



REV8 Sensors

Powered by L4 Ouster Silicon

The world's first native color lidar

	OSDome	OS0	OS1	OS1 Max
Specifications	OSDome REV8 Full hemisphere view	OS0 REV8 Ultra-wide view	OS1 REV8 Mid-range	OS1 Max REV8 Long-range
Vertical resolution (channels)	32, 64 or 128	32, 64 or 128	32, 64 or 128	64, 128 or 256
Native color point cloud (RGB-D)	Yes	Yes	Yes	Yes
Maximum representable range	~250 m	~250 m	~250 m	~500 m
Range (10% reflective target @ 90% detection prob.)	20 m	35 m	90 m	200 m
Range (80% reflective target)	45 m	75 m	170 m	350 m
Minimum range	0.0 m	0.0 m	0.0 m	0.0 m
Precision [1]	±0.5 cm to ±5 cm	±0.25 cm to ±1.5 cm	±0.25 cm to ±1.5 cm	±0.25 cm to ±1.5 cm
Accuracy [1]	±1.25 cm	±1.25 cm	±1.25 cm	±1.25 cm
Vertical field of view	180°	90°	45°	45°
Vertical angular resolution	1.4° (64ch) 0.7° (128ch)	1.4° (64ch) 0.7° (128ch)	0.69° (64ch) 0.34° (128ch)	0.34° (128ch) 0.17° (256ch)
Horizontal resolution	512, 1024, 2048 or 4096	512, 1024, 2048 or 4096	512, 1024, 2048 or 4096	512, 1024, 2048 or 4096
Horizontal field of view	360°	360°	360°	360°
Horizontal angular resolution	up to 0.09°	up to 0.09°	up to 0.09°	up to 0.09°
Beam divergence (FWHM)	0.35°	0.35°	0.18°	0.09°
Points per second	up to 10,485,760	up to 10,485,760	up to 10,485,760	up to 10,485,760
Frame rate	5, 10, 15, 20, 30 or 40 Hz	5, 10, 15, 20, 30 or 40 Hz	5, 10, 15, 20, 30 or 40 Hz	5, 10, 15, 20, 30 or 40 Hz [2]
Number of returns	2 (strongest, second strongest)	2 (strongest, second strongest)	2 (strongest, second strongest)	2 (strongest, second strongest)
Ingress protection	IP68, IP69K	IP68, IP69K	IP68, IP69K	IP68, IP69K
Shock / vibration	100 G / 10 G-rms	100 G / 10 G-rms	100 G / 10 G-rms	100 G / 10 G-rms
Typical power consumption [3]	10–20 W	10–20 W	10–20 W	15–25 W
Operating voltage	12 / 24 V	12 / 24 V	12 / 24 V	12 / 24 V
Operating temperature [4]	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Time synchronization	gPTP; PTP; \$GPRMC; PPS	gPTP; PTP; \$GPRMC; PPS	gPTP; PTP; \$GPRMC; PPS	gPTP; PTP; \$GPRMC; PPS
Ethernet	1000BASE-T / -T1	1000BASE-T / -T1	1000BASE-T / -T1	1000BASE-T / -T1
Weight	540 g	500 g	500 g	670 g
Embedded IMU	Yes	Yes	Yes	Yes
Near-IR ambient data	Yes	Yes	Yes	Yes
Functional safety [5]	ASIL-B, SIL-2, PLd	ASIL-B, SIL-2, PLd	ASIL-B, SIL-2, PLd	ASIL-B, SIL-2, PLd
Beam configuration options	32ch and 64ch	32ch and 64ch	32ch and 64ch	32ch, 64ch and 128ch

[1] Typical, Lambertian targets beyond 1 m, 1024 @ 10 Hz mode, 1 standard deviation
[2] OS1 Max: 4096 @ 5 Hz; 2048 @ 10 Hz; 1024 @ 10–20 Hz; 512 @ 10–40 Hz
[3] Nominal 15 W (OS1 Max: 19 W); peak 22 W (OS1 Max: 28 W) at startup when operating at -40 °C
[4] When mounted in accordance with the Ouster Thermal Integration Guide
[5] Designed for IEC 61508 SIL-2, ISO 26262 ASIL-B, ISO 13849 PLd/CAT-2; cybersecurity to ISO 21434. Certification pending – expected early 2027.

