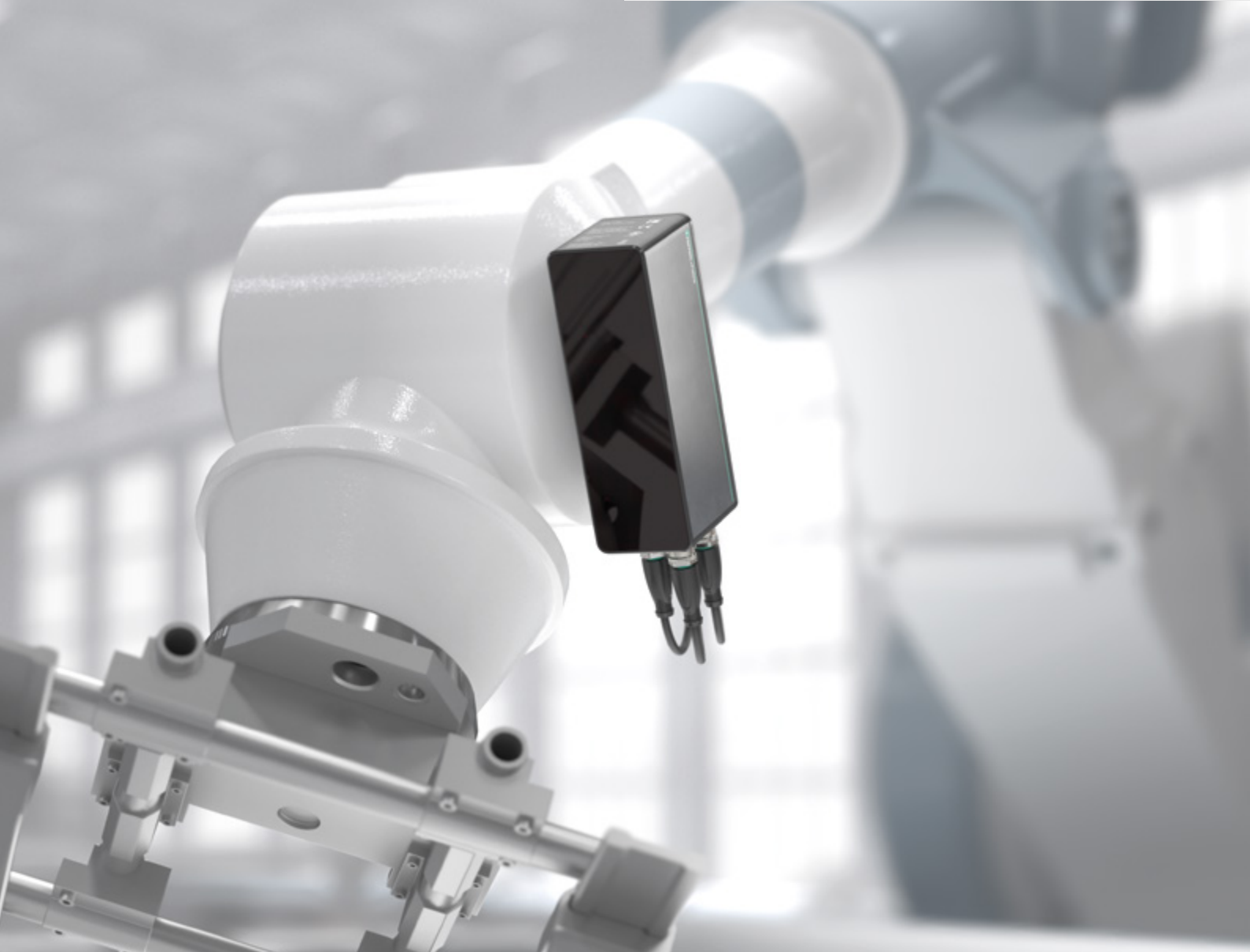


Infinite Possibilities

At the speed of light into the third
dimension of automation.

SmartRunner Explorer 3-D



Your automation, our passion.

