

Detailed technical data

Features

Sensor principle	Photoelectric retro-reflective sensor
Detection principle	Autocollimation
Dimensions (W x H x D)	24.6 mm x 82.5 mm x 53.3 mm
Housing design (light emission)	Rectangular
Sensing range max. ¹⁾	0 m ... 18 m
Type of light	Visible red light
Light source ²⁾	PinPoint LED
Light spot size (distance)	Ø 100 mm (10 m)
Wave length	635 nm
Adjustment	BluePilot: With alignment aid, IO-Link
Pin 2 configuration	External Input (test), Teach-in, switching signal

¹⁾ Reflector PL80A.

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

Smart Task

Smart Task name	Base logics
Logic function	Direct AND OR Window Hysteresis
Timer function	Deactivated On delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching frequency	SIO Direct: 1000 Hz ¹⁾ SIO Logic: 800 Hz ²⁾ IOL: 650 Hz ³⁾
Response time	SIO Direct: 500 µs ¹⁾ SIO Logic: 600 µs ²⁾ IOL: 750 µs ³⁾
Repeat accuracy	SIO Direct: 150 µs ¹⁾ SIO Logic: 300 µs ²⁾ IOL: 400 µs ³⁾
Switching signal Q_{L1}	Switching output
Switching signal Q_{L2}	Switching output

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Ripple	≤ 5 V _{pp}
Power consumption	≤ 30 mA ²⁾ < 50 mA ³⁾
Output type	PUSH/PULL, PNP, NPN
Output function	Complementary, Pin 2: NPN normally closed (light switching), PNP normally open (dark switching), Pin 4: NPN normally open (dark switching), PNP normally closed (light switching), IO-Link
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. V _s - 2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. V _S / < 2.5 V
Output current I_{max}	≤ 100 mA
Response time ⁴⁾	≤ 500 μs
Switching frequency ⁵⁾	1,000 Hz
Connection type	Cable, 2 m ⁶⁾ Male connector, M12 Cable with male connector, M12, 270 mm ⁶⁾ (depending on type)
Circuit protection	A ⁷⁾ , B ⁸⁾ , C ⁹⁾ , D ¹⁰⁾
Protection class	III
Weight	
Cable	130 g
Male connector M12, 4-pin	80 g
Cable with M12 male connector, 4-pin	100 g
Polarisation filter	✓
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	
Cable	IP66, IP67
Male connector M12, 4-pin	IP66, IP67, IP69K
Cable with M12 male connector, 4-pin	IP66, IP67
Ambient operating temperature	-40 °C ... +60 °C
Ambient storage temperature	-40 °C ... +75 °C

¹⁾ Limit values.

²⁾ 16 V DC ... 30 V DC, without load.

³⁾ 10 V DC ... 16 V DC, without load.

⁴⁾ Signal transit time with resistive load in switching mode. Different values possible in COM2 mode.

⁵⁾ With light/dark ratio 1:1 in switching mode. Different values possible in IO-Link mode.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_s connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ C = interference suppression.

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

Communication interface

Communication interface	IO-Link V1.1
Mode	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure	Bit 0 = switching signal Q _{L1} Bit 1 = switching signal Q _{L2} Bit 2 ... 15 = empty
VendorID	26

Ordering information

Visible red light

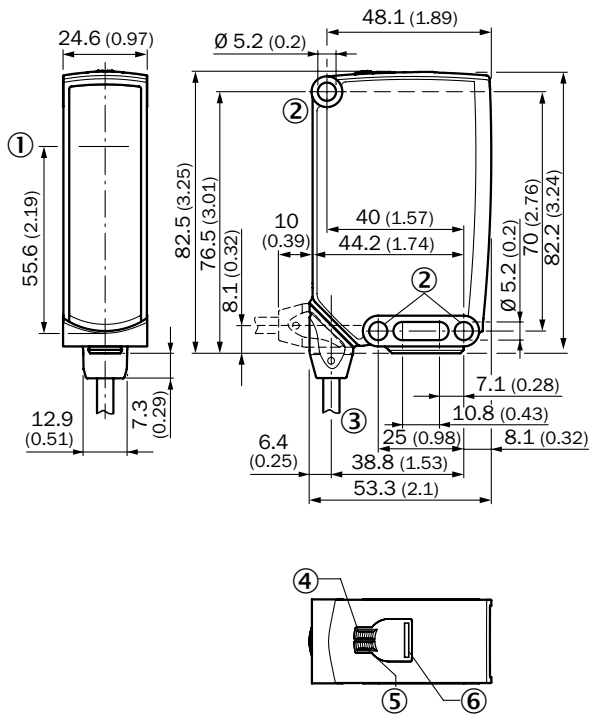
- **Detection principle:** autocollimation
- **Switching mode:** Light/dark switching
- **Adjustment:** BluePilot: With alignment aid, IO-Link

