SICK
Sensor Intelligence.

Visionary-T Mini CX

Time to simplify 3D vision

3D Compact Systems

December 2021

Visionary-T Mini CX
DISCLAIMER

- Visionary-T Mini is specified as a laser class 1 product (= poses no danger)
- Visionary-T Mini does not constitute personal protection equipment in accordance with the respective applicable safety standards for machines
- The Visionary-T Mini CX is a streaming device which provides high quality depth and intensity maps based on the time-of-flight principle
- The measurement of physical quantities is always affected by random and systematic errors. Some errors are creating false measurements for distances above 9m. If your application allows it, we therefore recommend that you always use the Visionary-T Mini CX with the activated distance filter <9m.

SICK Product portfolio
3D SNAPSHOT CAMERAS

Visionary-T Mini
3D Time of Flight

Visionary-S
Structured light Stereo

Visionary-B
Passive Stereo

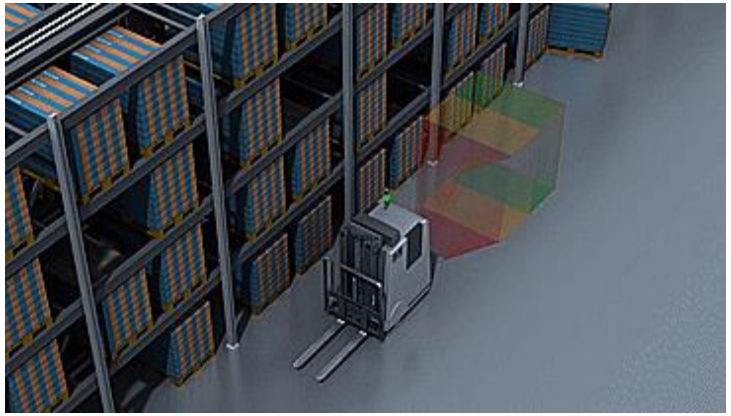
Visionary-T
3D Time of Flight

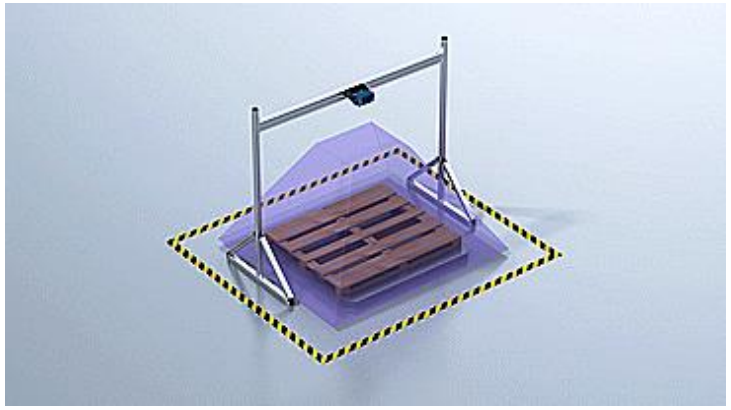
Visionary-T Mini CX
RELEASE FEATURES

- The new **Visionary-T Mini CX** convinces with a **compact design** and fits even for your applications in the smallest space.
- 3D snapshot technology enables 3D data with no moving parts and guarantees **high robustness against shock and vibrations**.
- State of the art technology and system design ensures your advantage with **unrivaled precision**.
- **Industrial design** (thermal, electrical, communication) for **reliable 24/7 availability**.
- Optimized for application **in motion** and with **highly dynamic** operating range (dark and bright objects).

Visionary-T Mini CX
TARGET APPLICATIONS

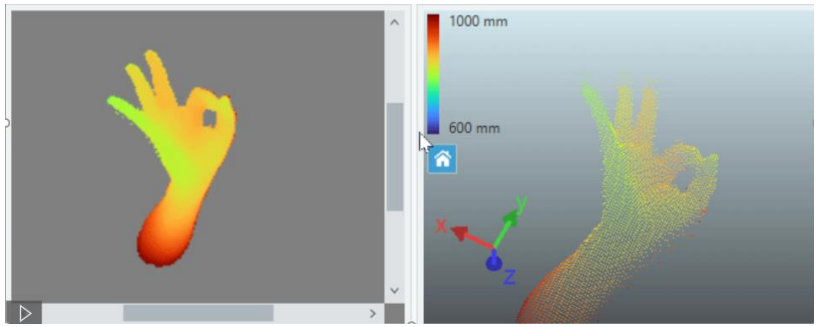
- 3D object detection for AGV/AGC, e.g. collision warning, object positioning, navigation
- Static and dynamic 3D dimensioning and level detection
- Robot applications e.g. palletizing / depalletizing
- Completeness check e.g. packaging machines