 **PEPPERL+FUCHS**

One Platform. Two Technologies. Infinite Possibilities.

Whether you need maximum precision at close range or the highest immunity to ambient light in outdoor applications—with individualized hardware and software, the SmartRunner Explorer 3-D raw data sensor is ready for any vision application.

The Appropriate Technology for Your Application

Precise object measurement on conveyor belts, reliable navigation of automated guided vehicles, or exact positioning of robots—the range of applications for 3-D vision sensors is versatile and therefore requires flexible sensor technology. The SmartRunner Explorer 3-D is not limited to one application. The open platform allows flexible adaptation to your requirements. With stereo vision and Time-of-Flight (ToF), there are two high-performance technologies to choose from, which can leverage their advantages depending on the application.

Maximum Precision is the New Standard

Precise measurement data enables optimal processes. Standardized data structure simplifies integration. Due to the high chip resolution, the raw data sensor converts objects and environments into highly accurate 3-D point clouds. Ex-factory calibration and the temperature-regulating aluminum housing guarantee reliable data acquisition. The standardized data structure and the uniform ViSolution user software facilitate integration into your systems—no matter which technology you have chosen.

Highlights

- 3-D raw data sensor tailored to your application—with individualized hardware and software
- Stereo vision or Time-of-Flight—the right technology for every application
- Maximum precision through high chip resolution and temperature-regulating aluminum housing
- Intuitive commissioning with live data in the ViSolution user software



For more information, visit
pepperl-fuchs.com/pf-smartrunner3d



Maximum Precision in Short-Range Applications



Data Preprocessing Directly in the Sensor

Equipped with an integrated FPGA, the measurement data is processed directly in the sensor. This means that the 3-D data is provided immediately and does not have to be calculated externally at great expense. The images from two offset cameras are automatically superimposed and merged into a 3-D point cloud using a semiglobal block-matching process. An infrared pattern of 72,000 points enables both images to be exactly superimposed and therefore guarantees maximum precision.

In addition, the operator can access live images and use them for quick and easy commissioning as well as error analysis. If required, these can also be recorded with integrated lighting.

