



# WTB190TL-P430

W190 Laser High Grade

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTB190TL-P430	6026542

Other models and accessories → [www.sick.com/W190\\_Laser\\_High\\_Grade](http://www.sick.com/W190_Laser_High_Grade)

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, Foreground suppression
Dimensions (W x H x D)	15 mm x 44.4 mm x 30 mm
Housing design (light emission)	Rectangular
Sensing range max.	40 mm ... 100 mm <sup>1)</sup>
Type of light	Visible red light
Light source	Laser
Light spot size (distance)	Ø 0.8 mm (80 mm)
Laser class	2
Adjustment	Menu-controlled Single teach-in button Teach-in
Display	Switching threshold, distance, mode

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC <sup>1)</sup>
Ripple	± 10 % <sup>2)</sup>
Current consumption	40 mA <sup>3)</sup>
Switching output	PNP

<sup>1)</sup> Limit values.  
<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.  
<sup>3)</sup> Without load.  
<sup>4)</sup> Signal transit time with resistive load.  
<sup>5)</sup> With light/dark ratio 1:1.  
<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.  
<sup>7)</sup> D = outputs overcurrent and short-circuit protected.  
<sup>8)</sup> Reference voltage: 50 V DC.

<b>Switching mode</b>	Light/dark switching
<b>Switching mode selector</b>	Programmable
<b>Output current <math>I_{\max}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$1.5 \text{ ms}^{4)}$
<b>Switching frequency</b>	$300 \text{ Hz}^{5)}$
<b>Time functions</b>	Programmable Programmable: 0 ... 10 s
<b>Delay time</b>	Nor: normal mode Ond: On delay mode, reactivation delay OFd: Off-delay mode, release delay OnE: One Shot Mode, ONE SHOT
<b>Connection type</b>	Male connector M8, 4-pin
<b>Circuit protection</b>	A <sup>6)</sup> D <sup>7)</sup>
<b>Protection class</b>	III <sup>8)</sup>
<b>Weight</b>	120 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Tightening torque, max.</b>	0.5 Nm
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	$-10 \text{ °C} \dots +40 \text{ °C}$
<b>Ambient temperature, storage</b>	$-20 \text{ °C} \dots +60 \text{ °C}$

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

<sup>8)</sup> Reference voltage: 50 V DC.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	196 years
<b>DC<sub>avg</sub></b>	0 %

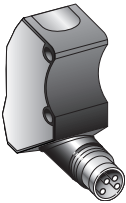
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cRUus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓
<b>Laser safety (IEC 60825-1) certificate</b>	✓

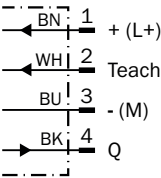
Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

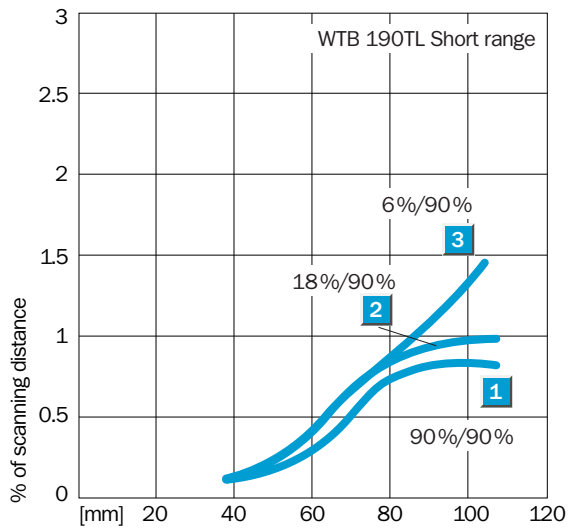
Connection type



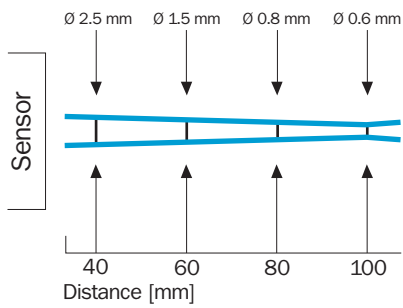
Connection diagram Cd-092



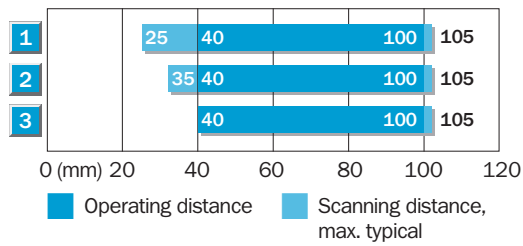
## Characteristic curve



## Light spot size

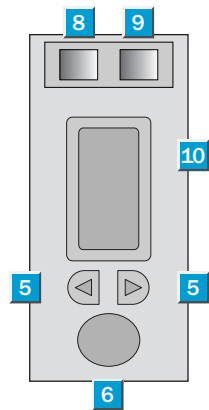


### Sensing range diagram



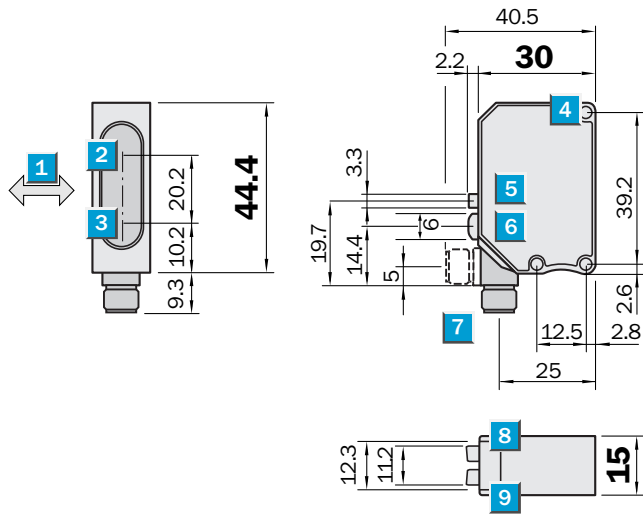
1	Scanning range on white, 90 % remission
2	Scanning range on grey, 18 % remission
3	Scanning range on black, 6 % remission

### Adjustments



- ⑤ +/- button; select mode button
- ⑥ Teach-in button
- ⑧ Status indicator LED, green: Laser on
- ⑨ LED indicator yellow;
- ⑨ lights continuously: output aktiv
- ⑨ no light: output inactive
- ⑨ blinks slowly: shot circuit detected
- ⑩ Numerical Display

## Dimensional drawing






Dimensions in mm (inch)

- ① Standard direction of the material being detected
- ② Center of optical axis, receiver
- ③ Center of optical axis, sender
- ⑦ Connector M8, 4-pin, 90° rotatable or cable 2 m, 4-wire

## Recommended accessories

Other models and accessories → [www.sick.com/W190\\_Laser\\_High\\_Grade](http://www.sick.com/W190_Laser_High_Grade)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> </ul>	BEF-W190	5311362
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF8U14-050VA3XLEAX	2095889
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li> </ul>	STE-0804-G	6037323

## 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](http://www.sick.com)