

ZEISS AIMax cloud
Product Information



Capture 3D point clouds in-line using the ZEISS AIMax cloud

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The ZEISS AIMax cloud optical 3D sensor for generating point clouds is the new benchmark in robot-based 3D in-line technology for metalworking and car body construction. This sensor enables the high-precision analysis of complex features in a fraction of a second – ensuring 100% measurement in short cycle times.

ZEISS AIMax cloud benefits

- Dense point clouds created quickly using structured illumination
- DLP® technology optimized for in-line use
- Intuitive and fast setup of feature extraction
- Greater robustness as compared to standard image processing through feature extraction in the point cloud
- Measurability and testability of even smallest features thanks to high 3D resolution
- Highly compact sensor design for optimal accessibility
- Problem-free measurements on sheet metal and paint
- Simultaneous analysis of multiple features in one sensor position

ZEISS AIMax cloud applications

- Inspection of assembly and welding processes
- In-line measuring technology for car body construction, metalworking and structural parts
- Attribute feature recognition for data matrix codes, availability checks and type differentiation
- Robot-based coordinate measuring technology
- Gap-and-flush measurement in body shell work and final assembly
- Measurements of features previously difficult to analyze (e. g. nut behind metal, rivets)
- Measurements of characteristic design lines



The robot-based sensor can be used for 3D metrology in-line and at-line and in metalwork and car body construction.

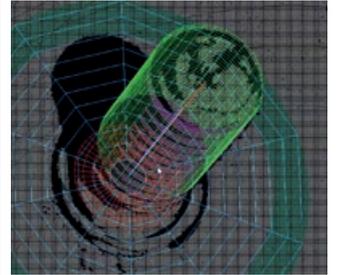
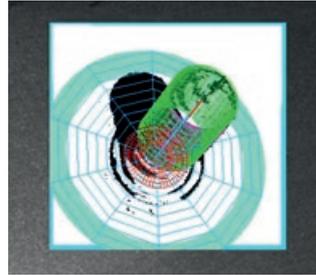
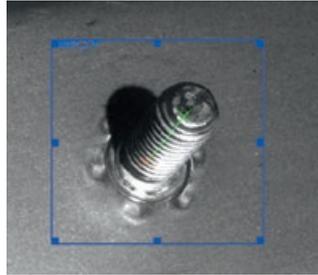


The feature to be measured is selected in the 2D image.

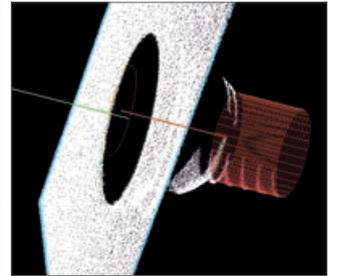
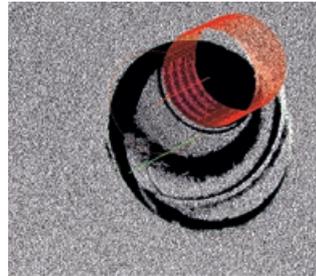
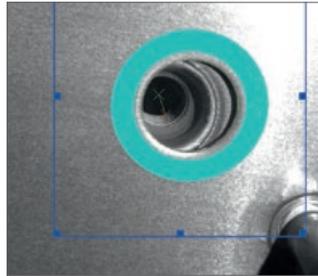
An algorithm generates the 3D point cloud.

The measuring result is visualized immediately.

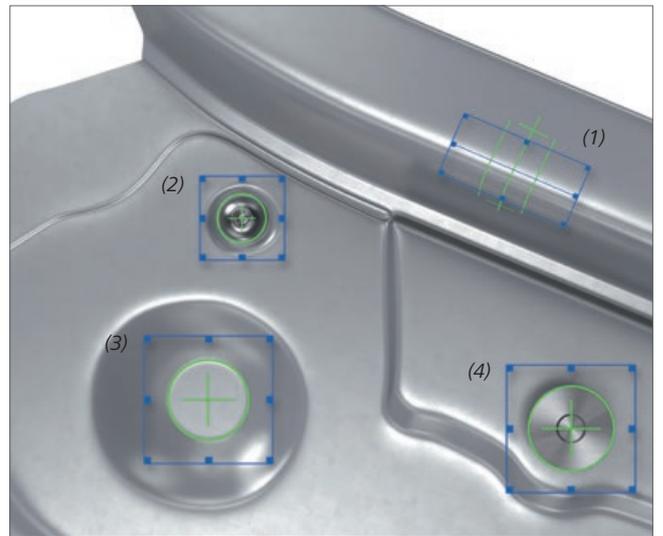
Example: bolt



Example: a nut under sheet metal



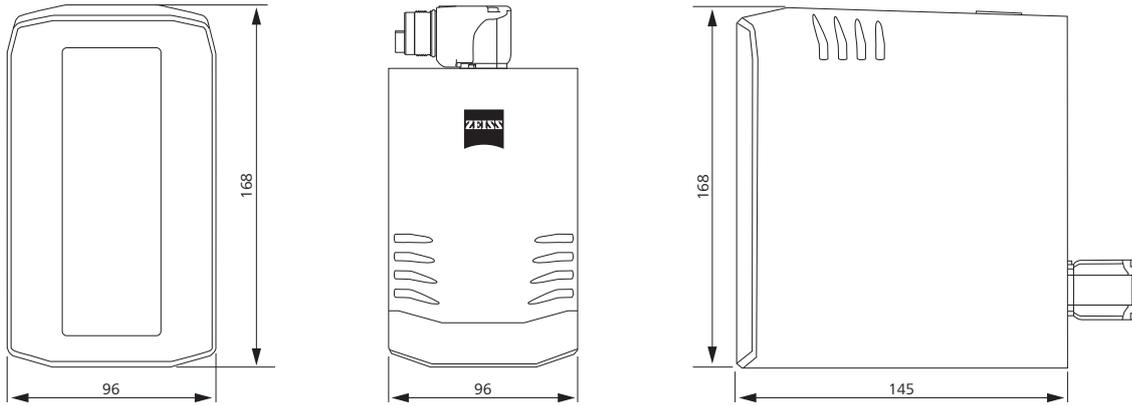
Examples: features
(1) bending edge
(2) rivet
(3) surface point
(4) T pin



One benefit of dense point clouds is that multiple features, such as bending edges, rivets, surfaces points and T pins, can be measured with just a single capture.

ZEISS AIMax cloud technical data

Camera	Digital (GigE) camera technology (monochrome)
Camera resolution	2048 pixels x 2048 pixels
Illumination	DLP® projector in the range of 450 nm to 620 nm
Measuring distance	165 mm
Measuring range	80 mm x 80 mm x 40 mm
Dimensions	96 mm x 168 mm 145 mm
Weight	3 kg
Measuring time	< 0.5 seconds/measuring position for typical features



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