

# Velodyne LiDAR<sup>®</sup> Puck<sup>™</sup>

VERSATILE REAL-TIME LIDAR SENSOR



## Puck



Velodyne LiDAR's Puck is a small and compact lidar that is performance and power optimized for usage across a variety of applications ranging from automotive, mapping, robotics, security, smart cities and more. The Puck is attractively priced and built on the foundations of Velodyne's leadership in lidar, enabling real-time, surround view, 3D distance and calibrated reflectivity measurements.

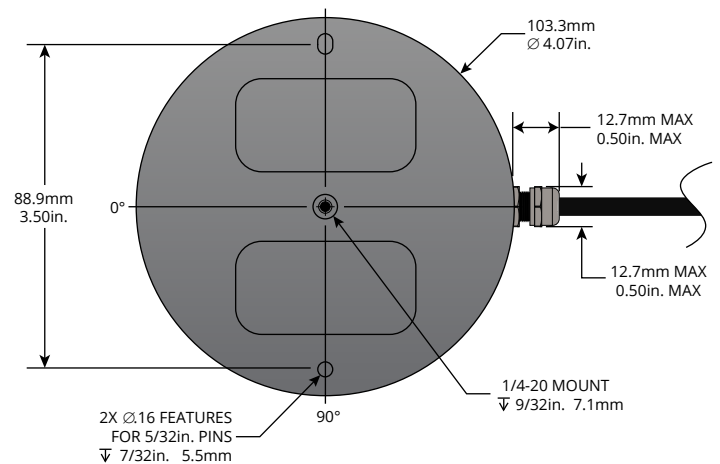
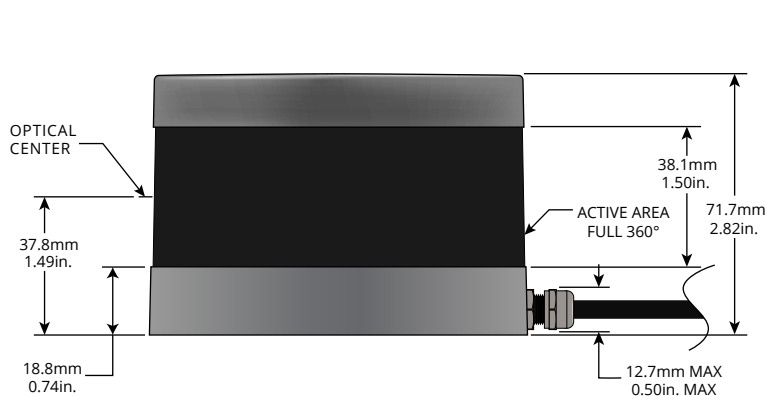
The Puck has a range of 100 m and generates up to ~600,000 points/second, across a 360° horizontal field of view and a 30° vertical field of view. It uses proven, Class 1 eye-safe 905 nm technology with substantial autonomous fleet validation, making the Puck a sensor of choice for lower speed autonomous vehicle (AV) applications. The Puck has best-in-class power, which enables operation over a wide temperature range. It's use of off-the-shelf components enables enhanced scalability and attractive volume pricing. Like other Velodyne sensors, the Puck has world-class technical support available across North America, Europe & Asia from the world's leading lidar company.



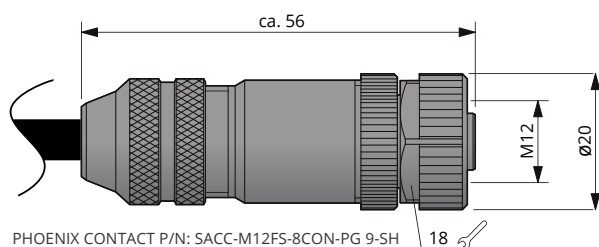
## Puck at a glance

- 100 m range with compact form factor
- Proven 905 nm tech, with largest install base
- Top-of-the-line field-of-view
- Best-in-class accuracy and calibrated intensity
- Best-in-class power & temperature range
- Sensor-to-sensor interference mitigation feature
- Optional, enhanced short range detection
- Versatile, with attractive volume pricing

## DIMENSIONS *(Subject to change)*



## M12 CONNECTOR OPTION





## Real-Time Lidar Sensor

The Puck provides high definition 3-dimensional information about the surrounding environment.

### Specifications:

#### Sensor:

- 16 Channels
- Measurement Range: 100 m
- Range Accuracy: Up to  $\pm 3$  cm (Typical)<sup>1</sup>
- Field of View (Vertical):  $+15.0^\circ$  to  $-15.0^\circ$  ( $30^\circ$ )
- Angular Resolution (Vertical):  $2.0^\circ$
- Field of View (Horizontal):  $360^\circ$
- Angular Resolution (Horizontal/Azimuth):  $0.1^\circ - 0.4^\circ$
- Rotation Rate: 5 Hz – 20 Hz
- Integrated Web Server for Easy Monitoring and Configuration

#### Laser:

- Laser Product Classification: Class 1 Eye-safe per IEC 60825-1:2007 & 2014
- Wavelength: 903 nm

#### Mechanical/ Electrical/ Operational

- Power Consumption: 8 W (Typical)<sup>2</sup>
- Operating Voltage: 9 V – 18 V (with Interface Box and Regulated Power Supply)
- Weight: ~830 g (without Cabling and Interface Box)
- Dimensions: See diagram on previous page
- Environmental Protection: IP67
- Operating Temperature:  $-10^\circ\text{C}$  to  $+60^\circ\text{C}$ <sup>3</sup>
- Storage Temperature:  $-40^\circ\text{C}$  to  $+105^\circ\text{C}$

#### Output:

- 3D Lidar Data Points Generated:
  - Single Return Mode: ~300,000 points per second
  - Dual Return Mode: ~600,000 points per second
- 100 Mbps Ethernet Connection
- UDP Packets Contain:
  - Time of Flight Distance Measurement
  - Calibrated Reflectivity Measurement
  - Rotation Angles
  - Synchronized Time Stamps ( $\mu\text{s}$  resolution)
- GPS: \$GPRMC and \$GPGGA NMEA Sentences from GPS Receiver (GPS not included)

63-9229 Rev-J VLP-16

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.



# HEXAGON



CLASS 1 LASER PRODUCT

+1.309.291.0966 | [AutonomousStuff.com](http://AutonomousStuff.com) | [info@AutonomousStuff.com](mailto:info@AutonomousStuff.com)