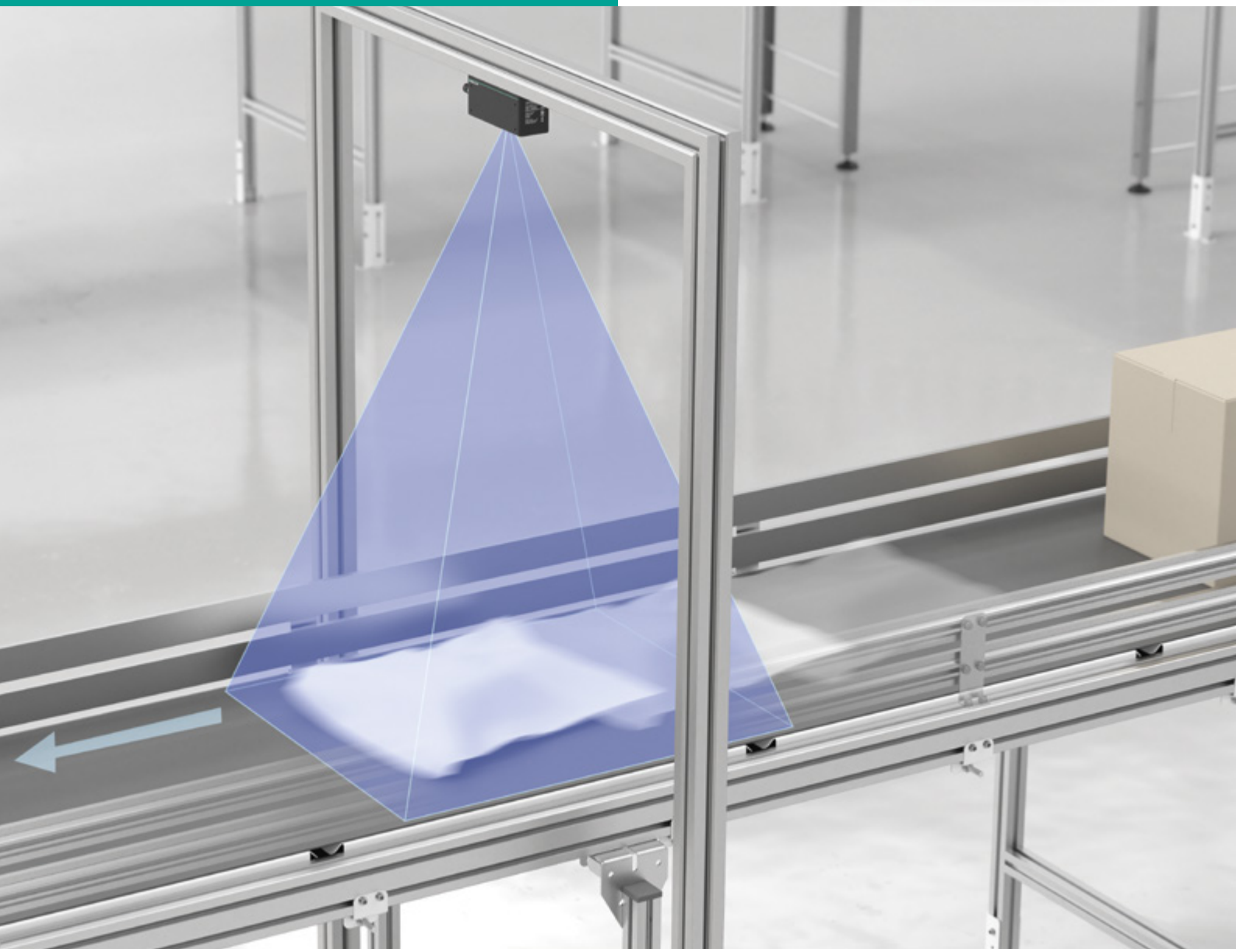
# Measure Without Detours.

Volume, dimensions, rotation, and position directly from the sensor—up to 2.5 m/s.

