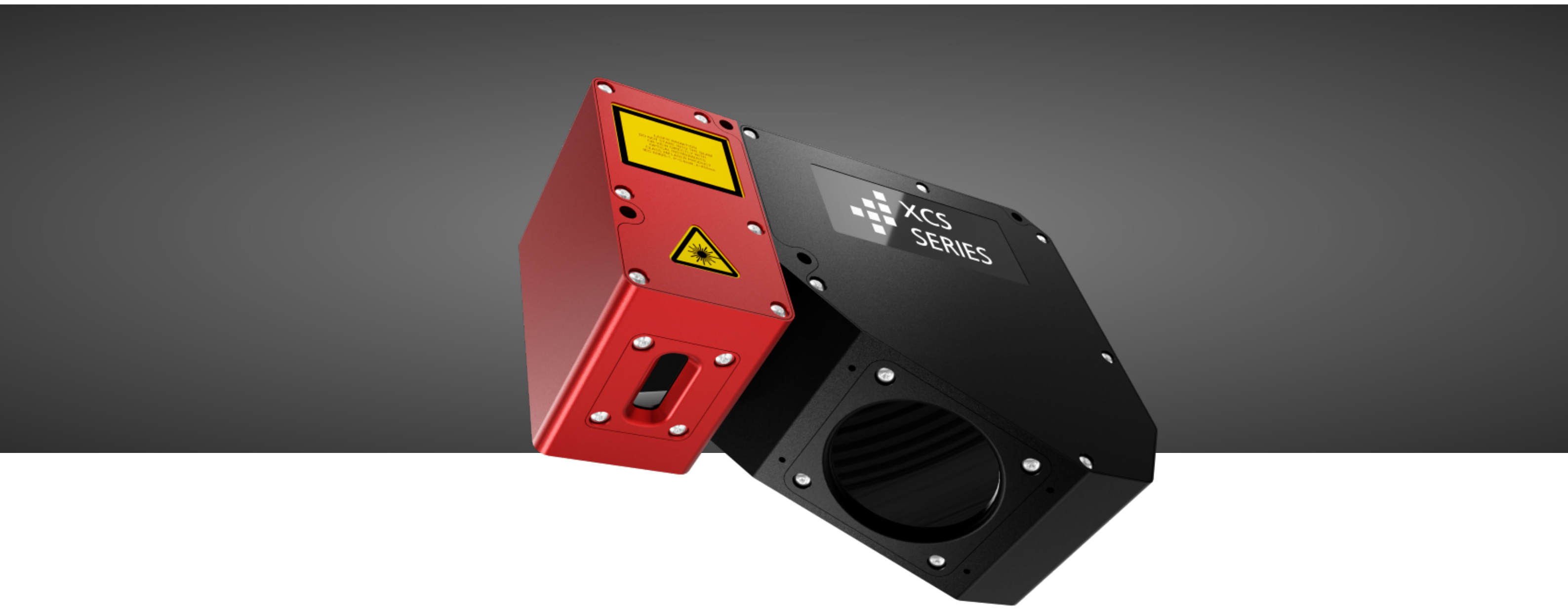
XCS Series Data Sheet

PN: 602345002, Model: C6-S7-3070-XCS-28-48-146-SX-1G-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 140 kHz with the 3070-WARP version, speeding up data analysis and increasing efficiency.

- **Unique 3D scan results without occlusion due to dual-head option and extremely high resolution**
- **High precision and repeatability thanks to high-quality laser line projection**
- **Two different sensor resolutions available (3070, 4090)**
- **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**

Visit our Website | Contact us | Visit our Product Documentation

AT - Automation Technology GmbH
Hermann-Bössow-Straße 6-8
23843 Bad Oldesloe

AT - Automation Technology, Inc.
380 Main Street, Suite 203
Stoneham, MA 02180

www.at-sensors.com
support@automationtechnology.de
+49 (0)4531 / 88011-42

Model Information

Model Name	C6-S7-3070-XCS-28-48-146-SX-1G-405-3R
Part Number	602345002
Sensor configuration	Single

