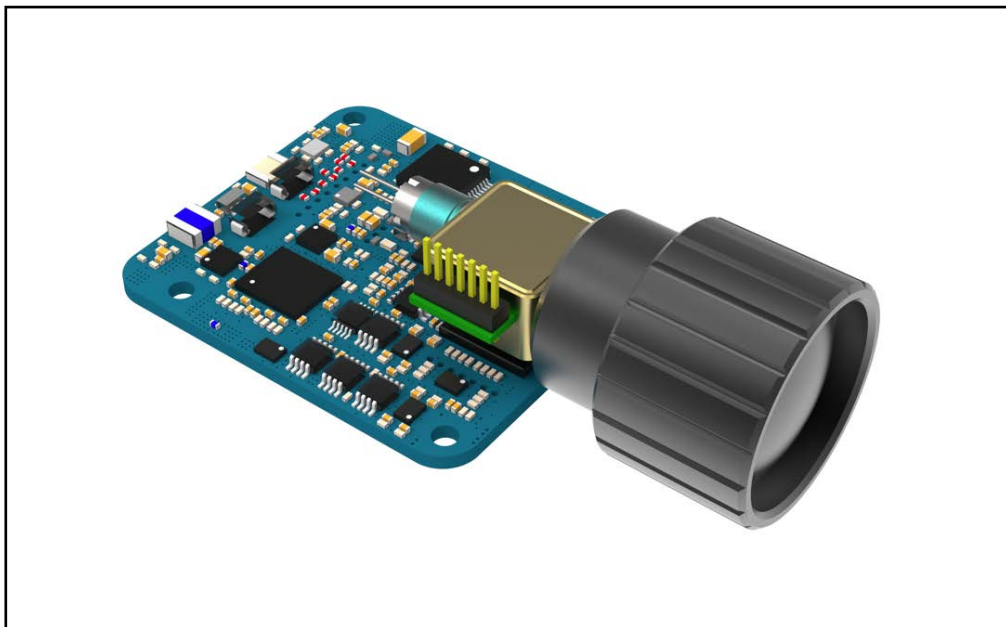


OSP Laser Sensing Assembly for Remote Vibration/Audio Signal Detection



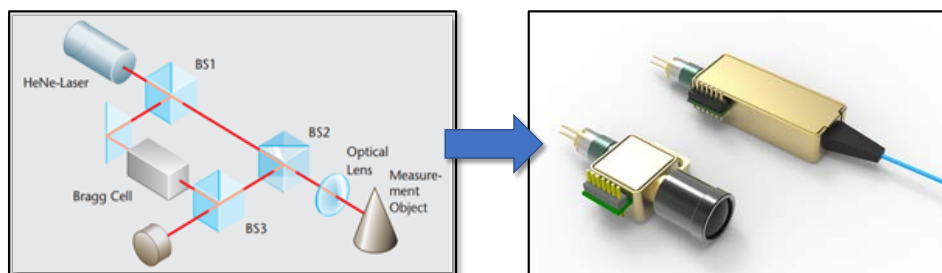
Features

- 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):

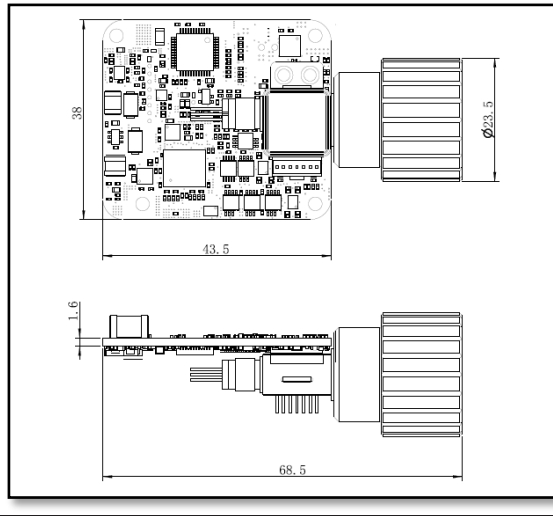
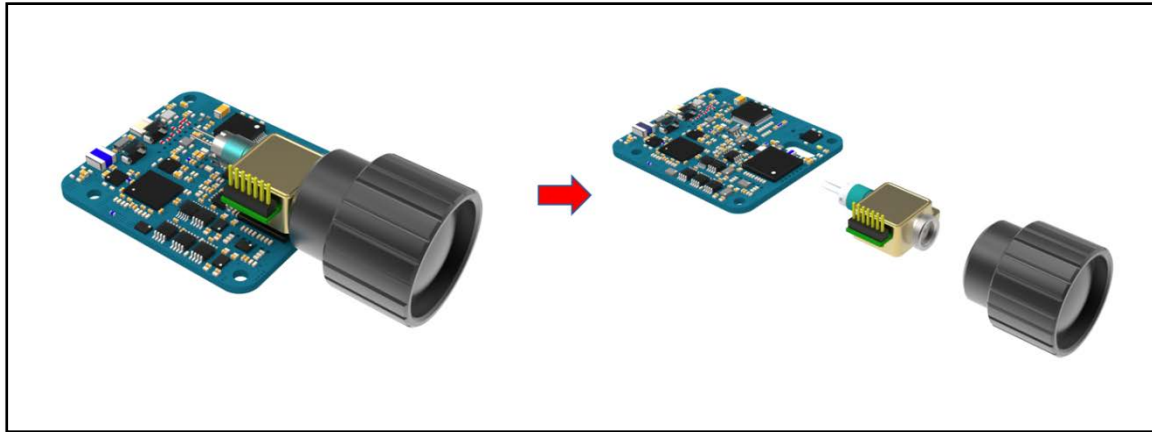
Based on its core technology, OSP has developed several types of laser sensing assembly (LSA) for its MV-H series laser vibrometer product lines. To meet its customers' demand for volume applications, OSP is also offering these LSAs as an separate product line. The LSA is a combination of the all-in-one optical assembly and enabling hardware/firmware. Secondly, these LSA(s) has either directly or indirectly optical interface for optional lens system. The included hardware/firmware not just provides the necessary electronic interface (i.e., the fast Ethernet and power supply) but also the signal processing for precise signal report.

