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OS0 REV7

OS0 REV 7 Series

OS0-128
128 channels / 5.2 Mpts/s / 90.8° W × 360° H / 35 m @ 10% / 9.5–51 VD



- Ultra-wide view (90°/360°) – complete near-field coverage with no deadzones.
- High data density – up to 5.24 M dots/s + dual returns for cleaner point clouds
- Close-detection – 0.0 m min-range (FW 3.1) for safe protection zones and precision maneuvers.
- Fast integration – GbE, IMU, gPTP/PTP and out-of-the-box SDK/ROS drivers.
- Built for operation – IP68/IP69K, -40...+60°C, MTTF ≥ 250,000 h on REV7/L3 chip.

PRODUCT DESCRIPTION

The OS0 ultra-wide short-range lidar
delivers 35 m range against a dark 10% target and 75 m against an 80% Lambertian target, combined with an ultra-wide 90.8° vertical field of view angle. The compact design is suitable for autonomous vehicles, heavy machinery, robots, drones and mapping solutions.
Edge-ready integration
Integrated IMU, IEEE 1588 PTP/gPTP, NMEA $GPRMC and External PPS for time synchronization. UDP over Gigabit Ethernet (1000BASE-T or 1000BASE-T1) and Ouster's SDK with C++/ROS drivers. 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 points and 10 or 20 Hz rotation. Up to 5.2 million points per second with 0.1 cm distance resolution provides camera-like NIR and signal data.
All-weather rugged
The housing is rated IP68 and IP69K, can operate between -40 °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 (lambert) / ±5 cm (retroreflektiv)
Ambient light max	100000 lx
Angular measurement accuracy	0.01 °
Angular resolution	0.7 °
Beam diameter at sensor output	5 mm
Beam divergence	0.35 °
Data latency	10 ms
Data profiles	Single, Dual, Low Data Rate
Data rate per profile	1353 Mbit/s
Detector technology	SPAD

Distance resolution	1 mm
False positive rate	10000
Field of view (L)	90.8 °
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	0.5 m
MTTF	250000 h
Operating temperature from	-40 °C
Operating temperature to	60 °C
Points per second	5242880
Power consumption	16 W
Precision (σ) min/max	±0,8 cm / ±4 cm
Protocol Lidar Data	1000BASE-T, 1000BASE-T1
Range	35 m @ 10% reflektivitet, 75 m @ 80% reflektivitet (1024×10 Hz, 100 klx solljus, >90% detektionssannolikhet)
Range resolution	0.1 cm
Rotation speed	20 Hz
Scanning principle	Flash
Storage temperature max	85 °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	430 g