Sensing range max. ¹⁾	Light spot size (distance)	Output type	Connection	DeviceID	Connection diagram	Type	Part no.
0 m ... 18 m	Ø 100 mm (10 m)	PUSH/PULL, PNP, NPN	Cable, 2 m, PVC	8388992 dez / 0x800180	cd-389	WLA26P-1H162100A00	1218822
			Male connector M12, 4-pin	8388992 dez / 0x800180	cd-390	WLA26P-24162100A00	1218664
			Cable with M12 male connector, 4-pin, 270 mm, PVC	8388992 dez / 0x800180	cd-390	WLA26P-34162100A00	1218823

¹⁾ Reflector PL80A.

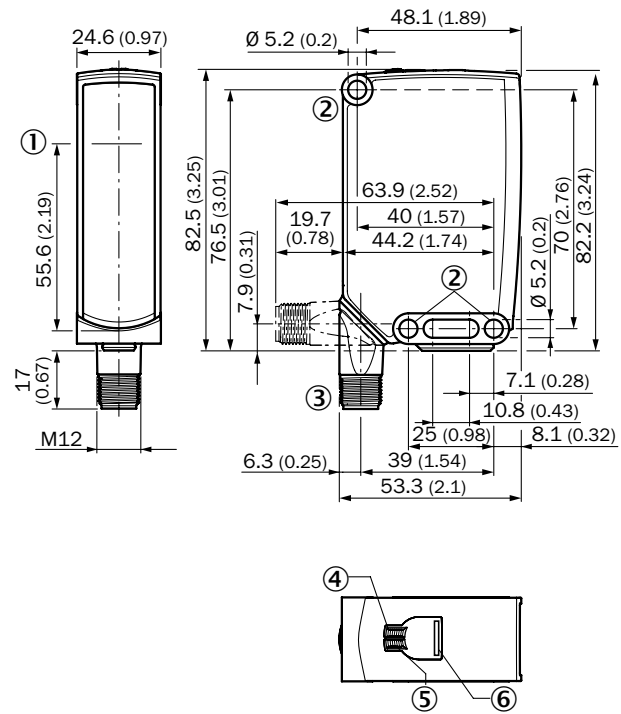
Dimensional drawings (Dimensions in mm (inch))

WLA26, cable



- ① Center of optical axis
- ② Mounting hole, Ø 5.2 mm
- ③ Connection
- ④ LED indicator green: power
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ BluePilot blue: Alignment aid

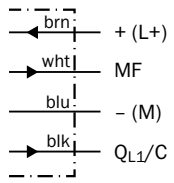
WLA26, connector



- ① Center of optical axis
- ② Mounting hole, Ø 5.2 mm
- ③ Connection
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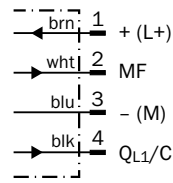
Connection diagram

