



INDIAN INSTITUTE OF TECHNOLOGY KANPUR
DEPARTMENT OF MECHANICAL ENGINEERING
KANPUR-208016, INDIA

Dr. Avinash Kumar Agarwal,
Poonam and Prabhu Goyal Chair Professor

Tel: + 91 512 2597982 (O), + 91 512 2598682 (R)

Fax: + 91 512 259 7408

Email: akag@iitk.ac.in

<http://home.iitk.ac.in/~akag>

Enquiry no.: ME/ERL/2015-16/September/01

Enquiry date: September 4th 2015

Last Date: September 20th, 2015

Enquiry for Scientific Lasers for Combustion in Internal
Combustion Engines

Sealed quotations are invited for the purchase of Nd: YAG pulsed laser (flash pump) for engine applications. The detailed specifications are following:

- ◆ Laser Crystal: Nd:YAG
- ◆ Pumping Mechanism: Flash lamp
- ◆ Wavelength: 1064 nm and 532 nm
- ◆ Frequency: ≥ 30 Hz
- ◆ Beam diameter: 6-8 mm
- ◆ Pulse Duration: 4-8 ns
- ◆ Pulse to pulse stability: $\pm 2-3\%$
- ◆ Beam Divergence: < 0.5 mrad
- ◆ M^2 Value: < 2
- ◆ Energy
> 320 mJ@ 1064 nm
> 160 mJ@ 532 nm
- ◆ Pointing Stability: < 70 μ radian
- ◆ Timing Jitter: < 0.5 ns
- ◆ Linewidth @ 1064nm: < 0.7 cm^{-1}
- ◆ Polarisation Ratio: > 90 %
- ◆ Accuracy range: $\leq \pm 3\%$ of FS
- ◆ Operating Temperature: 0°C to 40°C .
- ◆ Repeatability: $\pm 0.25\%$.
- ◆ Application Position: Horizontal
- ◆ Power Supply: 220V, 50Hz AC
- ◆ Cooling medium: Air
- ◆ Resolution: 0.1% of F.S
- ◆ Warm Up Time: < 2 min
- ◆ Weight of Laser head: ≤ 10 Kg

- ◆ Weight of Laser Controller: ≤ 25 Kg
- ◆ Laser must be triggerable externally
- ◆ Spares: At least one set of extra flash lamp and other necessary spares
- ◆ Apertures 2.3 mm, 2.5 mm, 2.7 mm, and 2.9 mm

NOTE: The Supplier should also provide the details of connecting cables and other accessories and spares needed to operate the laser on engine.

Terms and conditions:

- (i) Provide “Authorization certificate” from the manufacturer, in case the quotation is submitted by an Indian Agent.
- (ii) Prices should be FOB/ CIF upto Delhi.
- (iii) Validity of quotation should be at least for 90 days. Supply (Dispatch from factory) should be done within 4 weeks from the day of confirmation of order.
- (iv) Warranty: One Year from the date of Installation and Commissioning. Anything missing in the tender document to prove the system is also the responsibility of the supplier. The supplier must clearly specify the cost of service support visits (not AMC) after the expiry of warranty for a period of 10 years.
- (v) All necessary components (cables, sensors, switches etc.) required for proper functioning of system must be included in the offer.

Kindly send your best Technical and Commercial offer so as to reach us on or before September 20th, 2015 to the following address:

The undersigned reserves the right to accept the offer in part or full or reject completely without assigning any reasons.

Prof. Avinash Kumar Agarwal
Department of Mechanical Engineering
Indian Institute of Technology Kanpur
Kanpur – 208016, India

In case of any queries/clarification related to this tender, you may contact Mr. Rajesh Kumar Prasad (+91 8853992752)