



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
MATERIALS MANAGEMENT DIVISION  
Powai, Mumbai 400076.

**Corrigendum-I**

**Reference for PR No.1000016195 (REx No.6100000676)**

**Technical Specifications for Solid state Femtosecond laser with DPSS  
pump laser**

**Note 1:** All components are necessary unless 'OPTIONAL' clearly specified against them.

**Note 2:** In the technical bid, point by point list should be furnished to demonstrate requirements have been met

The system should have the following specifications and features:

1. Laser Type : Diode-pumped solid-state laser
2. Lasing medium : Ytterbium (Yb)
3. Tuneable parameters : Repetition rate, pulse energy, power, pulse duration
4. Maximum Repetition rate :  $\geq 1$  MHz (Tuneable)
5. Pulse picker : For pulse-on-demand (in-built)
6. Central wavelength (nm) :  $1030 \pm 10$
7. Maximum Pulse Energy ( $\mu\text{J}$ ) :  $\geq 200$
8. Minimum Pulse duration (fs) :  $\leq 350$  (Full-width at half-maximum value)
9. Pulse duration : up to 10 ps (Tuneable)
10. Average Power (W) :  $\geq 10$  (Tuneable)
11. Beam quality( $M^2$ ) :  $< 1.2$
12. Beam diameter (mm) :  $\leq 5$
13. Divergence (mrad) :  $\leq 1.1$  times diffraction limited (for  $M^2 < 1.2$  beam)
14. Pulse energy stability :  $\leq 0.5\%$  RMS over 24 hours
15. Power stability :  $\leq 0.5\%$  RMS over 100 hours
16. Pointing stability :  $< 25 \mu\text{rad}/^\circ\text{C}$
17. Polarization : Linear, horizontal
18. Spatial Mode :  $\text{TEM}_{00}$
19. Beam cross-section : Circular, with  $< 10\%$  variation in circularity
20. Power Input : 220-250 V AC, 50 Hz, with Indian standard plugs
21. Power Supply : Integrated (including AC-DC converter)
22. Operating ambient : 18 to  $30^\circ\text{C}$
23. Storage ambient : 5 to  $40^\circ\text{C}$
24. Coolant : Water



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25. External trigger control : Required
26. Ambient humidity :  $\geq 50\%$  RH (non-condensing)
27. Warranty: Minimum 1 year with full system warranty.
28. The laser should be closed loop with water to air heat exchanger and without external water cooling.
29. A software to vary laser parameters should be included.
30. There should be a provision to add second harmonic generator in the future.

**Other important requirements:**

31. Please provide input on delivery period.
32. It is mandatory that it should be previously installed at least at one location in premier institutes and/or research labs of Government of India (such as IITs/ IISERs/NITs/ DRDO labs/ DAE labs/ CSRO labs / ISRO labs), which are using it for research purposes. As a proof, a support letter has to be furnished. Please provide contact addresses of previous installations of the system quoted for.
33. Door to door delivery paid for all components.
34. Installation and training should be provided free of cost.
35. During the installation, beam shape and output power of the laser has to be verified with appropriate instruments. These instruments have to be brought by the installation personnel during installation.