

OS1 MAX REV 8

OS1 MAX REV 8 Series

OS1MAX-64



- Range: 200 m @ 10%, 350 m @ 80% reflectivity, max recognizable distance 500 m
- Resolution: 64/128/256 channels vertical, 4096 horizontal, down to $0.17^\circ \times 0.088^\circ$ angular resolution
- Native RGB colour: 48-bit, 116dB dynamic range, 1-2,000,000 lux, no calibration between colour and 3D
- Functional safety: ASIL-B, SIL-2, PLd, ISO 21434 cybersecurity, 3D Zone Monitor on the sensor
- Rugged: IP68/IP69K, -40 to +85°C, 100G shock, 10G-rms vibration, Class 1 eye-safe laser

PRODUCT DESCRIPTION

The flagship of the REV8 family

, the OS1 Max delivers 200 m range against a dark 10% target and 350 m against an 80% Lambertian target, with a maximum representable distance of 500 m. The first lidar sensor with 256 vertical channels is designed for long-range industrial applications, off-highway vehicles, autonomous cars, trucks and buses, traffic and safety monitoring, and 3D mapping vehicles.

MAXIMIZED

2X
RANGE

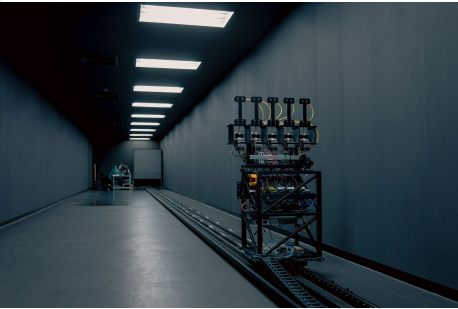
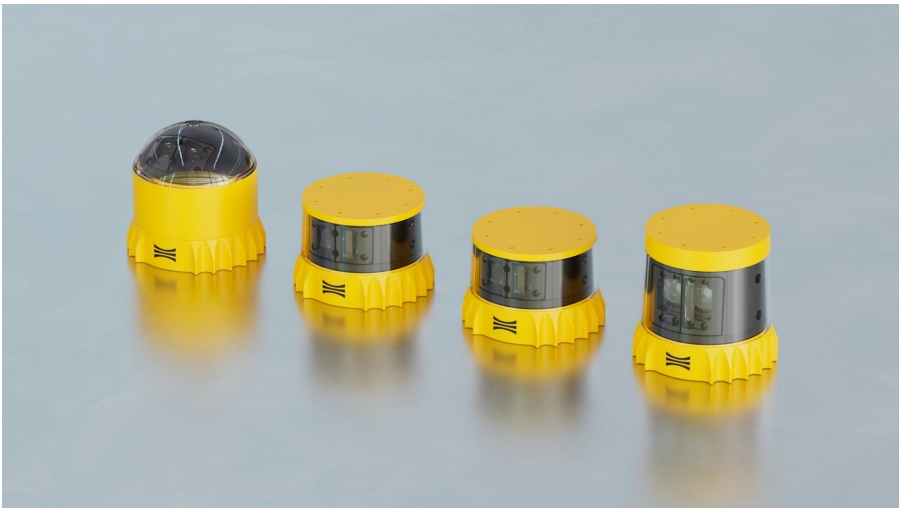


2X
RESOLUTION

2x range, 2x resolution

256 vertical channels provide 0.17° vertical angular resolution. Horizontal resolution up to 4096 points corresponds to 0.088° – and combined with almost double the range compared to REV7, it provides "best-in-class" level of detail at long distances. 48-bit RGB with 116 dB dynamic range maintains consistent quality from 1 lux to 2,000,000 lux.

Functional safety and edge-ready integration
ASIL-B (ISO 26262), SIL-2 (IEC 61508) and PLd (ISO 13849) in alternative configuration, with built-in 3D Zone Monitor directly on the sensor.
Cybersecurity according to ISO 21434, UNECE WP.29 R155 and IEC 62443. Integrated IMU with 2560 Hz sampling, IEEE 1588 PTP/gPTP, NMEA \$GPRMC and External PPS. UDP over 1000BASE-T and Ousters SDK with C++/ROS drivers.



The most rugged 3D lidar sensors ever built
The housing is rated IP68 and IP69K, can operate between -40 °C and +85 °C and meets 100 G shock according to IEC 60068-2-27 and 10 G-rms vibration according to IEC 60068-2-64 / ISO-16750-3 Test VII. Class 1 eye-safe laser according to IEC/EN 60825-1:2014. CE, UKCA and FCC certified as well as UL 62368-1 (4th Ed.) and CSA C22.2 No. 62368-1-25. Planned 10-year production life cycle.

TECHNICAL DATA

Accuracy	±1.25 cm (lambertian), ±2.5 cm (retroreflektivt)
Ambient light max	2000000 lx
Angular measurement accuracy	0.01 °
Angular resolution	0.7 °
Beam diameter at sensor output	19 mm
Beam divergence	0.09 °
Data latency	10 ms
Data profiles	Single, Dual, Low Data Rate
Data rate per profile	600 Mbit/s
Detector technology	SPAD
Distance resolution	1 mm
Field of view (L)	43.9 °
Field of view (R)	360 °
Frame rate	40 fps
Frame rate max	40 fps
Horizontal resolution	4096
IMU latency	10 ms

IMU sampling rate	2.56 kHz
IMU timestamp resolution	1 µs
Interface	GigE
IP class	IP68, IP69K
Laser class	Class 1
Minimum range	0 m
Operating temperature from	-40 °C
Operating temperature to	85 °C
Points per second	1310720
Power consumption	19 W
Precision (σ) min/max	±0.25 cm (min) / ±1.5 cm (max)
Protocol Lidar Data	1000BASE-T
Range	200 m @ 10 % reflektivitet, 350 m @ 80 % reflektivitet (1024×10 Hz, 100 klx solljus, >90 % detektionssannolikhet)
Range resolution	0.1 cm
Rotation speed	40 Hz
Scanning principle	Flash
Storage temperature max	105 °C
Storage temperature min	-40 °C
Time synchronization – inputs	PTP, gPTP, NMEA \$GPRMC, External PPS
Time synchronization – outputs	60 Hz
Timestamp resolution	1 µs
Wavelength	865 Nm
Weight	670 g