TIM310-1130000

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.

TIM310-1130000 | TiM
2D LIDAR SENSORS

Ordering information

Type	part no.
TIM310-1130000	1056550

Other models and accessories ➜ www.sick.com/TiM

Detailed technical data

Features

Application	Indoor
Measurement principle	HDDM$^+$
Light source	Infrared (850 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
Aperture angle	
Horizontal	270°
Scanning frequency	15 Hz
Angular resolution	
Horizontal	1°
Working range	0.05 m ... 4 m
Scanning range	
At 10% remission factor	2 m

Mechanics/electronics

Connection type	1 x M12 12-pin male connector (0.8 m)
Supply voltage	9 V DC ... 28 V DC
Power consumption	Typ. 4 W, 16 W with 4 max. loaded digital outputs
Output current	≤ 100 mA
Housing color	Light blue (RAL 5012)
Enclosure rating	IP65 (IEC 60529:1989+AMD1:1999+AMD2:2013)
Protection class	III (IEC 61140:2016-1)
Weight	150 g, without connecting cables
Dimensions (L x W x H)	60 mm x 60 mm x 79 mm
MTBF	> 100 years
MTTFd	100 years

Safety-related parameters

MTTF$_D$	100 years

Performance

Response time	1 scan, typ. 67 ms 2 scans, ≤ 134 ms [1]
Detectable object shape	Almost any
Systematic error	± 40 mm [2]
Statistical error	< 30 mm [2]
Integrated application	Field evaluation
Number of field sets	16 field triples (48 fields, 1 triple (3 fields) can be configured directly at the scanner)
Simultaneous evaluation cases	1 (3 fields)

[1] At +45° to +225° of the working range; max. 150 ms at −45° to +45° of the working range.

[2] Typical value at 90% remission factor up to maximum scanning range; real value depends on ambient conditions.

Interfaces

USB		✓
	Remark	Micro USB
	Function	Service interface, parameterization
Digital inputs/outputs		
	Inputs	4
	Outputs	3 (PNP, additional 1 x "Device Ready")
Delay time		67 ms ... 30,000 ms (configurable)
Dwell time		67 ms ... 600,052 ms (configurable)
Optical indicators		2 LEDs (ON, switching status)

Ambient data

Remission factor		4 % ... 1,000 % (reflectors)
Electromagnetic compatibility (EMC)		
	Emitted radiation	Residential area (EN 61000-6-3:2007+AMD:A1:2011)
	Electromagnetic immunity	Industrial environment (EN 61000-6-2:2005)
Vibration resistance		
	Sine resonance scan	10 Hz ... 1,000 Hz [1]
	Sine test	10 Hz ... 500 Hz, 5 g, 10 frequency cycles [1]
	Noise test	10 Hz ... 250 Hz, 4.24 g RMS, 5 h [2]
Shock resistance		50 g, 11 ms, ± 3 single shocks/axis [3] 25 g, 6 ms, ± 1,000 continuous shocks/axis [3] 50 g, 3 ms, ± 5,000 continuous shocks/axis [3]
Ambient operating temperature		−10 °C ... +50 °C [4]
Storage temperature		−30 °C ... +70 °C [4]
Switch-on temperature		−10 °C ... +50 °C

[1] IEC 60068-2-6:2007.

[2] IEC 60068-2-64:2008.

[3] IEC 60068-2-27:2008.

[4] IEC 60068-2-14:2009.

[5] EN 60068-2-14:2009.

[6] EN 60068-2-30:2005.

Temperature change	–10 °C ... +50 °C, 10 cycles [5]
Damp heat	+25 °C ... +55 °C, 95 % RH, 6 cycles [6]
Permissible relative humidity	
Operation	< 80 %, Non-condensing (EN 60068-2-30:2005)
Storage	≤ 90 %, Non-condensing (EN 60068-2-30:2005)
Ambient light immunity	80,000 lx

[1] IEC 60068-2-6:2007.
[2] IEC 60068-2-64:2008.
[3] IEC 60068-2-27:2008.
[4] IEC 60068-2-14:2009.
[5] EN 60068-2-14:2009.
[6] EN 60068-2-30:2005.

