



V3S110-1AABAAB

Visionary-T

3D MACHINE VISION

**SICK**  
Sensor Intelligence.

### Ordering information



| Type           | Part no. |
|----------------|----------|
| V3S110-1AABAAB | 1075614  |

Other models and accessories → [www.sick.com/Visionary-T](http://www.sick.com/Visionary-T)

Illustration may differ



### Detailed technical data

#### Features

|                               |   |
|-------------------------------|---|
| <b>Task</b>                   | Collision awareness                                   |
| <b>Technology</b>             | 3D snapshot time-of-flight                            |
| <b>Product category</b>       | Configurable, programmable, Streaming, pre-calibrated |
| <b>Working distance</b>       | 0.5 m ... 7.2 m <sup>1)</sup>                         |
| <b>Example field of view</b>  | 7 m x 5.3 m <sup>2)</sup>                             |
| <b>Detection angle</b>        | 69° x 56°   |
| <b>Angular resolution</b>     | 0.39° x 0.38°   |
| <b>Illumination</b>           | Integrated  |
| <b>Illumination color</b>     | Infrared, LED, invisible, 850 nm                      |
| <b>LED class</b>              | Risk group 0 in accordance with EN 62471              |
| <b>Factory calibrated</b>     | ✓   |
| <b>Grayscale measurements</b> | ✓   |

<sup>1)</sup> Radial distance for targets having 100% remission.

<sup>2)</sup> See table for individual values.

#### Mechanics/electronics

|                          |  |
|--------------------------|--|
| <b>Connection type</b>   | M12 8-pin Gigabit Ethernet, X-coded<br>M12 17-pin (voltage supply/data), system plug, digital IOs (24 V) |
| <b>Supply voltage</b>    | 24 V DC <sup>1)</sup>  |
| <b>Power consumption</b> | ≤ 16 W, Typical (without digital I/Os)   |
| <b>Peak current</b>      | 3 A  |
| <b>Enclosure rating</b>  | IP67   |
| <b>Protection class</b>  | III  |
| <b>Housing color</b>     | Blue, black  |
| <b>Weight</b>            | 1.4 kg, without cooling fins   |

<sup>1)</sup> -30% ... +20%.

<sup>2)</sup> Without cooling fins.

|                               |                                      |
|-------------------------------|--------------------------------------|
| <b>Dimensions (L x W x H)</b> | 162 mm x 93 mm x 78 mm <sup>2)</sup> |
| <b>Mounting</b>               | Any or can be determined by raster   |

<sup>1)</sup> -30% ... +20%.

<sup>2)</sup> Without cooling fins.

## Performance

|                               |   |
|-------------------------------|---|
| <b>Pixel count</b>            | 176 px x 144 px   |
| <b>Repeatability</b>          | Approx. 3 mm, At 1 m distance<br>Approx. 30 mm, At 7 m distance <sup>1)</sup>               |
| <b>On delay</b>               | < 20 s  |
| <b>Response time</b>          | < 66 ms   |
| <b>Integrated application</b> | Data stream with the option of filtering, reducing, and manipulating data inside the device |

<sup>1)</sup> See table for individual values.

## Interfaces

|                           |   |
|---------------------------|---|
| <b>Ethernet</b>           | ✓   |
| Function                  | With the option to output both polar data and Cartesian data simultaneously |
| Data transmission rate    | ≤ 36 Mbit/s, communication interface Gigabit Ethernet (TCP/IP)              |
| <b>Digital input</b>      | 2   |
| <b>Optical indicators</b> | 2 status LEDs   |

## Ambient data

|  |  |
|--|--|
| <b>Electromagnetic compatibility (EMC)</b> | EN 61000-6-2:2005-08, EN 61000-6-3:2007-01 |
| <b>Shock load</b>                          | EN 60068-2-27:2009                         |
| <b>Vibration load</b>                      | EN 60068-2-6, EN 60068-2-64                |
| <b>Ambient operating temperature</b>       | 0 °C ... +45 °C, without cooling fins      |
| <b>Storage temperature</b>                 | -20 °C ... +70 °C                          |
| <b>Ambient light immunity</b>              | < 50 klx, Sunlight                         |

