



W280L-2 Long Range Compact photoelectric sensors

Laser class 1 photoelectric proximity sensors –
great performance, simple operation

W280L-2 Long Range photoelectric proximity sensor – „best in class“ in laser class 1

Longest laser class 1 sensing distance

On black, 6% remission



other
manufac-
turers

Max.
2,5 m

High reliability



- Reliable detection on various surface colors and textures even at high incident angles



- Resistant to stray reflections from shiny or highly reflective objects beyond the set sensing distance, e.g. metal, windows, safety vests



- Immune to cross talk from opposed sensors

Easy set-up –
simple, intuitive, fast



2 in 1: reduced costs



- 2 sensing distances / 2 switching points (① + ②) can be set independently
- 2 sensing distances adjustment potentiometers – one for each switching output
- 2 indicating LEDs – one for each switching output

Fast commissioning



- Setting with potentiometer is preferred by most users
- Image shows version with one switching point

Flexible in application



- Rotatable connector
- Light / dark operate selection switch
- Versatility of use reduces stock inventory

Laser photoelectric proximity sensors – great performance, simple operation



Product description

The WTT280L-2 Long Range provides up to 4.0 m sensing distance on light colored targets. The option of 2 independent switching outputs allows feedback of low and high detection points. Setup is easy through an intuitive sensing range adjustment potentiometer and indicator LED for each switching output. A visible red Class 1 laser ensures alignment is quick and precise. An integrated protec-

tive system in the W280L-2 Long Range prevents adverse effects caused by reflections in the background, for example, resulting from reflective metal surfaces, windows and safety vests and ignores cross-talk from an adjacent sensor. In addition, the sensing distance can be increased up to 18 m with the reflector version WLT280L-2 Long Range.

At a glance

- WTT280L-2 Long Range: Background suppression sensing distance up to 4 m
- Complete background suppression: very small black/white shift, insensitive against reflections from the background (e.g. shiny metal, window, safety vest)
- Ignores cross talk from adjacent sensors
- Visible red Class 1 laser
- Version 1: with 1 x switching output and light/dark switch, Version 2: with 2 x switching outputs and light/dark switch
- Reliable detection also in very fast production processes thanks to the switching frequency of 1,000 Hz
- Disable laser by wire

Your benefits

- Reliable target detection with difficult target colors, angles and color transitions (black/white shift)
- One sensor with two outputs and two status LEDs improves application flexibility and reduces the number of sensors needed
- Quick and easy commissioning with sensing range adjustment potentiometers and status LEDs - one for each output
- Quick and easy alignment with a red Class 1 laser
- Rotatable connector and light/dark switch for mounting and installation flexibility



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→ www.mysick.com/en/WTT280L-2_Long_Range
For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

Sensor principle	Photoelectric proximity sensor
Detection principle	Background suppression
Dimensions (W x H x D)	23.5 mm x 76 mm x 55.8 mm
Housing design (light emission)	Rectangular
Sensing range max.	200 mm ... 4,000 mm ¹⁾ 200 mm ... 3,000 mm ²⁾
Type of light	Visible red light
Light source ³⁾	Laser
Light spot (distance)	Ø 12 mm (3 m)
Sensing distance adjustment	Potentiometer
Laser class	1 (EN 60825-1:2008-5, IEC 60825-1:2007-03)

¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033)

²⁾ Objects to be sensed with 6 % reflectivity (based on black)

³⁾ Average service life 100,000 h at Ta = +25 °C.