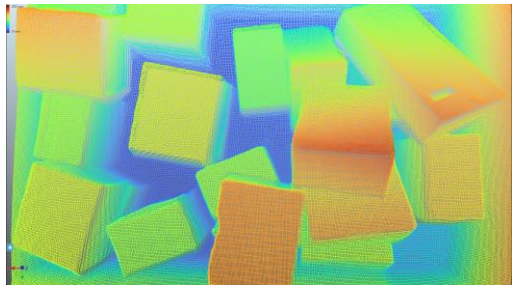


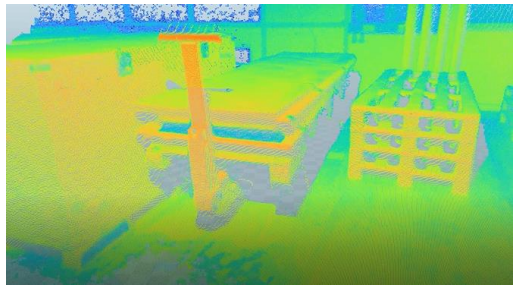


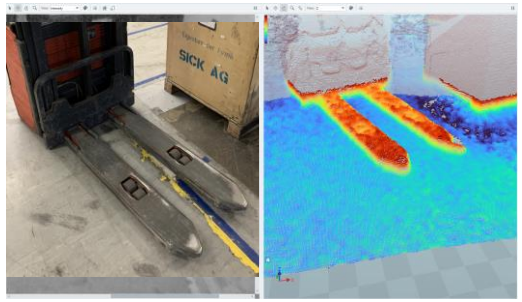
Visionary-T Mini CX
DATA EXAMPLES

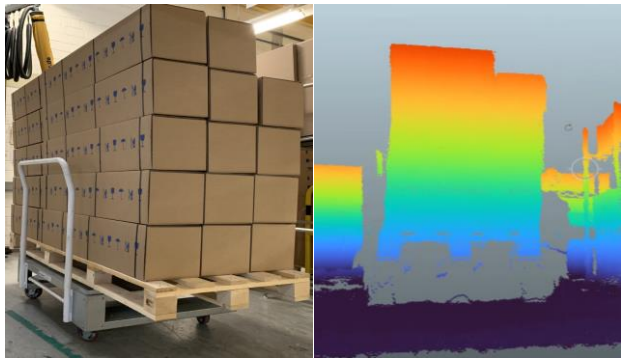
- Accurate vision for the third dimension
- High dynamic range for flexible usability
- High frame rate for dynamic applications
- Fast aquisition for reduced blur effects
- Dense resolution for object recognition

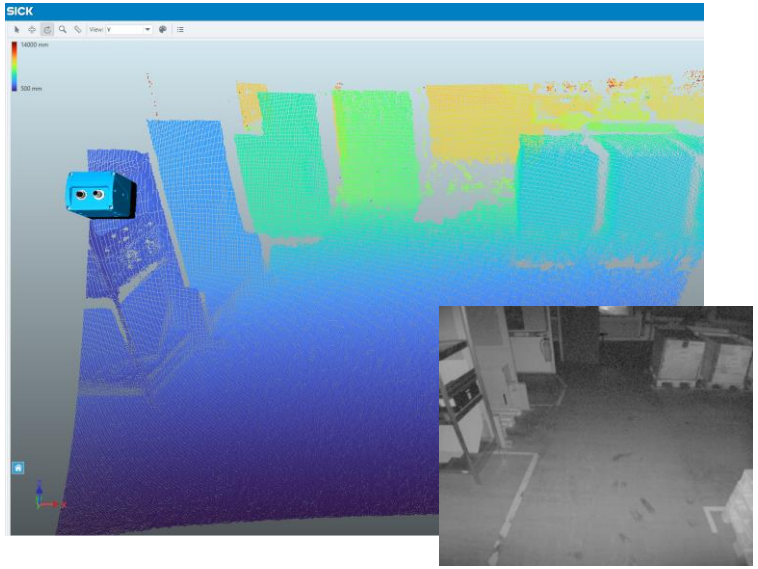












Visionary-T Mini CX
FEATURES AND BENEFITS

Main device features	Main benefits
Compact design 80 x 70 x 77 mm (w x h x d)	Easy to integrate in confined assembly space
IP65, IP67 enclosure rating and temperature range -10 °C ... 50 °C	Industrially robust camera for 24/7 use in harsh environment
3D snapshot camera based on 3D time-of-flight principle with resolution of 512 x 424 pixels	High quality calibrated depth data from the device
Up to 30 frames per second	Well suited for dynamic applications
High-power cutting-edge illumination technology	Ambient light robustness up to 50 kLux
Automatic camera coexistence mode	Simultaneous operation of multiple cameras in one scene without interference

