

## OS0 REV 8

OS0-32-REV8



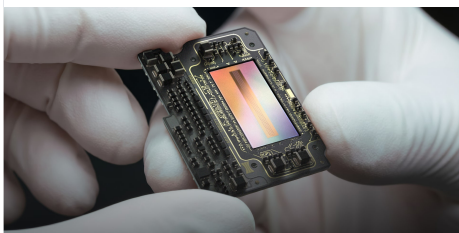
- View: 90° vertical, 360° horizontal, up to 40 Hz rotation and 4096 horizontal resolution
- Range: 35 m @ 10%, 75 m @ 80% reflectivity in 100 klx sunlight, max representable distance 250 m
- Native RGB colour: 48-bit, 116dB dynamic range, 1-2,000,000 lux, no calibration between colour and 3D
- Functional 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

#### Native color short-range lidar

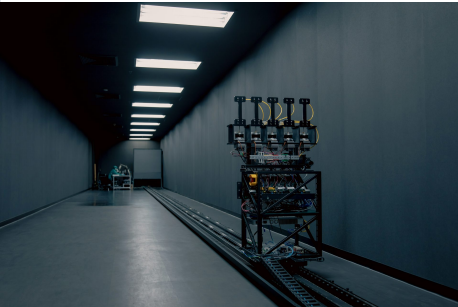
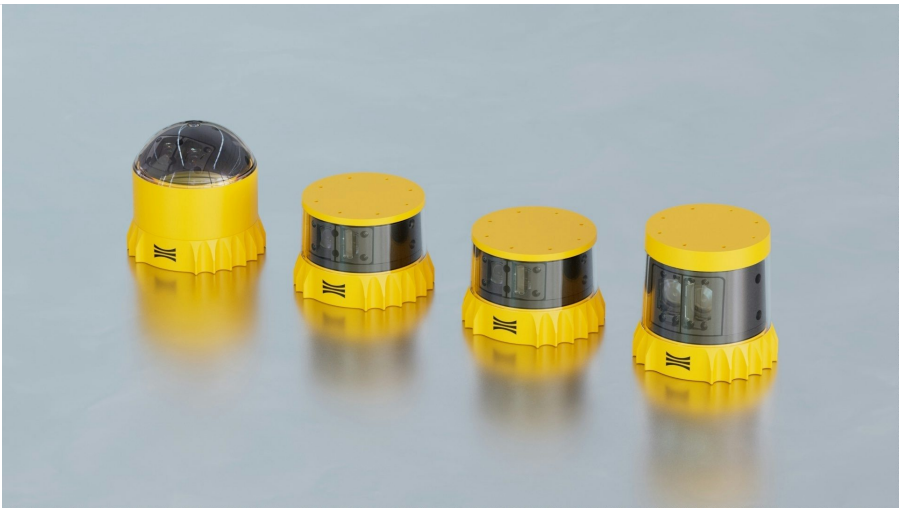
OS0 REV8 delivers 35 m range against a dark 10% target and 75 m against an 80% Lambertian target, combined with an ultra-wide 90° vertical field of view. Each point is born with both color and 3D data directly on the chip – no separate camera calibration is required. The compact design is suitable for AMRs, AGVs, autonomous vehicles, heavy machinery, robots, drones and mapping solutions.



#### 2x resolution, 2x frame rate

Choose 32, 64 or 128 channels vertically, horizontal resolution of 512/1024/2048/4096 dots and rotation from 5 to 40 Hz. Up to 5.2 million dots per second with 0.1 cm distance resolution and twice the precision of REV7. 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             | 2.8 °                                            |
| 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          | 600 Mbit/s                                       |
| Detector technology            | SPAD                                             |
| Distance resolution            | 1 mm                                             |
| Field of view (L)              | 90 °                                             |
| 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              | 15 W                                                                                                            |
| Precision (σ) min/max          | ±0.25 cm (min) / ±1.5 cm (max)                                                                                  |
| Protocol Lidar Data            | 1000BASE-T                                                                                                      |
| Range                          | 35 m @ 10 % reflektivitet, 75 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                         | 500 g                                                                                                           |