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Residual ripple ²⁾	≤ 3 V _{pp}
Power consumption ³⁾	≤ 70 mA
Switching output	1 x PNP, Light/dark-switching, selectable via light/dark rotary switch, open collector 1 x NPN, Light/dark-switching, selectable via light/dark rotary switch, open collector 2 x PNP, Light/dark-switching, selectable via light/dark rotary switch, open collector 2 x NPN, Light/dark-switching, selectable via light/dark rotary switch, open collector (depending on type)
Output current I_{max.}	≤ 100 mA
Response time ⁴⁾	≤ 0.5 ms
Switching frequency ⁵⁾	1,000 Hz
Connection type	Connector Cable, 2 m, PVC, 0.18 mm ² , Ø 3.8 mm ⁶⁾ (depending on type)
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	⊕
Weight	Cable, 2 m, 5-pin, 2 m, PVC 200 g Connector M12, 5-pin 150 g
Housing material	ABS
Optics material	PMMA
Enclosure rating	IP 67

Items supplied	Mounting bracket BEF-W280
EMC ¹¹⁾	EN 60947-5-2
Ambient operating temperature	-10 °C ... +50 °C
Ambient storage temperature	-40 °C ... +70 °C

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

²⁾ May not exceed or fall short of V_S .

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = output reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

¹¹⁾ The devices meet the interference suppression requirements for industrial use (interference suppression class A). When used in residential areas it can cause interference.

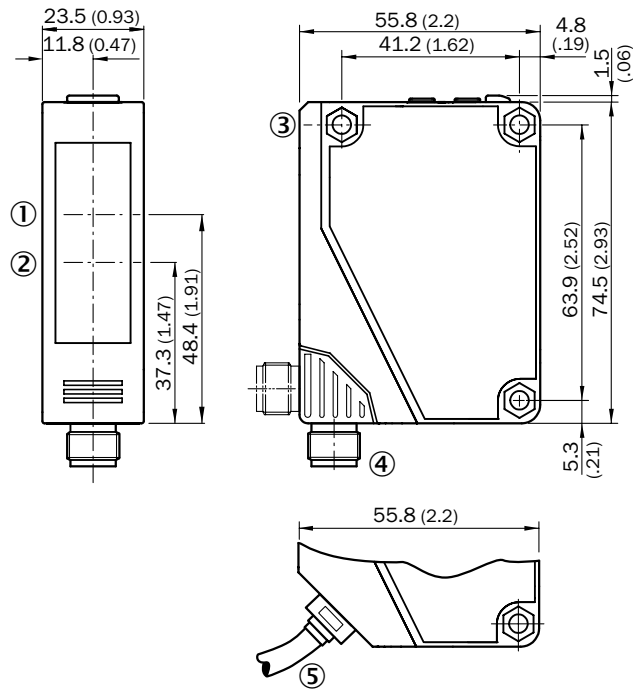
Ordering information

Sensing range max.	Output function	Switching mode	Connection	Model name	Part no.
200 mm ... 4,000 mm ¹⁾ 200 mm ... 3,000 mm ²⁾	1 x PNP	Light/dark-switching	Connector M12, 5-pin	WTT280L-2P2531	6048061
			Cable, 2 m, 5-pin, 2 m, PVC	WTT280L-2P1531	6048065
	1 x NPN	Light/dark-switching	Connector M12, 5-pin	WTT280L-2N2531	6048063
			Cable, 2 m, 5-pin, 2 m, PVC	WTT280L-2N1531	6048067
	2 x PNP	Light/dark-switching	Connector M12, 5-pin	WTT280L-2P2536	6048062
			Cable, 2 m, 5-pin, 2 m, PVC	WTT280L-2P1536	6048066
			Connector M12, 5-pin	WTT280L-2N2536	6048064
			Cable, 2 m, 5-pin, 2 m, PVC	WTT280L-2N1536	6048068

¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033)

²⁾ Objects to be sensed with 6 % reflectivity (based on black)

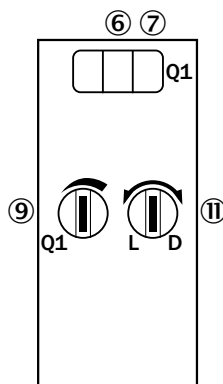
Dimensional drawing



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole, \varnothing 4.3 mm
- ④ Connector M12, 5-pin, rotatable by 90°
- ⑤ Cable, 2 m, 5-pin, \varnothing 3,8 mm