Visionary-T Mini CX
FEATURES AND BENEFITS

Additional features	Main benefits
Pixel Binning within device	Higher data robustness by additional spatial filtering. Optimized bandwidth usage and reduced hardware requirements for the client.
Image cropping within device	Reduction of image size for given region of interest And optimized bandwidth usage.
Frame rate configuration	Optimized bandwidth usage and reduced hardware requirements for the client.
Embedded data filters	Efficiently optimize data quality for a specific use case without compromising device performance
Gigabit ethernet communication with TCP/IP and UDP support	Enables TCP/IP + UDP

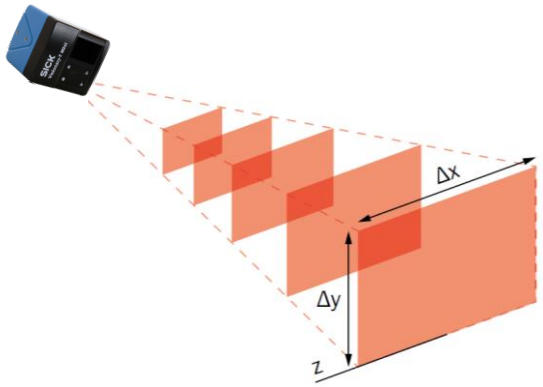
Visionary-T Mini CX

PRELIMINARY PARAMETER LIST*

Parameter*	Target spec*
Resolution	512 x 424 pixels
FOV (field of view)	~70° x 60°
Max. frame rate	30 fps
Illumination wavelength	850 nm (± 5 nm)
Radial depth measuring range	~0.1 – 16m
Optimized working range	~0.4 – 9m
Unambiguity range	18,75m
Precision	± 0,8 mm (<1.0m @ 90% remission)
Accuracy	± 5 mm (<3.0m @ 90% remission)
Ambient light robustness	50 klx
Operating voltage	24V -30%/+25%
Power consumption	≤12 W
Peak current	≤2.0 A
Eye safety (EN/IEC 80625-1)	Laser class 1
Protection rating	IP65, IP67
Ambient temperature range	-10 - 50°C
Dimensions	80 x 70 x 77 mm (w x h x d)
Weight	~520 g
Interfaces	TCP/IP, UDP, Gigabit Ethernet, 6 programmable I/Os
Data output (via Ethernet)	radial depth, intensity, statemap
Camera coexistence mode	Automatic

* All content may change without notice

Visionary-T Mini CX
WORKING RANGE



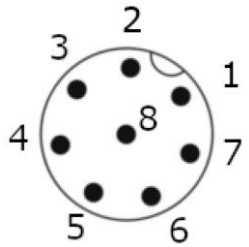
Working distance (radial)	Accuracy* (90% remission)	Precision* (90% remission)
0.2 m	...	...
0.5 m	± 5 mm	± 0.8 mm
1.0 m	± 5 mm	± 0.8 mm
2.0 m	± 5 mm	± 1.0 mm
4.0 m	± 7 mm	± 2.0 mm
7.0 m	± 10 mm	± 5.0 mm
9.0 m	± 15 mm	± 10.0 mm

Working distance (radial)	Accuracy* (10% remission)	Precision* (10% remission)
0.2 m	± 5 mm	± 0.8 mm
0.5 m	± 5 mm	± 0.8 mm
1.0 m	± 5 mm	± 1.5 mm
2.0 m	± 5 mm	± 4.0 mm
4.0 m	± 8 mm	± 12.0 mm
7.0 m	± 10 mm	± 10.0 mm
9.0 m	...	...

Working distance (absolute z)	Range - Δx	Range - Δy
0.2 m	0.30 m	0.20 m
0.5 m	0.70 m	0.60 m
1.0 m	1.40 m	1.15 m
2.0 m	2.80 m	2.30 m
4.0 m	5.60 m	4.60 m
7.0 m	9.80 m	8.00 m
9.0 m	12.60 m	10.35 m

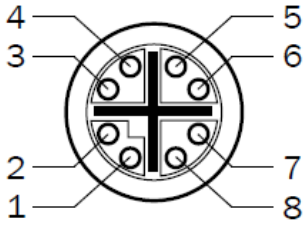
Visionary-T Mini CX
ACCESSORIES - CABLES

› System Plug (8-pin, M12, A-coded)



Pin	Signal	Description
1	+24V DC	Supply Voltage
2	INOUT3	Programmable digital I/O
3	GND	Reference Ground
4	INOUT4	Programmable digital I/O
5	INOUT1	Programmable digital I/O
6	INOUT5	Programmable digital I/O
7	INOUT6	Programmable digital I/O
8	INOUT2	Programmable digital I/O

