

# OSP Laser Sensing Assembly for Remote Vibration and Audio Signal Detection



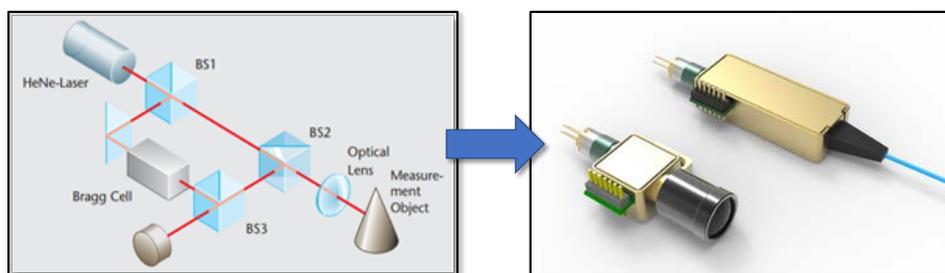
## Features

- Complete assembly with digital interface
- Non-contact, remote detection
- Small form-factor
- High-resolution, high sensitivity
- Wide frequency range, including audio and ultrasonic band

## Core Technology:

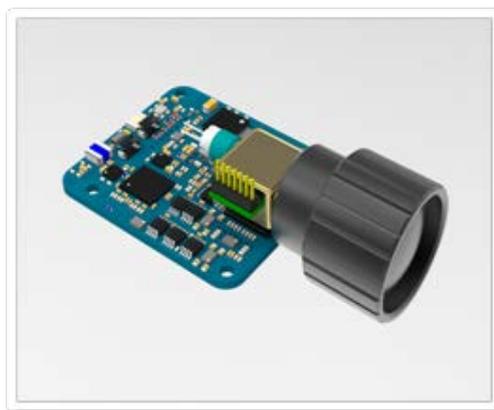
### **Photonics Integration/All-in-one Packaging**

OmniSensing Photonics (OSP) has developed a miniaturized laser sensing platform, based on the photonics integrated circuits (PIC) technology, enabling high-precision measurements for various metrology applications through extremely low cost and lightweight structures. As image below presented, this all-in-one laser sensing platform consists of the laser diode, detector array and a proper optical interface, with or without a lens system. Through the proprietary DSP algorithm, this complete laser sensing platform can perform high-precision detection on multiple functional parameters, such as the phase variation, vibration, displacement as well as speed/acceleration.



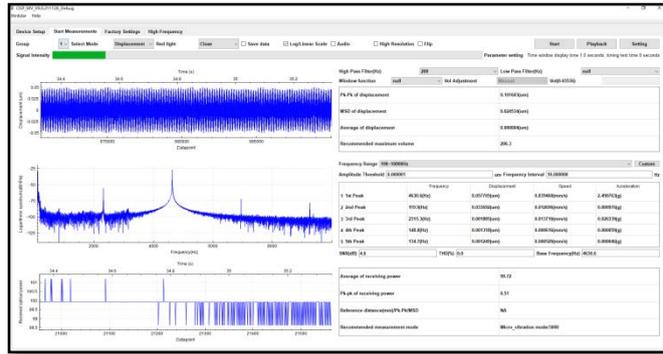
## Laser Sensing Assembly (LSA):

Based on its core technology, OSP has developed an OSP-LSA-H series laser sensing assembly (LSA) for remote vibration and audio signal detection applications. The LSA is a combination of the all-in-one optical assembly and necessary hardware/firmware. Currently the LSA has implemented the Fast Ethernet as its digital interface for communication and control purpose. Generally targeting the OEM market, the LSA can be integrated into various system across a much wide end markets, such as inline quality control system for Industrial/Manufacturing, field testing tool for Aerospace & Automotive, remote vital signal detection for Medical and surveillance system for Home Security, etc.

