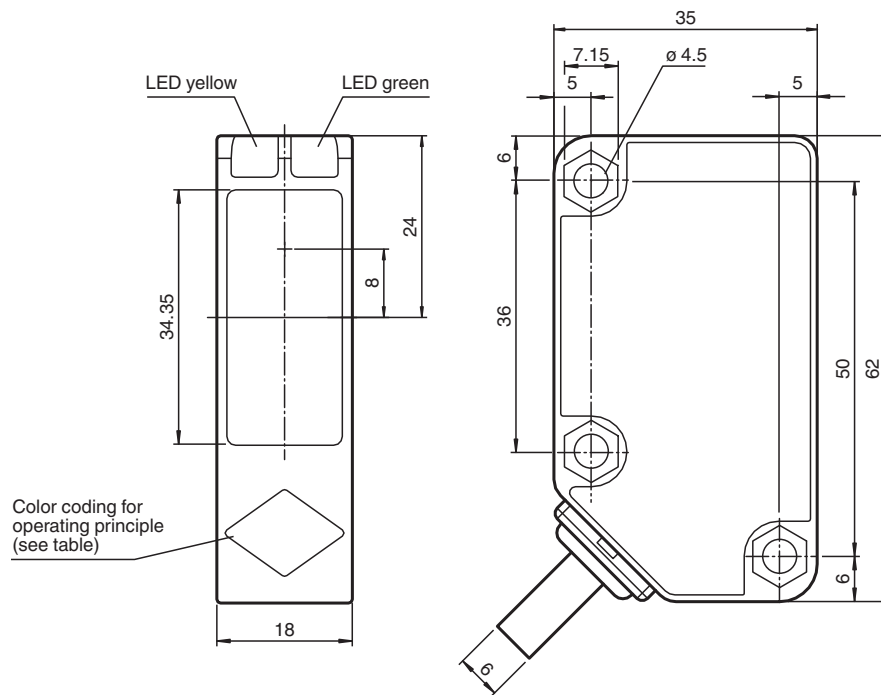


- Highly visible LED
- Powerful push-pull output
- Compact and stable housing
- Protection class II

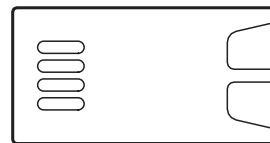
Thru-beam sensor, 30 m detection range, red light, dark on, DC version, 2 push-pull outputs, emitter switch-off, fixed cable



### 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



### Technical Data

#### System components

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

#### General specifications

Effective detection range	0 ... 30 m
---------------------------	------------

Release date: 2023-10-13 Date of issue: 2023-10-13 Filename: 187672\_eng.pdf

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

**pf** PEPPERL+FUCHS

## Technical Data

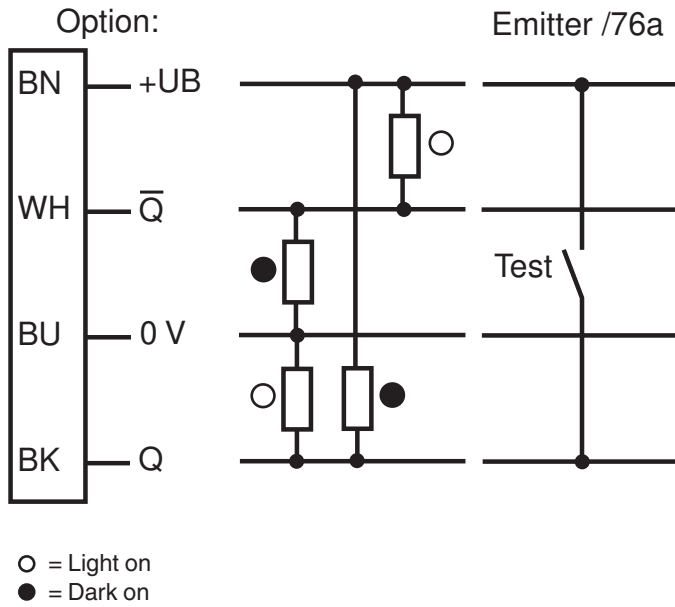
Threshold detection range	43 m	
Light source	LED	
Light type	modulated visible red light , 630 nm	
Alignment aid	LED yellow: 1. LED illuminates: Sufficient light signal received, emitter and receiver alignment is correct 2. LED flashes: Reaching switching point 3. LED off: Light beam is interrupted or the alignment is out	
Diameter of the light spot	approx. 800 mm at a distance of 30 m	
Opening angle	Emitter: 1.5 ° , Receiver: 1.5 °	
Ambient light limit	50000 Lux ; according to EN 60947-5-2	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	750 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	90 %	
<b>Indicators/operating means</b>		
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	
<b>Electrical specifications</b>		
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
<b>Input</b>		
Test input	emitter deactivation at +U <sub>B</sub>	
<b>Output</b>		
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	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
<b>Approvals and certificates</b>		
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	
<b>Ambient conditions</b>		
Ambient temperature	-30 ... 55 °C (-22 ... 131 °F)	
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)	
<b>Mechanical specifications</b>		
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	

