



# CSS-WBGAD4115AA10Z

CSS High Resolution

COLOR SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
CSS-WBGAD4115AA10Z	1120174

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

Detailed technical data

Features

Dimensions (W x H x D)	26 mm x 62 mm x 47.5 mm
Sensing distance	50 mm ... 500 mm
Housing design	S housing
Light source	LED, RGB <sup>1)</sup>
LED risk group marking	2
Wave length	450 nm, 550 nm, 610 nm
Light emission	Long side of housing
Light spot size	Ø 8 mm ... 32 mm <sup>2)</sup>
Light spot direction	Round, large
Teach-in mode	Single value teach-in Multi value teach-in
Color mode	C (Color) C + I (Color + Illumination)
Output mode	2 colors in standard mode/best fit mode 3 colors in coded mode
Adjustment of the sensitivity	Continuous: 0 ... 999
Available job banks	4
Output (channel)	2 × hardware switching outputs 24 x virtual switching outputs via IO-Link

<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>Parameter presettings</b>	None
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1) Average service life: 100,000 h at  $T_U = +25\text{ °C}$ .

2) Depends on the sensing distance.

## Mechanics/electronics

<b>Supply voltage</b>	10.8 V DC ... 28.8 V DC <sup>1)</sup>
<b>Ripple</b>	$\leq 5\text{ V}_{pp}$ <sup>2)</sup>
<b>Current consumption</b>	$< 150\text{ mA}$ <sup>3)</sup>
<b>Switching frequency</b>	4 kHz
<b>Response time</b>	120 $\mu\text{s}$
<b>Jitter</b>	60 $\mu\text{s}$
<b>Switching output</b>	Push-pull: PNP/NPN
<b>Switching output (voltage)</b>	Push-pull: PNP/NPN HIGH = $U_V - 3\text{ V}$ /LOW $\leq 3\text{ V}$
<b>Output current <math>I_{max}</math></b>	100 mA <sup>4)</sup>
<b>Input, teach-in (ET)</b>	Teach: $U = 10\text{ V} \dots < U_S$
<b>Input, blanking input (AT)</b>	Blanked: $U = 10\text{ V} \dots < U_V$
<b>Retention time (ET)</b>	3 s, non-volatile memory
<b>Connection type</b>	Male connector M12, 5-pin
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	70 g
<b>Housing material</b>	VISTAL®
<b>Optics material</b>	Glass

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

2) May not fall below or exceed  $U_V$  tolerances.

3) Without load.

4) Total current of all Outputs.

## Communication interface

<b>IO-Link</b>	✓, IO-Link
VendorID	26
DeviceID HEX	80028E
DeviceID DEC	8389262
<b>Process data structure</b>	Byte 0 ... 3 = Switching output and status Byte 4 ... 11 = Color measurement values and color match values
<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

## Ambient data

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

Connection type/pinouts

Connection type	Male connector M12, 5-pin	
Pinouts		
	BN 1	+ (L+)
	WH 2	Q <sub>L2</sub> /I <sub>N1</sub>
	BU 3	- (M)
	BK 4	Q <sub>L1</sub> /C
	GY 5	I <sub>N2</sub>

