

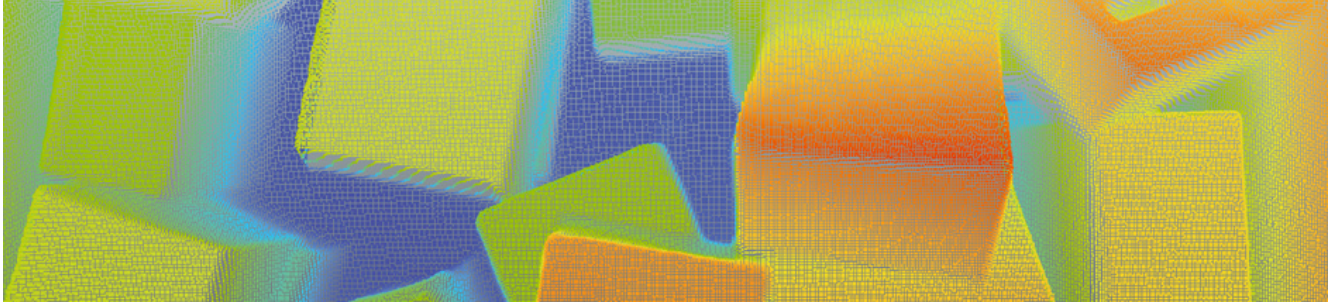


Visionary-T Mini

3D machine vision has never been easier

SICK
Sensor Intelligence.

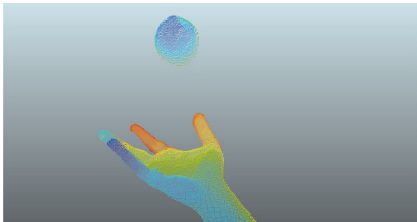
Advantages



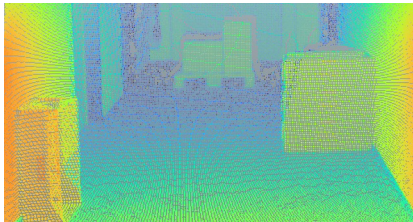
Precise 3D data in real time – thanks to time-of-flight technology

The Visionary-T Mini uses the latest time-of-flight technology to measure distances. This method involves emitting modulated infrared light that is then reflected back in the direction of the sensor by an object. The distance between the sensor and object can be calculated precisely based on the phase shift of the light. Different phase shifts equate to different distances. The individual pixels thereby deliver a detailed, three-dimensional distance and infrared intensity image of the recorded area.

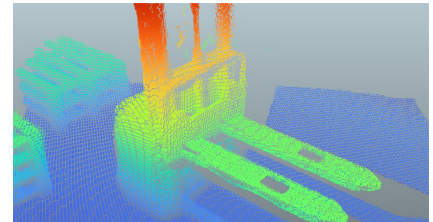
High frame rate and measurement accuracy; state-of-the-art technology and system design ensure a high ambient light immunity



The Visionary-T Mini with its high frame rate captures up to 30 images per second. It does so with a very short image capture time and wide dynamic range. The Visionary-T Mini simultaneously captures and processes 512 x 424 pixels per image, thereby delivering sharp intensity and 3D images.



With its high repeatability and measurement accuracy over very large distances, the Visionary-T Mini based on 3D time-of-flight technology is one of the best 3D vision sensors available



The Visionary-T Mini has a high ambient light immunity and reliably detects even dark objects from long distances. The reason: Modern VCSEL lighting elements ensure strong illumination. At the same time, the highly sensitive 3D vision sensor detects objects even with low reflection of the emitted infrared light.



The Visionary-T Mini delivers more than 6.5 million high precision 3D distance data points per second. This data basis is highly stable thanks to the advanced time-of-flight technology. The Visionary-T Mini can therefore master even dynamic applications and difficult light and contrast conditions.



Precision in logistics pays off

In logistics, accurate recording of freight dimensions is far more than just a technical necessity – determining dimensions is the key to cost control and billing. Correctly calculated freight dimensions enable precise costing, secure sales, and ensure the efficient use of storage space.

The Visionary-T Mini solves applications where high throughput and speed are also crucial. Fast and impervious to ambient light, the camera captures the 3D data and thereby the exact dimensions of pallet loads. Several devices can also be easily combined to form multi-camera systems.

The Visionary-T Mini provides you with exact data for checking freight dimensions, for correct invoicing, and for claiming lost amounts for shipping. Because precision pays off in logistics.

