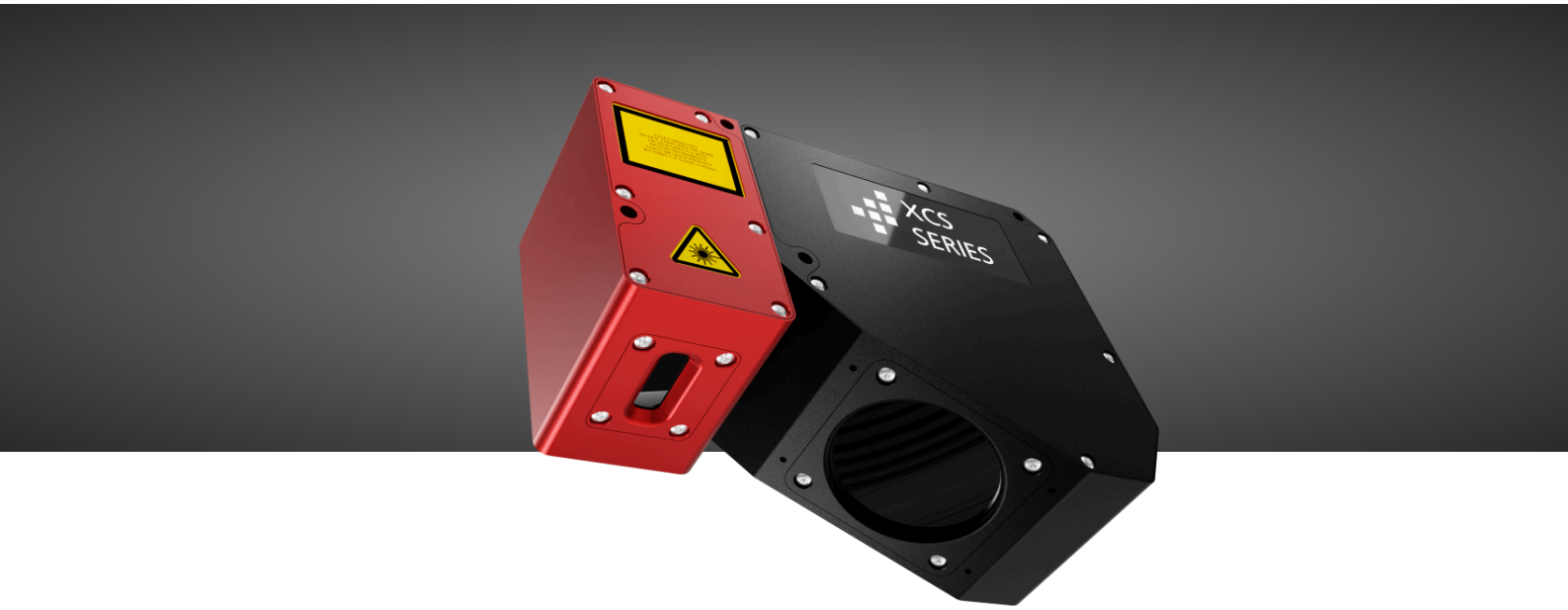
3D Sensor DATA SHEET

PN: 602346173, Model: C7-S8-3070W-XCS-28-48-146-SX-5G-405-3R



The new 3D sensors of the XCS series are particularly suitable for high-performance applications in the electronics industry thanks to their enormous precision and extreme speed. The sensors are characterized by an optimized laser with homogeneous thickness along the laser line, which guarantees precise detection of even the smallest structures. This enables high-precision inspection applications with high repeatability, which is ideal for the inspection of ball grid arrays (BGAs), among other things. The innovative clean beam function protects the laser from external interference and ensures a uniform intensity distribution, which further increases reliability. The sensor's dual-head option eliminates occlusions and achieves profile speeds of up to 95 kHz with the 3070-WARP version, speeding up data analysis and increasing efficiency.