Optimized for Inspection

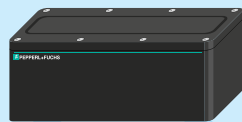
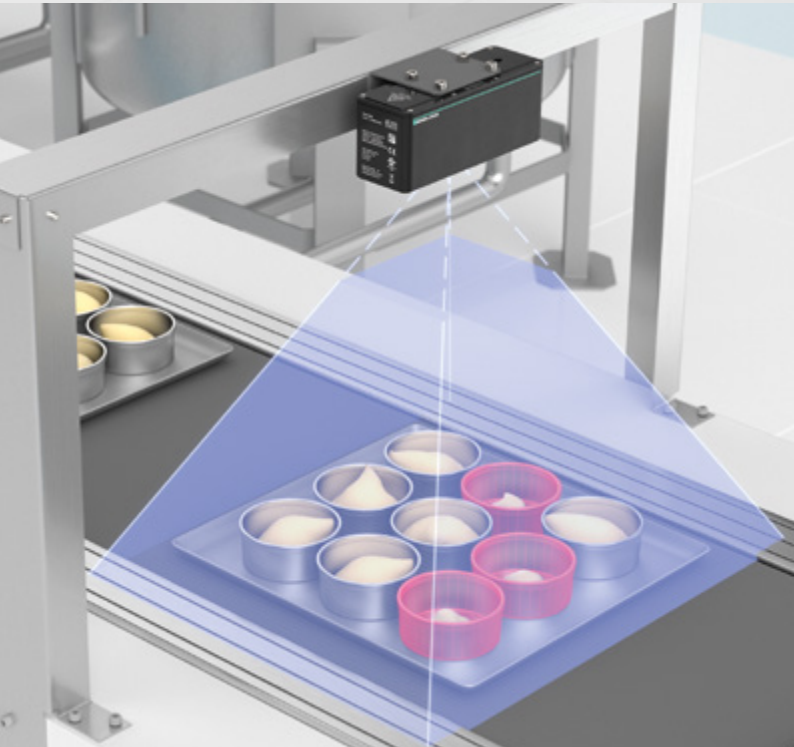
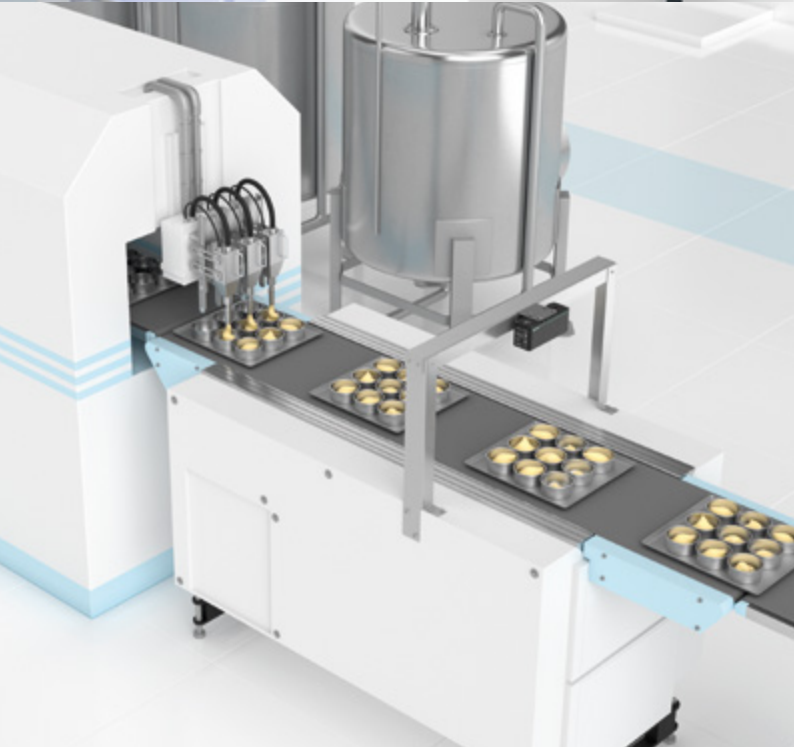
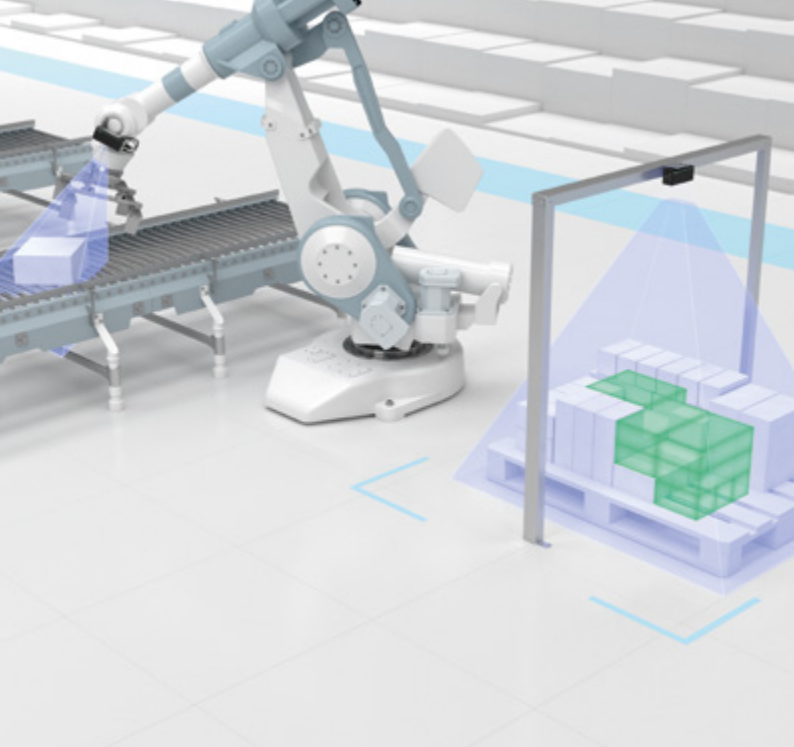
With a resolution of 1.4 megapixels and a range of one meter, the SmartRunner Explorer 3-D with stereo vision technology is optimized for high-precision detection of objects at close range. Applications such as bottle inspection and counting or volume detection of amorphous masses are typical for this technology.

