



WL27-3P2450

W27

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

| Type | part no. |
|-------------|----------|
| WL27-3P2450 | 1027771 |

Other models and accessories → www.sick.com/W27

Detailed technical data

Features

| | |
|----------------------------------------|-------------------------------------------------------|
| Functional principle | Photoelectric retro-reflective sensor |
| Functional principle detail | With minimum distance to reflector (dual lens system) |
| Dimensions (W x H x D) | 24.6 mm x 80.6 mm x 54 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 0.1 m ... 15 m ¹⁾ |
| Sensing range | 0.1 m ... 11 m ¹⁾ |
| Focus | Approx. 1.5° |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 220 mm (10 m) |
| Angle of dispersion | Approx. 1.5° |
| Wave length | 660 nm |
| Adjustment | None |

¹⁾ Reflector PL80A.

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

Mechanics/electronics

| | |
|-------------------------------------|-----------------------------------|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_V tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ Reference voltage: 50 V DC.

¹⁰⁾ Static, low heat output, use in +5° C ... +15° C.

| | |
|---------------------------------------------------|-------------------------------------------------------|
| Current consumption | 45 mA ³⁾ |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Signal voltage PNP HIGH/LOW | Approx. $V_S - 2.5 \text{ V} / 0 \text{ V}$ |
| Output current I_{max} | $\leq 100 \text{ mA}$ |
| Response time | $\leq 500 \mu\text{s}$ ⁴⁾ |
| Switching frequency | 1,000 Hz ⁵⁾ |
| Connection type | Male connector M12, 4-pin |
| Circuit protection | A ⁶⁾ B ⁷⁾ C ⁸⁾ |
| Protection class | II ⁹⁾ |
| Weight | 100 g |
| Polarizing filter | ✓ |
| Front screen heating | ✓ ¹⁰⁾ |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP69K |
| Ambient operating temperature | -40 °C ... +60 °C |
| Ambient temperature, storage | -40 °C ... +75 °C |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |

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¹⁰⁾ Static, low heat output, use in +5° C ... +15° C.

Safety-related parameters

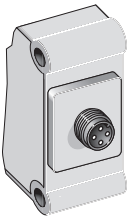
| | |
|-------------------------|-------------|
| MTTF_D | 1,640 years |
| DC_{avg} | 0 % |

Classifications

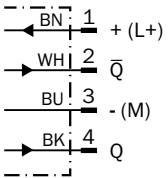
| | |
|---------------------|----------|
| ECLASS 5.0 | 27270902 |
| ECLASS 5.1.4 | 27270902 |
| ECLASS 6.0 | 27270902 |
| ECLASS 6.2 | 27270902 |
| ECLASS 7.0 | 27270902 |
| ECLASS 8.0 | 27270902 |
| ECLASS 8.1 | 27270902 |

| | |
|-----------------------|----------|
| ECLASS 9.0 | 27270902 |
| ECLASS 10.0 | 27270902 |
| ECLASS 11.0 | 27270902 |
| ECLASS 12.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| ETIM 7.0 | EC002717 |
| ETIM 8.0 | EC002717 |
| UNSPSC 16.0901 | 39121528 |

