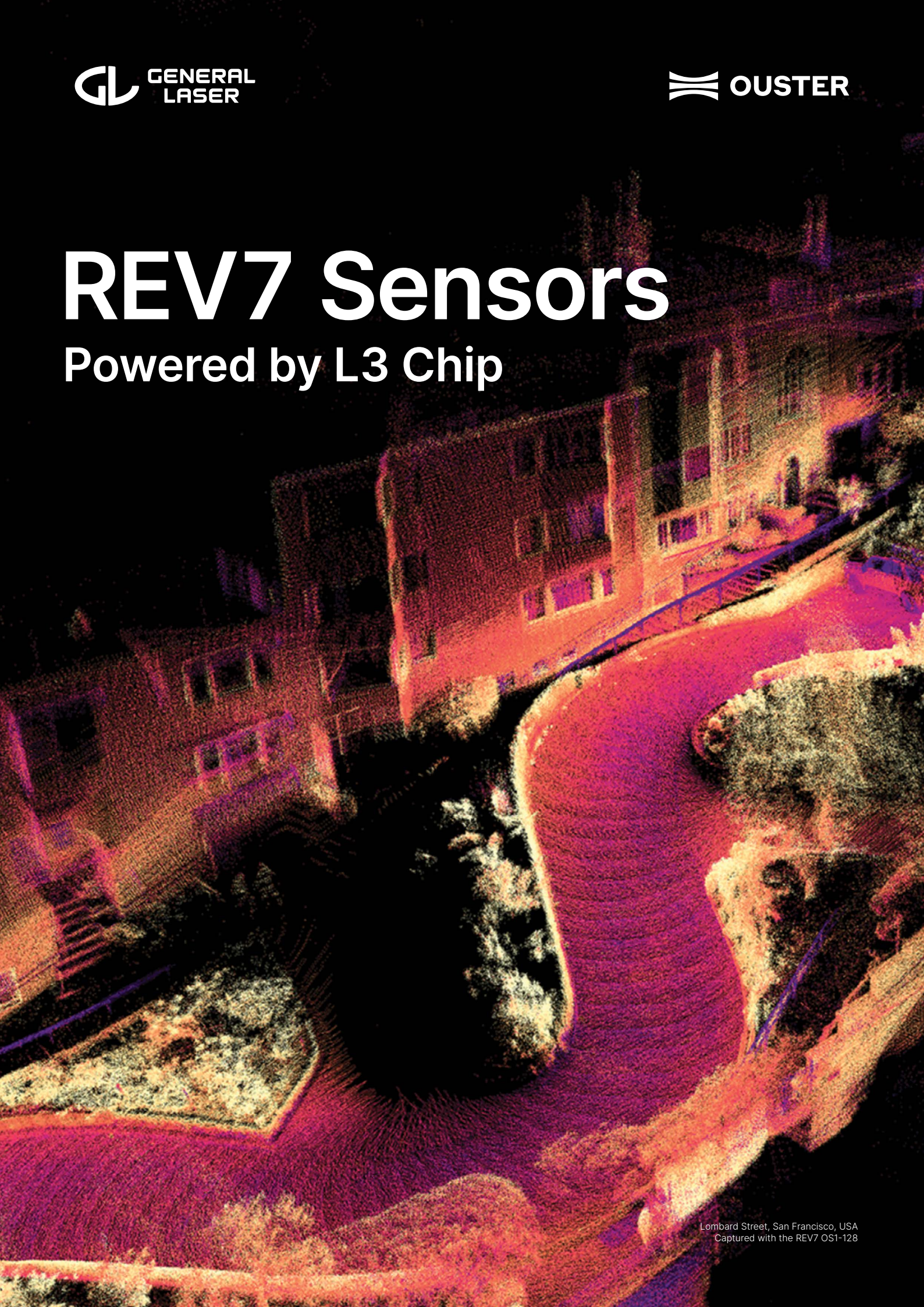
GENERAL LASER

OUSTER

REV7 Sensors

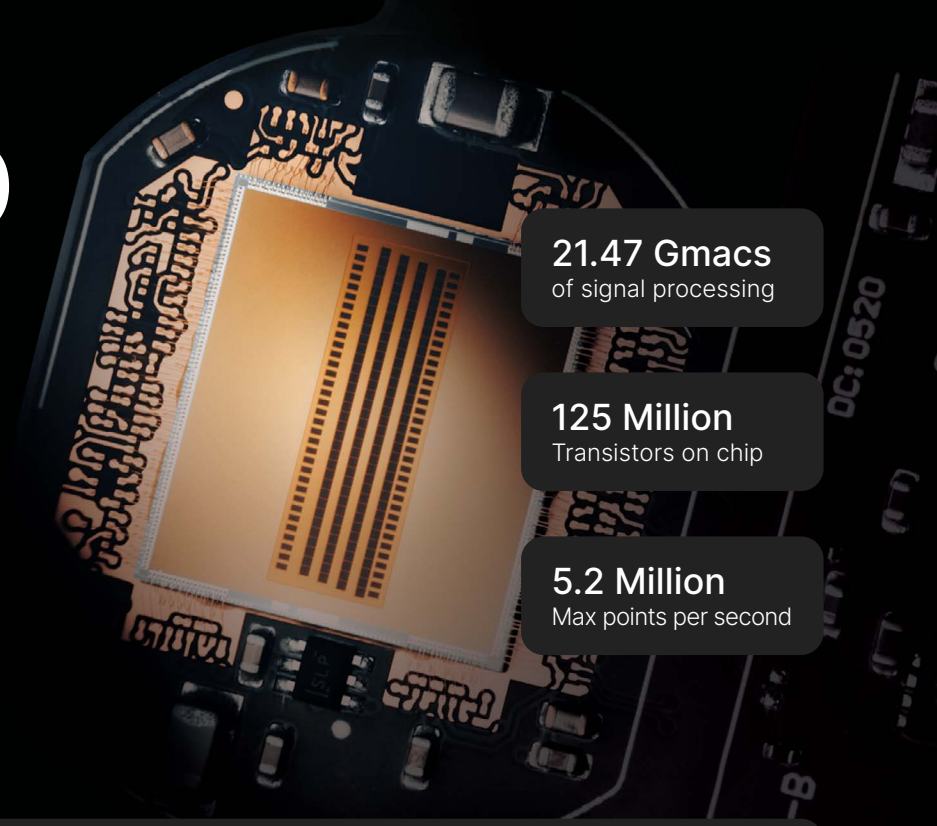
Powered by L3 Chip



Lombard Street, San Francisco, USA
Captured with the REV7 OS1-128

L3 Chip

Delivering on the promise of digital lidar, with step-change upgrades to range, precision, accuracy, and reliability. Automotive grade, applications also in construction and agricultural machinery, as well as mobile robots.

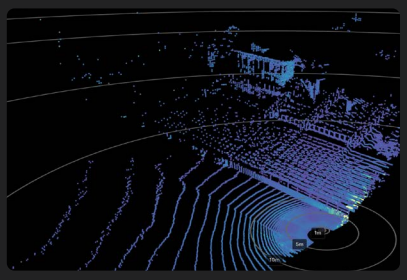
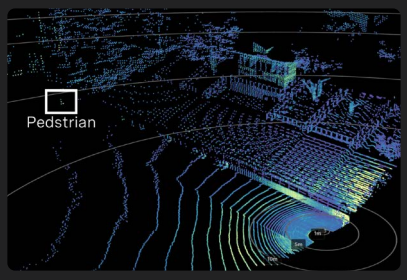
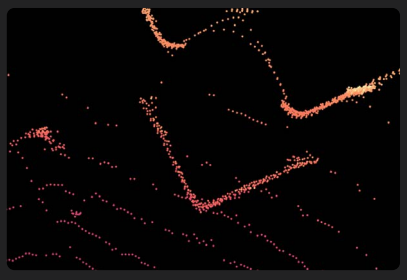
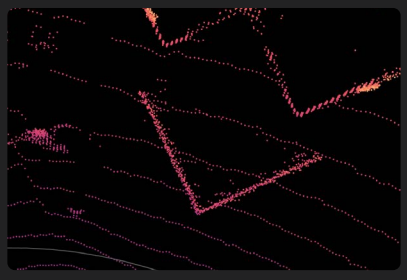
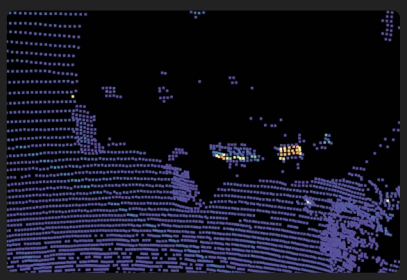
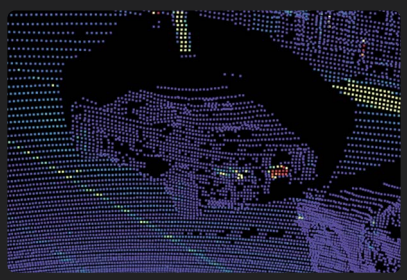
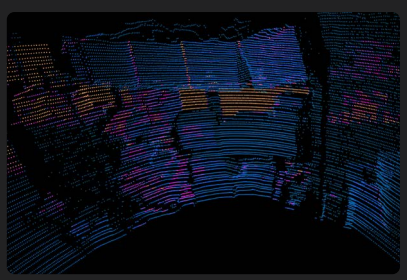
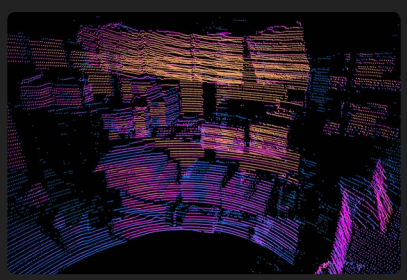


21.47 Gmacs
of signal processing

125 Million
Transistors on chip

5.2 Million
Max points per second

REV6 and REV7 compared

REV6 (L2X Chip)	REV7 (L3 Chip)	
		**Range** More than +100% OS0: 15 m → 35 m (pictured) OS1: 45 m → 90 m OS2: 80 m → 200 m
		**Precision** Clean scan lines. Sharp corners. Flat walls. Incredibly accurate 3D maps and digital twins indoors or outdoors.
		**Dark Car Detection** Black vehicles, and other dark objects, and small physical details can pose a challenge for lidar detection. REV7 is designed to change that with a 1000% improvement in signal strength across all sensors.
		**Near Range** Improved Near Range Signal. Warehouse boxes at a distance of 1 m pictured.