Cd-389



Default: MF = \bar{Q}
 QL1/C = Q

Cd-390



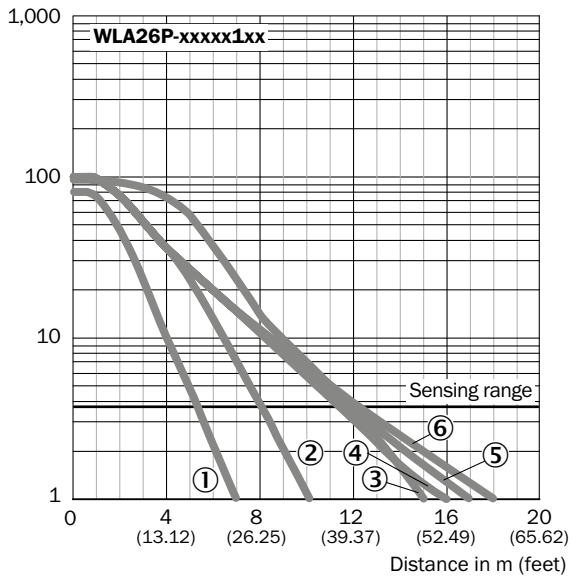
Default: MF = \bar{Q}
 QL1/C = Q

Characteristic curves

WLA26P-xxxxx1xx

Standard reflectors

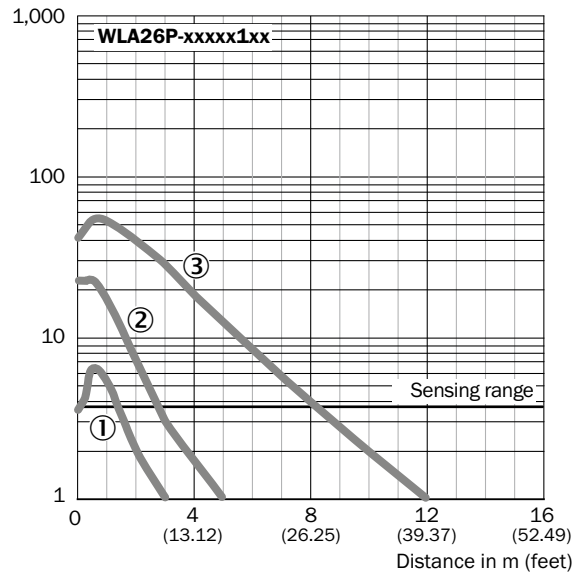
Function reserve



- ① Reflector PL20A
- ② Reflector PL22
- ③ Reflector PL250
- ④ Reflector PL30A
- ⑤ Reflector PL40A
- ⑥ Reflector PL80A, C110A

Reflective tape

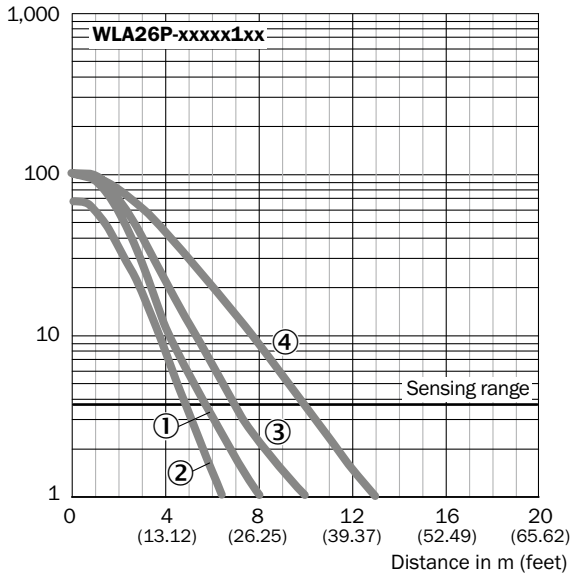
Function reserve



- ① Reflective tape REF-DG (50 x 50 mm)
- ② Reflective tape REF-IRF-56 (50 x 50 mm)
- ③ Reflective tape REF-AC1000 (50 x 50 mm)

Fine triple reflectors

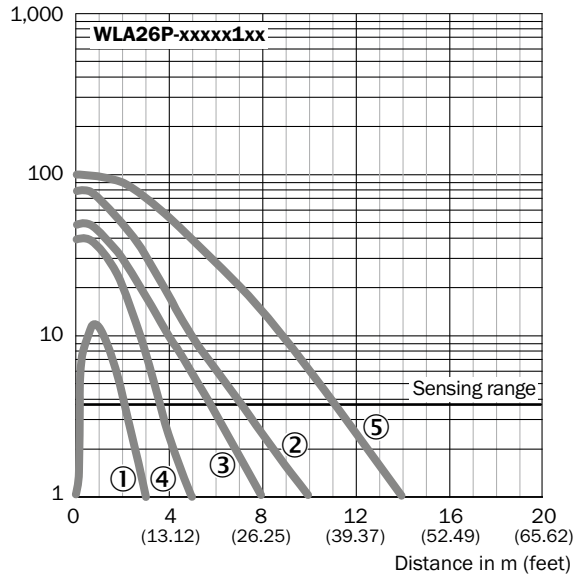
Function reserve



- ① PL10FH-1 reflector
- ② PL10F reflector
- ③ Reflector PL20F
- ④ Reflector P250F

