NAV310-3211

NAV3xx

2D LIDAR SENSORS

SICK
Sensor Intelligence.

NAV310-3211 | NAV3xx
2D LIDAR SENSORS

Ordering information

Type	part no.
NAV310-3211	1060834

Other models and accessories ➜ www.sick.com/NAV3xx

Detailed technical data

Features

Application	Indoor
Light source	905 nm
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
Aperture angle	
Horizontal	360°
Scanning frequency	5 Hz ... 20 Hz
Angular resolution	
Horizontal	0.125°
	0.25°
	0.375°
	0.5°
	0.75°
	1°
	1.875°
	0.0625°, interlaced
Working range	0.5 m ... 250 m
Scanning range	
At 10% remission factor	35 m
At 90% remission factor	120 m

Mechanics/electronics

Connection type	3 x M12 male connector/female connector
Supply voltage	24 V DC, ± 15 %
Power consumption	36 W
Housing material	Aluminum die cast
Housing color	Light blue (RAL 5012)
Enclosure rating	IP65

Protection class	III
Weight	2.4 kg
Dimensions (L x W x H)	115 mm x 120.5 mm x 222 mm
MTBF	86 years
MTTFd	> 100 years

Safety-related parameters

$MTTF_D$	> 100 years

Performance

Detectable object shape	Almost any
Systematic error	± 10 mm [1]
Statistical error	15 mm [1]

[1] Actual value depends on environmental conditions.

Interfaces

Ethernet	✓ , TCP/IP
Data transmission rate	100 Mbit/s
Serial	✓ , RS-232
Data transmission rate	19.2 kBaud … 115 kBaud
Digital inputs/outputs	
Outputs	1 (digital)
Optical indicators	4 LEDs (status displays)

Ambient data

Ambient operating temperature	0 °C … +50 °C
Storage temperature	–20 °C … +80 °C
Permissible relative humidity	85 %, Non-condensing

General notes

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

Certificates

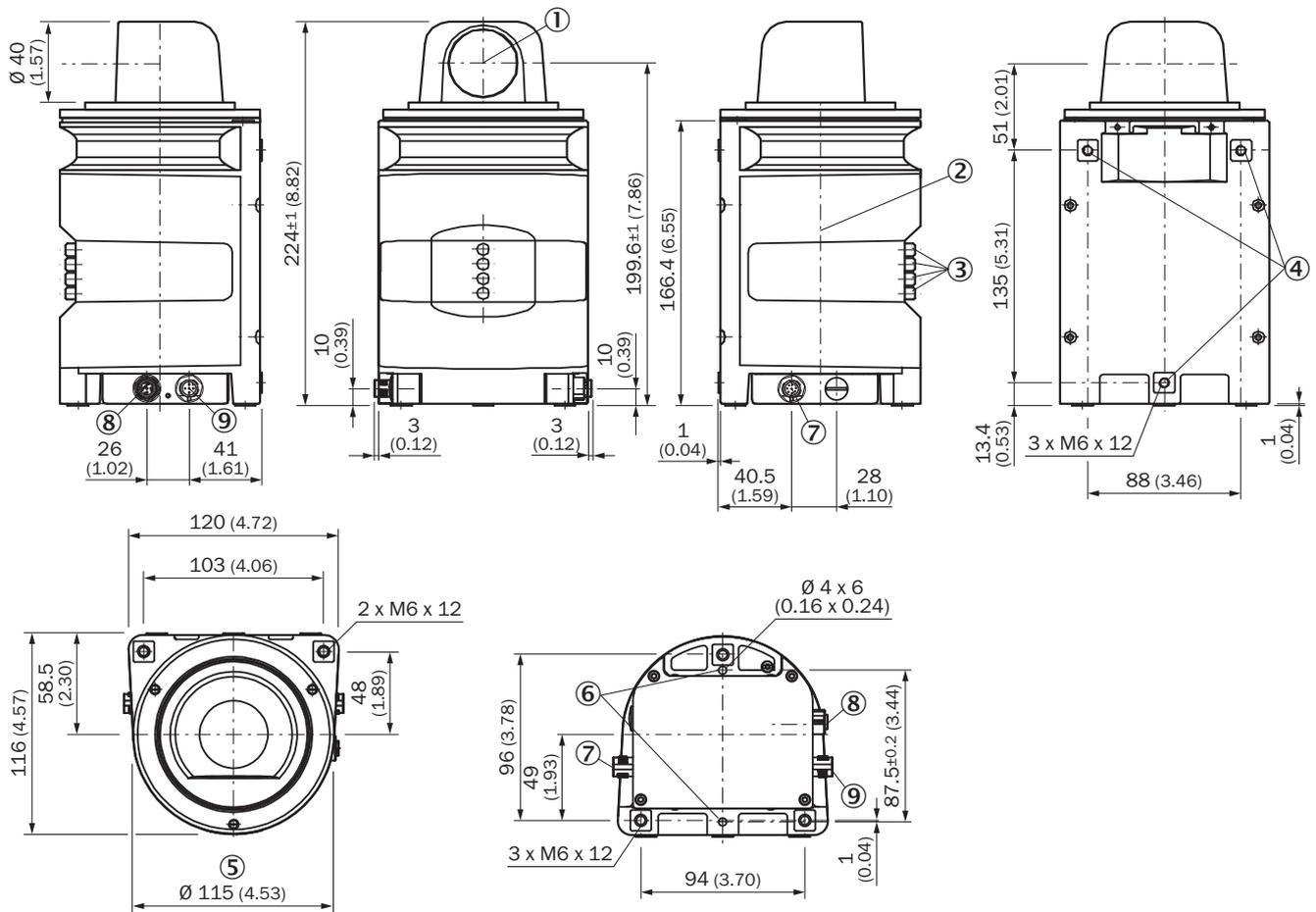| EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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
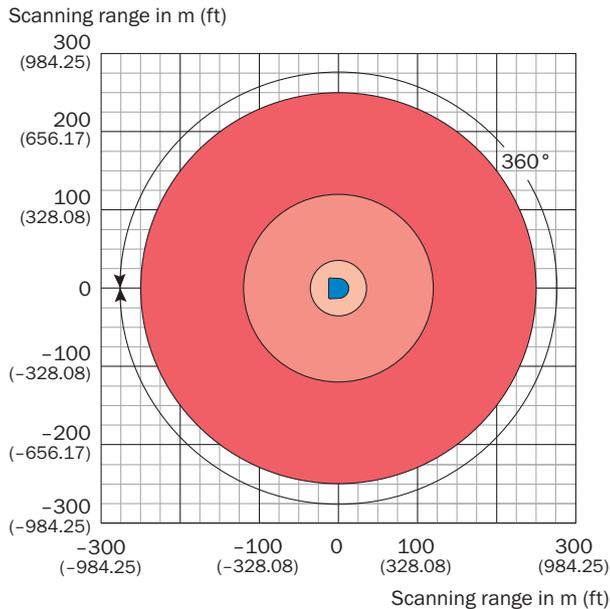

