LeddarVu is a new solid-state LiDAR platform that combines the benefits of a compact architecture with superior performance, robustness and cost-efficiency.

LeddarVu - The new platform for next-gen Leddar sensors

LeddarVu brings a whole new dimension to sensing applications with an optimized modular design that offers a better range, a smaller form-factor and greater flexibility of integration than any other sensor module. Leveraging LeddarTech’s unique expertise in LiDAR detection and ranging, every optical sensor built on the LeddarVu platform inherits the unique added value of Leddar, which is better sensitivity, immunity to ambient light and robust performance in inclement weather, and powerful signal processing.

Conceived to follow the evolution of the next generations of LeddarCore ICs, the LeddarVu platform fosters the development of highly differentiated and affordable solutions powered by optimized Leddar configurations.

Vu8 – 8 segments LiDAR sensor module

Vu8, the first Leddar sensor module built on the LeddarVu platform, leverages powerful class-1 laser illumination and 8 independent active detection elements into a single sensor, resulting in rapid, continuous and accurate detection and ranging of objects — including lateral discrimination — in the entire wide beam, without any moving parts. Detecting targets up to 215 m and weighting only 107 grams, the Vu8 uses a fixed laser light source, which significantly increases the sensor's robustness and cost-efficiency compared to any scanning LiDAR solution.

Vu8’s source assembly combines the IR Laser emitter with a dominant wavelength of 905 nm and diffractive optics, providing a wide illumination beam which is available in three horizontal and two vertical field of view options. The receiver assembly includes 8 independent detection elements with simultaneous multi-object measurement capabilities and hosts the powerful Leddar signal processing algorithms. Vu8’s carrier board hosts the electrical and communication interface of the module. Two interface configurations are available: SPI or USB-CAN-Serial (UART/RS-485).

Software Development Kit (SDK)

The Leddar Enabler SDK provides a user-friendly application programming interface (API) with .Net and C libraries and code examples. Sample code for both Windows and Linux, as well as MATLAB integration examples, are also provided.
**Characteristics**

**Number of segments**: 8

**Beams**: 20°, 48°, 100°

**Vertical FoV options**: 0.3°, 3°

**Wavelength**: 905 nm

**Power supply**: 12 VDC

**Interface options**: SPI, USB, CAN, Serial (UART/RS-485)

**Ocular safety**: Fulfills the requirements of IEC 60825-1:2014 (Third Edition); Class I laser product (certification pending)

**System performance**

**Accuracy**: 5 cm

**Data refresh rate**: up to 100 Hz

**Operating temperature range**: -40°C to +85°C

**Distance precision**: 6 mm

**Distance resolution**: 10 mm

**Power consumption**: 2 W

1 Depends on configuration

### Dimensions

<table>
<thead>
<tr>
<th>Configurations</th>
<th>Vu8 - 020</th>
<th>Vu8 - 048</th>
<th>Vu8 - 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal FoV</td>
<td>20°</td>
<td>48°</td>
<td>100°</td>
</tr>
<tr>
<td>Vertical FoV</td>
<td>0.3°</td>
<td>3°</td>
<td>0.3°</td>
</tr>
<tr>
<td>Dimensions</td>
<td>70 mm x 35.2 mm x 67.5 mm</td>
<td>70 mm x 35.2 mm x 45.8 mm</td>
<td>73 mm x 40 mm x 65 mm</td>
</tr>
<tr>
<td>Weight (for SPI carrier model)</td>
<td>110.3 g</td>
<td>107.6 g</td>
<td>128.5 g</td>
</tr>
</tbody>
</table>

**Range**

| Retro-Reflector1 | 215 m | 121 m | 118 m | 85 m | 61 m | 34 m |
| White Target2    | 60 m  | 34 m  | 31 m  | 19 m | 12 m | 9 m  |
| Grey Target3     | 38 m  | 22 m  | 18 m  | 13 m | 7 m  | 6 m  |

1 Retro-reflector reference target corresponds to a 5 cm x 7 cm band of retro-reflective tape
2 White reference target corresponds to a 20 cm x 25 cm Kodak Greycard with 90% reflectivity
3 Grey reference target corresponds to a 20 cm x 25 cm Kodak Greycard with 18% reflectivity

**Ordering Information**

**VU8 - XXX - YYY - ZZ**

Select: Vertical FOV:
- 030 = 3°
- 003 = 0.3°

Select Carrier Board:
- 01 = SPI
- 02 = USB, CAN, Serial

Select horizontal FOV:
- 020 = 20°
- 048 = 48°
- 100 = 100°

**Optional Accessory:**
- SPI to USB cable (ACC-CBL-USB-SPI)
- LeddarVu 12V power supply (ACC-CBL-12DC)

**Modular architecture**

Sensors built on the LeddarVu platform offer a high degree of modularity. This capability to develop various optical and mechanical design combinations provides unique integration flexibility and makes it possible to customize the sensor’s specifications to the requirements of specific end-markets.