Chemical-resistant reflectors

Function reserve

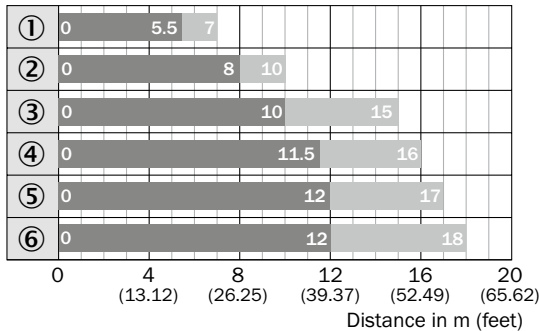


- ① PL10F CHEM reflector
- ② Reflector P250H
- ③ Reflector P250 CHEM
- ④ Reflector PL20 CHEM
- ⑤ Reflector PL40A Antifog

Bar diagrams

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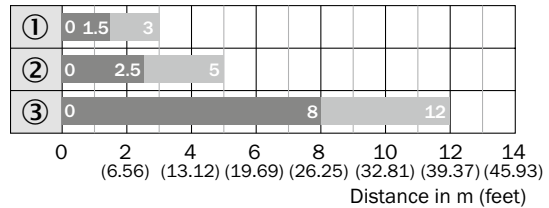
Standard reflectors



■ Sensing range ■ Sensing range typ. max.

- ① Reflector PL20A
- ② Reflector PL22
- ③ Reflector PL250
- ④ Reflector PL30A
- ⑤ Reflector PL40A
- ⑥ Reflector PL80A, C110A

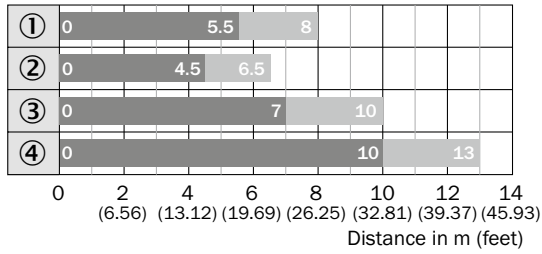
Reflective tape



■ Sensing range ■ Sensing range typ. max.

- ① Reflective tape REF-DG (50 x 50 mm)
- ② Reflective tape REF-IRF-56 (50 x 50 mm)
- ③ Reflective tape REF-AC1000 (50 x 50 mm)

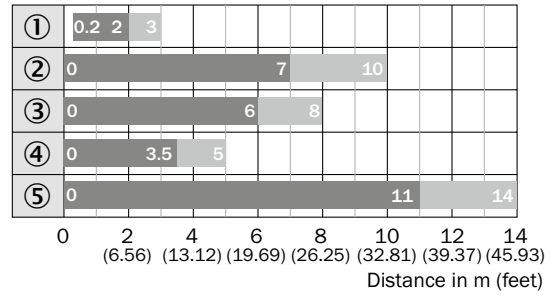
Fine triple reflectors



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- ④ Reflector P250F

Chemical-resistant reflectors

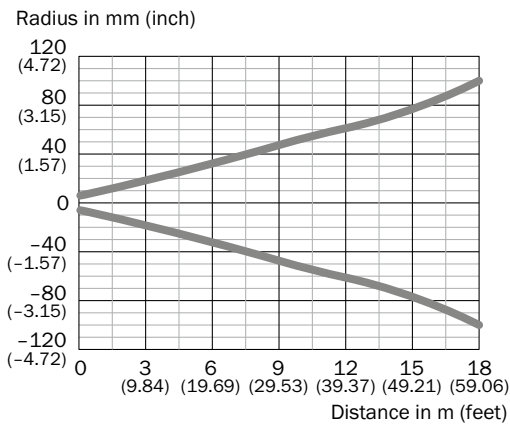


■ Sensing range ■ Sensing range typ. max.