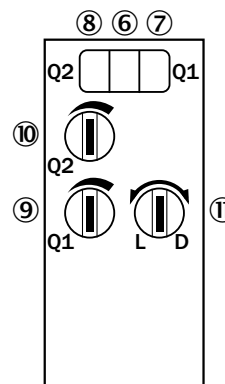
Adjustments

WTT280L-2xxxx1



- ⑥ LED indicator green: Stability indicator
- ⑦ Status indicator LED, yellow: Status of received light beam
- ⑨ Sensing range adjustment: Potentiometer
- ⑪ Light/dark selector

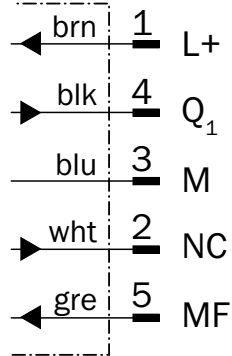
WTT280L-2xxxx6



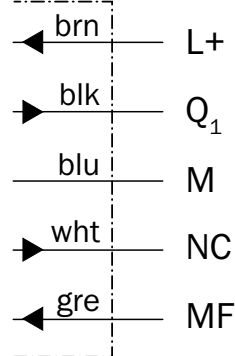
- ⑥ LED indicator green: Stability indicator
- ⑦ Status indicator LED, yellow: Status of received light beam (switching output 1)
- ⑧ Status indicator LED, yellow: Status of received light beam (switching output 2)
- ⑨ Sensing range adjustment: Potentiometer for switching output 1
- ⑩ Sensing range adjustment: Potentiometer for switching output 2
- ⑪ Light/dark selector

Connection diagram

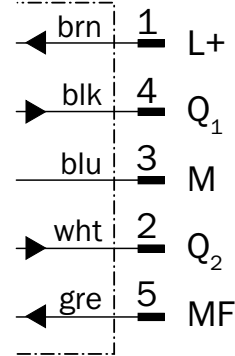
WTT280L-2x2531,
Connector



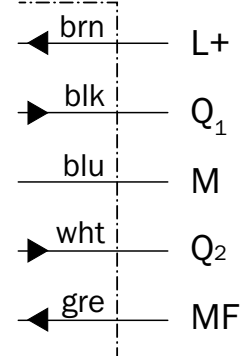
WTT280L-2x1531,
Cable



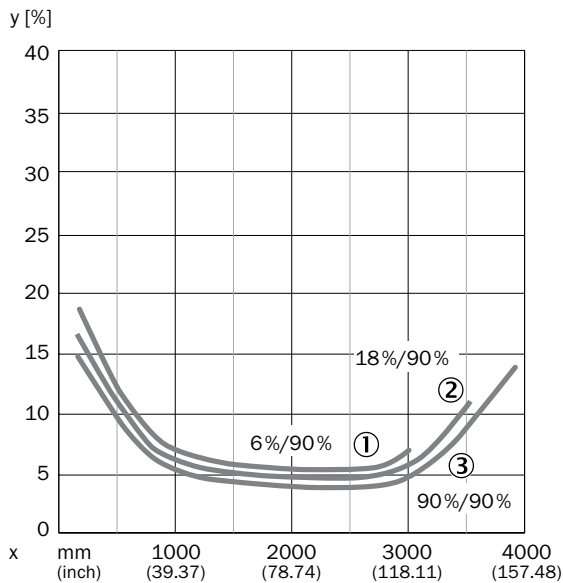
WTT280L-2x2536,
Connector



WTT280L-2x1536,
Cable

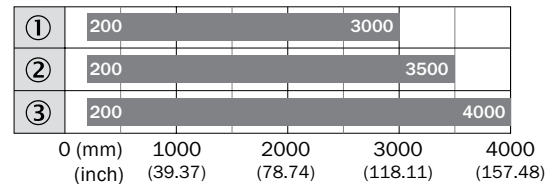


Operating reserve



- ① Sensing range on black, 6 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on white, 90 % remission



