Model Number
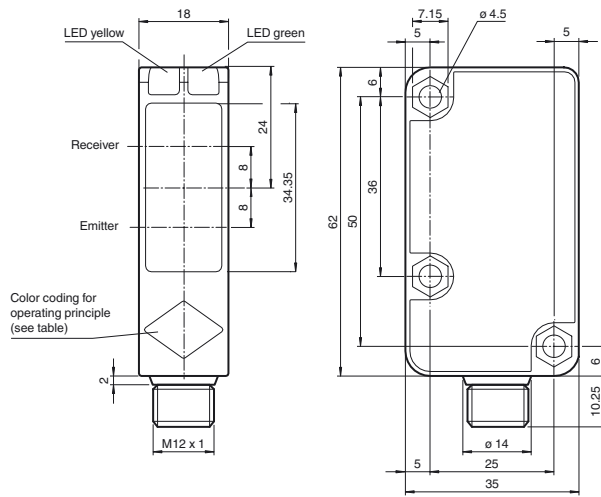
RL31-8-2500-IR/73c/136

Diffuse mode sensor
with 4-pin, M12 x 1 connector

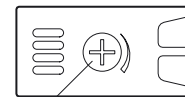## Features

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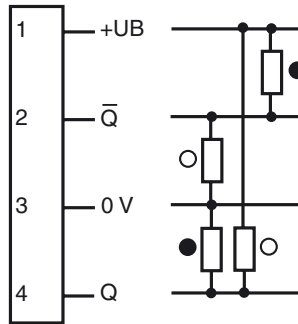- Compact and stable housing
- Protection class II

Dimensions

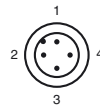| Operating principle	color
Retroreflective sensor with polarisation filter	green
Retroreflective sensor	blue
Diffusive mode sensor	white
Thru-beam sensor	grey
Diffusive mode sensor with background suppression	red

Sensing range adjuster

Electrical connection

Option:

1 — +UB
2 — $\overline{Q}$
3 — 0 V
4 — Q

○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Indicators/operating means
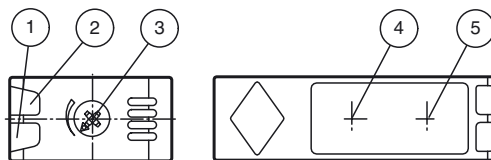
1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Emitter	
5	Receiver	

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Technical data

General specifications

Detection range	0 ... 2500 mm adjustable
Reference target	standard white 200 mm 200 mm
Light source	IRED
Light type	modulated infrared light , 850 nm
Polarization filter	no
Diameter of the light spot	approx. 50 mm at a distance of 2.5 m
Angle of divergence	2 °
Ambient light limit	50000 Lux ; according EN 60947-5-2

Functional safety related parameters

$MTTF_d$	920 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green: power on
Function indicator	LED yellow, lights up with receiver lit
Control elements	Sensing range adjuster

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		10 %
No-load supply current	I_0	≤ 20 mA

Output

Switching type		light 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_d	≤ 1.5 V
Switching frequency	f	≤ 500 Hz
Response time		≤ 1 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	4-pin, M12 x 1 connector
Material	
Housing	Polycarbonate
Optical face	PMMA
Mass	25 g

Approvals and certificates

EAC conformity	TR CU 020/2011
Protection class	II , rated insulation 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
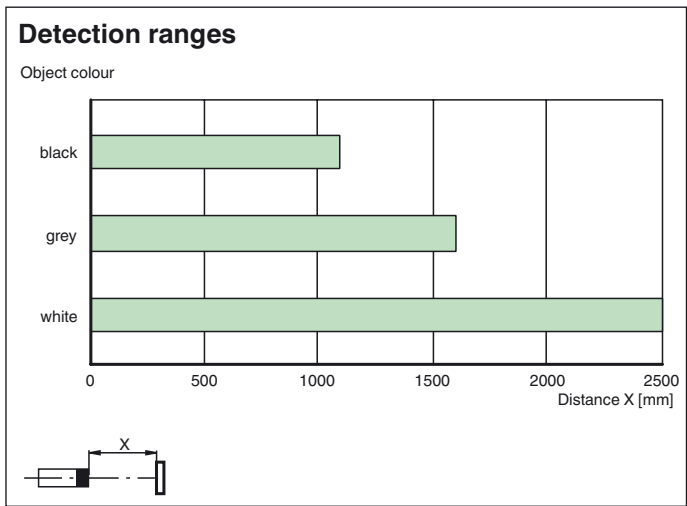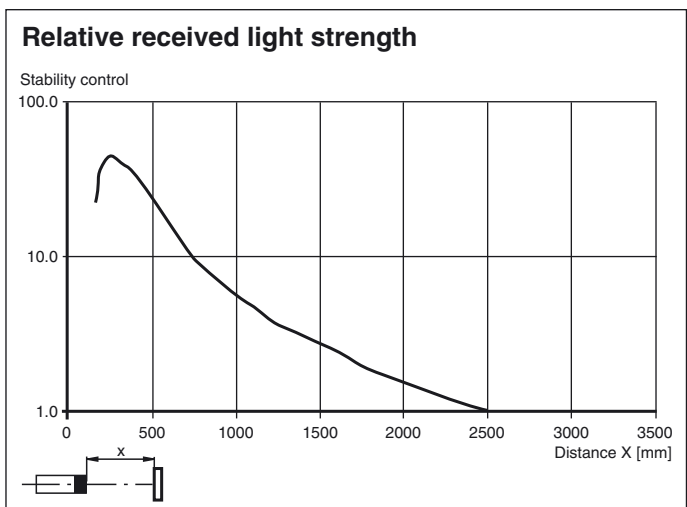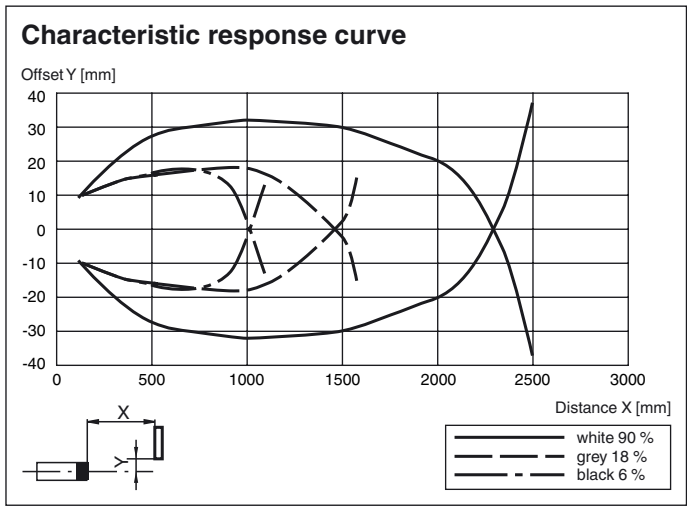Mounting bracket for mounting on flat surfaces with 2 M4 screws

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

V1-G-2M-PUR
Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR
Female cordset, M12, 4-pin, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com

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

2 Pepperl+Fuchs Group   USA: +1 330 486 0001   Germany: +49 621 776 1111   Singapore: +65 6779 9091
www.pepperl-fuchs.com   fa-info@us.pepperl-fuchs.com   fa-info@de.pepperl-fuchs.com   fa-info@sg.pepperl-fuchs.com

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [mm]

———	white 90 %
– – –	grey 18 %
–·–·–	black 6 %

Relative received light strength

Stability control

Distance X [mm]

Detection ranges

Object colour

Distance X [mm]

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