Software solutions from SICK



3D Object Detection

Flexibly customizable collision avoidance for mobile platforms



SICK Nova

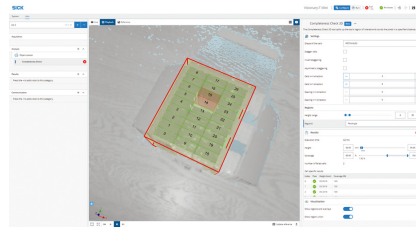
Check presence inspection applications with ease using 2D and 3D machine vision

Go one step further with SICK Nova

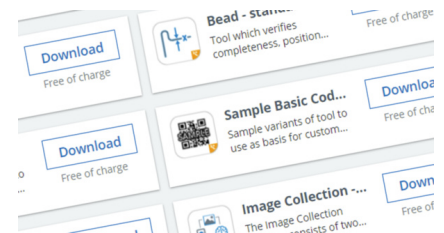
By combining Visionary-T Mini AP with SICK Nova, applications in the area of machine vision can be implemented in a web browser without difficulty using a point and click configuration. This gives users the flexibility to combine tools for image processing and integrate them according to requirements to solve applications. But that's not all: With SICK Nova, users can download additional tools or even develop their own. This makes it possible to quickly and conveniently extend the functional scope to suit the particular application.



Nova Visionary-T Mini for Visionary-T Mini AP is available via the SICK AppPool.



Customer-specific applications can be solved by configuring various image analysis tools via a graphical user interface in a web browser.



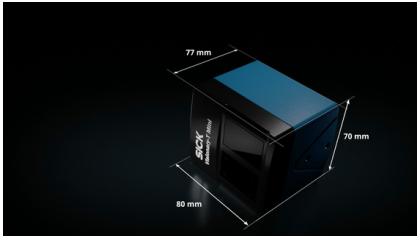
Create solutions quickly and customize them yourself: with SICK AppPool downloads.



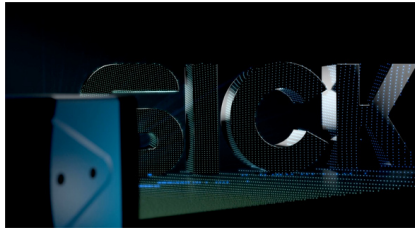
Compact housing and outstanding data quality thanks to 3D time-of-flight technology

Automation applications for robotics, transport vehicles and logistics depend on precise and reliable 2D and 3D distance data. Vision systems need to be able to be effortlessly integrated into the particular machine design even when space is at a premium. The Visionary-T Mini product family combines performance with a compact construction and very high cost efficiency. For data evaluation, the 3D vision sensor provides, amongst other things, detailed 2D and 3D point clouds with a high pixel density. Automatic operating modes make it easier to integrate the device into a machine and ensure ease of use.

Compact design, excellent data quality, and user-friendly operating modes for ease of use



The sensor housing measures only 80 mm x 70 mm x 77 mm, which makes it easier to implement particularly compact robotics and automation solutions.



At 30 images per second and a resolution of 512 x 424 pixels, the sensor delivers outstanding intensity and distance values even for moving objects.



There is no risk of mutual interference when using multiple cameras, even without synchronization. The acquisition technology offers a wide dynamic range without additional configuration and ensures reliable results even in difficult light and contrast conditions.



Cost-efficient solution for a multitude of 3D applications: The compact Visionary-T Mini can be integrated into almost any machine design and tailored to the application. The sensor provides a reliable data basis for demanding applications.



At home in countless industrial applications

The Visionary-T Mini 3D vision sensor was developed especially for fast 3D environment perception in dynamic industrial applications. Example: When used in an automated guided vehicle system (AGV), the sensor records its environment at 30 images per seconds and does so over large distances. It thereby delivers continuous data for AGV system or object positioning. In robotics applications, the 2D and 3D images can be used, for example, as a basis for palletizing and picking tasks. The Visionary-T Mini can also be reliably used in static applications such as completeness checks at packaging machines.

During data integration, the Visionary-T Mini CX variant provides quick access to custom pre-configured and pre-filtered data. The Visionary-T Mini AP variant is programmable. This even makes it possible to perform custom further processing of data on the sensor and to solve applications partially or even fully on the sensor.

3D data acquisition in a dynamic environment, precise measurement data, and reliable object detection



The high resolution and frame rate of the sensor enable precise positioning and navigation of automated guided vehicles and help avoid collisions. This is especially important in industrial environments that are constantly changing, for example, in warehouses or production halls.



The 2D image data and 3D point clouds of the Visionary-T Mini deliver reliable data for accurate determination of the size of parcels and other objects using just one sensor. This ensures compact machine designs and increased cost efficiency, in particular for logistics applications and robot controllers.



A high resolution density and the sharp 3D image can serve, for example, as the basis for completeness checks on conveyor belts or when removing pallets.



The Visionary-T Mini ensures more efficiency in industrial production wherever reliable 3D depth values for dynamic processes are needed.