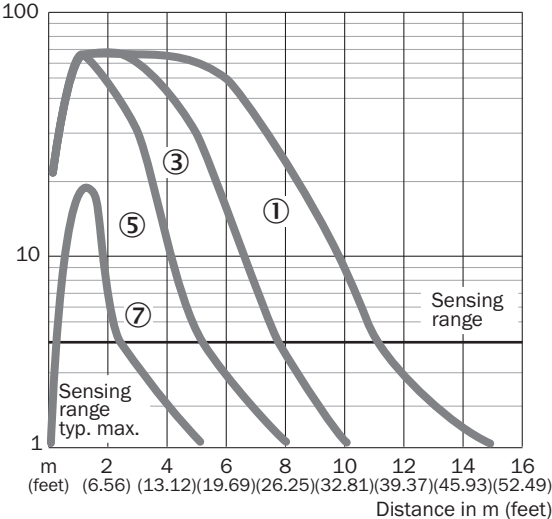
Connection type



Connection diagram Cd-083

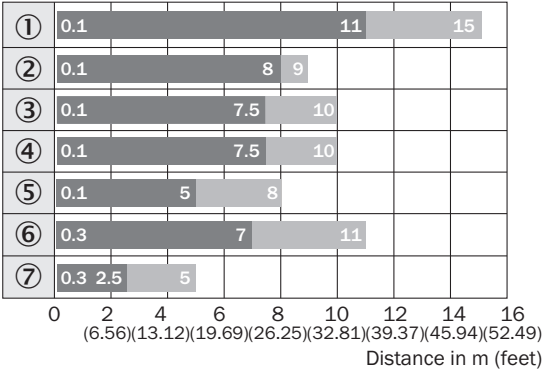


Characteristic curve WL27-3



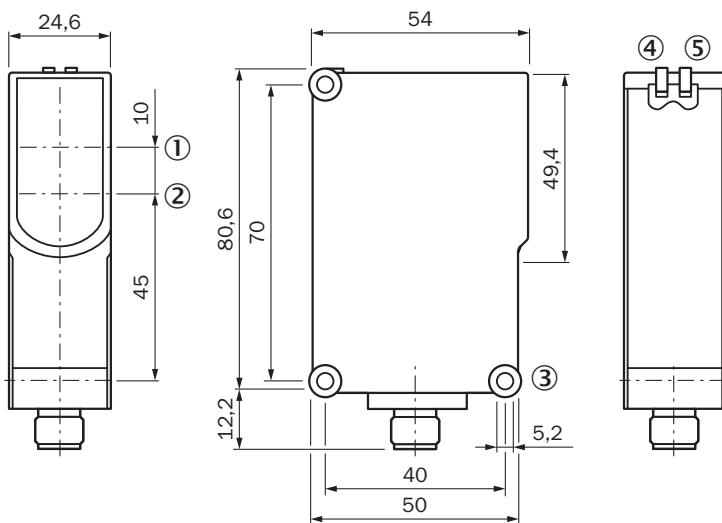
- ① Reflector PL80A
- ③ Reflector PL40A
- ⑤ Reflector PL20A
- ⑦ Reflective tape Diamond Grade

Sensing range diagram WL27-3



- Sensing range
- Sensing range max.
- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector PL30A
- ⑤ Reflector PL20A
- ⑥ Reflector C110A
- ⑦ Reflective tape Diamond Grade

Dimensional drawing WL27-3, WSE27-3











Dimensions in mm (inch)

- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole \varnothing 5.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam

Recommended accessories

Other models and accessories → www.sick.com/W27

| | Brief description | Type | part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> • Description: Mounting bracket with hinged arm • Material: Steel • Details: Steel, zinc coated • Items supplied: Mounting hardware included • Suitable for: W23-2, W27-3, Reflex Array | BEF-WN-W27 | 2009122 |
|  | <ul style="list-style-type: none"> • Description: Universal mounting bracket for reflectors • Dimensions (W x H x L): 85 mm x 90 mm x 35 mm • Material: Steel • Details: Steel, zinc coated • Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A | BEF-WN-REFX | 2064574 |
|  | <ul style="list-style-type: none"> • Description: Plate N11N for universal clamp bracket • Material: Stainless steel • Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • Items supplied: Universal clamp (5322627), mounting hardware • Usable for: DeltaPac, Glare, WTD20E | BEF-KHS-N11N | 2071081 |

| | Brief description | Type | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| device protection and care | | | |
|  | <ul style="list-style-type: none"> Description: Protective housing for W26, W27-3 and mounting rods with diameter 12 mm ... 20 mm Material: Steel, zinc diecast Items supplied: Universal clamp BEF-KHS-KH1 (2022726), mounting hardware Suitable for: W27-3, W26, RAY26 | BEF-SG-W27 | 2039601 |
| reflectors and optics | | | |
|  | <ul style="list-style-type: none"> Description: Rectangular, screw connection Dimensions: 84 mm 84 mm Ambient operating temperature: -30 °C ... +65 °C | PL80A | 1003865 |
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-050UB3XLEAX | 2095608 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |
|  | <ul style="list-style-type: none"> Description: Unshielded Connection type head A: Male connector, M12, 4-pin, straight, A-coded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | STE-1204-G | 6009932 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com