Detector/Performance specifications

Detector	CMOS | Global Shutter
Resolution	3072 x 1020 pixels
Physical size	20.275 x 6.732 mm
Pixel size	6.6 x 6.6 µm
Points per profile	3072
Profile speed at 200 rows	4798.0 Hz
Maximum profile speed	66489.0 Hz
Linearity Z-Axis	0.051 % of calibrated Z-Range

X 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 Field of View

	Full	**Near Field**	**Far Field**
Z-Range	20.0 mm	10.0 mm	10.0 mm

Laser/Geometry specifications

Working Distance	146.0 mm
Triangulation Angle	28.0 °
Laser Safety Class	3R
Laser Wavelength	405.0 nm
Laser Output Power	80.0 mW
Laser Line Width	21.0 µm

Interface specifications

Ethernet	Gigabit-Ethernet | 1.000 Mbit/s
Encoder	A+, A-, B+, B-, Z+, Z- | RS-422 | TTL
Digital inputs	2x isolated digital inputs | 5V - 24V DC
Digital outputs	2x isolated digital outputs | 5V - 24V DC

Electrical/Mechanical specifications

Sensor power supply	12V - 24V DC | 27V DC Max.
Power consumption	- W
Laser power supply	12V - 24V DC
Connectors	Power&I/O: M12-Connector | 17-pin Ethernet: M12-Connector | 8-pin | A-coded
Housing material	Anodized aluminum
Dimensions (L x W x H)	159.0 x 60.0 x 113.0 mm
Weight	1750.0 g

Environmental conditions

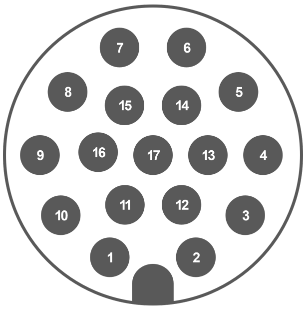
Temperatures	Operating: 0 °C - +40 °C Storage: -20 °C - +80 °C
Humidity	20 % - 80 % (non-condensing)
Vibration resistance	Sinusoidal: DIN EN 60068-2-6:2008-10: 2 g | 10 Hz - 150 Hz Random: DIN EN 60068-2-64:2020-09: 7 g | 10 Hz - 500 Hz
Shock resistance	DIN EN 60068-2-27: 2010-02: 15 g | 3 ms
Protection class	IP67 | According to IEC 60529

Software/Features

Supported standards	GenICam | GigEVision
Firmware features	RegionTracking | RegionSearch | MultiRegion | MultiPart | AutoStart | HistoryBuffer | MultiSlope | MultiPeak
Software	SolutionPackage | MetrologyPackage | cxSDK with wrappers for C, C++, Python and Matlab

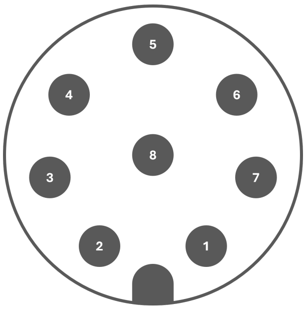
Connectors

M12 17-Pin: A-Coded Male Connector



1	ENC_Z-
2	LASER_Supply
3	ENC_Z+
4	ENC_B+
5	GND
6	ENC_B-
7	ENC_A-
8	VCC_EXT
9	GND_EXT
10	ENC_A+
11	ENC_GND
12	OUT2
13	IN1
14	IN2
15	OUT_Supply
16	OUT1
17	IO_GND
Shield	SHIELD

M12 8-Pin: A-Coded Female Connector



1	BI_DC-
2	BI_DD+
3	BI_DD-
4	BI_DA-
5	BI_DB+
6	BI_DA+
7	BI_DC+
8	BI_DB-
Shield	SHIELD

Visit our Website

Contact us

Visit our Product Documentation

AT - Automation Technology GmbH
Hermann-Bössow-Straße 6-8
23843 Bad Oldesloe

AT - Automation Technology, Inc.
380 Main Street, Suite 203
Stoneham, MA 02180

www.at-sensors.com
support@automationtechnology.de
+49 (0)4531 / 88011-42