SmartRunner Measurer 3-D



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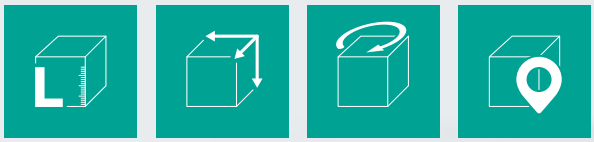
SmartRunner Measurer 3-D

# Built-in Intelligence for Precise 3-D Measurements

**With stereo-vision technology and integrated data processing, the SmartRunner Measurer 3-D sets new standards in automation. All relevant values are calculated directly in the device, simplifying processes and accelerating measurement results in a precise, reliable manner suitable for industrial use.**



Volume Dimensions Rotation Position

## Direct Data Output Through Integrated Data Processing

The sensor captures the entire 3-D scene with a single shot and calculates all relevant measurements directly in the device. An integrated algorithm processes the stereo image data to produce precise results for volume, dimensions, rotation, and position. The output is generated directly from the sensor, without external image processing or additional IPC. This reduces system complexity and significantly simplifies integration.

## Flexible Integration

The sensor can be seamlessly integrated into various automation environments. Measurement results are transmitted directly to a PLC via Modbus TCP. Alternatively, an Ethernet TCP/IP interface is available, which can also be used to provide image data for documentation purposes. Optional gateways enable integration into PROFINET, EtherNet/IP, and EtherCAT networks.

| Extract of Technical Data | VSM1000-F400-B12-A1000 | VSM2000-F400-B12-A1000 | VSM3000-F400-B12-A1000 |
|---|---|---|---|
| **Detection range** | 600 ... 950 mm | 850 ... 2,050 mm | 1,000 ... 3,200 mm |
| **Power supply** | 24 V DC | | |
| **Interface** | Gigabit Ethernet TCP/IP, Modbus TCP | | |
| **Dimensions** | 180 × 56 × 67 mm (W × H × D) | | |
| **Ambient light suppression** | > 20 kLux | | |
| **Trigger options** | Auto trigger, software trigger, hardware trigger | | |
| **Frame rate** | Up to 10 Hz | | |
| **Object size minimal** | 30 × 20 × 30 mm (W × H × D) | | |
| **Object velocity** | Up to 2.5 m/s | | |

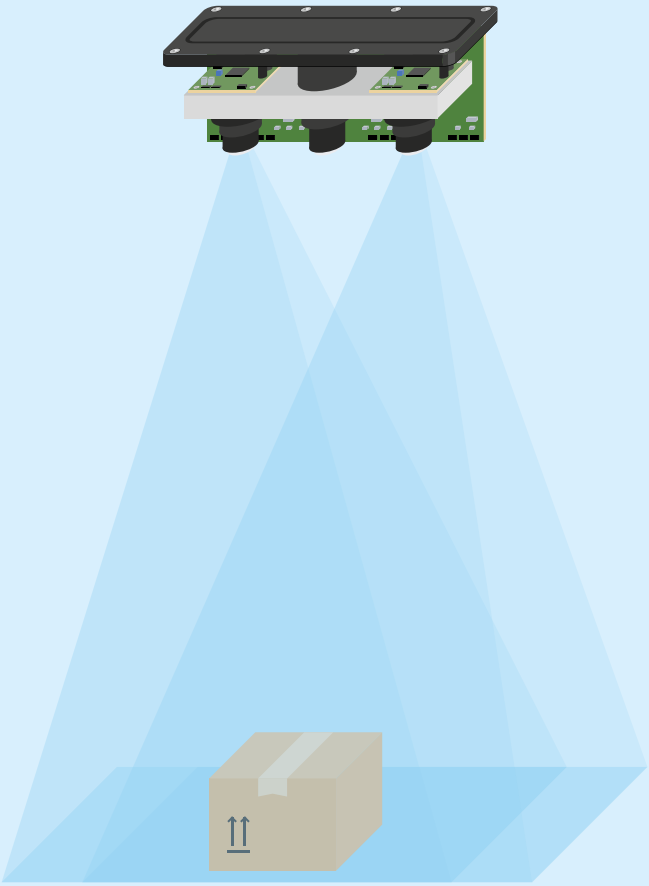
For more information, visit
**pepperl-fuchs.com/pf-measurer**

### Stereo-Vision Technology for Precise Depth Detection

Two offset cameras capture the scene simultaneously from different angles. The exact depth information is calculated using triangulation based on the measured disparity between the two images. This creates a complete 3-D image of the object, providing precise information on its shape, position, and orientation. This technology enables high measurement accuracy in both static and dynamic applications with object speeds up to 2.5 m/s and ensures reliable results for complex geometries.

