



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

PR No. 1000024002

RFx No. 6100001096

Technical Specification of Multi-cultivator system for cultivation of photosynthetic organisms:

1. A consolidated unit comprising of 8-12 cultivation clear glass tubes with the working volume ranging between 50-100 mL.
2. Cool white LED illumination (Quantity: 2) up to 3000 $\mu\text{mol}/\text{m}^2/\text{s}$ maximum (minimum upto 1000 $\mu\text{mol}/\text{m}^2/\text{s}$ in-built, while extendable upto 3000 $\mu\text{mol}/\text{m}^2/\text{s}$ using exchangeable light source). Adjustable from 0 to 100% and independently controllable illumination for each tube.
3. Static or dynamic light regime (pulse and daylight mimic) with independent controls for different tubes.
4. Manual aeration which allows the sparging of required gases and ensures equal distribution across all the tubes.
5. Thermostatic water bath with controllable temperature range between 20-55 °C, at least.
6. In-built online optical density measurement system, especially at the wavelengths 680 nm and 720 nm independently for each tube. A compatible software through which online data can be visualized and exported to the editable format like MS excel.
7. Periodic measurement of OD, temperature and time at user defined time intervals.
8. Individual sampling ports for independent sampling of each tube, even while the instrument is operative/running.
9. Sampling valves for each tube (Quantity: 2 sets) for sterile culture sampling.
10. Sophisticated gas mixing and transfer system for blending required volumes of 2 or more gases, air and CO₂ are indispensable.
 - a) Flow rates: For air, ≥ 1.5 L/min; for CO₂, ≥ 35 mL/min
 - b) Both the gases should be independently controllable or based on relative compositions

Common requirements:

- Comprehensive warranty for 24 months and free AMC for another 12 months.
- We need a well-tested and validated standard equipment and not custom-made equipment.
- The equipment should come with a certificate of analysis and conformity.
- The vendor needs to provide the address of certified and authorized service center for the quoted equipment in Mumbai.
- Printed brochure for the standard unit with specifications.
- List of at least 10 global installations of the quoted instrument and description of the users with details.
- OEM Certificate is required.