

Specifications for Pulsed Laser System for Particle Image Velocimetry

NASA Langley Research Center requires one dual-head, pulsed Nd:YAG laser system for flow physics research. This laser system will be part of a Particle Image Velocimetry (PIV) system used by the Flow Physics and Control Branch in wind tunnel and laboratory experiments to investigate and analyze complex flow phenomena.

The laser shall have the following characteristics:

- Shall output 532 nm beam only.
- Shall have a pulse repetition rate per laser head of 0-15 Hz.
- Shall have a minimum output energy 340 milljoules at 532 nm wavelength.
- Shall have a pulse width no greater than 15 nsec.
- Shall have a beam diameter no greater than 10 mm.
- Shall include internal laser beam combining and alignment optics for PIV applications.
- Shall include laser safety shutter or switch device.
- Shall be compact and lightweight for possible installation in wind tunnel models.
- Each laser head shall accept external flash lamp and Q-switch trigger inputs to synchronize with a TTL level pulse.
- Vendor shall respond to requests for emergency service and repair within 24 hours.

**The vendor shall provide technical literature in order for the Government to evaluate the quotes submitted based on technical merit.

**The vendor shall provide references within the United States Government that have purchased the laser system being offered by the vendor.