### Structured Light for Stable Measurement Results

An integrated projector casts a fine structured pattern onto the object's surface. This structure provides stable reference points,including on smooth, single-color, or low-contrast materials. This makes the correlation between the camera images more stable and the depth calculation significantly more accurate. The result is reliable measurement data with high repeat accuracy, regardless of the color, surface, or material of the object.



SmartRunner Measurer 3-D

# Simple Setup, Flexible Customization

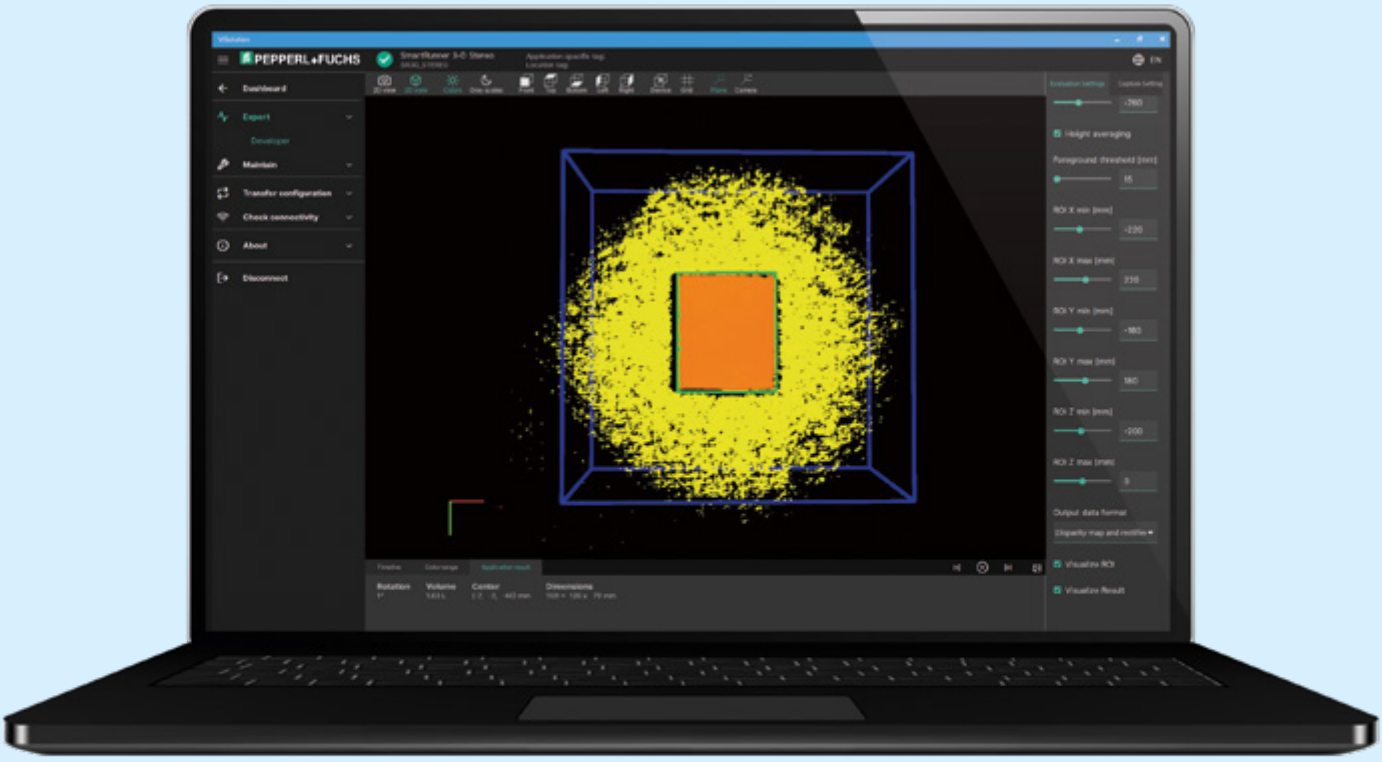
**The user-friendly ViSolution makes commissioning simple and efficient. Live images, clear menu navigation, and preconfigured functions guide you step by step through the setup process. For special applications, parameters such as exposure time or Region of Interest (ROI) can be customized individually to achieve optimal measurement results in every application.**

## Easy Configuration with ViSolution

The software provides support during commissioning, parameterization, and analysis. A clear user interface allows you to display live images, define work areas, and adjust parameters such as exposure time or ROI. Measurement results and image data can be visualized and checked directly. This makes sensor configuration intuitive and efficient, from initial setup to ongoing use, without requiring special image processing knowledge.