## General notes

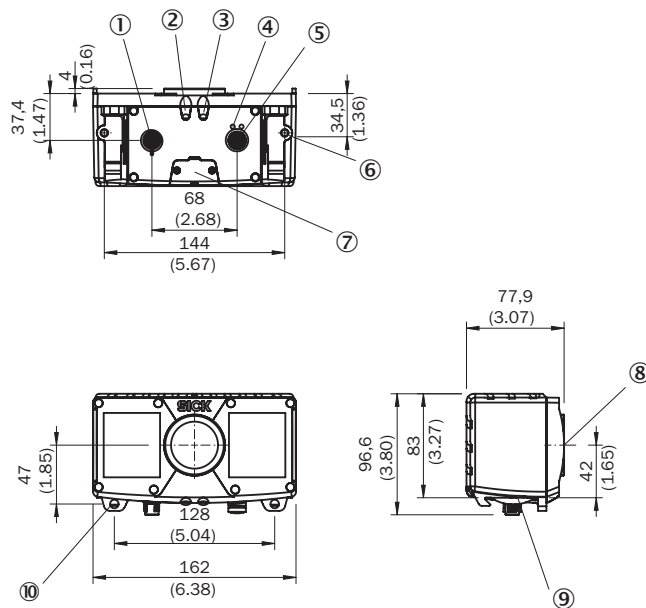
|             |  |
|-------------|--|
| <b>Note</b> | All relevant materials for commissioning (instructions, drivers, examples, software, API) can be found in the Downloads tab under "Other downloads". |
|-------------|--|

## Classifications

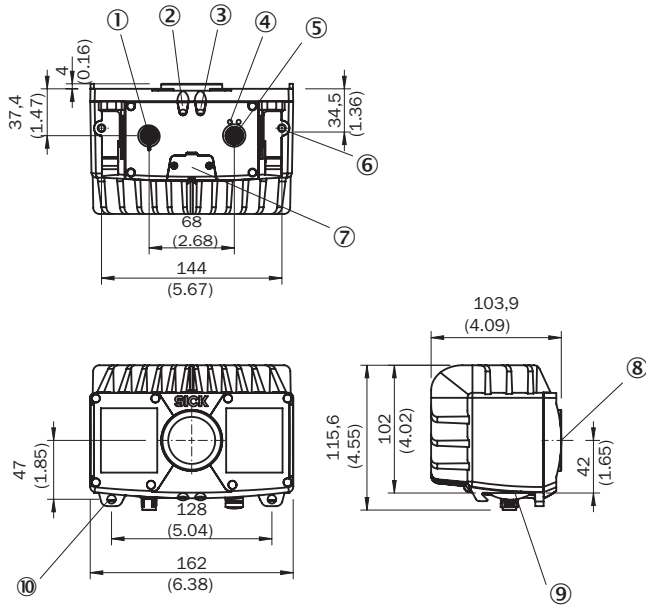
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27310205 |
| <b>ECLASS 5.1.4</b> | 27310205 |
| <b>ECLASS 6.0</b>   | 27310205 |
| <b>ECLASS 6.2</b>   | 27310205 |
| <b>ECLASS 7.0</b>   | 27310205 |
| <b>ECLASS 8.0</b>   | 27310205 |
| <b>ECLASS 8.1</b>   | 27310205 |
| <b>ECLASS 9.0</b>   | 27310205 |
| <b>ECLASS 10.0</b>  | 27310205 |
| <b>ECLASS 11.0</b>  | 27310205 |
| <b>ECLASS 12.0</b>  | 27310205 |
| <b>ETIM 5.0</b>     | EC001820 |

|                       |          |
|-----------------------|----------|
| <b>ETIM 6.0</b>       | EC001820 |
| <b>ETIM 7.0</b>       | EC001820 |
| <b>ETIM 8.0</b>       | EC001820 |
| <b>UNSPSC 16.0901</b> | 43211731 |