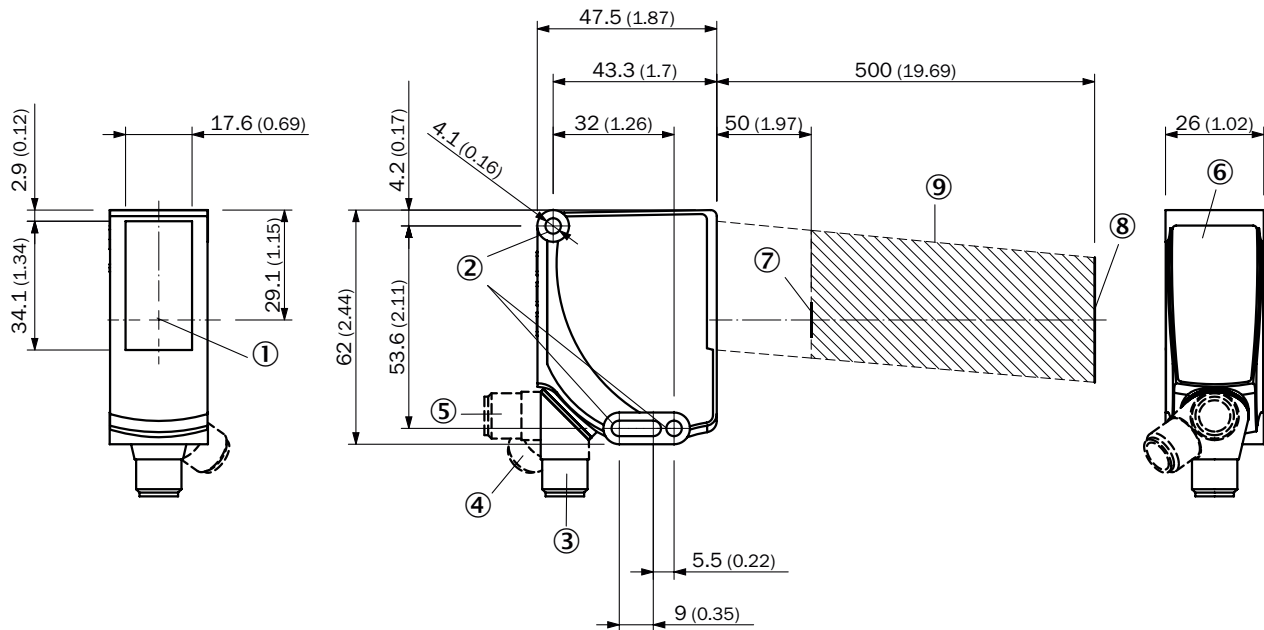
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
IO-Link	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

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

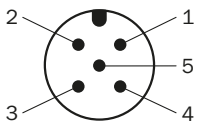
## Dimensional drawing, sensor



Dimensions in mm (inch)

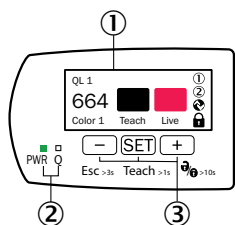
- ① Optical axis
- ② fixing hole
- ③ M12 male connector, delivery state
- ④ M12 male connector, end stop right
- ⑤ M12 male connector, end stop left
- ⑥ display and adjustment elements
- ⑦ Light spot size (distance): Ø 8.8 mm (50 mm)
- ⑧ Light spot size (distance): Ø 32 mm (500 mm)
- ⑨ working range

Pinouts, see table [Technical data: <b>Connection type/pinouts</b>](#)



Male connector, M12, 5-pin, A-coded

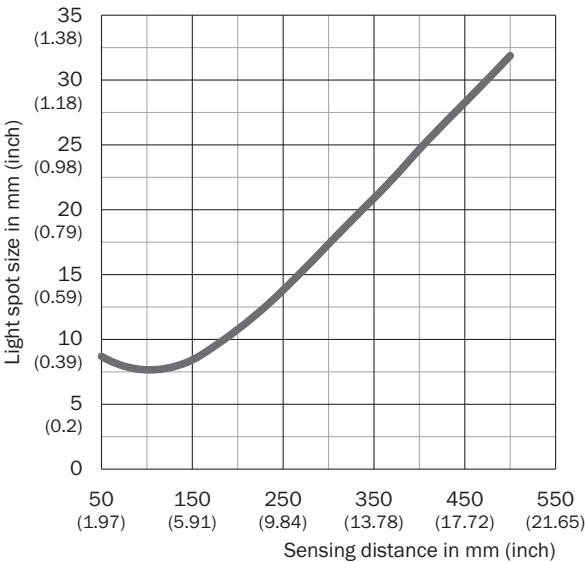
## display and adjustment elements



- 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
	<ul style="list-style-type: none"><li><b>Description:</b> Adaptation of CSS High Resolution and CSS High Speed to third party hole pattern</li><li><b>Material:</b> Aluminum</li><li><b>Details:</b> Aluminum</li><li><b>Items supplied:</b> Mounting hardware for the sensor included</li></ul>	BEF-AP-CSS	2137662
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Male connector, M12, 5-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> ≤ 0.75 mm²</li><li><b>Note:</b> For field bus technology</li></ul>	STE-1205-G	6022083
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A15-050VB5XLEAX	2096240

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG350-0004AP100	6076871
		SIG350-0005AP100	6076923
		SIG350-0006AP100	6076924

## 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)