
Release: No. 756, 23rd April, 2019

Contact: Nicole Ruffer

E-Mail: nrueffer@isravisision.com

Phone: +49 (6151) 948-192

Embedded technology and quad-camera sensors ensure maximum efficiency in bin picking

Top speed, maximum performance – new sensors ensure top performance in bin picking

Robot-guided bin picking is significantly increasing the level of automation in industrial production, while also enabling maximum flexibility. That is why another large German supplier in the automotive sector has now chosen the PowerPICK3D bin picking system. The totally new quad-camera sensor solution with top speeds in scanning and data processing takes fully automated bin picking to the next level of performance. It enables significantly higher throughput and faster cycle times than comparable solutions and other technologies. Its parts detection is highly robust, thus ensuring maximum performance even under the most difficult conditions.

Today's high demands on quality and cost in the automotive sector require absolute efficiency and a high level of automation. ISRA's bin picking portfolio meets these demands perfectly. With multiple cameras, the ultra-high-performance sensors scan the content of the container and generate a dense point cloud. This is then compared to the CAD template, enabling the systems to detect the parts to be picked and create an optimized picking order autonomously, resulting in an almost unlimited diversity of recognizable object geometries. Intelligent picking planning and the precise supply of components in the production process ensure safe processes. Furthermore, the use of embedded PCs means that data is processed extremely quickly.



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One of the world's largest automotive suppliers relies on PowerPICK3D to sort components for the chassis. Small, cylindrical metal pins – some reflective, some dark black – need to be picked individually by a robotic system in the production process. The mechanical solution used previously exhibited high wear and insufficient throughput to meet the challenge of significantly increasing quantity. PowerPICK3D increased output and the sensor ensured the extremely short cycle time to be met, despite the reflective surfaces.

With its quad-camera technology, the optical sensor allows complete detection of the container even with large volumes. During this multi-stereo procedure, four integrated cameras capture the components to be picked from the container. PowerPICK3D automatically creates an optimized picking sequence and calculates the corresponding robot paths. The four cameras use the redundant images to create different perspectives, enabling reliable object detection even with shadows in the field of view or reflections from component.

Thanks to its fast integration and the ease of teaching new parts with CAD teach-in, the system can be up and running in no time and switch quickly between different component types. With its embedded processor technology, the sensor requires no external computer at all, omitting the need for extensive wiring between the camera and the PC and ensuring data transmission at the maximum speed possible. Combined with powerful LED lighting, this ensures the fastest possible scan times. ISRA products are compatible with all common robots and standard communication interfaces. The latest generation of PowerPICK3D offers the OPC-UA communication protocol, equipping it for

ISRA VISION AG
Industriestraße 14
64297 Darmstadt
Germany
Tel.: +49 (6151) 948-0
Fax: +49 (6151) 948-140
info@isravision.com



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the future of industrial production. Designed as ready-to-use systems, they can also be installed easily and quickly.

Images



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Thanks to its quad-camera technology, the new PowerPICK3D bin picking generation offers extremely short cycle times for every type of component and container.

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Highly precise scans offer maximum performance for industrial applications.



756_3.jpg

PowerPICK3D learns new part geometries quickly and efficiently on the basis of a CAD data set. As a result, the number of components that can be detected is virtually unlimited.

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