



# CSS-WBGAD4118RZZZZ

CSS High Resolution

COLOR SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
CSS-WBGAD4118RZZZZ	1120176

Other models and accessories → [www.sick.com/CSS\\_High\\_Resolution](http://www.sick.com/CSS_High_Resolution)

Detailed technical data

Features

Parameter presets	None
Housing design	Small
Dimensions (W x H x D)	26 mm x 62 mm x 47.5 mm
Light source	LED, RGB <sup>1)</sup>
Light emission	Long side of housing
Light spot size	Ø 8 mm ... 32 mm <sup>2)</sup>
Light spot direction	Round, large
Wave length	450 nm, 550 nm, 610 nm
LED risk group marking	2
Color mode	C (Color) C + I (Color + Illumination)
Sensing distance	50 mm ... 500 mm
Teach-in mode	Single value teach-in Multi value teach-in
Output mode	4 colors in standard mode/best fit mode 15 colors in coded mode
Output (channel)	4 x hardware switching outputs 24 x virtual switching outputs via RS-485
Adjustment of the sensitivity	Continuous: 0 ... 999

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>2)</sup> Depends on the sensing distance.

<b>Available job banks</b>	4
<b>Safety-related parameters</b>	
MTTF <sub>D</sub>	179.9 years

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>2)</sup> Depends on the sensing distance.

## Interfaces

<b>Modbus</b>	✓, RS-485
<b>Digital output</b>	Q <sub>1</sub> , Q <sub>2</sub>
Number	2
<b>Digital input</b>	In <sub>1</sub> , In <sub>2</sub>
Number	2

## Electronics

<b>Supply voltage</b>	10.8 V DC ... 28.8 V DC <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	< 150 mA <sup>3)</sup>
<b>Switching frequency</b>	4 kHz
<b>Response time</b>	120 μs
<b>Jitter</b>	60 μs
<b>Switching output</b>	Push-pull: PNP/NPN
<b>Switching output (voltage)</b>	Push-pull: PNP/NPN HIGH = U <sub>V</sub> - 3 V / LOW ≤ 3 V
<b>Output current I<sub>max</sub></b>	100 mA <sup>4)</sup>
<b>Input, teach-in (ET)</b>	Teach: U = 10 V ... < V <sub>S</sub>
<b>Input, blanking input (AT)</b>	Blanked: U = 10 V ... < U <sub>v</sub>
<b>Retention time (ET)</b>	3 s, non-volatile memory
<b>Time delay</b>	None
<b>Protection class</b>	III
<b>Circuit protection</b>	U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Connection type</b>	Male connector M12, 8-pin

<sup>1)</sup> Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>V</sub> tolerances.

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

<sup>4)</sup> Total current of all Outputs.

## Mechanics

<b>Housing material</b>	VISTAL®
<b>Optics material</b>	Glass
<b>Weight</b>	70 g

Ambient data

<b>Ambient operating temperature</b>	-20 °C ... +55 °C
<b>Ambient temperature, storage</b>	-25 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068-2-27 (30 g/11 ms)
<b>Enclosure rating</b>	IP67
<b>UL File No.</b>	E181493

Connection type/pinouts

<b>Connection type</b>	Male connector M12, 8-pin	
<b>Pinouts</b>		
	WH 1	In <sub>1</sub>
	BN 2	+ (L+)
	GN 3	Q <sub>L1</sub>
	YE 4	Q <sub>L2</sub>
	GY 5	In <sub>2</sub>
	PK 6	RS-485_A
	BU 7	- (M)
	RD 8	RS-485_B

