OpenSCAN – optical scanning by BCT
Fast in-line capturing of complex parts

Knowledge about the current work piece geometry is key to all applications requiring to consider the individual shape of work pieces during the further processing or for quality assurance purpose.

OpenSCAN uses laser-line-scanners to capture the work pieces contactless, by moving the scanner along a pre-defined path while measuring thousands of points/s.

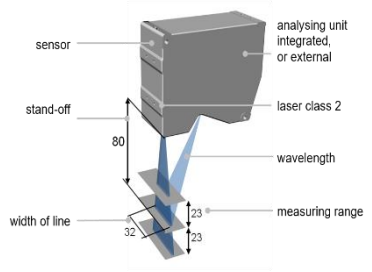
The sensor is mounted to the machine/robot used to process the parts, hence avoiding multiple transports and time-consuming re-fixation needs.

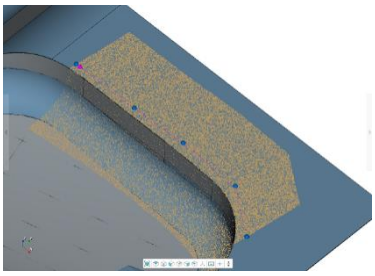
To capture all relevant details of the part OpenSCAN supports scanning with varying sensor orientations and will generate a consistent resulting point cloud.

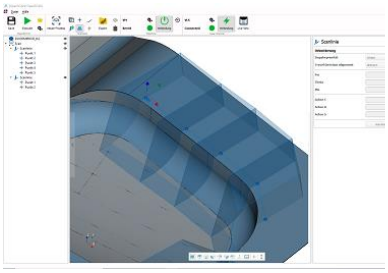
Whether a work piece geometry has to be captured for repair applications or to get information about inter-mediate stages of a LMD (laser-metal-deposition) build or to use the resulting data to check the dimensions of a part, OpenSCAN is the solution...

OpenSCAN is easy to use, no specific experiences required

OpenSCAN as part of BCT‘s product range, is available stand-alone or integrated in other products.







Sensors

OpenSCAN supports different types of laser line scanner. They can be selected based on the analysis of the application and further constrains.

OpenSCAN Software

The laser line scanner software is easy to use showing all relevant setting on the screen, directly. The path for scanning the part can be comfortably set by mouse-click on the base of a CAD model or by entering the coordinates.

To allow easy checking, the scan volume is shown along the path. Areas which will not be captured with the current settings can be seen at a glance.

The integrated kinematics module support typical NC machine configurations up to robots with additional rotary table. Special calibration routines take care that the maximum precision can be reached.

As a result you get a unique point cloud, independent on the sensor orientations used to capture the geometry.

Measuring results can be filtered and exported in various formats. Further processing can be made using specialised software packages.

We are looking forward to supporting you.

OpenSCAN-Connection

To realise an automated process flow, OpenSCAN is directly coupled with the NC controller of NC machine/robot. This allows ty synchronise measuring values and sensor positions with highest precision.

BCT GmbH is specialised in automated processing of individually shaped parts. Our expertise is:

- integration of 3D-Scan-technology in NC-processes
- geometrical adaptive processing of parts

Our aim is to integrate solutions to increase the efficiency of production, re-work and repair.

BCT: Your partner

contact us!

BCT.

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Technical details

Sensor*

- laser-line-sensor, triangulation principle
- resolution, measured on scan line > 1.280 points
- measuring range: different types available
- distance to middle of measuring range (Stand-Off): depending on sensor type
- frequency 300Hz – 60kHz
- laser power starting with from 8mW (class 2M) to 3M
- laser-wavelength blue/red
- connector cable and analysis box (depending on sensor)
- tool-changeable type available for HMT docking system

Software

- Windows based
- graphical user interface German/English
- definition of measuring path by mouse click or by entering point coordinates, directly
- move of path defining points, by mouse
- display of scan volume
- integrated kinematics module (NC-machine/ robot)
- automatic alignment of sensor orientation along the scan path
- approach and retract movements to be defined
- live-view showing the resulting picture directly
- scan form various orientations
- precise data synchronisation with trigger signal
- calculation of unique point cloud
- consideration of quality indicators (if delivered by the sensor)
- export point cloud a ASC/PLY file, other formats on request.

Links

- Directly coupled to NC machines and robots with:
  - Sinumerik 840D (operate, powerline)
  - Fanuc 30/30i (16i on request)
  - Beckhoff
  - Kuka KRC4

Scope of delivery

- OpenSCAN software inclusive documentation/technical manual
- laser-line-scanner, depending on selection
- calibration sphere
- matting spray
- Installation and training

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