
Release: No. 754, 09.04.2019

Contact: Nicole Ruffer

E-Mail: nrueffer@isravision.com

Phone: +49 (6151) 948-192

State-of-the-art sensors for the first step in the production line

Top speed and robust detection – bin picking with outstanding performance as the key to Industry 4.0

Top speeds in scanning and parts detection are offering a whole new level of performance in fully automated bin picking. The latest version of already proven IntelliPICK3D, now fitted an innovative four-camera sensor solution enable robust component detection and optimized cycle times. A wide range of sensor sizes enables the detection of even the tiniest components in the millimeter range. Moreover, easy integration in just a few hours allows maximum flexibility of utilization. Equipped with embedded technology, Wi-Fi and the OPC/UA communication protocol, they are also ideally prepared for networked production.

With its quad-camera technology, the high-performance PowerPICK3D sensor achieves top speeds and empties pallet cages in no time. MiniPICK3D, on the other hand, is optimized for components with edges just a few millimeters long, meeting even the requirements for applications in the disciplines of fine mechanics, electronics, toys, and comparable industries. These new sensors for fully automated bin picking complement the successful IntelliPICK3D product line, whose robust component detection impresses even under the most difficult of conditions. With an embedded PC, the design does not require any extensive wiring between the camera and the PC, thereby ensuring the easiest possible installation and commissioning. In addition, the embedded design enables maximum speeds for data transmission. Users, therefore, benefit from extremely short scanning times. The individual de-

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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sign of the systems focuses on the fastest possible cycle times, maximum process reliability, and top speed.

Full monitoring under the toughest conditions – with IntelliPICK3D-PRO

Developed based on IntelliPICK3D, the IntelliPICK3D-PRO was specifically designed with the tough conditions on production lines in mind. Its powerful laser lighting ensures detailed image capturing with a high depth focus even at great distances from the container, in incident light, and under other difficult conditions, while still being safe for the human eye. Parts are reliably detected and picked even in complex locations. The system detects dirty surfaces as reliably as glossy or matte components. Intelligent collision avoidance automatically plans the correct picking path to ensure smooth operation. A software extension means that the system now also tolerates different container positions and types, supplying the production line without interruptions and with high process reliability.

Record times for bin picking

Bin picking can now be completed at record speeds thanks to the quad-camera technology of the PowerPICK3D sensor. During this multi-stereo process, four integrated cameras capture the components to be picked in the container. PowerPICK3D automatically creates an optimized picking sequence and calculates the corresponding robot paths. As the quad-camera assembly provides multiple camera angles, the sensor guarantees highly reliable multi-view image capturing, even with shadows in the field of view or light reflections from component surfaces. Furthermore, the advanced point cloud generation covers the entire scanned surface quickly and precisely.



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MiniPICK3D – bin picking now also available for fine mechanics and electronics

The MiniPICK3D sensor from ISRA VISION enables reliable detection and automatic picking of components with an edge length of just a few millimeters, such as plugs, injection-molded elements, electronic components or precision engineered components. Equipped with four cameras, the sensor ensures a comprehensive overview of every container as well as the required precision and speed. Small or thin-walled components are not just a challenge due to their small size: Their low weight means that robot systems can move them very quickly over generally short transport paths. This makes fast scanning times and precise object detection indispensable in order to enable optimal cycle times.

All bin picking solutions from ISRA are based on point cloud technology, with which they scan all objects inside a container. The various sensors use a CAD template to extract the components to be picked from this initially unstructured information. As the systems are quick and efficient at learning new part geometries with the help of a CAD teach-in, they can detect a virtually unlimited number of components. They are compatible with all standard communication interfaces and can be easily installed in any environment thanks to their flexible installation system. As part of the Touch & Automate portfolio, IntelliPICK3D-PRO, MiniPICK3D, and PowerPICK3D sensors are equipped with Wi-Fi as standard – ready for the future of industrial production and perfectly prepared for the requirements of Industry 4.0.

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Images



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With its robust laser illumination, IntelliPICK3D-PRO reliably captures the most complex geometries, even under challenging production conditions.



754_2.jpg

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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.



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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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The MiniPICK3D detects objects measuring just a few cubic millimeters with reliable precision.

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