

A High-Speed Laser for Particle Image Velocimetry



Pegasus-PIV is a dual-head, high repetition rate, diode-pumped Nd:YLF laser system designed for high-speed or time-resolved Particle Image Velocimetry (PIV) analyses. Each of its two laser heads can operate from 1 – 10,000 pulses per second allowing camera frame rates up to 20,000 frames per second. With both laser heads operating, green energy per pulse is 10mJ at 2kHz. Because Pegasus-PIV features a dual-head design, each head can be triggered independently. Each laser pulse is uniform assuring the same pulse width, uniformity and intensity.

Important Advantages of Pegasus-PIV Include:

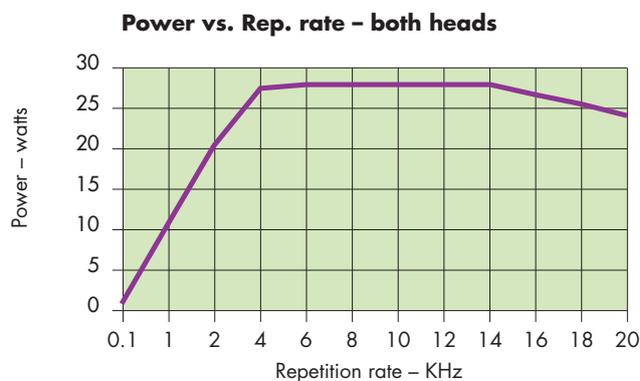
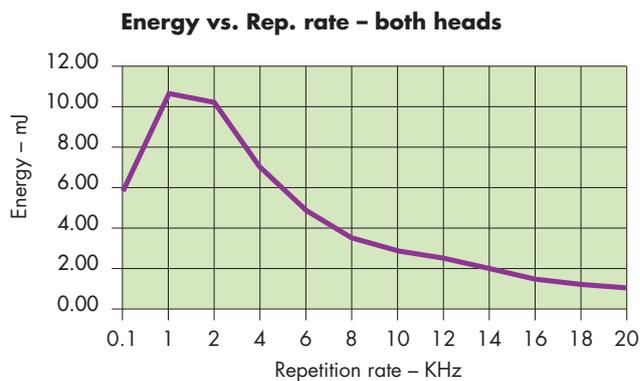
- Dual laser heads are independently triggered and produce uniform laser pulses
- Per-head energy at 527nm is 10mJ at 2kHz—both heads operating
- System operates from 2 – 20k pulses per second
- Compact laser head makes setup convenient and easy
- Laser can be triggered internally, by an external source through BNCs, or by a remote computer via an RS232 interface

Applications

Pegasus-PIV is a dual-head, high repetition rate Nd:YLF laser designed for high-speed flow analyses using Particle Image Velocimetry (PIV). It is ideally suited for high-speed flow experiments and investigations such as:

- Turbulent flow studies
- Vortex analysis
- Spray analysis
- Combustion studies

Performance Specifications



Performance

Wavelength	527nm
Repetition rate – both heads	2–20,000Hz
– single head	1–10,000Hz
Energy	– both heads @ 2000Hz ≥10mJ
& Power ¹	– both heads @ 6000Hz ≥25watts
Energy stability ² (rms %) @ 2kHz, 20W	<1%
Pulse width ³ at 1kHz	<135ns
Beam diameter	1.5mm
Divergence ⁴	≤ 3mrad
Polarization	Vertical
Spatial mode	Multimode, M ² <6
Warm-up time – 95% full power	≤10min

¹ After 10 minute warm-up

² RMS after 10 minute warm up

³ Full-width, half-maximum

⁴ Full angle for 86% of the energy, at 1/e² point

Standard Equipment

Dual-cavity laser head	527nm
Power supply	auto-ranging input voltage 95 – 250VAC, 50/60Hz
Chiller options	115VAC, 60Hz 230VAC, 50Hz 200VAC, 50/60Hz



VISIBLE AND INVISIBLE LASER RADIATION. AVOID EYE AND SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION
Wavelength 1053nm/4watts/2mJ/120ns
Wavelength 527nm/45watts/20mJ/120ns
Wavelength 263nm/10watts/5mJ/120ns
CLASS 4 LASER PRODUCT