Technical data overview

Technology	3D snapshot time-of-flight
Scan/frame rate	≤ 30 fps
Factory calibrated	✓
Enclosure rating	IP65, IP67, IP69
Configuration software	SOPAS Engineering Tool Telegram interface API (C++) SICK AppManager SICK AppStudio Web-Interface Nova Visionary-T Mini (depends on variant)
Ethernet	✓, TCP/IP, UDP/IP
REST API	✓, Communication interface, Configuration interface

Product description

The compact Visionary-T Mini 3D snapshot cameras from SICK with their simple operation and excellent data quality provide the solution to virtually all industrial 3D machine vision requirements. Thanks to the advanced 3D time-of-flight technology, each pixel delivers extremely accurate depth and intensity data. The camera captures its surroundings extremely reliably even in strong light/dark contrast conditions and at long distances, and delivers precise data even for moving objects thanks to its very short image capture time. A clearly structured configuration tool makes it easy to parameterize the device and flexibly adapt the data to the specific application. This makes Visionary-T Mini an ideal, cost-efficient solution, e.g., for logistics, robotics or industrial vehicles.



At a glance

- Up to 30 3D images per second at full resolution (512 × 424 pixels)
- High data quality and image dynamics with a very large contrast range
- Compact housing
- Temperature range: -10 °C to +50 °C
- Enclosure rating: IP65, 67
- 3D data transmission over industrial Gigabit Ethernet

Your benefits

- Cost-effective, compactly designed sensor for a multitude of applications
- Accurate 3D and 2D data with a high pixel density for a reliable environment perception
- Rugged camera for long-term industrial use
- Visionary-T Mini CX: The versatile programming interface offers fast data availability for external data evaluation
- Visionary-T Mini AP: Based on SICK AppSpace, it provides access to key apps and gives you the ability to create your own applications and load them on the camera
- Easy-to-use software tools for custom device configuration and programming

Fields of application

- Object detection
- Navigation
- Palletizing and depalletizing
- Measurement and volume detection
- Positioning
- Gesture control
- Area monitoring

Ordering information

Other models and accessories → www.sick.com/Visionary-T_Mini

- **Product version:** Visionary-T Mini CX
- **Integrated application:** 2D and 3D data flow with the option of filtering data in the device
- **Working range:** ≤ 16 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px
- **Laser class:** 1
- **Scan/frame rate:** ≤ 30 fps
- **Detection angle:** 70° x 60°

Window material	Type	Part no.
Glass	V3S105-1AAAAAD	1132065
PMMA	V3S105-1AAAAAA	1112649

- **Product version:** Visionary-T Mini AP
- **Integrated application:** Ability to process data within the device. Already-finished Key Apps can be loaded onto the device and independent applications can be created.
- **Working range:** ≤ 16 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAAAAA	1127086

- **Product version:** Visionary-T Mini AP
- **Integrated application:** The installed 3D Object Detection SICK SensorApp allows flexibly customizable collision avoidance for mobile platforms. The data is processed within the device. The SICK SensorApp can be deinstalled.
- **Working range:** ≤ 9 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAAACA OD Core	1137062

- **Product version:** Visionary-T Mini AP
- **Integrated application:** The installed 3D Object Detection SICK SensorApp allows flexibly customizable collision avoidance including ground filter for mobile platforms. The data is processed within the device. The SICK SensorApp can be deinstalled.
- **Working range:** ≤ 9 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAADA OD Prime	1142558

- **Product version:** Visionary-T Mini AP
- **Integrated application:** The installed SICK Nova Visionary-T Mini SensorApp with Intelligent Inspection License allows presence checks and quality Inspections using 3D machine vision. The data is processed within the device. The SICK SensorApp can be deinstalled.
- **Working range:** ≤ 16 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAAAIA NOVA II	1138471

- **Product version:** Visionary-T Mini AP
- **Integrated application:** The installed SICK Nova Visionary-T Mini SensorApp with Presence Inspection license allows easy presence checks using 3D machine vision. The data is processed within the device. The SICK SensorApp can be deinstalled.
- **Working range:** ≤ 16 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAAAPA NOVA PI	1138469

- **Product version:** Visionary-T Mini AP
- **Integrated application:** The installed SICK Nova Visionary-T Mini SensorApp with Quality Inspection license allows presence checks and quality Inspections using 3D machine vision. The data is processed within the device. The SICK SensorApp can be deinstalled.
- **Working range:** ≤ 16 m (Depends on the infrared remission properties of the target object. At distances of 9 m to 16 m, the reliability of the measured values will be lower and individual pixels or pixel groups may exhibit incorrect measured values.)
- **Sensor resolution:** 512 px x 424 px

Laser class	Scan/frame rate	Detection angle	Window material	Type	Part no.
1	≤ 30 fps	70° x 60°	PMMA	V3S145-1AAAAARA NOVA QI	1138470

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com