Sensing range




- Operating distance
- ① Sensing range on black, 6 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on white, 90 % remission

Laser photoelectric proximity sensors – great performance, simple operation





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Product description

The reflector version WLT280L-2 Long Range is capable of a 18 m sensing distance and offers simple commissioning. The option of 2 independant switching outputs allows feedback of low and high detection points. Setup is easy through an intuitive sensing range adjustment potentiometer and indicating LED for each switching output. A visible red Class

1 laser ensures that the alignment is quick and precise. An integrated protective system in the W280L-2 Long Range allows to ignore cross talk from an adjacent sensor. In addition, the WTT280L-2 Long Range supplements the range, while it comes without a reflector and offers a sensing distance up to 4 m.

At a glance

- WLT280L-2: Sensing distance up to 18 m with reflector P250
- Visible red Class 1 laser
- 2 x switching outputs and light/dark switch
- Disable laser by wire

Your benefits

- One sensor with two outputs and two status LEDs improves application flexibility and reduces the number of sensors needed
- Quick and easy comissioning with sensing range adjustment potentiometers and status LEDs - one for each output
- Quick and easy alignment with a red Class 1 laser
- Rotatable connector and light/dark switch for mounting and installation flexibility

→ www.mysick.com/en/WLT280L-2_Long_Range
For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

Sensor principle	Photoelectric proximity sensor
Detection principle	Background suppression
Dimensions (W x H x D)	23.5 mm x 76 mm x 55.8 mm
Housing design (light emission)	Rectangular
Sensing range max. ¹⁾	200 mm ... 18,000 mm
Sensing range	200 mm ... 18,000 mm
Type of light	Visible red light
Light source ²⁾	Laser
Light spot (distance)	Ø 50 mm (18 m)
Sensing distance adjustment	Potentiometer
Laser class	1 (EN 60825-1:2008-5, IEC 60825-1:2007-03)

¹⁾ Reflector P250, PL80A.

²⁾ Average service life 100,000 h at Ta = +25 °C.

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Residual ripple ²⁾	≤ 3 V _{pp}
Power consumption ³⁾	≤ 70 mA
Switching output	2 x PNP, Light/dark-switching, selectable via light/dark rotary switch, open collector 2 x NPN, Light/dark-switching, selectable via light/dark rotary switch, open collector (depending on type)
Output current I_{max.}	≤ 100 mA
Response time ⁴⁾	≤ 2 ms
Switching frequency ⁵⁾	250 Hz
Connection type	Cable, 2 m, PVC, 0.18 mm ² , Ø 3.8 mm ⁶⁾ Connector (depending on type)
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	⊕
Weight	Cable, 2 m, 5-pin, 2 m, PVC 200 g Connector M12, 5-pin 150 g
Housing material	ABS
Optics material	PMMA

Enclosure rating	IP 67
Items supplied	Mounting bracket BEF-W280
EMC ¹¹⁾	EN 60947-5-2
Ambient operating temperature	-10 °C ... +50 °C
Ambient storage temperature	-40 °C ... +70 °C

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

²⁾ May not exceed or fall short of V_S .

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = output reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

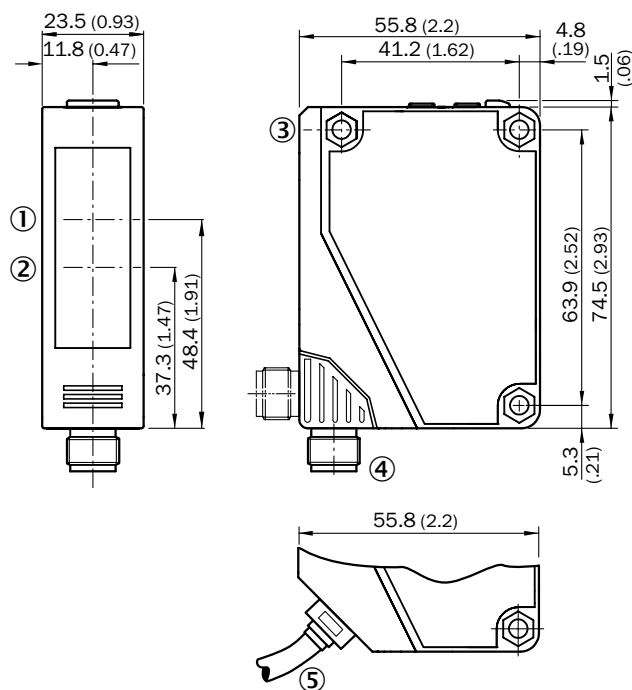
¹¹⁾ The devices meet the interference suppression requirements for industrial use (interference suppression class A). When used in residential areas it can cause interference.