- **High precision and repeatability thanks to high-quality laser line projection**
- **Unrivaled optical resolution for electronic inspection (e.g. BGA inspection) with a field of view of up to 53 mm**
- **Highest inspection speed available with 3070 WARP sensor**

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Model Information

Model Name	C7-S8-3070W-XCS-28-48-146-SX-5G-405-3R
Part Number	602346173

General Data

Points per Profile	3072
Triangulation Angle	28 °
Working Distance	146 mm
Laser Safety Class	3R
Laser Wavelength	405 nm
Laser Output Power	80 mW
Laser Line Width	21 µm
Linearity Z-Axis	0.052 % of calibrated Z-Range
Profile speed with 200-row region	39968 Hz
Maximum profile speed	87873 Hz

Field of View

	Nominal	Near Field	Far Field
Scan Width	47.9 mm	44.5 mm	51.3 mm
X-Resolution	15.6 µm	14.5 µm	16.7 µm
Z-Resolution	0.5 µm	-	-

Z-Range

	Full	Near Field	Far Field
Z-Range	20 mm	10 mm	10 mm

Technical Specifications

Interface	Gigabit-Ethernet (1GigE)
Inputs	Encoder A+, A-, B+, B-, Z+, Z- (TTL level) Two freely configurable digital inputs (+5 to +24 VDC)
Outputs	Two freely configurable digital outputs (+5 to +24 VDC)
Power Supply	Sensor supply +10 to +24 VDC (max. +27 VDC) Laser supply +10 to +24 VDC
Housing	Anodized aluminum IP67 certified
Weight	1380 g
Environmental Conditions	Operating temperature: 0 to +40 °C Storage temperature: -20 to +80 °C Relative humidity: 20 to 80 % (non-condensing)
Vibration Resistance	Sinusodial: DIN EN 60068-2-6:2008-10: 2g, 10-150 Hz Random: DIN EN 60068-2-64:2020-09: 7g, 10-500 Hz
Shock Resistance	DIN EN 60068-2-27: 2010-02: 15g, 3ms
Supported Standards	GenICam GigEVision
Firmware Features	RegionTracking, RegionSearch, Multiple Regions, MultiPart, AutoStart, HistoryBuffer, MultiSlope, MultiPeak
Software	SolutionPackage, MetrologyPackage, cxSDK for C, C++, .Net, Python, Matlab, Halcon

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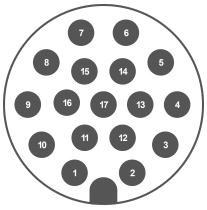
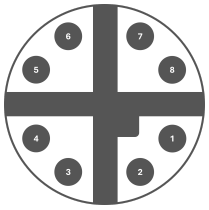
Connector layout and pin assignment

Power & I/O Connector: M12 17-Pin A-Coded Male



1	Z-	Encoder input Z- (RS-422, D-HTL)
2	L-VCC	Laser supply voltage (5-24V DC)
3	Z+	Encoder input Z+ (RS-422, TTL, D/SE-HTL)
4	B+	Encoder input B+ (RS-422, TTL, D/SE-HTL)
5	GND	Sensor and Laser supply ground
6	B-	Encoder input B- (RS-422, D-HTL)
7	A-	Encoder input A- (RS-422, D-HTL)
8	VCC	Sensor supply voltage
9	GND	Sensor and Laser supply ground
10	A+	Encoder input A+ (RS-422, TTL, D/SE-HTL)
11	IN-GND	Reference ground for Encoder/Digital inputs
12	OUT2	Digital output 2, level defined by OUT-VCC
13	IN1	Digital input 1 (5-24V DC)
14	IN2	Digital input 2 (5-24V DC)
15	OUT-VCC	Output supply voltage (5-24V DC), refers to OUT-GND
16	OUT1	Digital output 1, level defined by OUT-VCC
17	OUT-GND	Reference ground for digital outputs
Shield	SHIELD	Connected to device housing

Ethernet Connector: M12 8-Pin X-Coded Female



1	MDI1+	Data Pair 1, positive contact
2	MDI1-	Data Pair 1, negative contact
3	MDI2+	Data Pair 2, positive contact
4	MDI2-	Data Pair 2, negative contact
5	MDI4+	Data Pair 4, positive contact
6	MDI4-	Data Pair 4, negative contact
7	MDI3+	Data Pair 3, positive contact
8	MDI3-	Data Pair 3, negative contact
Shield	SHIELD	Connected to device housing

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