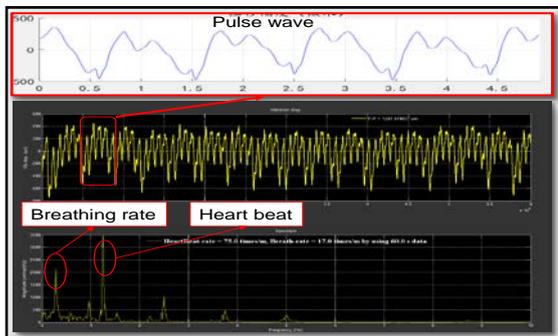
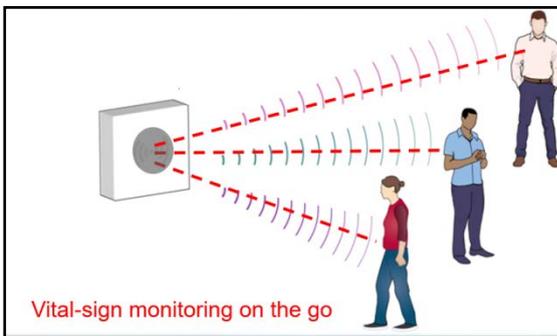


## Typical Applications:

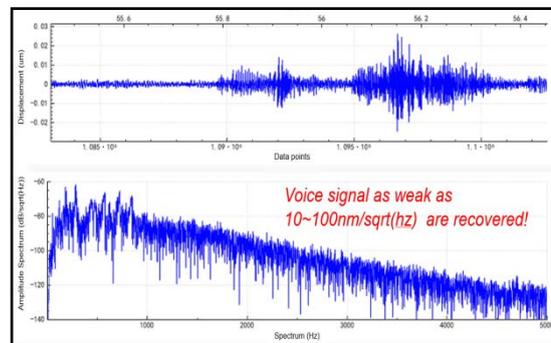
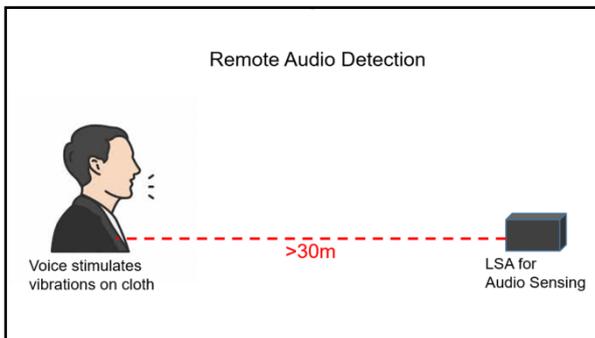
### 1) Generic vibration sensor module (Vibrometer):



### 2) Vital-signs remote detection



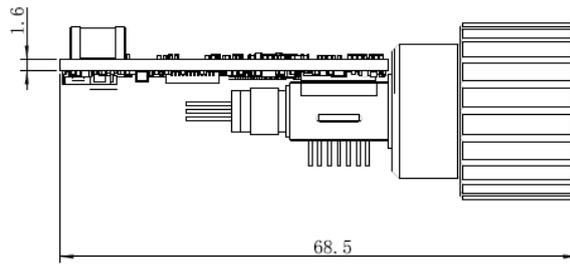
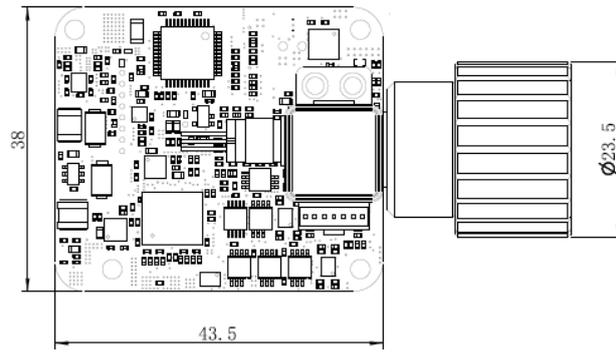
### 3) Remote weak audio signal detection



## Generic Specifications:

| Specs                              | OSP-LSA-H                          |
|------------------------------------|------------------------------------|
| Max. frequency (@5MHz sample rate) | 2.5MHz                             |
| Laser output                       | <10mW                              |
| Laser wavelength                   | 1310nm                             |
| Working distance                   | 20~50m (Depends on lens selection) |
| Max velocity full scale            | ~5 m/s                             |
| Size                               | 50x30x30mm^3                       |
| Weight                             | 50g                                |
| Operating temperature              | 0-50°C                             |
| Power supply                       | 12-24V, typical 6W                 |
| Data interface                     | Ethernet                           |
| Software                           | DLL (for system integration)       |

**Mechanical:**



# OmniSensing, Sensing Coherently

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