

**Technical Compliance Statements for CO<sub>2</sub> Incubator**

<b>Sl.no</b>	<b>Specification</b>	<b>Requirement</b>
1	Type	CO <sub>2</sub> Incubator for cell culture
2	Capacity	5.65 cubic feet and Size should be around 170 L or more (max. size 185 L).
3	CO <sub>2</sub> range	0.2 to 20% with control accuracy and uniformity of $\pm 0.1\%$ and should have rapid recovery of at least 0.7% per minutes.
4	CO <sub>2</sub> Sensor	System should have dual wave Infrared (IR) CO <sub>2</sub> sensor to maintain CO <sub>2</sub> level accurate within 0.1%
5	Temperature Control	System should have temperature control. Range should be 5 <sup>0</sup> C above ambient to 55 <sup>0</sup> C with control accuracy of +/- 0.1 <sup>0</sup> C.
6	Filter	Should have HEPA filter on CO <sub>2</sub> inlet
7	Display	System should have 5x7 inches LCD screen display (preferably). Screen should display parameters like Chamber temperature, CO <sub>2</sub> %, System should Also have door open/Close display indicator, a heated decontamination cycle display. Maintenance required display.
8	Decontamination cycles	System should have user selectable Dual decontamination/sterilization cycles. 95 <sup>0</sup> C Humidified Decontamination 145 <sup>0</sup> C dry sterilization Cycles. User should be able to choose any of the Decontamination method depending upon the cell lines used.
10	Data logging (Desirable)	System should have data logging facility and should come with USB port for daily, weekly, monthly performance logs and event logs that indicates when alarms, door, opening, power interruptions occurred.
11	Heating principle	Water jacketed CO <sub>2</sub> Incubator
12	Number of shelves	Incubator should come with standard 4 rectangular polished stainless-steel shelves. Should have maximum capacity of 16 shelves. All shelves, shelf supports, & guide rails, should be easily removable for cleaning.
13	Other Features	Relative humidity level up to 90% should be achieved in the incubator by the use of a stainless-steel pan filled with single distilled water placed on the bottom of the chamber.
14	Certifications	System should be CE certified.
16	Warranty	Warranty: 3 Years including parts and labour, Warranty starts from the day of installation.

17	Delivery Location	Jamia Hamdard; New Delhi
18	Installation, commissioning, and demonstration	Jamia Hamdard; New Delhi
19	Training	The supplier of the equipment should provide hands on as well as operational training at the time of installation
20	Supplier/Vendor should provide, Catalogue in Original and indicating all Technical specifications, model and picture of the equipment	YES

**TECHNICAL SPECIFICATIONS FOR INVERTED MICROSCOPE (Quantity: 01)**

- Microscope Body: Inverted microscope with Infinity corrected optical system with light distribution between eyepiece and camera port of 100:0 and vice versa.
- Observation technique Bright field, Phase contrast. The microscope should be upgradeable to fluorescence technology.
- Eyepiece: 10X with FOV 22mm or better and diopter adjustment facilities on both eyes, anti-fungus type, and with soft rubber eyecups, suitable for spectacle wearers should be supplied.
- Condenser: Condenser of suitable length (minimum NA 0.3) for phase contrast, Bright field, modulation contrast.
- Nosepiece: revolving nosepiece to accommodate min 4 or higher objectives at a time.
- Stage: Attachable mechanical stage with a universal holder to accept all types of specimen holders. Holders for glass slides, Petri-plates and hemocytometer should be supplied.
- Illumination: High-intensity uniform brightness distribution scientific Grade LED (5W power consumption or better) with a service life of 50,000 hours or better, constant color temp.
- Objectives: Long working distance objectives with specialized phase contrast, Bright field and Fluorescence. (these values may vary)
  - Achromat 4X, NA 0.10, W.D.30.0mm
  - Achromat Phase 10x, NA 0.25
  - Achromat Phase 20X, NA 0.30
  - Plan flour Phase 40X, NA 0.60
- The system should be capable of upgrading with 100X oil magnification, as the research required.
- Camera: Digital CMOS Camera system: Scientific microscopic digital CMOS color Camera system: High-resolution scientific CMOS camera of resolution 6.0 MP or better, 20-30 frame per second live display, Live cell imaging, USB 3.0 PC interface, Exposure time: 1msec to 10 sec or better, Exposure control: One-push auto exposure. A suitable C mount should be provided. The camera preferably be capable of capturing BF/PH/Fluorescence images.
- Software: Licensed imaging software for 3-D imaging, image analysis, live cell imaging, AVI, multichannel & multipoint image capturing, counting, image profile, and spatial measurements such as length, width, area, perimeter, etc.
- The quoted system should comply with international quality standards.
- The catalog should have all the features.
- Any prerequisites for installation to be mentioned in the quotation along with the specifications. Installation and demo to be done on-site free of cost.
- All the technical details should be supported by documentary evidence in the form of technical brochures and should also be available on the company website.
- Three years warranty will be desirable.

- The supplier should ensure prompt technical support and repair service during the warranty period to enable the uninterrupted smooth functioning of the apparatus. To avoid work loss, ensure the provision of stand-by equipment in case of unresolved repair issues.
- The vendor may enclose a user list of a minimum of 10 users of the same machine supplied to various reputed institutes/research labs/ICMR/ICAR/CSIR/IIT institutes throughout India in the last 5 years.