Ordering information

Sensing range max. ¹⁾	Output function	Switching mode	Connection	Model name	Part no.
200 mm ... 18,000 mm	2 x PNP	Light/dark-switching	Cable, 2 m, 5-pin, 2 m, PVC	WLT280L-2P1536	6048071
			Connector M12, 5-pin	WLT280L-2P2536	6048069
	2 x NPN		Cable, 2 m, 5-pin, 2 m, PVC	WLT280L-2N1536	6048072
			Connector M12, 5-pin	WLT280L-2N2536	6048070

¹⁾ Reflector P250, PL80A.

Dimensional drawing



① Center of optical axis, receiver

② Center of optical axis, sender

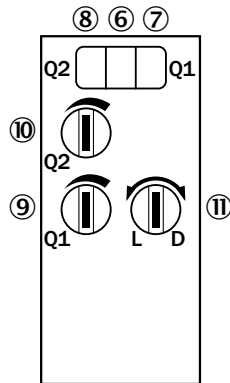
③ Mounting hole, Ø 4.3 mm

④ Connector M12, 5-pin, rotatable by 90°

⑤ Cable, 2 m, 5-pin, Ø 3.8 mm

Adjustments

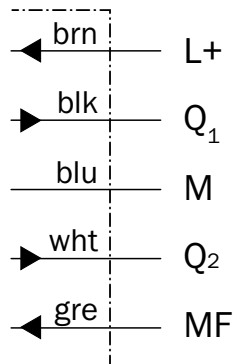
WLT280L-2xxxx6



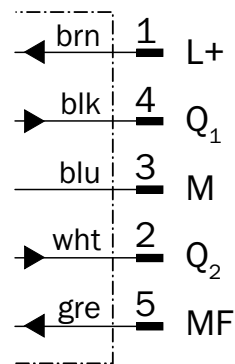
- ⑥ LED indicator green: Stability indicator
- ⑦ Status indicator LED, yellow: Status of received light beam (switching output 1)
- ⑧ Status indicator LED, yellow: Status of received light beam (switching output 2)
- ⑨ Sensing range adjustment: Potentiometer for switching output 1
- ⑩ Sensing range adjustment: Potentiometer for switching output 2
- ⑪ Light/dark selector

Connection diagram

WLT280L-2x1536, Cable




WLT280L-2x2536, Connection




W280L-2 Long Range



Mounting brackets/plates

Figure	Accessory type	Material	Model name	Part no.	WTT280L-2	WLT280L-2
	Mounting brackets	Stainless steel 1.4301	BEF-W280	5313885	●	●

Terminal and alignment brackets


Figure	Accessory type	Material	Model name	Part no.	WTT280L-2	WLT280L-2
	Universal terminal systems	Steel, zinc coated	BEF-KHS-F01	2022463	●	●

Reflectors

Figure	Accessory type	Dimensions (L x W x H)	Material	Model name	Part no.	WTT280L-2	WLT280L-2
	Angular	47 mm x 47 mm	PMMA/ABS	P250	5304812	-	●
		80 mm x 80 mm	PMMA/ABS	PL80A	1003865	-	●

