



Photoelectric sensors  
Photoelectric retro-reflective sensor, Product  
group W160

WL160-F440



**Model Name** > [WL160-F440](#)  
**Part No.** > [6022774](#)



- Vertical models
- Polarization filter, consequently reliable detection of objects with shiny surfaces
- Red light as alignment aid
- Sensitivity adjustable
- LED indicator: operating reserve



#### Product features

Sensing range min ... max::	0.01 m ... 4.5 m, 0.01 m ... 6.5 m
Light source::	LED
Type of light:	Red light
Light spot diameter:	Approx. 300 mm at 3 m distance
Laser:	Red light
Sensing range max.:	0.01 m ... 4.5 m, 0.01 m ... 6.5 m
Relating to:	Reflector PL80A
Sensitivity adjustment:	Potentiometer, 2 rotations
Wave length:	680 nm

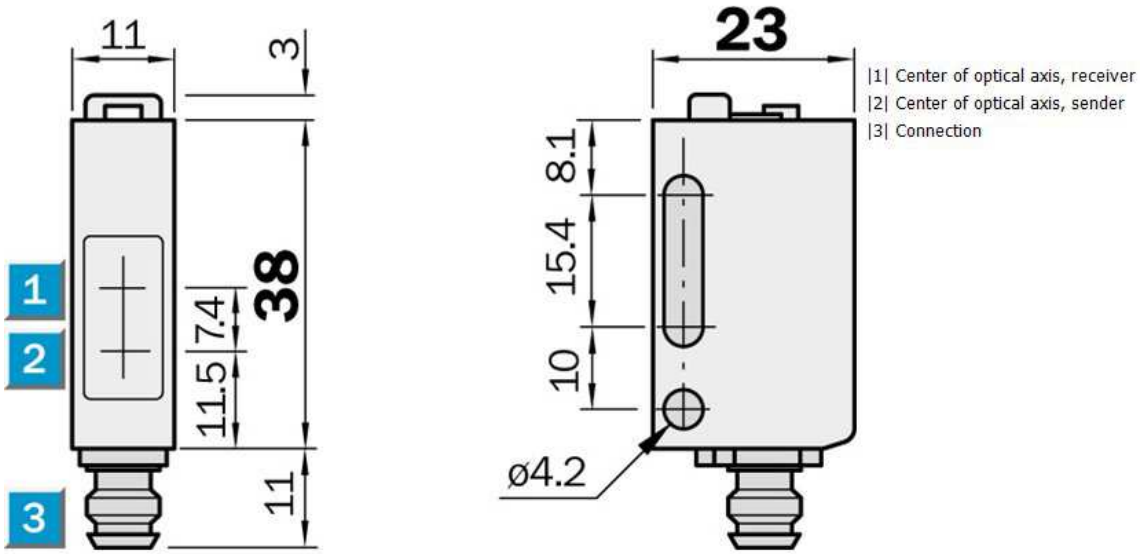
#### Technical data

Design::	Rectangular
Dimensions (W x H x D):	11 mm x 38 mm x 23 mm
Supply voltage min ... max.:	DC 10 ... 30 V <sup>1)</sup>
Ripple:	± 10 %
Power consumption:	≤ 25 mA
Output type:	PNP: open collector: Q
Switching mode:	Light/dark switching via rotary switch
Output current max.:	100 mA
Response time::	≤ 0.5 ms
Switching frequency:	1,000 Hz
Connection type:	Connector, M8, 4-pin
Circuit protection:	V connections reverse-polarity protected/In-/outputs short-circuit protected/Interference suppression/Outputs overcurrent and short-circuit protected
Enclosure rating::	IP 67: EN 60529, IP 69K: EN 40050
Ambient operation temperature, min ... max.:	-25 °C ... +55 °C
Ambient storage temperature, min ... max.:	-40 °C ... +70 °C
Weight:	Ca. 20 g

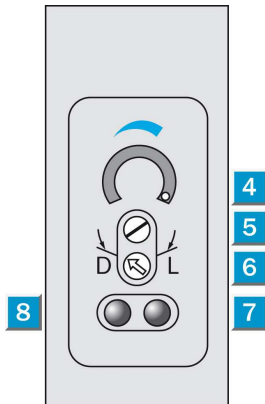
Housing material:	PBT
Signal voltage PNP HIGH/LOW:	Vs - 1.8 V / approx. 0 V
Angle of dispersion:	Ca. 5.8 °
Series:	W160
Optics material:	PMMA
Housing design:	Vertical

1) Limit values, reverse-polarity protected operation in short-circuit protected network max. 8 A

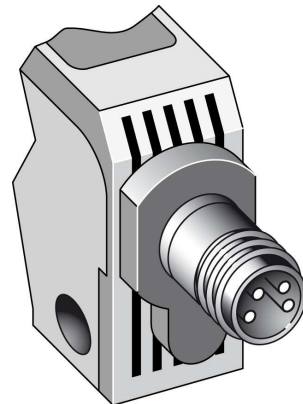
### Dimensional drawing



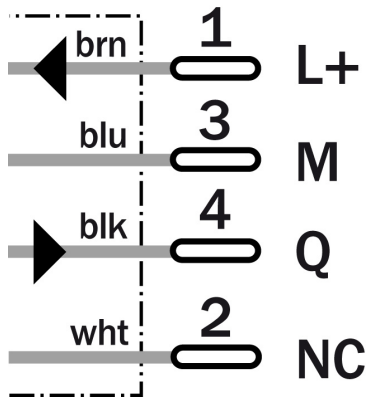
### Adjustment possible



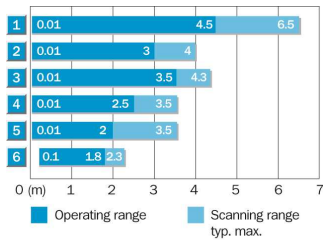
### Connection type



## Connection diagram

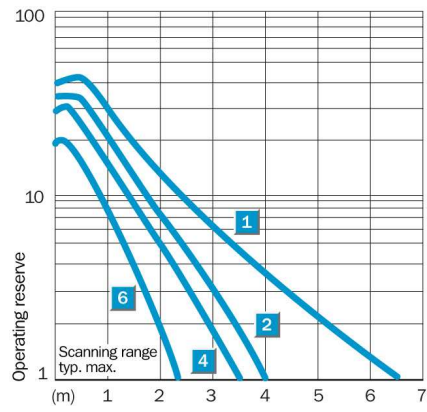


## Sensing range diagram



Reflector type	Operating range
1	PL80A 0.01 ... 4.5 m
2	P250 0.01 ... 3 m
3	PL50A/PL40A 0.01 ... 3.5 m
4	PL30A/PL31A 0.01 ... 2.5 m
5	PL20A 0.01 ... 2 m
6	Reflective tape Diamond Grade 0.1 ... 1.8 m (100 x 100 mm <sup>2</sup> )

## Characteristic curve



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