General notes

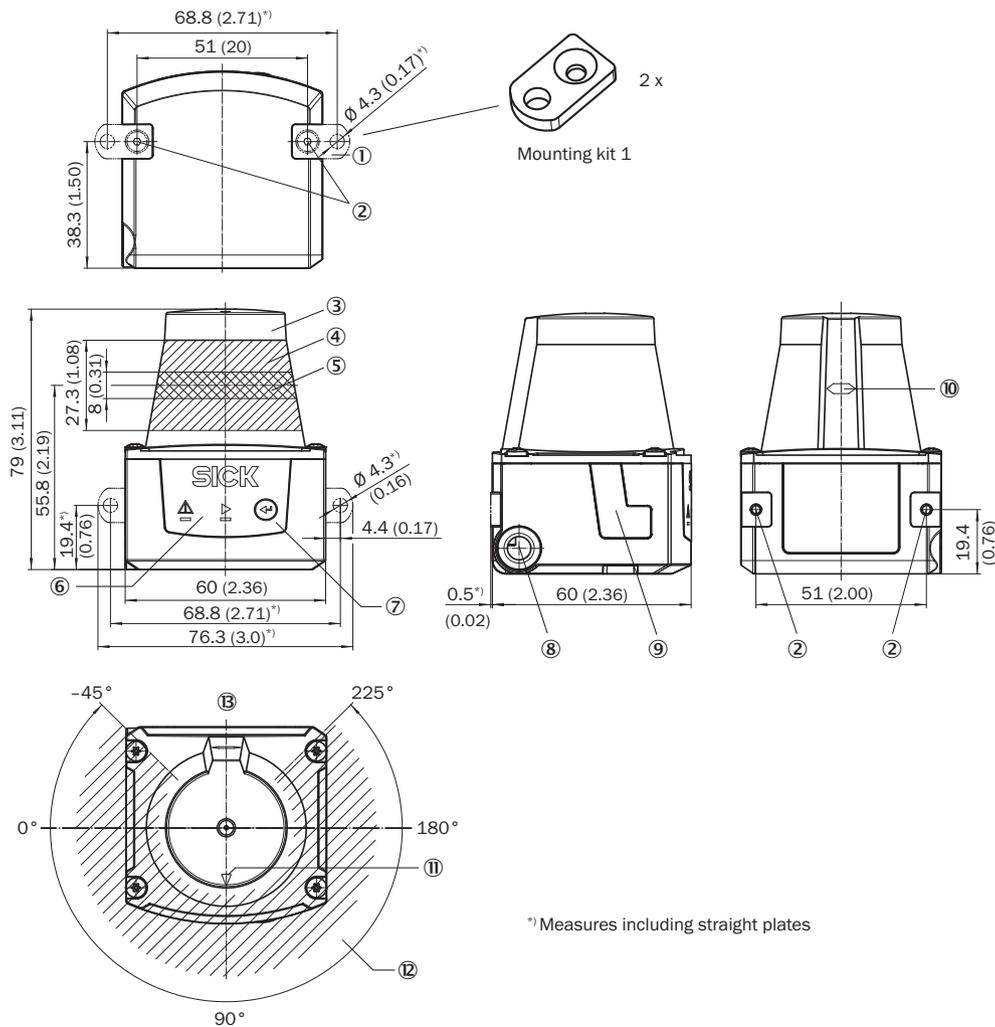|	
Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