In general, the LSA(s) is targeting volume applications, where the LSA(s) can be integrated into various subsystem/system across a much wider 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.

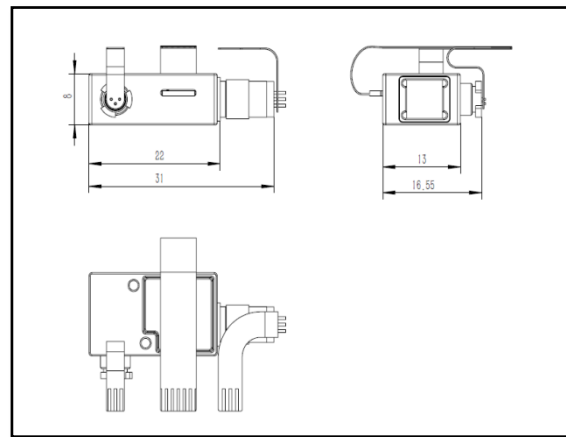
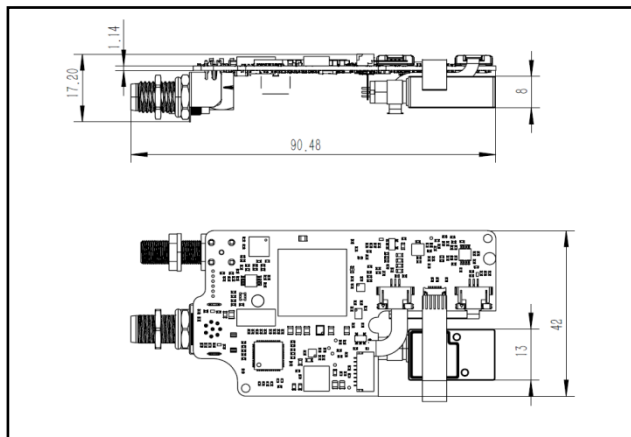
Available LSA Types:

Currently, OSP is offering two types of LSA:

- 1) LSA for model MV-H-T type laser vibrometer: as shown in the drawing below, this LSA includes three parts: the circuit board, the optical assembly and the optical lens. The circuit board could be customized into different form-factors that fit different applications. OSP is also offering a standard optical lens design. And the customers can design their own lens system or do customization through OSP. The mechanical drawing for a complete standard MV-H-T LSA is also shown below, in the unit of mm.



- 2) LSA for model MV-H-TR type laser vibrometer: MV-T-TR is the latest laser vibrometer that has a built-in visible guide light, suitable for long-distance vibration measurement. This type LSA includes only the two parts: the circuit board, the optical assembly. The optical lens system is not directly attached to the LSA, but part of the laser vibrometer module implementation. OSP can offer the design support on the optical lens system. Similarly, the circuit board could be customized too. The mechanical drawing MV-H-T LSA is also shown below, in the unit of mm.



Generic Specifications:

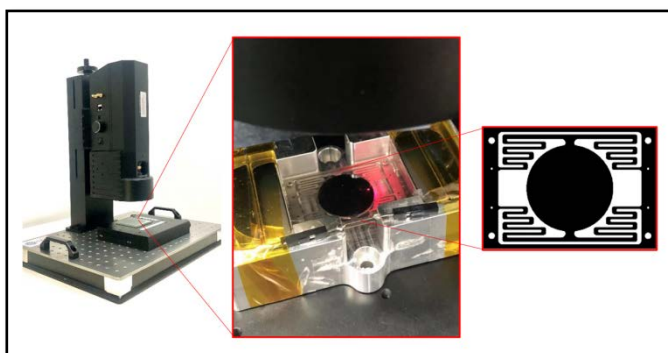
Specs	OSP-LSA-H
Max. frequency (@5MHz sample rate)	2.5MHz
Laser output	<10mW
Laser wavelength	1310nm
Working distance	20~50m (Depends on lens selection)
Max velocity full scale	~5 m/s
Size	50x30x30mm ³
Weight	50g
Operating temperature	0-50°C
Power supply	12-24V, typical 6W
Data interface	Ethernet
Software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

