Open Tender Notification for the procurement of "Compact Multi-Wavelength LASER Combiner" at the Indian Institute of Science, Bangalore

(Last date of submission of tenders: 30-January-2021)

(TENDER FROM DOMESTIC VENDORS)

Date: 15.01.2021

Dear Sir/Madam:

Please send your quotation valid for 90 days for the supply of equipment described below. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc. The tender should be submitted in two separate sealed envelopes – one containing the "Technical bid" and other containing the "Commercial bid", both of which should be duly signed and must reach the undersigned on or before 17:00 hours 30-January-2021.

The Dean
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Karnataka, India

Compact Multi-Wavelength LASER Combiner

Laser combiners with laser diodes and its accessories.

Feature of Control Box:

1. One box system with all electronic integrated. The combiner should come with control software, remote controller and power supply.
2. Laser Diode and DPSS Sources: All in one module with an output coupled to a multi-wavelength single fiber

3. Remote access: Need to provide Remote box with safety key, LED Status, Blanking switch, 1.5m long cable.
4. Interfaces: Should have USB (Software provided), Input modulation ports for analog signal/TTL (One for each laser source), blanking port, I/O DB 25 connector with ports for electromechanical shutters and other options. The lasers should able to be controlled via external microscope operating software and compatible with commercial microscope imaging software.
5. Interlock shutter on main output port. Could be connected to microscope safety port.
6. Startup time: <=10 minutes
7. Supply Voltage: 100-240 VAC (external power supply)
8. The life time of each laser should be at least 20,000 hours

Laser1:

Central Wavelength: 405 nm

Maximum Spectral line width: < 1.5 mm

Minimum Power: 50 mW

Type: Continuous laser

Modes of Control: Automatic Power Control (APC), Automatic Current Control (ACC)

Modulation method: Direct

Power adjustment range: 0-100%

Technology: Laser diode

Beam Transverse Mode: TEM 00

External Analog Modulation: 0-5V

Amplitude Modulation Bandwidth (min), -3db cut off frequency: DC- 1 MHz

External Digital Modulation (ACC Mode): TTL, DC- 150 MHz

Maximum Rise/Fall Time (10%-90%): <2ns

Extinction depth: Infinite

Maximum power consumption: <= 10W

Laser 2:

Technology: Laser diode

Central Wavelength: 488 nm

Maximum Spectral line width: < 1.5 mm.

Clean up filter: 70dB attenuation above 500nm.

Minimum Power: 100 mW

Type: Continuous laser

Modes of Control: Automatic Power Control (APC), Automatic Current Control (ACC)

Modulation method: Direct

Power adjustment range: 0-100%

Beam Transverse Mode: TEM 00

External Analog Modulation: 0-5V

Amplitude Modulation Bandwidth (min), @ -3db cut off frequency: DC- 1 MHz

External Digital Modulation (ACC Mode): TTL, DC- 150 MHz

Maximum Rise/Fall Time (10%-90%) : <2ns

Extinction depth: Infinite

Maximum power consumption: <= 10W

Laser 3:

Technology: DPSS Low Noise

Central Wavelength: 532 nm

Maximum Spectral line width: < 0.1 mm

Minimum Power: 100 mW

Type: Continuous laser

Modes of Control: Automatic Power Control (APC), Automatic Current Control (ACC)

Modulation method: AOM (should be included)

Power adjustment range: 0.01-100%

Beam Transverse Mode: TEM 00

External Analog Modulation: 0-5V – linearized.

Amplitude Modulation Bandwidth (min), @ -3db cut off frequency: DC- 3 MHz

External Digital Modulation (ACC Mode): TTL, DC- 3 MHz

Maximum Rise/Fall Time (10%-90%) : <300ns

Extinction depth: > 45db, and infinite with included Electromechanical shutter

Maximum power consumption: <= 12W

Laser 4:

Technology: DPSS Low Noise

Central Wavelength: 561 nm

Maximum Spectral line width: < 0.1 mm

Minimum Power: 250 mW

Type: Continuous laser

Modes of Control: Automatic Power Control (APC), Automatic Current Control (ACC)

Modulation method: AOM (should be included)

Power adjustment range: 0.01-100%

Beam Transverse Mode: TEM 00

External Analog Modulation: 0-5V - linearized.