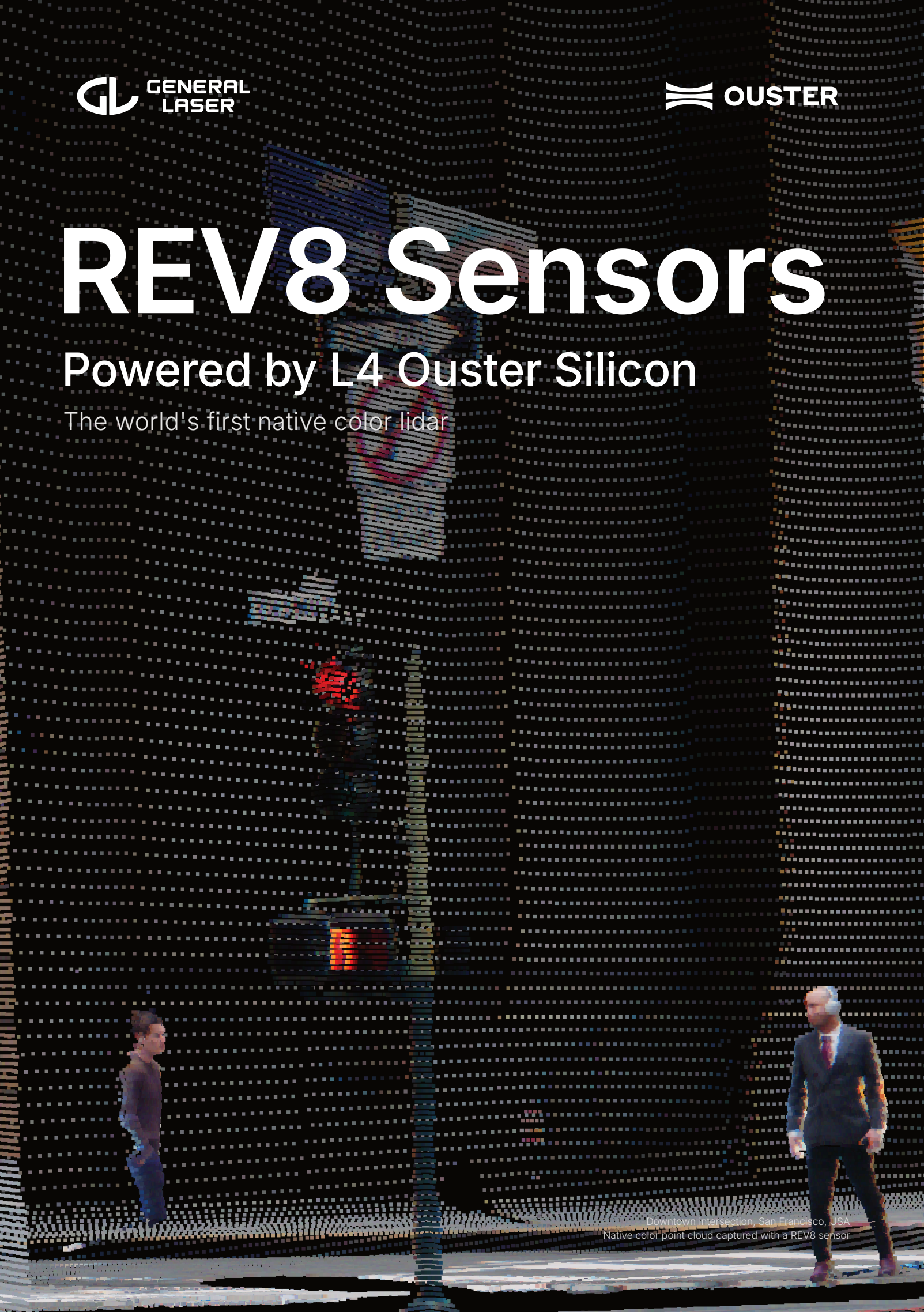
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Downtown intersection, San Francisco, USA
Native color point cloud captured with a REV8 sensor

L4 Ouster Silicon

The next generation of digital lidar. L4 Ouster Silicon fuses 3D and color data directly on the chip, doubles range and resolution over REV7, and is designed for functional safety. Automotive grade, with a planned 10-year production life for long-term program stability.

42.9 GMACs
of signal processing

256 Channels
of vertical resolution

10.4 Million
Max points per second

20 Trillion
Photons per second

REV7 and REV8 compared



Native Color – RGB in silicon

Every REV8 sensor natively captures RGB with each 3D point – no camera, no calibration, no software fusion. **48-bit color depth**, **116 dB dynamic range**, 1 lux to 2 million lux. Perfect spatial and temporal alignment.



Precision & Accuracy – 2x better

Range precision improved from ± 0.5 cm to **± 0.25 cm**, range accuracy from ± 2.5 cm to **± 1.25 cm** (OS1). Lower noise, cleaner scan lines, sharper edges – for survey-grade maps and digital twins.



Resolution & Range – up to 2x

Up to **4096 horizontal resolution** (0.09°), up to **256 channels** on the OS1 Max, up to **40 Hz**. 10.4 million points per second – double REV7. OS1 Max: 200 m on a 10% target, 500 m max range, 0.09° beam divergence. Zero minimum range on all sensors.

Functional Safety

Engineered for functional safety: designed for **ASIL-B** (ISO 26262), **SIL-2** (IEC 61508) and **PLd** (ISO 13849), cybersecure to ISO 21434, with on-sensor 3D Zone Monitor. Certification expected early 2027. Available in FuSa yellow.



Applications



Construction



Agriculture



Robotics



Smart Infrastructure



Mining



Ports & Logistics



Security & Defence



Maritime

Built for environments that destroy hardware. Every REV8 sensor exceeds automotive-grade reliability: operating temperature -40 °C to +85 °C, 100 G shock, 10 G-rms vibration, ESD up to 25 kV, IP68 and IP69K rated – for continuous uptime in the toughest industrial applications.

OS1 Max

Flagship 256-channel long-range digital lidar sensor

200 m
Range at 10%

256
Channels of resolution

500 m
Max range

10.4M
Max points per second

45°
Vertical field of view

0.09°
Beam divergence