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- ② Reflector P250H
- ③ Reflector P250 CHEM
- ④ Reflector PL20 CHEM
- ⑤ Reflector PL40A Antifog

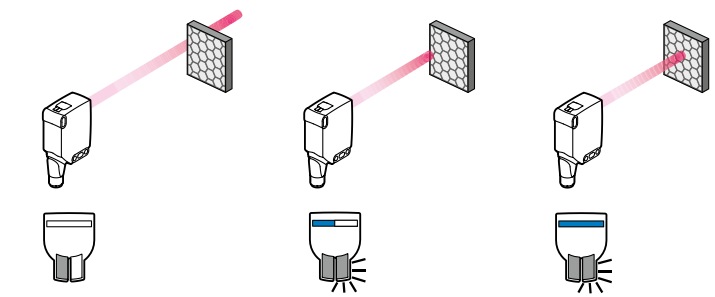
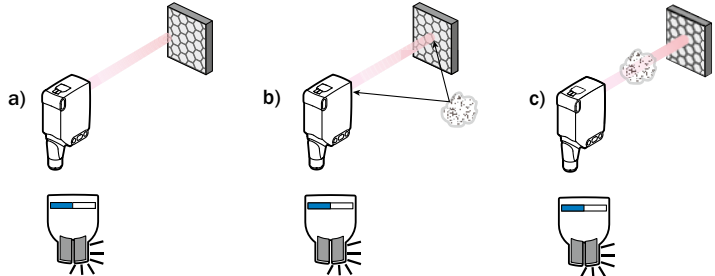
Light spot diameter

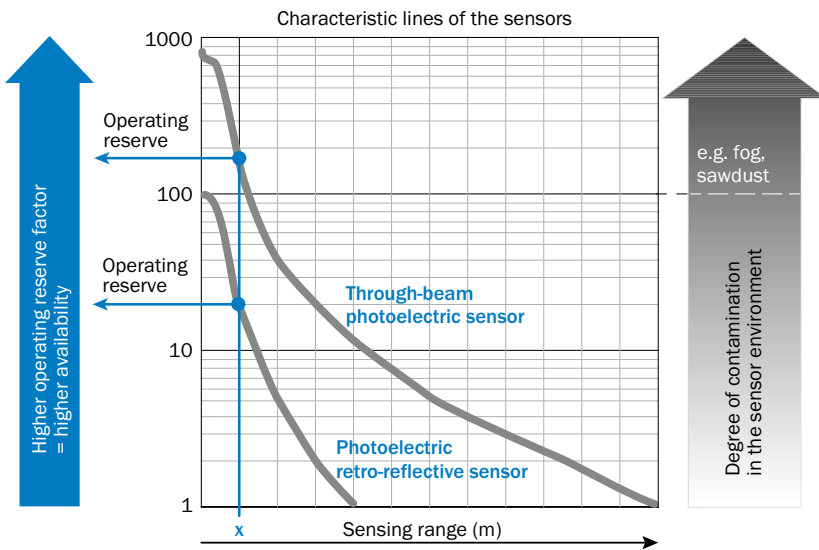
WLA26P-xxxxx1xx



Operation note

BluePilot: Blue indicator LEDs with double benefits

<p>Easy and quick sensor alignment with the help of the LED indicator</p> <p>All blue LEDs illuminate</p> <ul style="list-style-type: none"> - optimum alignment - highest possible operating reserve 	<p>WLA photoelectric retro-reflection sensor alignment</p> 
<p>Service note</p> <p>A reduction in sensor availability is displayed by a decrease of the blue LEDs.</p> <p>Possible causes:</p> <ol style="list-style-type: none"> insufficient alignment contamination of the optical surfaces particles in the light beam 	



At a sensing range of „x“ the photoelectric retro-reflective and through-beam photoelectric sensors have different operating reserves (see blue arrow). The higher the operating reserve factor, the better the sensor can compensate the contamination in the air or in the light beam and on the optical surfaces (front screen, reflector), i.e. the sensor has the maximum availability, otherwise the sensor switches due to pollution although there is no object in the path of the light beam.