Dimensions in mm (inch)
① Optical axis
② Zero level
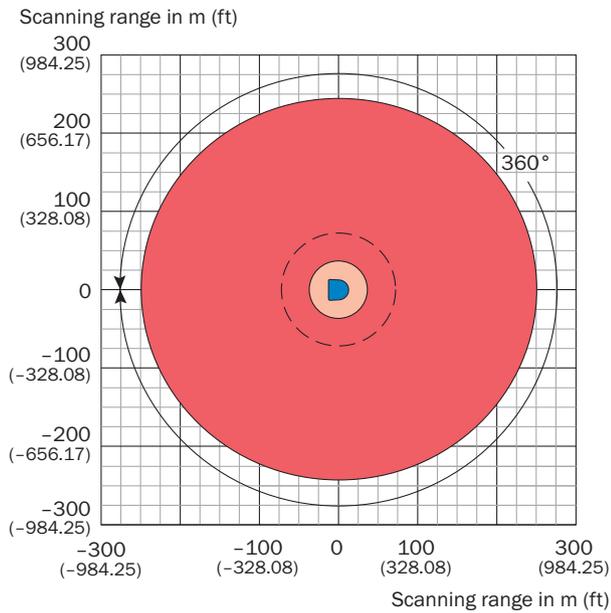③ LED (from top: yellow, yellow, green, red)
④ Mounting hole M6 x 12

⑤ Rotating diameter
⑥ Aligning pin
⑦ RS-232 connection (M12 x 8, male connector)
⑧ Ethernet connection (M12 x 4, female connector)
⑨ power supply connection (M12 x 5. male connector)

Working range diagram

Scanning range in m (ft)

Scanning range in m (ft)

■ Scanning range max. 250 m (820.21 ft)

■ Scanning range white targets
90 % remission 120 m (393.70 ft)

■ Scanning range for objects up to
10 % remission 35 m (114.83 ft)

Working range diagram

Scanning range in m (ft)

Scanning range in m (ft)

- ■ Scanning range max. 250 m (820.21 ft)
- ■ Scanning range for objects up to 10 % remission 35 m (114.83 ft)
- □ Scanning range on reflector 70 m (229.66 ft)

Recommended accessories

Other models and accessories ➜ www.sick.com/NAV3xx

	Brief description	Type	part no.
reflectors and optics			
	• **Description:** Reflective tape "Diamond Grade", self-adhesive, sheet • **Dimensions:** 749 mm 914 mm • **Ambient operating temperature:** –34 °C … +70 °C	REF-DG	5320565

Brief description	Type	part no.
connectors and cables		
• **Connection type head A:** Female connector, M12, 5-pin, straight • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 5-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, shielded • **Connection systems:** Flying leads • **Application:** Zones with oils and lubricants, Drag chain operation	DOL-1205-G05MAC25	6043440
• **Connection type head A:** Male connector, M12, 4-pin, straight, D-coded • **Connection type head B:** Male connector, RJ45, 4-pin, straight • **Signal type:** Ethernet, PROFINET • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Ethernet, shielded, PROFINET • **Application:** Drag chain operation, Zones with oils and lubricants	YM2D24-050P-N1MRJA4	2106184
• **Description:** Sensor/actuator cable, shielded • **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PUR, halogen-free • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A28-050UA6XLEAX	2095835
• **Description:** Sensor/actuator cable, shielded • **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 8-wire, PUR, halogen-free • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A28-C60UA6XLEAX	2145470
• **Description:** Sensor/actuator cable, shielded • **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 8-wire, PUR, halogen-free • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A28-010UA6XLEAX	2145471
• **Description:** Sensor/actuator cable, shielded • **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PUR, halogen-free • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A28-020UA6XLEAX	2145472
• **Description:** Sensor/actuator cable, shielded • **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 8-wire, PUR, halogen-free • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A28-030UA6XLEAX	2145473

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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