Excerpt of Technical Data

SmartRunner Explorer 3-D Stereo

Type code	VSE*
Eye safety	Laser class 1
Operating frequency/object speed	Up to 10 Hz at full resolution/up to 1 m/s
Interface	Gigabit Ethernet TCP/IP
Dimensions	165 × 67 × 56 mm (W × H × D)
Ambient light suppression	> 20 klx
Raw image size	1,300 × 1,080 pixels





600 mm

Typical values distance 600 mm

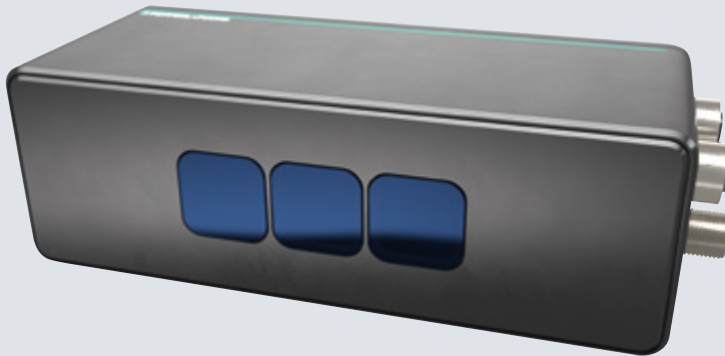
Reading window: X = 400 mm, Y = 350 mm
Resolution: X = 0.35 mm, Y = 0.35 mm, Z = 1 mm

900 mm

Typical values distance 900 mm

Reading window: X = 550 mm, Y = 500 mm
Resolution: X = 0.5 mm, Y = 0.5 mm, Z = 2 mm

High Reliability at Long Range



Optimized for Fast Processes

With a measuring rate of 30 Hz, the SmartRunner Explorer 3-D with Time-of-Flight technology guarantees maximum reliability even in fast processes. Due to the special four-phase measurement, objects are precisely detected even at a distance of ten meters and converted into 3-D data. Due to the 940 nanometer infrared light, the sensor is also very resistant to ambient light and can therefore be used in outdoor applications.