Typical Applications:

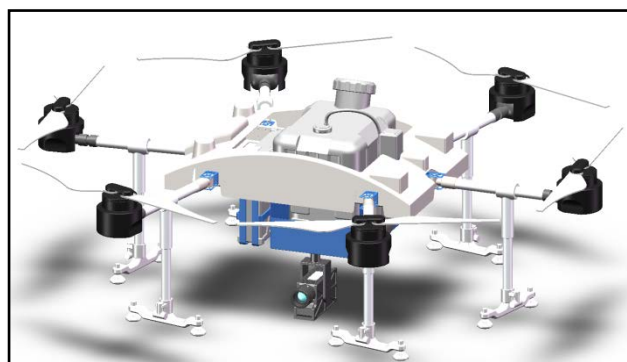
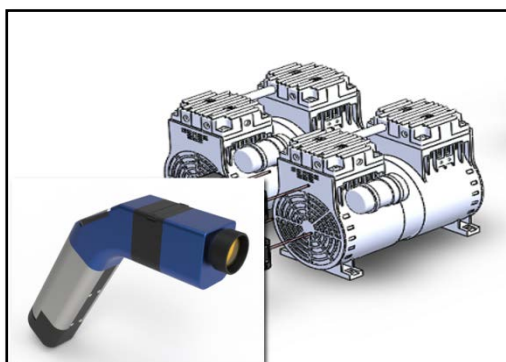
- 1) Generic vibration sensor module (Vibrometer): MV-H-T LSA or MV-H-TR LSA



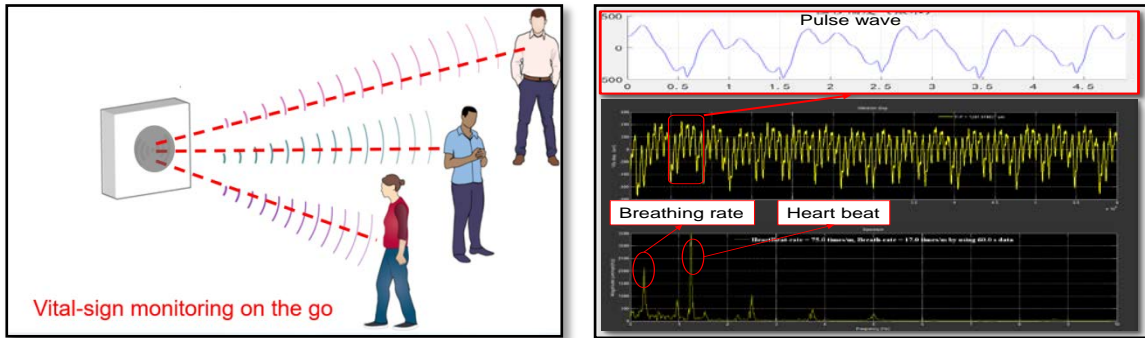
- 2) Vibration testing station w/ microscope for MEMS type device characterization: MV-H-T LSA



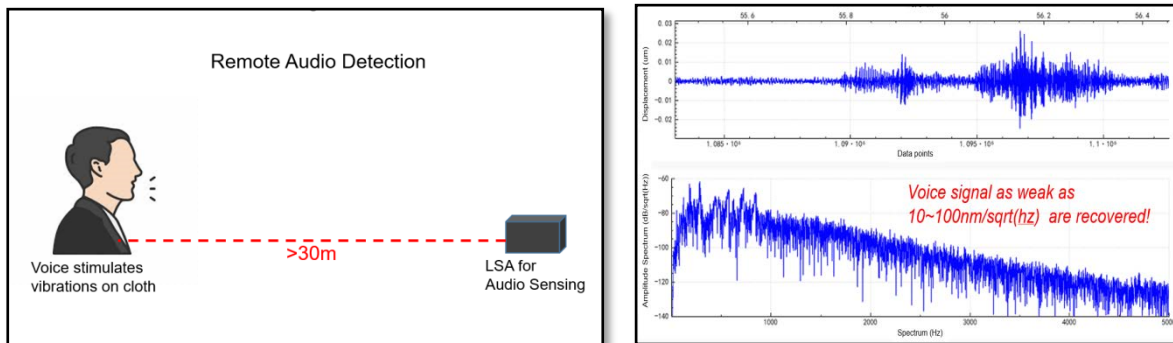
- 3) Handheld vibration detection or drone-based vibration detection: MV-H-TR LSA or MV-H-T LSA



4) Vital-signs remote detection: MV-H-TR LSA



5) Remote weak audio signal detection: MV-H-TR LSA



Evaluation Kit:

An evaluation kit includes an incomplete module outfit, necessary power supply/cable and testing GUI, which can support the circuit board power up, connection to PC, optical lens installation and basic testing.



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