Data sheet


# WSE27X-3P1830

## W27

**PHOTOELECTRIC SENSORS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| WSE27X-3P1830 | 1027991 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Through-beam photoelectric sensor |
| **Dimensions (W x H x D)** | 31.4 mm x 112.3 mm x 70.4 mm |
| **Housing design (light emission)** | Rectangular |
| **Sensing range max.** | 0 m ... 35 m |
| **Sensing range** | 0 m ... 25 m |
| **Focus** | Approx. 1.5° |
| **Type of light** | Visible red light |
| **Light source** | LED [1)] |
| **Light spot size (distance)** | Ø 600 mm (25 m) |
| **Angle of dispersion** | Approx. 1.5° |
| **Wave length** | 645 nm |
| **Adjustment** | None |
| **Special applications** | Explosive areas |

[1)] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |
| **Power consumption, sender** | 35 mA [3] |
| **Power consumption, receiver** | 20 mA [3] |
| **Switching output** | PNP |
| **Output function** | Complementary |
| **Switching mode** | Light/dark switching |
| **Signal voltage PNP HIGH/LOW** | Approx. $V_S$ – 2.5 V / 0 V |
| **Output current $I_{max.}$** | ≤ 100 mA |
| **Response time** | ≤ 500 µs [4] |
| **Switching frequency** | 1,000 Hz [5] |
| **Angle of reception** | Approx. 3° |
| **Connection type** | Cable, 4-wire, 10 m [6] |
| **Cable material** | Plastic, PVC |
| **Circuit protection** | A [7]<br>B [8]<br>C [9] |
| **Protection class** | II [10] |
| **Weight** | 1,500 g |
| **Housing material** | Metal, Stainless steel V2A (1.4301)<br>Plastic, ABS |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP67 |
| **ATEX marking** | ATEX II 3G Ex nA op is IIB T4 Gc X<br>ATEX II 3D Ex tc IIIB T135 °C Dc X<br>In accordance with directive 2014/34 / EU |
| **Ex area category** | 3D, 3G |
| **Ambient operating temperature** | –20 °C ... +50 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **Part number of individual components** | 2033627 WE27X-3P1830 2033628 WS27X-3D1830 |

[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] 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] Reference voltage: 50 V DC.

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 996 years |
| **$DC_{avg}$** | 0 % |

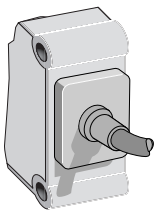
## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **Photobiological safety (DIN EN 62471) certificate** | ✓ |

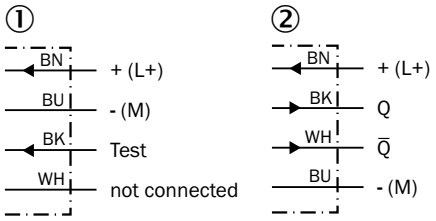
## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270901 |
| **ECLASS 5.1.4** | 27270901 |
| **ECLASS 6.0** | 27270901 |
| **ECLASS 6.2** | 27270901 |
| **ECLASS 7.0** | 27270901 |
| **ECLASS 8.0** | 27270901 |
| **ECLASS 8.1** | 27270901 |
| **ECLASS 9.0** | 27270901 |
| **ECLASS 10.0** | 27270901 |
| **ECLASS 11.0** | 27270901 |
| **ECLASS 12.0** | 27270901 |
| **ETIM 5.0** | EC002716 |
| **ETIM 6.0** | EC002716 |
| **ETIM 7.0** | EC002716 |
| **ETIM 8.0** | EC002716 |
| **UNSPSC 16.0901** | 39121528 |

