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OS2 REV7

OS2-128
128 channels / 2.6 Mpts/s / 22.5° V × 360° H / 200 m @ 10% / 9–34 V DC



- True Long Distance – 200m @ 10% and 400m max, ready for AV/ITS and perimeter security.
- High data quality at a distance—up to 2.62 M dots/s with dual returns provide sharp point clouds for tracking and classification.
- Built for reality – IP68/IP69K and MTTF ≥ 250,000 h for 24/7 operation in all weathers.
- Fast integration – GbE/UDP, IMU, PTP/gPTP, as well as SDK/ROS support directly from Ouster.
- REV7 with L3 chip – improved range/precision and ready-to-use solutions via Gemini/BlueCity.

PRODUCT DESCRIPTION

Long-range lidar with L3 chip
OS2 delivers 200 m range against a dark 10% target and 350 m against an 80% Lambertian target, with an absolute maximum range over 400 m. The L3 chip provides a 100% increase in range compared to previous generations.
Edge-ready integration
Integrated IMU, IEEE 1588 PTP/gPTP, NMEA $GPRMC and External PPS for time synchronization. UDP over Gigabit Ethernet and Ouster's open source SDK for ROS and C++. Multi-sensor phase lock and crosstalk suppression allow multiple devices to run in parallel without interference.
Configurable resolution
Choose 32, 64 or 128 channels vertically, horizontal resolution of 512/1024/2048 dots and 10 or 20 Hz rotation. Dual Return mode with fixed resolution per frame and 0.1 cm distance resolution.
All-weather rugged
The housing is rated IP68 and IP69K, can operate between -20 °C and +60 °C and meets shock/vibration requirements according to IEC 60068-2-27/-64. Class 1 eye-safe laser according to IEC/EN 60825-1:2014. CE, UKCA and FCC certified as well as UL 62368-1 and UL 60950-22 (outdoor use).

TECHNICAL DATA

Accuracy	±2.5 cm (lambertian), ±5 cm (retroreflektivt)
Ambient light max	100000 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	2032 Mbit/s
Detector technology	SPAD
Distance resolution	1 mm

False positive rate	10000
Field of view (L)	22.5 °
Field of view (R)	360 °
Frame rate	20 fps
Frame rate max	20 fps
Horizontal resolution	2048
IMU latency	10 ms
IMU sampling rate	0.1 kHz
IMU timestamp resolution	1 µs
Interface	GigE
IP class	IP68, IP69K
Laser class	Class 1
Minimum range	0.8 m
MTTF	250000 h
Operating temperature from	-20 °C
Operating temperature to	60 °C
Points per second	5242880
Power consumption	24 W
Precision (σ) min/max	±2,0 cm / ±10 cm
Protocol Lidar Data	1000BASE-T
Range	200 m @ 10% reflektivitet, 350 m @ 80% reflektivitet (1024×10 Hz, 100 klx solljus, >90% detektionssannolikhet); maxräckvidd över 400 m
Range resolution	0.1 cm
Rotation speed	20 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	1100 g