## Output Data

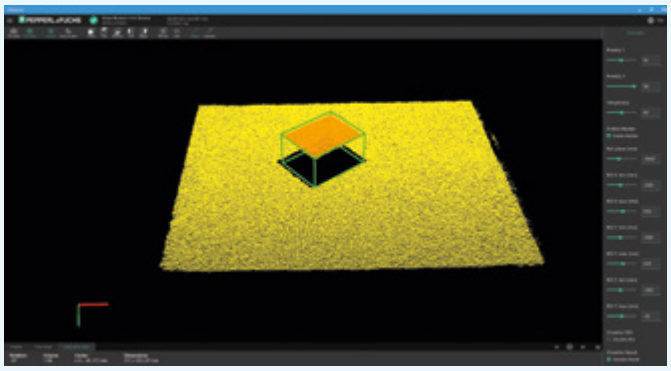
| Parameters | Accuracy |
|---|---|
| **Volume (liters, L)** | ca. ±3% |
| **Dimensions (length, width, height)** | ±5 mm at 1000 mm, ±10 mm at 2000 mm |
| **Rotation (°)** | ±3° |
| **Position (center of object surface in in x-, y-, and z-axis coordinates)** | ±5 mm at 1000 mm, ±10 mm at 2000 mm |




Video on commissioning available at
**pepperl-fuchs.com/pf-measurer-hacks**

### Volume

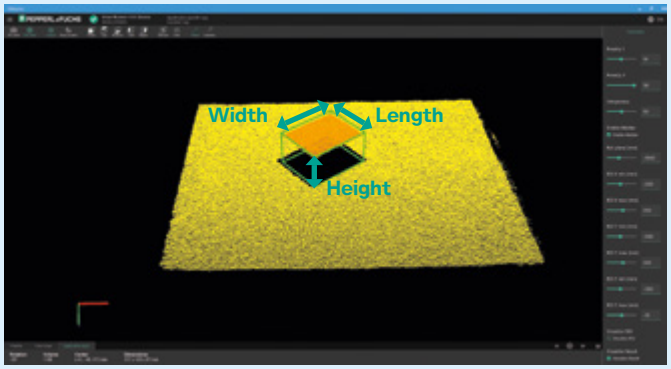
The device calculates the integrated volume of the detected object directly from the 3-D point cloud. The visible surface is taken into account in its entirety, including irregular structures.



**Rotation** -38° **Center** (-41, -49, -87) mm
**Volume** 1.68l **Dimensions** 157 × 128 × 87 mm

### Dimensions

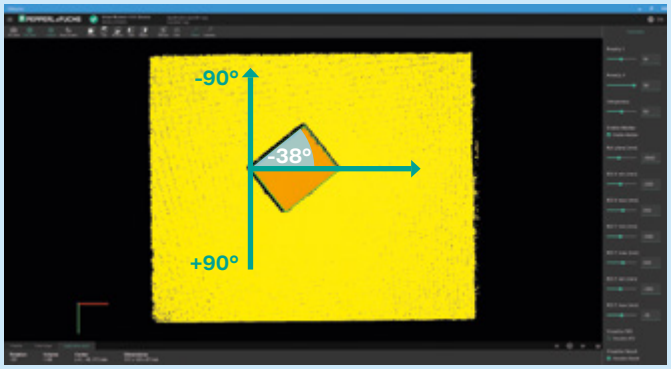
Length, width, and height are determined as the smallest possible bounding box around the object. This allows even irregular shapes to be reliably measured and compared.




**Rotation** -38° **Center** (-41, -49, -87) mm
**Volume** 1.68l **Dimensions** 157 × 128 × 87 mm

### Rotation

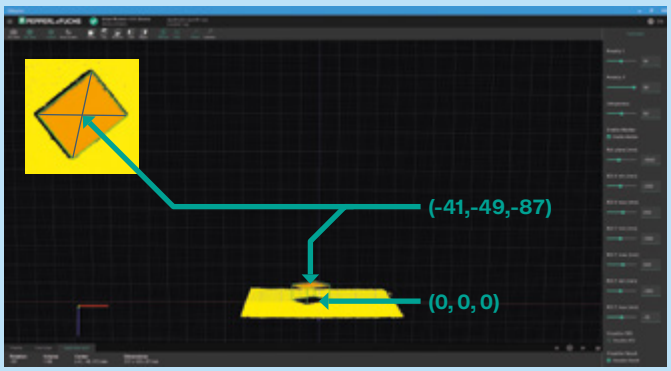
Rotation describes the orientation of the longer side of the object in relation to the sensor's X-axis. This allows the position of the object to be clearly detected, providing an important basis for automated gripping or sorting processes.




