

Tender Notification for the procurement of a fast tuning nanosecond pulsed laser for multispectral optoacoustic imaging

(Last Date of submission of tenders: **27th January 2020**)

REF Against Purchase Requisition Number: 5000000179

Kindly send your best quotation for the following item on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, E.D., payment terms etc. The tender should be submitted in **two separate sealed envelopes** - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 1700 hours, 27th January 2020.

The bids should be addressed to:

The Chairman,
Department of Instrumentation and Applied Physics,
Indian Institute of Science,
Bangalore 560 012, INDIA.

The bids should be sent to:

Dr. Jayaprakash,
Assistant Professor,
Department of Instrumentation and Applied Physics,
Indian Institute of Science,
Bangalore 560 012, INDIA.
Email: jayap@iisc.ac.in

Please enclose a **compliance certificate** along with the technical bid.

Yours Sincerely,

The Chairman
Department of Instrumentation and Applied Physics.

Specifications of the product - fast tuning nanosecond pulsed laser for multispectral optoacoustic imaging with the following components and minimum specifications:

1. Pulsed laser operating at wavelengths corresponding to approximately 600 nm – 1064 nm and approximately 1064 nm – 2600 nm. The system should be useful for performing optoacoustic imaging at these wavelength ranges. Provide supporting data for the same.
2. Pulse energy must be atleast 110 mJ @750 nm wavelength (at the output of the laser), correspondingly the pulse energy can change as a function of wavelengths. Provide energy profile as a function of wavelength ranges (approximately 600 nm – 1064 nm and approximately 1064 nm – 2600 nm).
3. Pump laser to generate these laser pulses, the pump laser should be operating at 532 nm and with an energy of atleast 450 mJ.
4. The pulse repetition rate of the nanosecond pulsed laser should be atleast 30 Hz (higher repetition rates at the same energy level i.e. atleast 110 mJ@750 nm is preferred). The time between two laser shots at the same wavelength should be less than 0.0333 seconds.
5. The pulse width of the laser should be less than 10 nanosecond. Lesser laser pulsewidth value is preferred.
6. The wavelength tuning time, i.e. changing from one wavelength (say 680 nm) to another wavelength (say 700 nm), should be less than 60 milliseconds. Lesser wavelength tuning time is preferred.
7. The wavelength tuning step i.e. change from one wavelength (say 680 nm) to another wavelength (say 682 nm), should be less than 2 nanometres. Lesser wavelength tuning step is preferred.

8. The line width output of the optical parametric oscillation should be less than 10 cm^{-1} . Smaller line width is preferred.
9. The beam diameter of the light output should be less than 8 mm. Provide supporting data. The smaller beam diameter value is preferred.
10. The divergence should be less than 5 mrad.
11. The lifetime of flashlamp i.e. number of shots possible should be greater than 2,00,00,000 shots. More number of shots is preferred.
12. Laser cooling (water chiller) should be provided with external water, such that the cooling is achieved to 20 degree centigrade.
13. Appropriate system software suite (preferably in LabVIEW/MATLAB) to control all aspects of the laser operation and measurements including setting laser power, tuning the range of laser wavelength, and setting the step for change in laser wavelength, with flexibility to add modules by the user for customized measurements.
14. A wavemeter should be integrated within the laser system for knowing the wavelength of the emitted laser light, further these values should be indicated on the system software suite, or any other means of knowing this value.
15. A laser powermeter should be integrated within the laser system for knowing the power of the generated laser light. This value should be indicated on the system software suite, or any other means of knowing this value.
16. Provide soft and hard copy of the manual and supporting documents
17. Warranty: Three years comprehensive warranty for the whole system with all the components should be available from the date of installation. Please specify the service plan like whether the local distributor will address the issue or parent company. Please mention which parts are field replaceable.
18. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.
19. Payment Terms: The quotation should be in the currency of the country of origin. The payment will be through confirmed irrevocable Letter of Credit. Alternate modes of payment can be suggested with suitable justification.

Optional Items:

1. Optional fibre bundle can be provided with the laser (here the fibre bundle should be single input and 6 output). This can be written as optional item in the quotation.
2. Providing readout of the number of hours of operation of laser is preferred.
3. Indicate the service and system calibration requirements (monthly/annual/biannual etc). This servicing/calibration should be included in warranty/service agreement.

Terms and conditions:

1. Proven track record in terms of prior installations and technical support in India is preferred. (If available, please furnish the contact details of the customers).
2. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).
3. The clauses of on-site installation and training need to be specified, and ideally provided free of cost.
4. Basic tool kit for installation of the laser system should be provided free cost.

Yours Sincerely,

Dr. Jayaprakash,
Assistant Professor,
Department of Instrumentation and Applied Physics,
Indian Institute of Science,
Bangalore- 560 012, INDIA.