› Gigabit Ethernet (8-pin, M12, X-coded)



Pin	Signal
1	TRD0_P
2	TRD0_N
3	TRD1_P
4	TRD1_N
5	TRD3_P
6	TRD3_N
7	TRD2_P
8	TRD2_N

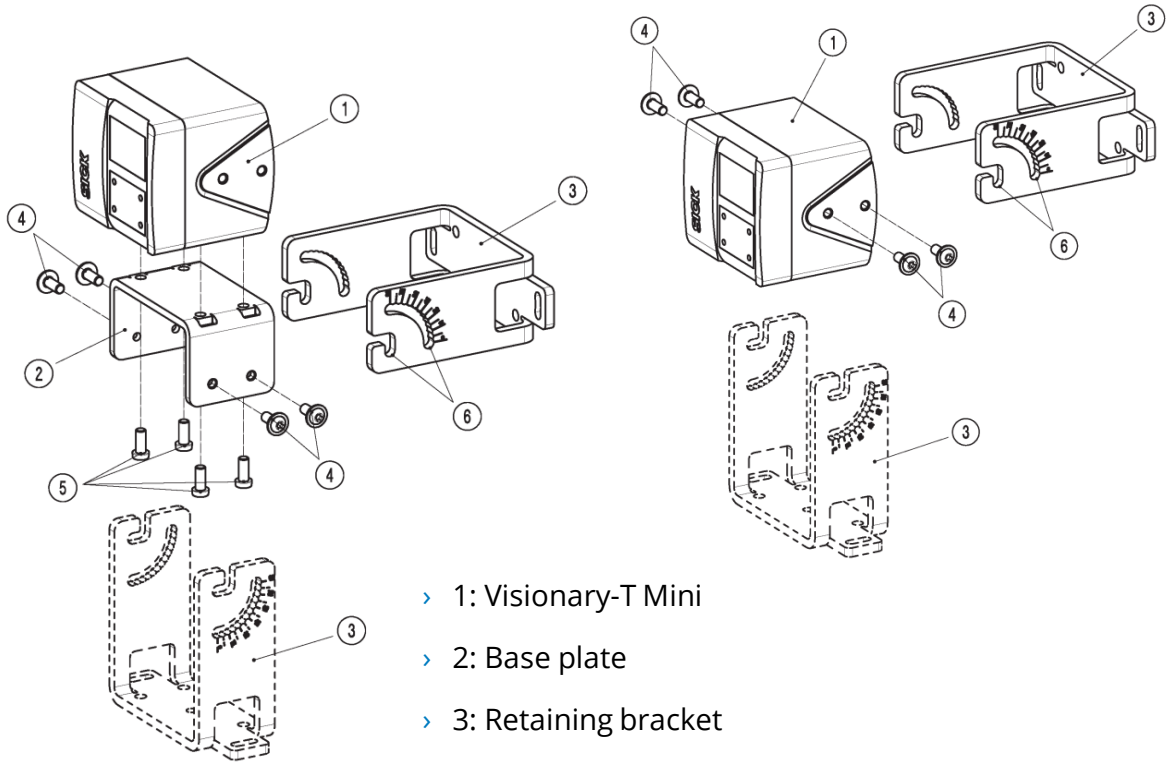
› Cables

Article number	Description
2106258	Ethernet cable 2m, M12 / RJ45, X-Coded, Straight
2106259	Ethernet cable 5m, M12 / RJ45, X-Coded, Straight
2106260	Ethernet cable 10m, M12 / RJ45, X-Coded, Straight
6020663	System cable 2m, M12, A-Coded, Straight
6020664	System cable 5m, M12, A-Coded, Straight
6048434	System cable 10m, M12, A-Coded, Straight
2094783	Ethernet cable 2m, M12 / RJ45, X-Coded, Angled
2094784	Ethernet cable 5m, M12 / RJ45, X-Coded, Angled
2094785	Ethernet cable 10m, M12 / RJ45, X-Coded, Angled
2096218	System cable 2m, M12, A-Coded, Angled
2096219	System cable 5m, M12, A-Coded, Angled
2114689	System cable 10m, M12, A-Coded, Angled

Visionary-T Mini CX
ACCESSORIES - MOUNTING KIT

Article number	Description
2124497	Mounting Kit – Visionary-T Mini

› The mounting kit includes the fixing screws and can be optionally used without the base plate



› 1: Visionary-T Mini
› 2: Base plate
› 3: Retaining bracket
› 4: Fixing screws with flange M5, Torx T25, 10mm
› 5: Fixing screws cheese head M5, Torx T25, 10mm
› 6: Fixing holes with angle scale

Thank you for your attention.

3D Compact Systems

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