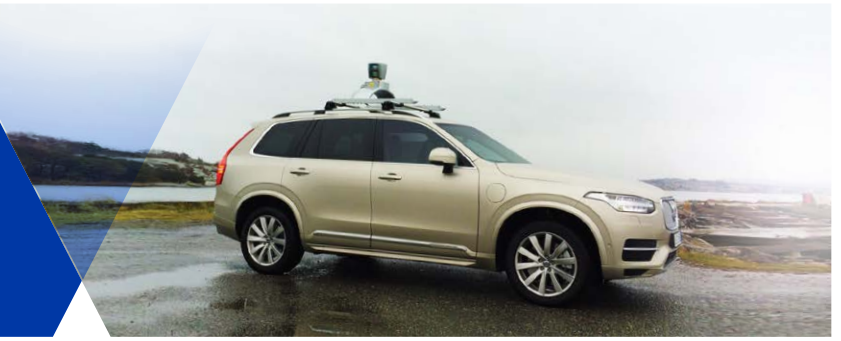


Velodyne LiDAR™

HDL-64E S3

HIGH DEFINITION REAL-TIME 3D LiDAR



HDL-64E



Real-Time 3D LiDAR

The HDL-64E S3 is Velodyne's high resolution and performance LiDAR sensor product that supports single or dual returns. Similar to its predecessor, the S2, it captures high definition, real-time 3D information about the surrounding environment. It is ideal for applications such as autonomous vehicle navigation, 3D mapping and surveying plus industrial automation.

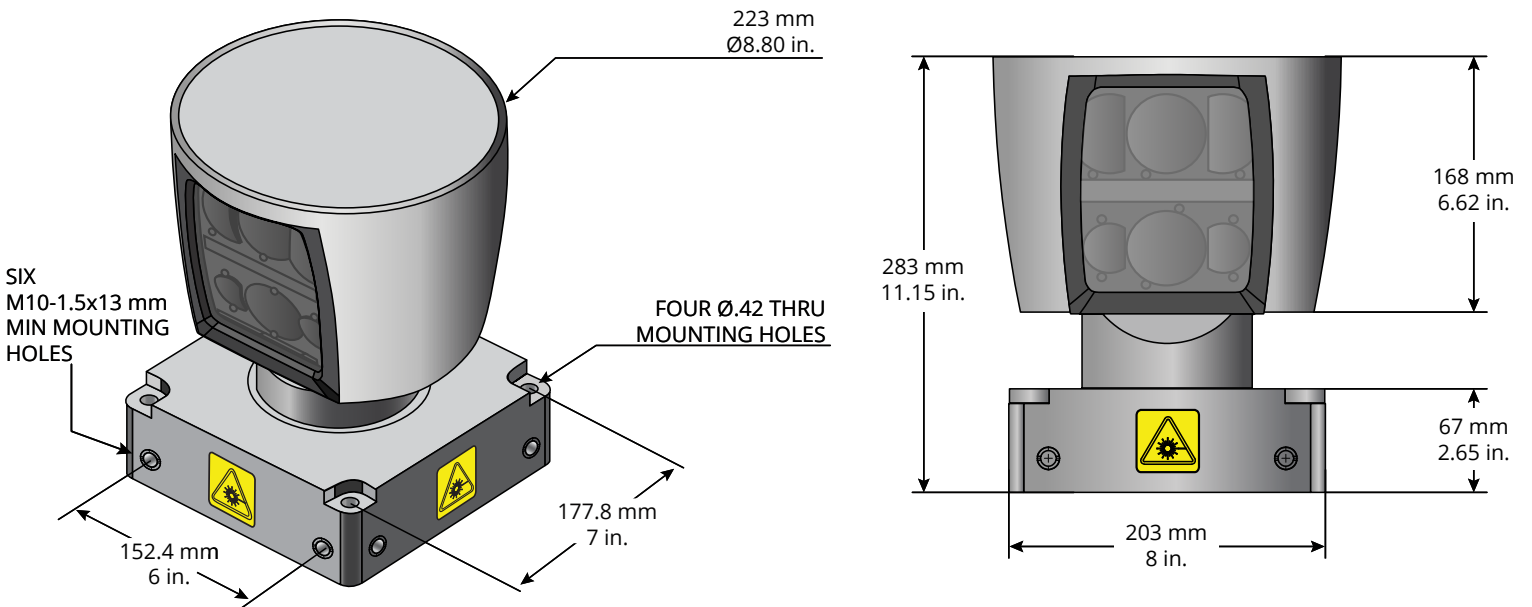
Wide Field of View and High Frame Rate

The HDL-64E S3 provides both unprecedented and unmatched resolution and field of views to generate a wealth of data about the surrounding environment. It utilizes 64 LiDAR channels aligned from +2.0° to -24.9° for a vertical field of view of 26.9° and similar to the S2 model it delivers a real-time 360° horizontal field of view with its patented rotating head design. The rotation rate is user-selectable from 5 Hz to 20 Hz to enable the user to determine the density of data points generated by the LiDAR sensor. The HDL-64E S3 generates a point cloud of up to 2,200,000 points per second with a range of up to 120 m and a typical accuracy of ±2 cm. The HDL-64E S3 is designed to operate over a wide temperature range (-10°C to +60°C) and challenging environments to support diverse operating conditions and applications.



HDL-64E S3

DIMENSIONS



High Definition LiDAR Sensor

The HDL-64E S3 provides high definition 3 dimensional information about the surrounding environment.



Specifications:

Sensor:

- Time of Flight Distance Measurement with Intensity
- 64 channels
- Measurement Range: Up to 120 m
- Accuracy: ± 2.0 cm (Typical)
- Single or Dual Returns
- Field of View (Vertical): $+2.0^\circ$ to -24.9° (26.9°)
- Angular Resolution (Vertical): 0.4°
- Field of View (Horizontal): 360°
- Angular Resolution (Horizontal/Azimuth): $0.08^\circ - 0.35^\circ$
- Rotation Rate: 5 Hz – 20 Hz

Laser:

- Laser Product Classification: Class 1 Eye-safe
- Wavelength: 903 nm
- Beam Size:
 - Upper Block: 20.0 mm \times 10.0 mm
 - Lower Block: 15.0 mm \times 10.0 mm
- Dynamic Laser Power Selection for Larger Dynamic Range

Mechanical/ Electrical/ Operational

- Power Consumption: 60 W (Typical)
- Operating Voltage: 12 V – 32 V
- Weight: 28 lbs. (12.7 Kg) (without cabling)
- Dimensions: 215 mm Diameter \times 283 mm Height (Base: 203 mm \times 203 mm)
- Operating Temperature: -10°C to $+60^\circ\text{C}$
- Storage Temperature: -40°C to $+85^\circ\text{C}$

Output:

- 3D LiDAR Data Points Generated:
 - Single Return Mode: $\sim 1,300,000$ points per second
 - Dual Return Mode: $\sim 2,200,000$ points per second
- 100 Mbps Ethernet Connection
- UDP Packets Contain:
 - Time of Flight Distance Measurement
 - Intensity Measurement
 - Rotation Angles
 - Synchronized Time Stamps (μs resolution)
- GPS: \$GPRMC NMEA Sentence from GPS Receiver (GPS not included)

63-9194 Rev-F

Product Ordering Information:

Product Name	SKU Ordering Number	Connector Type
HDL-64E S3 Dual Return Mode	80-HDL64E S3D	RJ45 + RS232
HDL-64E S3 Single Return Mode	80-HDL64E S3S	RJ45 + RS232



CLASS 1 LASER PRODUCT

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