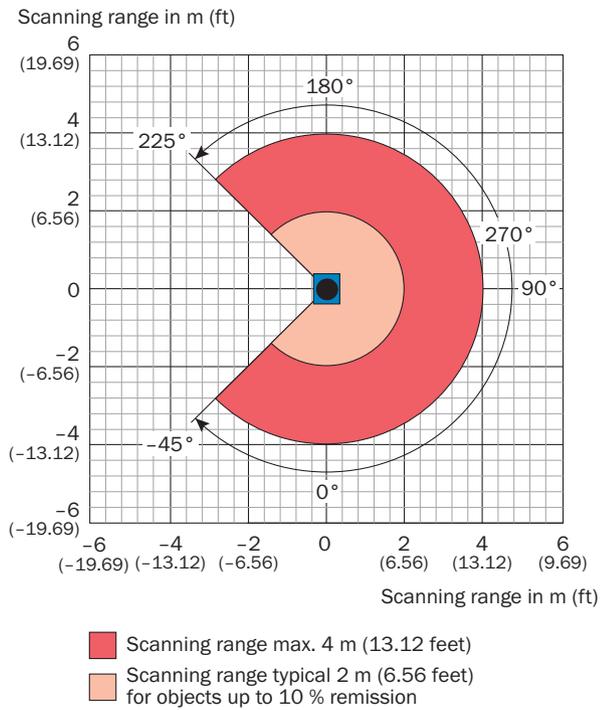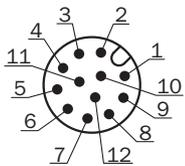|	
ECLASS 5.0	27270990
ECLASS 5.1.4	27270990
ECLASS 6.0	27270913
ECLASS 6.2	27270913
ECLASS 7.0	27270913
ECLASS 8.0	27270913
ECLASS 8.1	27270913
ECLASS 9.0	27270913
ECLASS 10.0	27270913
ECLASS 11.0	27270913
ECLASS 12.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
UNSPSC 16.0901	41111615

Dimensional drawing

Dimensions in mm (inch)

① 2 x straight plates with M3 x 4 mm screw (included in delivery)
② M3 threaded mounting hole, 2.8 mm deep (blind hole thread), max. tightening torque 0.8 Nm
③ Optical hood
④ Receiving range (light inlet)
⑤ Transmission range (light emission)
⑥ Red and green LED (status displays)
⑦ Function button for teach-in
⑧ Connecting cable outlet (connection for power/digital inputs/outputs)
⑨ Micro USB female connector, type B
⑩ Marking for the position of the light emission level
⑪ Bearing marking to support alignment (90° axis)
⑫ Aperture angle 270° (scanning angle)
⑬ Area in which no reflective surfaces are allowed for mounted devices

*) Measures including straight plates

Mounting kit 1

Working range diagram

Scanning range in m (ft)

Scanning range in m (ft)

■ Scanning range max. 4 m (13.12 feet)
■ Scanning range typical 2 m (6.56 feet)
for objects up to 10 % remission

PIN assignment Power I/O connection

Connecting cable with male connector or M12 male connector, 12-pin, A-coded
① GND
② DC 9 V … 28 V
③ In$_1$
④ In$_2$
⑤ OUT1
⑥ OUT2
⑦ OUT3
⑧ OUT4
⑨ PNP: INGND, NPN: IN 9 V … 28 V
⑩ In3
⑪ In4
⑫ nc

Recommended accessories

Other models and accessories ➜ www.sick.com/TiM

Brief description		Type	part no.
Mounting systems			
	• **Description:** Mounting kit with shock absorber • **Material:** Anodized aluminum • **Details:** Anodized aluminum • **Items supplied:** Mounting hardware included • **Suitable for:** TiM3xx, TiM5xx, TiM7xx	Mounting kit	2086074
connectors and cables			
	• **Description:** USB 2.0, unshielded • **Connection type head A:** Male connector, Micro-B, 4-pin, straight • **Connection type head B:** Male connector, USB-A, 4-pin, straight • **Signal type:** USB 2.0 • **Cable:** 2 m, 4-wire	YMUSA4-020VG4MUIA4	6036106

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."

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