Release date: 2023-10-13 Date of issue: 2023-10-13 Filename: 187672\_eng.pdf

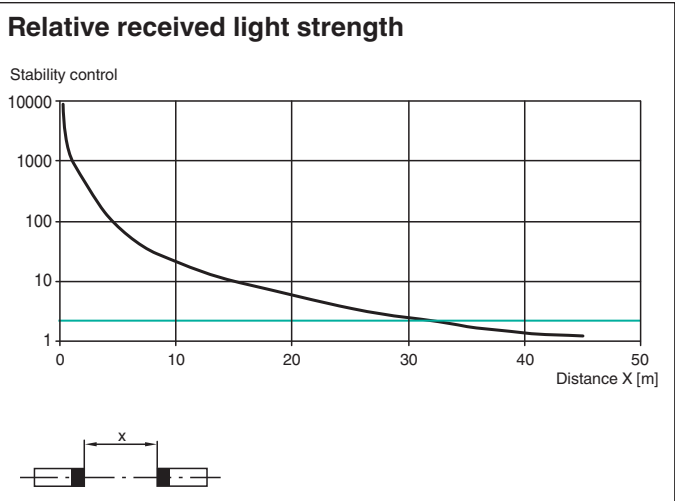
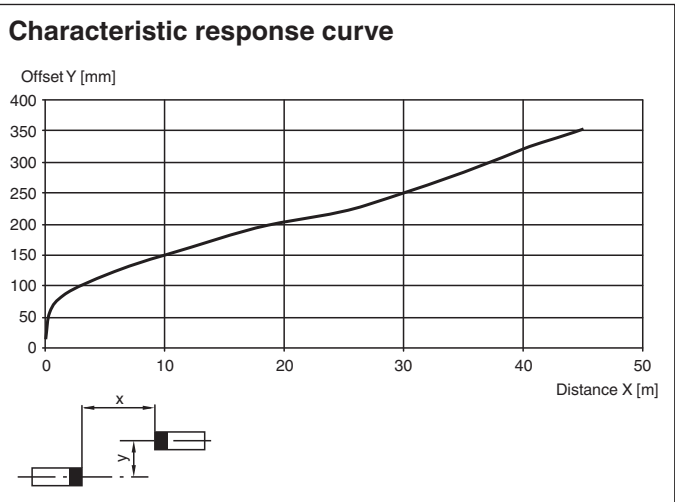
**Technical Data**

Mass	Emitter: 98 g Receiver: 132 g
------	----------------------------------

**Connection Assignment**









**Characteristic Curve**



Release date: 2023-10-13 Date of issue: 2023-10-13 Filename: 187672\_eng.pdf

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

## Accessories

	<b>OMH-RL31-01</b>	Mounting bracket
	<b>OMH-RL31-02</b>	Mounting bracket narrow
	<b>OMH-RL31-03</b>	Mounting bracket narrow
	<b>OMH-RL31-04</b>	Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm
	<b>OMH-RL31-05</b>	Mounting bracket for mounting on flat surfaces with 2 M4 screws
	<b>OMH-RL31-06</b>	Stainless steel mounting bracket with adjustable half clamp on the side