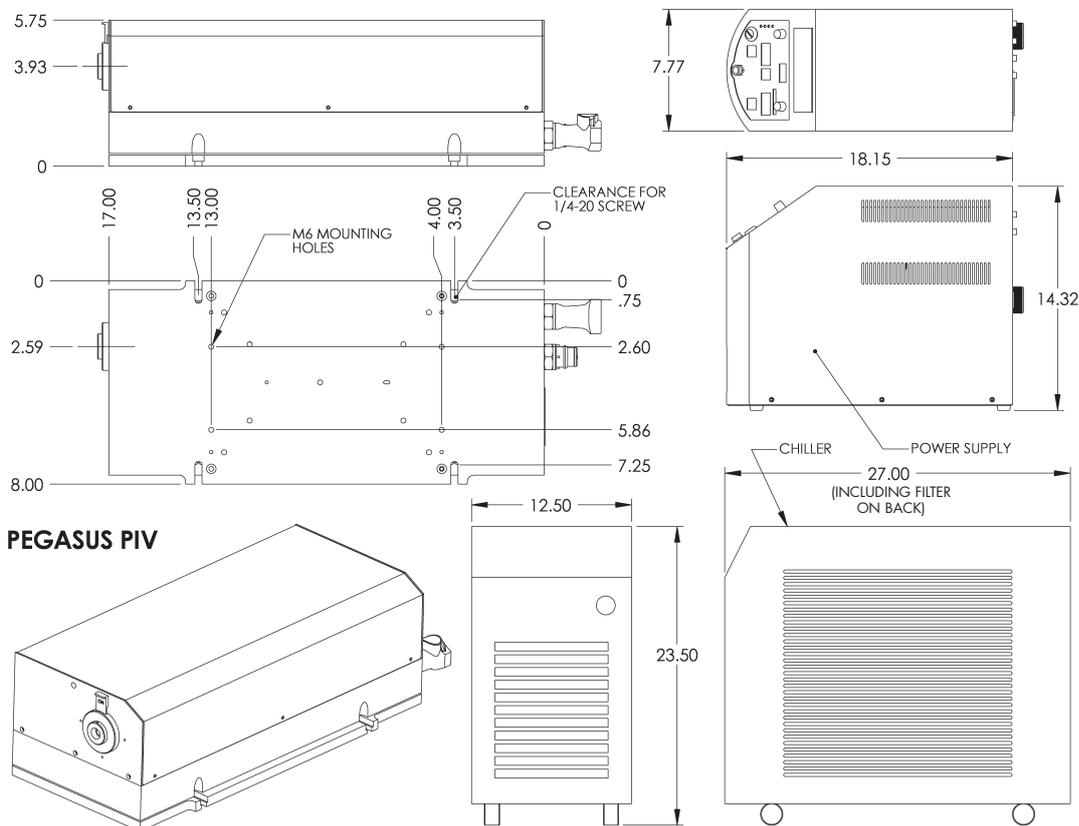
Physical Specifications

Size

	Laser Head	Power Supply	Chiller
Length	17in/432mm	18.15in/461mm	27in/686mm
Width	8in/203mm	7.77in/197mm	12.5in/318mm
Height	5.75in/146mm	14.32in/363mm	23.5in/597mm
Weight	25lbs/11.4kg	35lbs/16kg	130lbs/59kg
Length (umbilical)	10ft/3.0m		

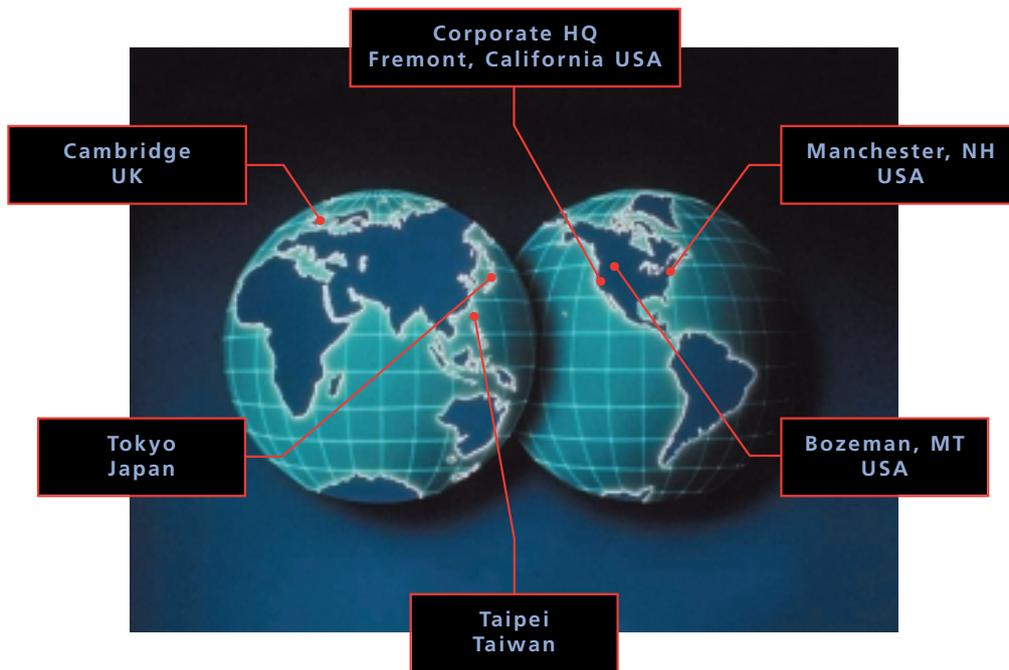
Operating Requirements

Temperature		10° – 30°C
Relative humidity		20 – 80% non-condensing
Voltage	– power supply – chiller	95 – 250VAC, 50/60Hz 115VAC, 60Hz or 200VAC, 50/60Hz or 230VAC, 50Hz
Power	– power supply – chiller	1300watts 15.5A @ 115VAC or 7.8A @ 200/230VAC



Dimensions in inches

Worldwide Locations



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