Applications

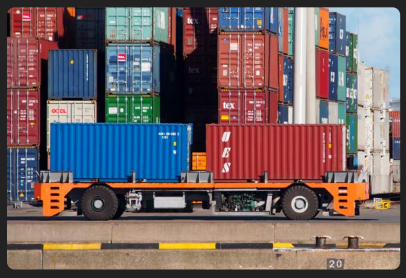
Construction

Agriculture

Robotics

Smart Infrastructure

Mining



Ports & Logistics

With a simple digital design and new automotive-grade components, REV7 is designed to withstand the rigors of daily use in even the most extreme environments. Tested to rigorous shock and vibration standards and IP68 and IP69K rated. Operating temperature from -40°C to 60°C.

Security & Defence

Maritime

OSDome

Hemispherical 180° field of view digital lidar sensor

20 m
Range at 10%

128
Channels of resolution

100 m
Max range

5.2M
Max points per second

180°
Vertical field of view

10x
Photon sensitivity

OSDome | OS0 | OS1 | OS2

Specifications	OSDome REV7 Full hemisphere view	OS0 REV7 Ultra-wide view	OS1 REV7 Mid-range	OS2 REV7 Long-range
Vertical resolution (channels)	64 or 128	64 or 128	64 or 128	64 or 128
Maximum representable range	~100 m	~100 m	~200 m	~400 m
Range (10% reflective target @ 90% detection prob.)	20 m	35 m	90 m	200 m
Minimum range [1]	0.5 m	0.5 m	0.5 m	0.8 m
Precision [2]	±1 cm to ±5 cm	±0.5 cm to ±5 cm	±0.5 cm to ±5 cm	±2 cm to ±8 cm
Vertical field of view	180º	90º	45º	22.5º
Vertical angular resolution	1.4º(64ch) 0.7º(128ch)	1.4º(64ch) 0.7º(128ch)	0.7º(64ch) 0.35º(128ch)	0.36º(64ch) 0.18º(128ch)
Horizontal resolution	512, 1024, or 2048	512, 1024, or 2048	512, 1024, or 2048	512, 1024, or 2048
Horizontal field of view	360º	360º	360º	360º
Horizontal angular resolution	up to 0.18º	up to 0.18º	0.18º	0.18º
Points per second	up to 5,242,880	up to 5,242,880	up to 5,242,880	up to 2,621,440
Frame rate	10 or 20 Hz	10 or 20 Hz	10 or 20 Hz	10 or 20 Hz
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
Typical power consumption [3]	14-20 W	14-20 W	14-20 W	18-24 W
Operating voltage	12 / 24 V	12 / 24 V	12 / 24 V	12 / 24 V
Operating temperature [4]	-40 to +60 ºC	-40 to +70 ºC	-40 to +70 ºC	-20 to +65 ºC
Time synchronization	gPTP; PTP; $GPRMC	gPTP; PTP; $GPRMC	gPTP; PTP; $GPRMC	gPTP; PTP; $GPRMC
Weight	447 g	447 g	447 g	1100 g
Embedded IMU	Yes	Yes	Yes	Yes
Near-IR ambient data	Yes	Yes	Yes	Yes
Beam configuration options	Uniform only	Only for 64ch	Only for 64ch	Only for 64ch
Field of view left — Uniform	180º	90º	45º	22.5º
Angular resolution right (128ch and 64ch for Uniform)	0.7º or 1.4º	0.7º or 1.4º	0.35º or 0.7º	0.18º or 0.36º
Gradient		+45º, +28º, +19.5º, +8º, -16.5º, -28º, -45º 5.6º, 2.8º, 1.4º, 0.7º, 1.4º, 2.8º	+22.5º, +14º, +9.5º, +4º, -8.5º, -14º, -22.5º 2.8º, 1.4º, 0.7º, 0.35º, 0.7º, 1.4º	+11.25º, +7º, +5º, +2º, -4º, -7º, -11.25º 1.4º, 0.7º, 0.35º, 0.18º, 0.35º, 0.7º
Above Horizon		45º — 0.7º	22.5º — 0.36º	11.25º — 0.18º
Below Horizon		45º — 0.7º	22.5º — 0.36º	11.25º — 0.18º

[1] Blockage detection binary flag between 0 m and the minimum range (v2.0 beta feature)
[2] 10% Lambertian reflectivity, 1 standard deviation, OS0 operating In 1024 @ 10 Hz mode
[3] The OS0 can briefly reach a peak of 22 W on start-up and a peak of 28 W if operating below -40 °C
[4] Between +53 °C to +60 °C, sensor automatically reduces range (max 20% range reduction)

Errors and technical modification subject to change.

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