**Rotation** -38° **Center** (-41, -49, -87) mm
**Volume** 1.68l **Dimensions** 157 × 128 × 87 mm

### Position (Center)

The coordinates of the object center indicate the exact position in the defined coordinate system. They serve as a reference for robots, handling systems, or quality checks.




**Rotation** -38° **Center** (-41, -49, -87) mm
**Volume** 1.68l **Dimensions** 157 × 128 × 87 mm

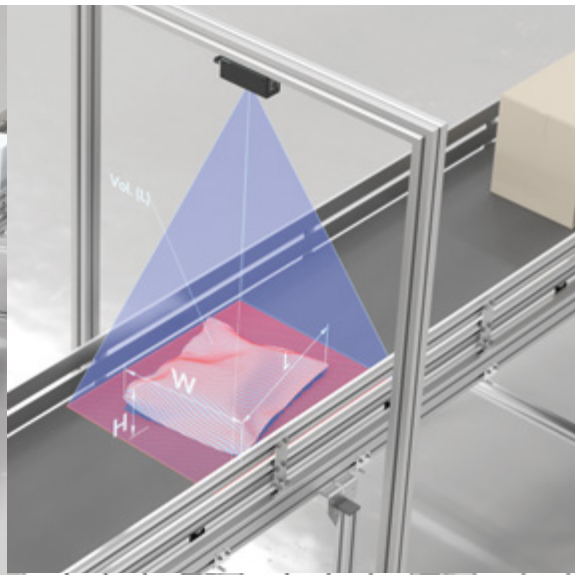
SmartRunner Measurer 3-D

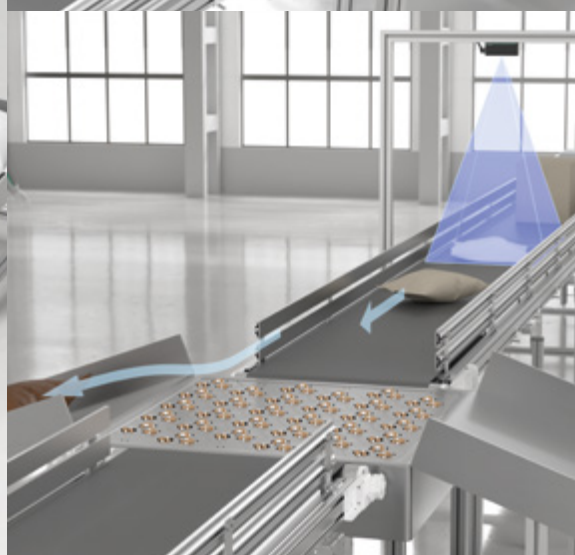
# Consistent 3-D Detection—Stationary or Moving

**Whether on the conveyor line, at the palletizer, or in quality control, the SmartRunner Measurer 3-D delivers reliable data for a wide range of tasks. Static and dynamic applications with object speeds up to 2.5 m/s are covered with the same high accuracy, making it an ideal solution for modern logistics and automation processes.**

### Reliable Measurement in Sorting Stations

In automated logistics centers, the sensor precisely captures passing packages and poly bags in three dimensions. Volume and dimensions are determined in real time and transmitted to the sorting system. Based on this data, shipments are automatically categorized and assigned, ensuring smooth material flow and efficient plant control.




**Optimized Palletizing Using Precise 3-D Data**

Located in front of a wheel conveyor system, the sensor records the dimensions and rotation of each passing package. Based on this information, the system calculates the optimal alignment and transfer position for the palletizing robot. This results in uniform layers with precisely positioned packages, forming the basis for stable pallet stacks and a continuously automated material flow.

**For Static and Dynamic Applications**

The sensor captures complete 3-D data in a single shot, delivering accurate results for moving and stationary objects. This makes it suitable for both static measurement tasks and dynamic processes with object speeds of up to 2.5 m/s. This versatility opens up a wide range of applications, from test stations to high-speed conveyor systems.

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Printed in Germany • Part. No. 70200702 11/25 • public

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