Velodyne Lidar®

SMART, POWERFUL LIDAR SOLUTIONS FOR ADAS AND AUTONOMY

Product Guide

Velodyne Lidar, Inc.
5521 Hellyer Avenue,
San Jose, CA 95138 USA
Main Office: 669.275.2251 lidar@velodyne.com
VelodyneLidar.com

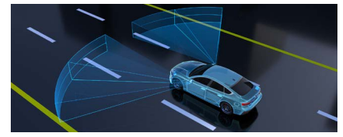
Surround Sensors[6]

(mid to long range)

Sensor	HDL-64E	HDL-32	Puck	Puck LITE	Puck Hi-Res	Ultra Puck	Alpha Prime
							
Range	Up to 120m	Up to 100m	100m	100m	100m	200m	Up to 245m[5]
Range Accuracy	Up to ±2 cm (Typical)[4]	Up to ±2 cm (Typical)[1]	Up to ±3 cm (Typical)[1]	Up to ±3 cm (Typical)[1]	Up to ±3 cm (Typical)[1]	Up to ±3 cm (Typical)[1]	Up to ±3 cm (Typical)[1]
# of Lines	64	32	16	16	16	32	128
Horizontal FoV	360°	360°	360°	360°	360°	360°	360°
Vertical FoV	26.9°	41.33°	30°	30°	20°	40°	40°
Horizontal Resolution	0.08° – 0.35°	0.08° - 0.33°	0.1° – 0.4°	0.1° – 0.4°	0.1° – 0.4°	0.1° – 0.4°	0.1° – 0.4°
Vertical Resolution	0.4°	1.33°	2.0°	2.0°	1.33°	0.33° (min)	0.11° (min)
Points Per Second (Single Return Mode)	~ 1,300,000	~ 695,000	~ 300,000	~ 300,000	~ 300,000	~ 600,000	~ 2,400,000
Points Per Second (Dual Return mode)	~ 2,200,000[5]	~ 1,390,000	~ 600,000	~ 600,000	~ 600,000	~ 1,200,000	~ 4,800,000
Refresh Rate	5-20 Hz	5-20 Hz	5-20 Hz	5-20 Hz	5-20 Hz	5-20 Hz	5-20 Hz
Operating Voltage	12V - 32V	9 V – 18 V	9 V – 18 V	9 V – 18 V	9 V – 18 V	10.5 V – 18 V	9 V – 28 V
Power Consumption	60 W (Typical)[2]	12 W (Typical)[2]	8 W (Typical)[2]	8 W (Typical)[2]	8 W (Typical)[2]	10 W (Typical)[2]	22 W (Typical)[2]
Weight (without cabling)	~ 28 lbs. (12.7 Kg)	~1.0 kg	~830 g	~590 g	~830 g	~925 g	~3.5 kg
Operating Temp	-10°C to +60°C[3]	-10°C to +60°C[3]	-10°C to +60°C[3]	-10°C to +60°C[3]	-10°C to +60°C[3]	-20°C to +60°C[3]	-20°C to +60°C[3]
Storage Temp	-40°C to +85°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +85°C	-40°C to +105°C
Output	UDP packets over Ethernet	UDP packets over Ethernet	UDP packets over Ethernet	UDP packets over Ethernet	UDP packets over Ethernet	UDP packets over Ethernet	UDP packets over Ethernet
Ethernet Connection	100 Mbps	100 Mbps	100 Mbps	100 Mbps	100 Mbps	100 Mbps	1000 Mbps
GPS Timesync	$GPRMC	$GPRMC + $GPGGA	$GPRMC + $GPGGA	$GPRMC + $GPGGA	$GPRMC + $GPGGA	$GPRMC + $GPGGA	$GPRMC + $GPGGA
Laser	903nm Class 1 eye safe	903nm Class 1 eye safe	903nm Class 1 eye safe	903nm Class 1 eye safe	903nm Class 1 eye safe	903nm Class 1 eye safe	903nm Class 1 eye safe
Water Resistance	IP67	IP67	IP67	IP67	IP67	IP67	IP67

63-9645 Rev G

1.Typical accuracy refers to ambient wall test performance across most channels and may vary based on factors including but not limited to range, temperature and target reflectivity. 2. Operating power may be affected by factors including but not limited to range, reflectivity and environmental conditions. 3. Operating temperature may be affected by factors including but not limited to air flow and sun load. 4. Greater than or equal to 80% of channels at ambient wall test; remaining channels better than or equal to 5 cm. 5. Configuration dependent. 6. These are projected specifications for final production parts. The specifications for any sample, prototype, or other non-final or pre-production products may be different from the specifications in this document. For more information, please contact Velodyne Sales.

	Close Range	Directional Sensors		Software
Sensor	VelaDome™	Velarray™	Velabit™	Vella™
				
Range				
Range Accuracy				
# of Lines				
Horizontal FoV				
Vertical FoV				
Horizontal Resolution				
Vertical Resolution				
Points Per Second (Single Return Mode)				
Points Per Second (Dual Return mode)				
Refresh Rate				
Operating Voltage				
Power Consumption				
Weight (without cabling)				
Operating Temp				
Storage Temp				
Output				
Ethernet Connection				
GPS Timesync				
Laser				
Water Resistance				

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