

# LUMINAR

## HYDRA

Hydra is a high-performance lidar for testing and development programs. This enables programs to accelerate research and development activities requiring long range, high point density performance under all conditions, including direct sunlight, rain, snow, fog and other challenging weather conditions.

Luminar rebuilt lidar from the chip-level up to meet stringent safety and economic requirements. In addition to the automotive industry, Hydra delivers high performance imaging to a broad set of applications, including safety and security.

With camera-like resolution up to 200 points per square degree and high data fidelity, Hydra reliably sees where objects are — even small or dark objects at long distances.



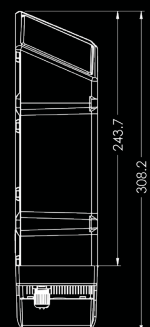
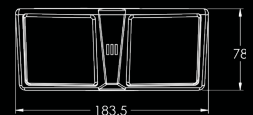
Hydra lidar sensor



### SENSOR SPECIFICATIONS

<b>250m</b> <10% Reflectivity	<b>500m</b> Max Range	<b>0.07°</b> Min. Horizontal Resolution	<b>0.03°</b> Min. Vertical Resolution
<b>120°</b> Horizontal FoV	<b>0-30°</b> Configurable Vertical FoV	<b>640 lines/sec</b> Software Configurable	<b>1 cm</b> Range Precision
<b>1-30</b> Frames per Second	<b>7 bits</b> Reflectance Resolution (resolvable)	<b>&lt; 2m</b> Min. Measurement Range	<b>3</b> Max Range Returns Per Point

### DIMENSIONS



### SENSOR ENVIRONMENTAL SPECIFICATIONS

Water & Dust Ingress	Vibration	Shock	Ambient Temp. Full Performance	Storage Temperature
IP67	SAE J1211	IEC 60068 -2-27 to 20g	-10° to 40° C <sup>†</sup>	-40° to 85° C

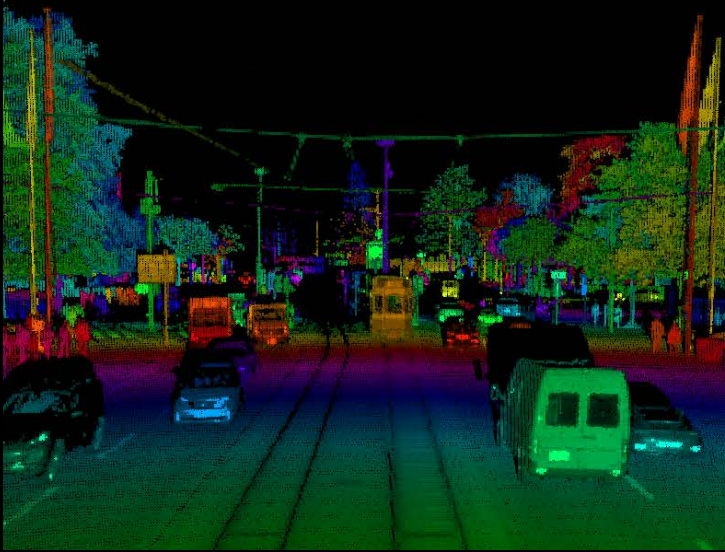
### CLASSIFICATIONS

Laser Safety	Export Control
Class 1	EAR99 (US DoC)

### ELECTRICAL

Operational	Power Consumption
24V +/- 10% Input Voltage	55 W

<sup>†</sup>Expanded Range enabled through vehicle integration



## Range

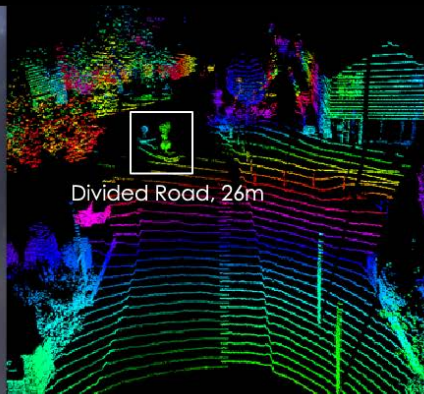
Luminar's Hydra lidar sensor offers the detection range needed to unlock your applications even when uncooperative targets are at long ranges. The sensor is capable of detecting 5% reflective targets at 165 meters and 10% reflective targets at 250 meters with > 90% detection. The sensor also detects small objects like power lines at over 100 meters.

## Resolution

Luminar is dedicated to enabling efficient detection and classification of small objects at long distances. We resolve highly precise 3D measurements, including small objects such as wires.

## Reflectance

In addition to the 3D point cloud, Luminar's Hydra lidar sensor also measures the amount of energy reflected from the target and provides a camera-like image. The addition of high-resolution reflectance provides dimension to the data that can be leveraged to improve detection and classification algorithms.



Divided Road, 26m

## Weather Performance

The higher laser power enabled by using 1550 nm sources in concert with our ability to detect multiple returns per measurement enables penetration of adverse weather and obscurants. This, in turn, supports all weather, day, and night applications.

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<http://luminartech.com>  
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