Amplitude Modulation Bandwidth (min), @ -3db cut off frequency: DC- 3 MHz

External Digital Modulation (ACC Mode): TTL, DC- 3 MHz

Maximum Rise/Fall Time (10%-90%) : <300ns

Extinction depth: > 45db, and infinite with included Electromechanical shutter

Maximum power consumption: <= 20W

Laser 5:

Technology: DPSS Low Noise

Central Wavelength: 640 nm

Maximum Spectral line width: < 0.1 mm

Minimum Power: 500 mW

Type: Continuous laser

Modes of Control: Automatic Power Control (APC), Automatic Current Control (ACC)

Modulation method: direct

Power adjustment range: 1-100%

Beam Transverse Mode: TEM 00

External Analog Modulation: 0-5V

Amplitude Modulation Bandwidth (min), @ -3db cut off frequency: DC - 1.5 kHz

External Digital Modulation (ACC Mode): DC-10 Hz with electromechanical shutter

Maximum Rise/Fall Time (10%-90%): 40 µs analog and 1ms with electromechanical shutter

Extinction depth: infinite

Maximum power consumption: <= 20W

Signal Delivery on main port:

RGVB PM Fiber coupling will be included with FC/APC connector with an appropriate fiber that connects the laser output to microscope. It includes repositionable mount for alignment free switch between free space and fiber coupling

Delivered Optical power at the output @ 405 nm: 32 mW

Delivered Optical power at the output @ 488 nm: 60 mW

Delivered Optical power at the output @ 532 nm: 58 mW

Delivered Optical power at the output @ 561 nm: 156 mW

Delivered Optical power at the output @ 640 nm: 312 mW

PER: 20 db

Optical Noise: <0.2%

Optical power stability over 8 hours (Temp. within +/- 3°K : +/- 1% (pk to pk)

The quotation should also include the following items:

1. Active heat sink, providing stable operating temperature
2. Clean up filter @ 488 nm
3. Repositionable fiber coupling
4. Interlock shutter

Training and Warranty

1. On-site installation to connect to an epi/TIRF microscope via optical fiber. Laser box should be able to control using software that operates microscope. All the necessary training should be provided.

2. 5 years complete system warranty

Tender Evaluation Criteria:

1. All the lasers should be compact design with smallest available footprint for the highest output power.

2. All the lasers must have the highest power efficiency and also need to have the best output power stability.
3. Flexibility: The laser combiners should be most flexible. It needs to be possible to add/upgrade lasers in the field or add extension module for multiple outputs
4. The Combiner should be able to integrate lasers from 375 up to 1064nm and repositionable PM fiber couplings covering at least from 405 up 1064nm from one fiber.
5. Total power consumption of this laser combiner should be typically 50W, and maximum 80 W.

The above-mentioned technical specifications are highly desirable. However, lower technical specifications may be considered if the above-mentioned specifications are found to be unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into considerations its financial constraints and technical preferences.

Terms and Conditions:

1. The quotations should be submitted in two bids system; i.e., Technical bid, and Commercial bid.

a. The technical bid must include all details of technical specifications of the instrument along with commercial terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the evaluation of the technical bid. Please also include warranty terms and any other information on upgradation terms in the technical bid.

b. The commercial bid must include the price of the instrument in Indian/Foreign currency indicating break up of:

I. For goods:

i. Price (CIF, Bangalore). Applicable Custom Duty will be borne by the Institute.

ii. Installation, commissioning and training charges, including any incidental expenses, if any

iii. Agency commission charges, if any

iv. Provide certificates for country origin of manufacturing for each line item

II. Price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (fixed and ready to use) in our facility

c. Both the Technical and Commercial bid should be put in separate sealed envelopes, and put together in another cover stating "Compact Multi-Wavelength LASER Combiner" and should reach us on or before 17:00 hours 30-Jan-2021

2. The vendor should have a good track record of having previously supplied Compact Multi-Wavelength LASER Combiner in India or abroad (please furnish details)

3. The vendor should have qualified technical service personnel capable of servicing the equipment

4. The payment will be through a letter of credit

5. The lead time for the delivery of the equipment should not be more than three months from the date of receipt of purchase order or two months from the date of receipt of Letter of Credit details (whichever is earlier)

6. The validity period of the quotation should be 90 days

7. The items should be supplied from Indian manufacturers only. In case they are imported, the import code of the items and their country of origin should be indicated.

8. If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended

9. The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time period to award of construct without thereby incurring any liability of the affected bidder or bidders