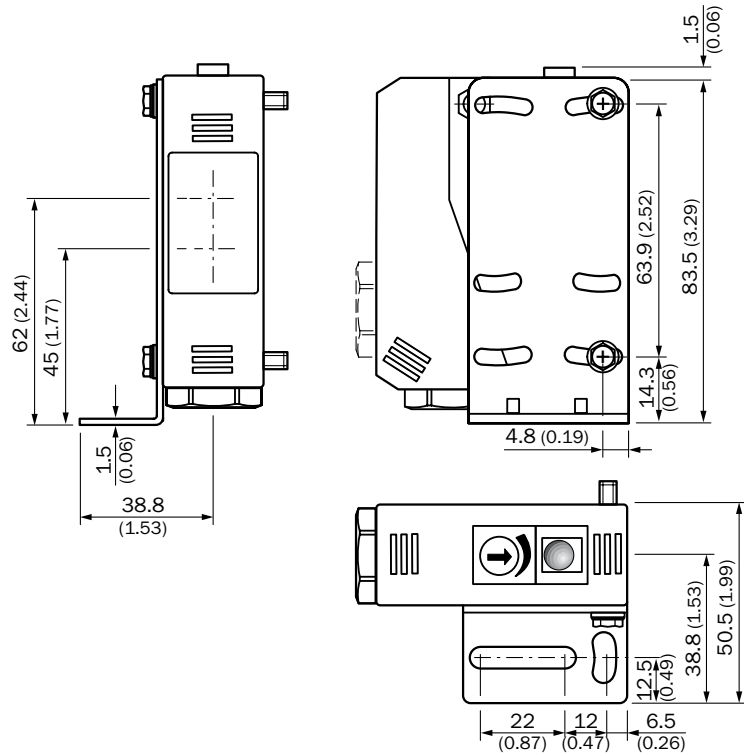
Plug connectors and cables

- Connector type: Female connector

Figure	Enclosure rating	Flying leads	Sheath material	Cable length	Model name	Part no.	WTT280L-2	WLT280L-2
	IP 67	Straight	PVC	2 m	DOL-1205-G02M	6008899	●	●
				5 m	DOL-1205-G05M	6009868	●	●
				10 m	DOL-1205-G10M	6010544	●	●
				15 m	DOL-1205-G15M	6029215	●	●

Dimensional drawings Mounting brackets/plates

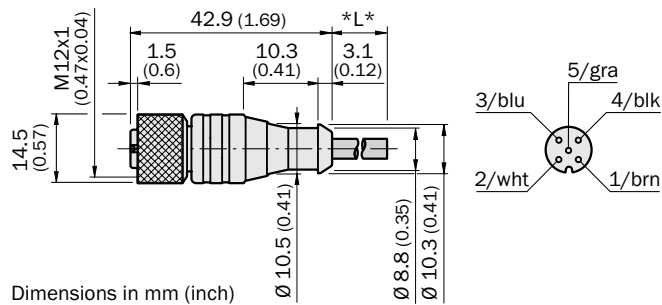
BEF-W280



All dimensions in mm (inch)

Dimensional drawings Plug connectors and cables

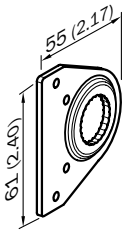
- DOL-1205-G02M**
- DOL-1205-G05M**
- DOL-1205-G10M**
- DOL-1205-G15M**



Dimensions in mm (inch)

Dimensional drawings Terminal and alignment brackets

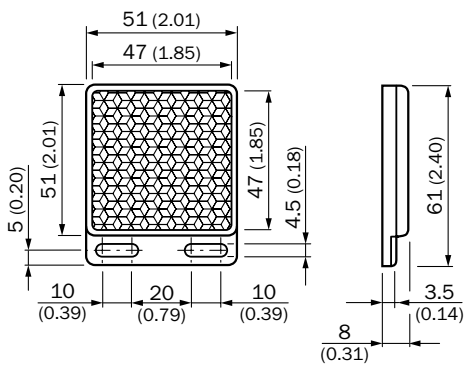
BEF-KHS-F01



All dimensions in mm (inch)