Classifications

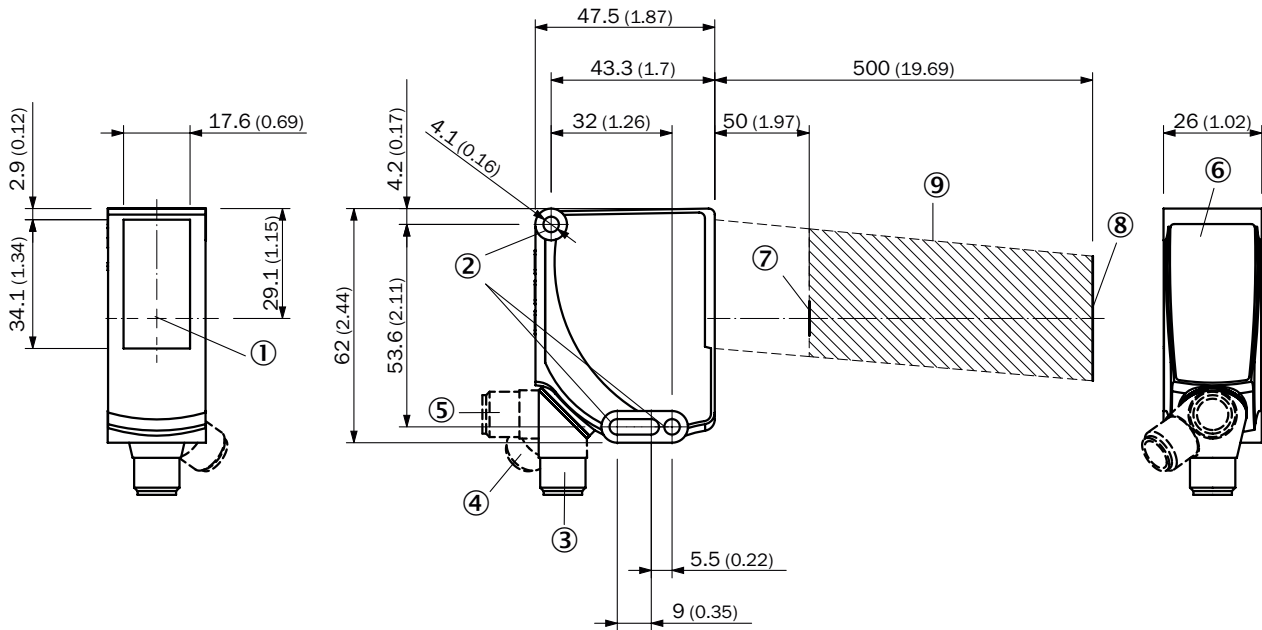
<b>ECLASS 5.0</b>	27270907
<b>ECLASS 5.1.4</b>	27270907
<b>ECLASS 6.0</b>	27270907
<b>ECLASS 6.2</b>	27270907
<b>ECLASS 7.0</b>	27270907
<b>ECLASS 8.0</b>	27270907
<b>ECLASS 8.1</b>	27270907
<b>ECLASS 9.0</b>	27270907
<b>ECLASS 10.0</b>	27270907
<b>ECLASS 11.0</b>	27270907
<b>ECLASS 12.0</b>	27270907
<b>ETIM 5.0</b>	EC001817
<b>ETIM 6.0</b>	EC001817
<b>ETIM 7.0</b>	EC001817
<b>ETIM 8.0</b>	EC001817
<b>UNSPSC 16.0901</b>	39121528

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>	✓

China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

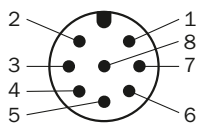
## Dimensional drawing, sensor



Dimensions in mm (inch)

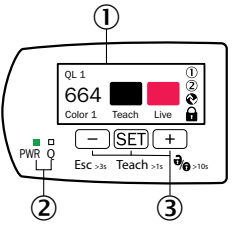
- ① Optical axis
- ② fixing hole
- ③ M12 male connector, delivery state
- ④ M12 male connector, end stop right
- ⑤ M12 male connector, end stop left
- ⑥ display and adjustment elements
- ⑦ Light spot size (distance):  $\varnothing$  8.8 mm (50 mm)
- ⑧ Light spot size (distance):  $\varnothing$  32 mm (500 mm)
- ⑨ working range

## Pinouts, see table Technical data: Connection type/pinouts



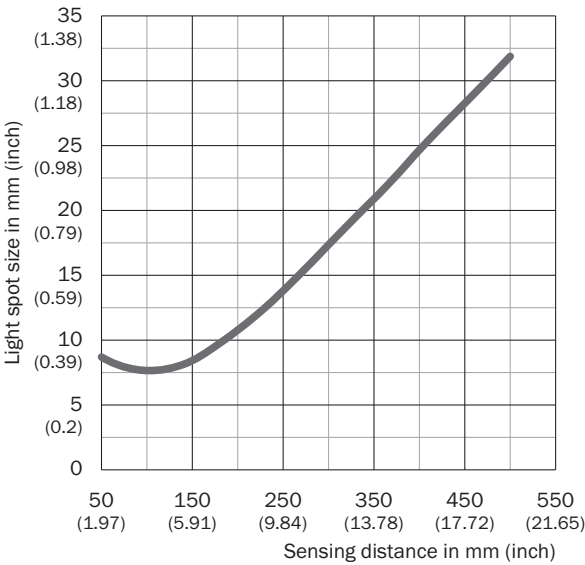
Connector M12, 8-pin, A-coded

display and adjustment elements



- ① TFT display
- ② LEDs (status display)
- ③ Plus/minus button







Light spot size



Recommended accessories

Other models and accessories → [www.sick.com/CSS\\_High\\_Resolution](http://www.sick.com/CSS_High_Resolution)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li><b>Description:</b> Plate K for universal clamp bracket</li><li><b>Material:</b> Steel</li><li><b>Details:</b> Steel, zinc coated</li><li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li><li><b>Usable for:</b> W11-2, W12-3, W14-2, W18-3, W23-2, W24-2, W27-3, W30, W32, W34, W36, PL50A, PL80A, P250, UC12, LUT3, KT2, KT5-2, KT8, CS8, DT2, DS30, DS40, W12-2 Laser, W16, W26, KT5</li></ul>	BEF-KHS-K01	2022718

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG350-0004AP100	6076871
		SIG350-0005AP100	6076923
		SIG350-0006AP100	6076924
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 8-pin, angled, B-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.25 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> <li>• <b>Note:</b> For field bus technology</li> </ul>	STE-1208-W	2092036
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-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, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-050UA5XLEAX	2095653

## 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)