### Dimensional drawing (Dimensions in mm (inch))



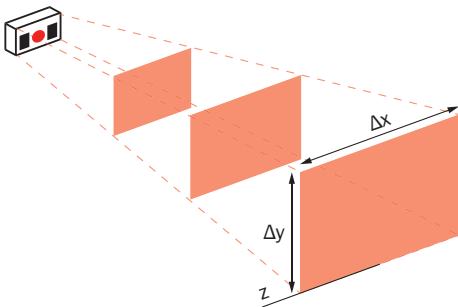
- ① Power connection / digital inputs and outputs / service
- ② Device display
- ③ Application status display
- ④ Ethernet status display
- ⑤ Ethernet connection
- ⑥ M6 blind tapped holes, 7 mm deep (2 x), for mounting
- ⑦ Service interface
- ⑧ Optical axis
- ⑨ Interface bracket
- ⑩ Bracket mounting (accessories)



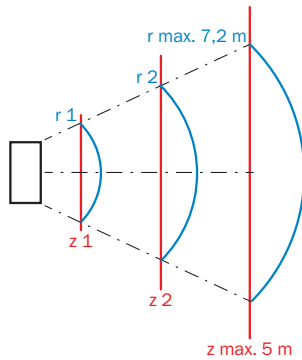
- ① Power connection / digital inputs and outputs / service
- ② Device display
- ③ Application status display
- ④ Ethernet status display
- ⑤ Ethernet connection
- ⑥ M6 blind tapped holes, 7 mm deep (2 x), for mounting
- ⑦ Service interface
- ⑧ Optical axis
- ⑨ Interface bracket
- ⑩ Bracket mounting (accessories)

## Field of view

Detection volume and field of view



Absolute measurement accuracy and repeatability, working distance: radial

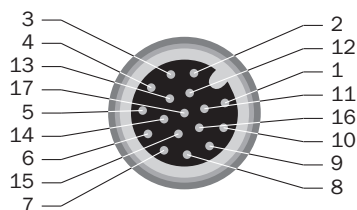


Absolute accuracy (z-axis) and repeatability at 10 % and 100 % remission and without background light for integration time of 1 ms (central detection zone)

| Working distance radial (r) | Measurement accuracy (100% remission) | Repeatability (1 $\sigma$ - 100% remission) | Measurement accuracy (10% remission) | Repeatability (1 $\sigma$ - 10% remission) |
|-----------------------------|---------------------------------------|---|--------------------------------------|--|
| 0,50 m                      | $\pm 15$ mm                           | $\pm 2$ mm                                  | $\pm 15$ mm                          | $\pm 4$ mm                                 |
| 1,00 m                      | $\pm 15$ mm                           | $\pm 3$ mm                                  | $\pm 15$ mm                          | $\pm 8$ mm                                 |
| 2,00 m                      | $\pm 15$ mm                           | $\pm 4$ mm                                  | $\pm 20$ mm                          | $\pm 25$ mm                                |
| 3,00 m                      | $\pm 15$ mm                           | $\pm 7$ mm                                  | $\pm 35$ mm                          | $\pm 50$ mm                                |
| 4,00 m                      | $\pm 20$ mm                           | $\pm 10$ mm                                 | $\pm 50$ mm                          | $\pm 100$ mm                               |
| 5,00 m                      | $\pm 25$ mm                           | $\pm 15$ mm                                 | -                                    | -  |
| 7,00 m                      | $\pm 35$ mm                           | $\pm 30$ mm                                 | -                                    | -  |