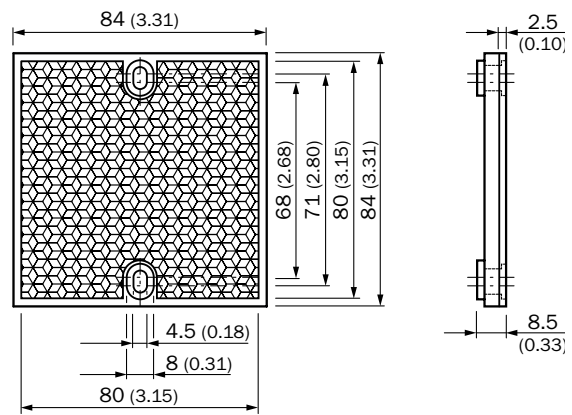
Dimensional drawings Reflectors

P250



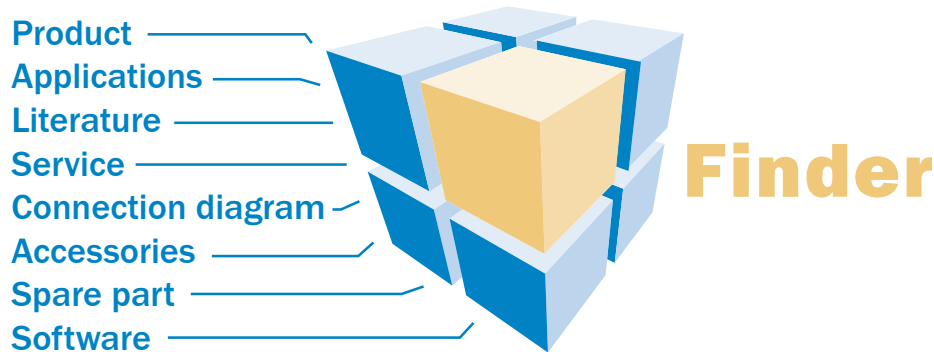
All dimensions in mm (inch)

PL80A



All dimensions in mm (inch)

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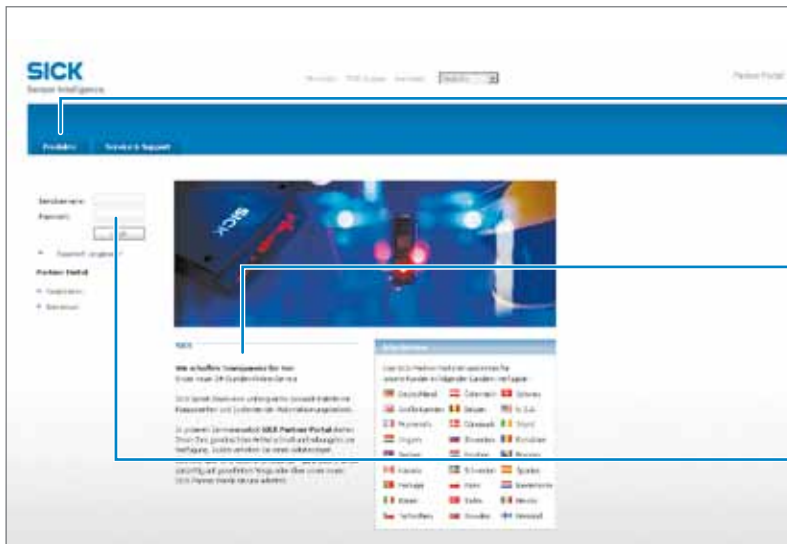
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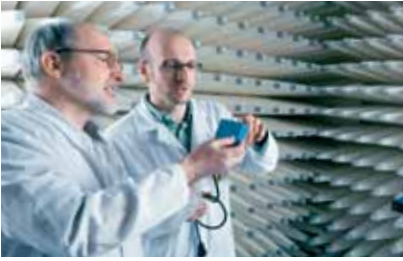
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