## Connection type

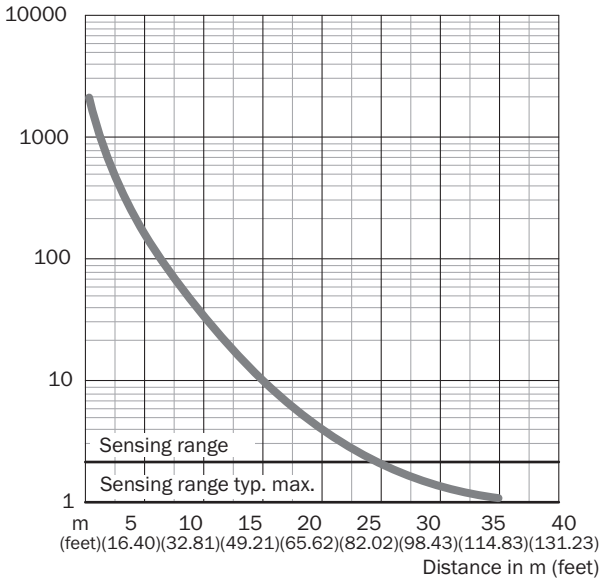


## Connection diagram Cd-088

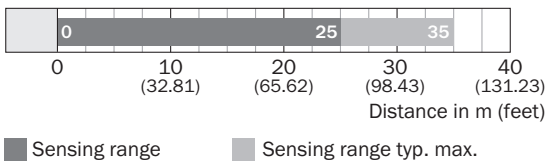



① sender
② receiver

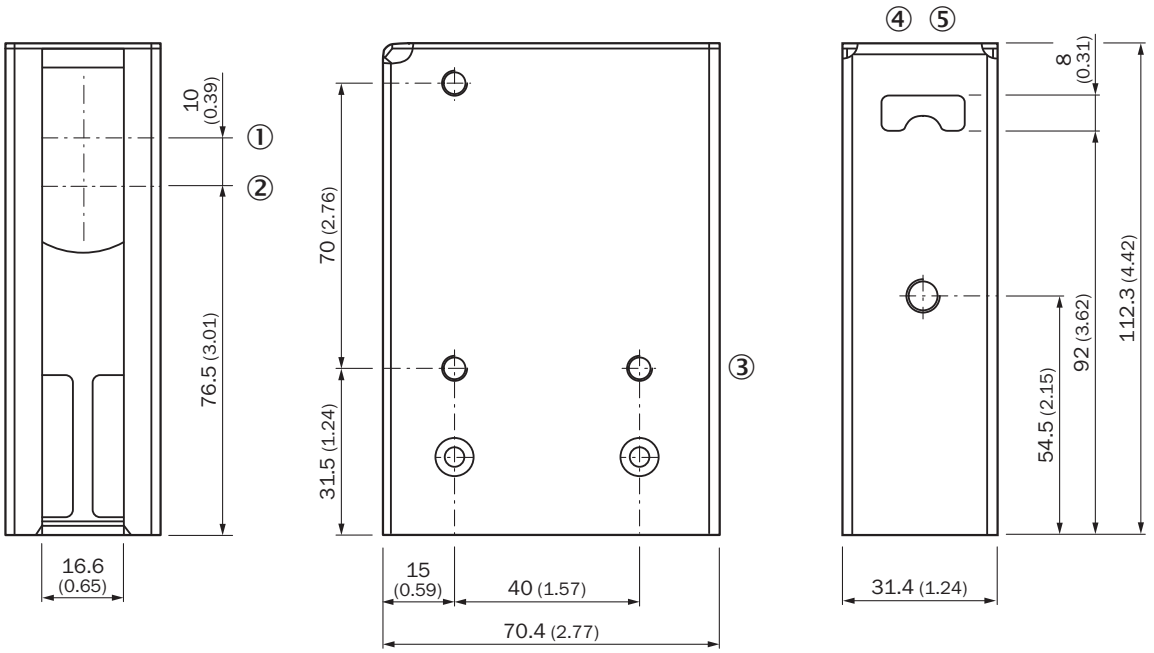
## Characteristic curve WSE27-3 EX




## Sensing range diagram



## Dimensional drawing WSE27-3 EX




Dimensions in mm (inch)
① Optical axis, sender
② Optical axis, receiver
③ Mounting hole ø 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 | | | |
|  | • **Description:** Mounting bracket with hinged arm<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Mounting hardware included<br>• **Suitable for:** W23-2, W27-3, Reflex Array | BEF-WN-W27 | 2009122 |
| connectors and cables | | | |
|  | • **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **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.”**

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