## Connection type

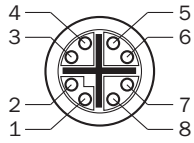
Digital I/O



M12, 17-pin male connector

- ① GND - reference mass
- ② Supply voltage
- ③ CAN L - reserved, not implemented. Do not connect to VCC!
- ④ CAN H - reserved, not implemented. Do not connect to VCC!
- ⑤ TD+ (RS-422/485) Host - reserved, not implemented. Do not connect to VCC!
- ⑥ TD- (RS-422/485) Host, TxD (RS-232), Host - reserved, not implemented. Do not connect to VCC!
- ⑦ TxD (RS-232), Aux - service only
- ⑧ RxD (RS-232), Aux - service only
- ⑨ SENS GND - GND for electrically decoupled inputs
- ⑩ SENS IN1 - switch input, electrically decoupled
- ⑪ RD+ (RS-422) Host - reserved, not implemented. Do not connect to VCC!
- ⑫ RD- (RS-422/485) Host, RxD (RS-232), Host - reserved, not implemented. Do not connect to VCC!
- ⑬ INOUT 1 - Programmable digital I/O
- ⑭ INOUT 2 - Programmable digital I/O
- ⑮ SENS IN2 - switch input, electrically decoupled
- ⑯ INOUT 3 - Programmable digital I/O
- ⑰ INOUT 4 - Programmable digital I/O

Gigabit Ethernet







M12, 8-pin female connector, X-coded (Gigabit Ethernet)

- ① TRD0\_P
- ② TRD0\_N
- ③ TRD1\_P
- ④ TRD1\_N
- ⑤ TRD3\_P
- ⑥ TRD3\_N
- ⑦ TRD2\_P
- ⑧ TRD2\_N

Recommended accessories

Other models and accessories → [www.sick.com/Visionary-T](http://www.sick.com/Visionary-T)

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| Plug connectors and cables  |   |                    |          |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 3 m, 17-wire, stripped, PE-X</li> <li><b>Description:</b> Power, serial, CAN, digital I/Os, suitable for 2 A, Changed color coding of the flying leads, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Drag chain operation</li> </ul> | YF2ASD-030XXXXLECX | 2070425  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 5 m, 17-wire, stripped, PE-X</li> <li><b>Description:</b> Power, serial, CAN, digital I/Os, suitable for 2 A, Changed color coding of the flying leads, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Drag chain operation</li> </ul> | YF2ASD-050XXXXLECX | 2070426  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 17-pin, straight, A-coded</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 3 m, 17-wire</li> <li><b>Description:</b> Power, serial, CAN, digital I/Os, suitable for 2 A, shielded, to connection module CDB650</li> <li><b>Application:</b> Drag chain operation</li> </ul>   | YM2A8D-030XXXF2A8D | 6051194  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>  | YM2X18-020EG1MRJA8 | 2106258  |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>  | YM2X18-050EG1MRJA8 | 2106259  |

|   | Brief description  | Type  | Part no. |
|---|--|---|----------|
| Terminal and alignment brackets   |  |   |          |
|  | 1 piece, Bracket including clamps and screws, metal, Bracket including clamps and screws | Mounting set (2-part) incl. clamps and screws | 2077710  |
|  | 1 piece, 2x clamps and 2x screws, metal, 2 clamps and 2 screws                           | 2x clamps, 2x screws                          | 2077709  |

### Recommended services

Additional services → [www.sick.com/Visionary-T](http://www.sick.com/Visionary-T)

|  | Type   | Part no. |
|--|--|----------|
| Extended warranty  |  |          |
| <ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, machine vision, Detection and ranging solutions, safety camera sensors, Safety laser scanners, Safety radar sensors</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery).</li> <li>• <b>Duration:</b> Five-year warranty from delivery date.</li> </ul> | Extended warranty for a total of five years from delivery date | 1680671  |



## 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](http://www.sick.com)