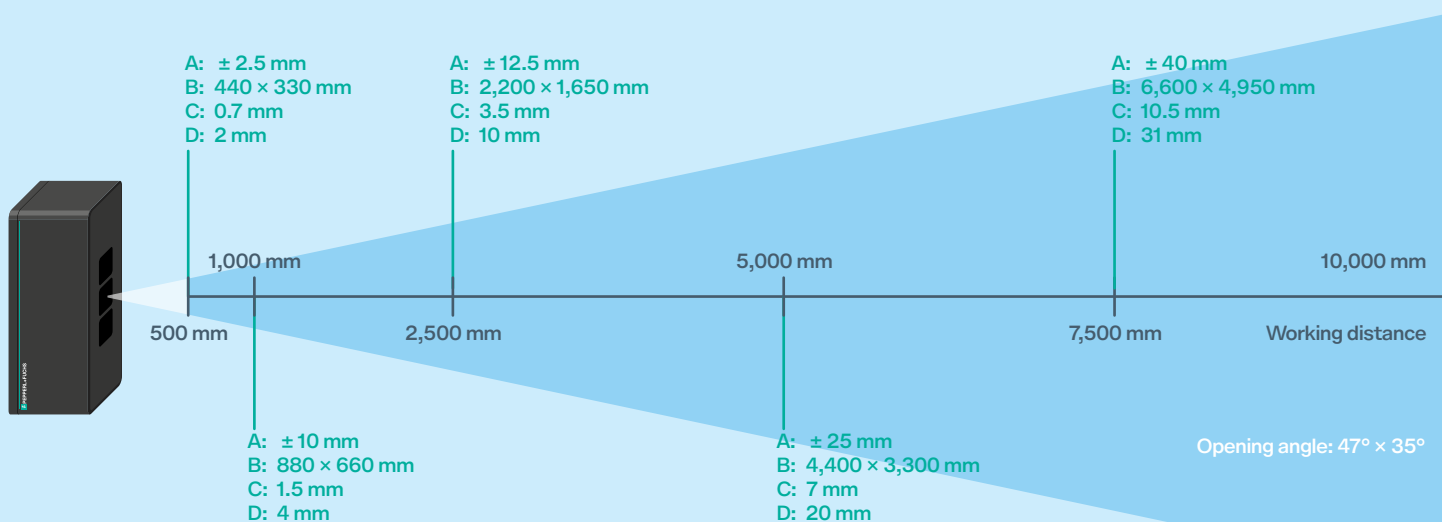
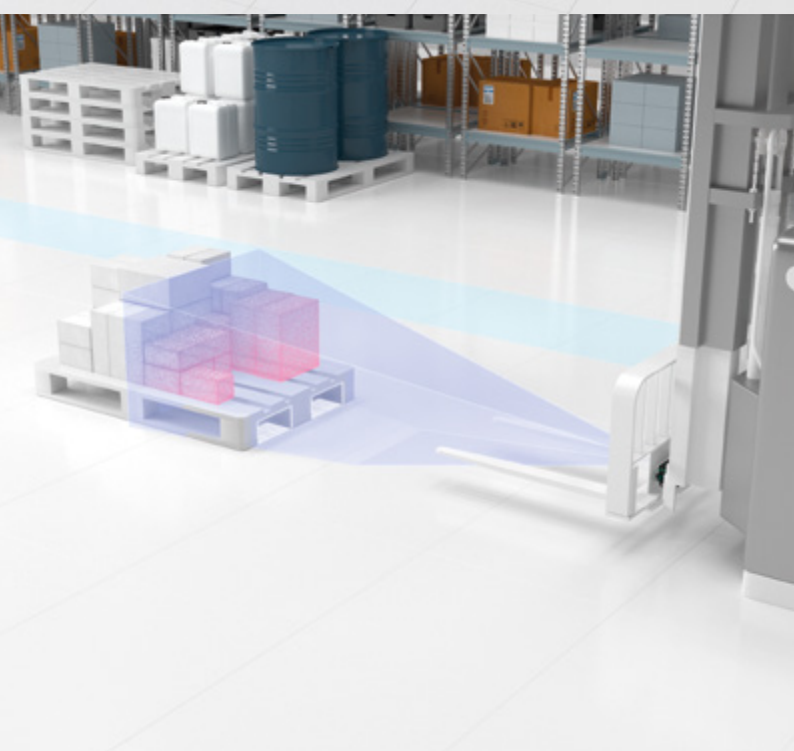
Typical use is in automated guided vehicles. Obstacles in the travel path can be reliably detected and avoidance routes calculated. The measurement of objects or the detection of pallet recesses in automated forklifts are also no problem with this high-performance technology.

Excerpt of Technical Data

SmartRunner Explorer 3-D ToF

Type code	VTE*
Eye safety	Laser class 1
Operating frequency/object speed	Up to 30 Hz at full resolution/up to 1m/s
Interface	Gigabit Ethernet TCP/IP
Dimensions	165 × 67 × 56 mm (W × H × D)
Ambient light suppression	> 100 klx
Raw image size	640 × 480 pixels





Typical values

A: Depth resolution
B: Image window size X, Y

C: Resolution X, Y
D: min. object size

Your automation, our passion.

Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus Infrastructure
- Remote I/O Systems
- Electrical Explosion Protection Equipment
- Purge and Pressurization Systems
- HMI Systems
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Vibration Monitoring
- Industrial Ethernet
- AS-Interface
- IO-Link
- Identification Systems
- Displays and Signal Processing
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