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# Itasca Solid-State Laser Module for LDV and PDPA Systems

Models Itasca-1D, Itasca-2D and Itasca-3D



**The Itasca solid-state laser module is a uniquely-designed laser source for TSI's Laser Doppler Velocimetry (LDV) and Phase Doppler Particle Analyzer (PDPA) systems.**

This solid state laser module based on the fiber laser technology provides integrated frequency shifted and unshifted beams, making it ready to generate the measurement volume in LDV or PDPA arrangements with the TSI's fiber optic probes. The powerful and stable laser module with excellent beam quality of TEM00 mode requires no active cooling on the laser, and operates on standard wall plug power supplies.

## Features and Benefits

- Excellent beam quality of TEM00 mode and M2 of 1.2 for uniform fringe spacing and contrast in the measuring volume
- High laser power of 1W for enhanced data rate
- Easy integration and simple alignment making the module ready for your measurement instantly
- Modules with 532, 546 and 520 nm wavelengths for 1D, 2D and 3D arrangements respectively

## Applications

- Aerodynamic and hydrodynamic flows
- Underwater applications
- Engine diagnostics
- Spray diagnostics
- Turbulence research

## Specifications

# Itasca Laser Module for LDV and PDPA Systems

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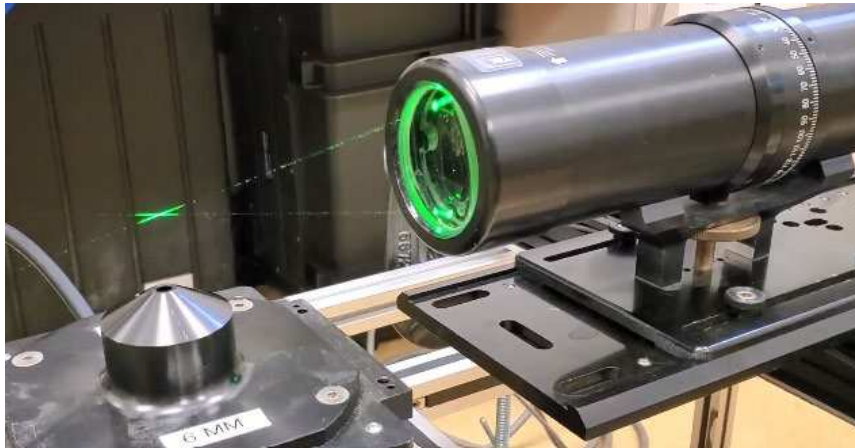
The Itasca solid state laser module is ideal for your research using LDV or PDPA system because it provides two laser beams as the output, one shifted at 40 MHz and the other unshifted, ready to be coupled to the fiber optic probe to generate the measurement volume for the system.

Fiber optics probes have been used very successfully in LDV and PDPA system arrangements for many years. A lot of benefits of the fiber optics probes are offered. Different types and size of probes (transceiver and transmitters) can be used to accommodate the measurement requirements. The various size of the probes offers flexibility for harsh or hard to reach area. In addition long fiber cable length of up to 30 m can be used to allow measurements in large facilities or remote environments.

The high laser power of 1W for each wavelength is very beneficial for your challenging measurements in boundary laser flow or with long standoff distance which typical signal-to-noise is low. The high laser can boost the signal to get accurate measurement even in this type of circumstance.

The Itasca laser module makes the entire LDV and PDPA optics a breeze for system setup, allowing you to spend time for your research, not adjusting the optics continuously.

Three wavelengths of the laser module are offered for your multi-component measurement. The modules are dedicated to make your system configuration easily setup.



Model	Description
Itasca-1D	1D Itasca module with 532 nm 1W laser
Itasca-2D	2D Itasca modules with 532 and 546 nm 1W lasers
Itasca-3D	3D Itasca modules with 532, 546 and 520 nm 1W lasers

Key Specifications of the Lasers			
Laser Wavelength (nm)	532	546	520
Output Power (mW)	1000	1000	1000
Transverse Mode	TEM00	TEM00	TEM00
Polarization	Linear	Linear	Linear
Orientation of Polarization	Vertical	Vertical	Vertical
Beam Quality (M2)	1.2	1.2	1.2

Specifications are subject to change without notice.

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