

Tender No. FAAMCH/MRU Tender/Project/285/2018/1173 of 21/02/2019

Amended specifications (indicative only) as per pre bid meeting held on 01/03/2019

Sl No.	Equipment	Amended specifications (indicative only)
1.	HPLC Machine	No change
2.	Deep Freeze (-80 ⁰ C)	<p>General: Tender is invited from reputed original manufacture or their authorized agents/dealers only. Information regarding installation in India and satisfactory service and maintenance may be forwarded with all the details for verification.</p> <p>Technical: Galvanized steel sheet body with epoxy paint and vacuumed polyurethane foam panels, outer double door with locking facility. Alarm for audible & visual fault acknowledgement, low & high temperature audio visual alarms, condenser fault alarm, remote contact alarm, open door alarm, clean filter Indicator and power failure alarm. It should have low noise or whisper-quiet operation allowing the freezer to be used directly inside the lab. Castor wheels & leveling adjustor should be provided for adjustment and installation.</p> <p>Capacity: Approximately 650– 800L with double door.</p> <p>Refrigerant: CFC &HCFC free.</p> <p>Cooling system: Industrial rated cascade cooling system</p> <p>Doors: Solid door. Triple silicon section seal, Fitted with decompression valve facility to lower air pressure inside the freezer for easy door opening.</p> <p>Inner Compartment: High grade stainless steel with minimum 3 compartments with insulated inner doors.</p> <p>Temperature: Range-55 to-85°C or better, Stability+/-1°C, uniformity+/-3°C</p> <p>Additional Accessories: SS Racks, cardboard boxes & appropriate voltage stabilizer.</p> <p>Power Supply: 210-240V/50-60 Hz</p> <p>Certification: CE or Equivalent certification</p> <p>Warranty: Minimum 2 years for basic machine and 4 years on both the compressor.</p>

Amended specifications (indicative only) as per pre bid meeting held on 01/03/2019

Sl No.	Equipment	Amended specifications (indicative only)
1	Fluorescent upright Microscope with software	<p>General: Tender is invited from reputed original manufacturer or their authorized agents/dealers only. Information regarding installation in India and satisfactory service and maintenance may be forwarded with all the details for verification.</p> <p>Technical: International brand with good market reputation or Indian make with international quality standard is a must.</p> <p>Design & Body:</p> <ul style="list-style-type: none"> • Must be compatible for brightfield, darkfield and fluorescence application with suitable features applicable for cutting edge biomedical research. • There should have life span of 50000 hrs or better with LED illumination for transmitted light. • Constant color temperature should be maintained at all magnification. • It should have inbuilt or integrated mechanism for compensation to eliminate any focus drift during long term observation to ensure consistent sharp image. • Built in focus drive with coarse and fine focusing, torque adjustment and adjustable focus stop. • Must have revolving objective nosepiece (6x or better) capable of accommodating upto 6 objectives or better, mounted on ball bearing with highly precise click stops and should have slots for upgradation to DIC. <p>Objectives: Objectives with Fluorescence grade suitable for above mentioned brightfield application and fluorescence- 4x/0.1, 10x/0.25, 40x/0.75 and 100x/1.3 (oil immersion)</p> <p>Condenser: Colour coded condenser with 6 positions for brightfield and DIC. It should preferably have provision for upgradation to darkfield application.</p> <p>Eye piece: 10x/22 mm FOV dioptre adjustable and harmonic corrected focusable eyepiece pair.</p> <p>Observation Cube: Trinocular tube with 0/100 beam splitter for acquiring maximum signals.</p> <p>Stage: Mechanical rectangular xy stage with coaxial xy drive preferably with both right and left hand operation.</p> <p>Fluorescence illumination: Fluorescence filters with minimum 5 positions or better. Emission should not overlap with other filters.</p>

		<p>LED based illumination controlled by microscope software with minimum lifespan of 25000 hrs or better. The unit should be controlled by same imaging software and should accompany with control panel for changing the wavelength & controlling intensity. Should have LEDs for UV, Blue, Green, Yellow and Red excitation. Should include pixel shift corrected band pass fluorescence filters for normal fluorescence as well as FISH application, DAPI/Hoechst, FITC, TRITC.</p> <p>Camera: High resolution dual mode (monochrome & color) peltier cooled scientific CCD 2/3" chip camera with 5 MP actual resolution and image acquisition of 18 fps or better in both modes. Should also include 0.63/0.7x C-mount adaptor.</p> <p>Software: Licensed imaging software for Fluorescence multichannel acquisition, image analysis, intensity measurement, counting, line profile, spatial measurement such as length, width, area, perimeter etc. Software should control all automated components including microscope and light source.</p> <p>Data processing Unit: Compatible branded PC with i5 processor, minimum 8 GB RAM, NVIDIA graphics card with 1 GB RAM, 500 GB SATA HDD or higher, original windows 10 OS, DVD RW, at least 24" monitor, keyboard, pen drive and optical mouse.</p> <p>Certification: CE Certified/Equivalent or Conformity.</p> <p>Additional Requirements:</p> <ul style="list-style-type: none"> • Microscope, camera and software should be from same manufacturer. Valid CE/FDA and ISO certification of the quoted model should also be accompanied with the technical bid. <p>Dust cover, all wires, cords, connector and standard accessories needed for proper functioning of the microscope should be accompanied with microscope.</p>
2	Inverted Microscope	<p>General:</p> <p>Tender is invited from reputed original manufacturer or their authorized agents/dealers only. Information regarding installation in India and satisfactory service and maintenance may be forwarded with all details for verification.</p> <p>Technical:</p> <p>International brand with good market reputation or Indian make with international quality standard is a must.</p> <p>Design & Body: System must include the cell imaging system/microscope, high sensitivity digital camera, computer, high power fluorescence lighting system. LCD display should be attached with the system as integrated unit or as separate PC with appropriate visualizing software (whole system should easily accommodate in biosafety or laminar hood. Both vertical and</p>

horizontal length & Space should be clearly mentioned for the whole system including display or computerized visualizing system.)

Illumination type and contrast method: LED light illumination with adjustable light intensity. Epifluorescence, transmitted light (bright field and phase contrast) and RGB color illumination (wherever applicable).

Objectives: System must be able to accommodate a minimum of 4 objectives at once or better. System must include color & focus corrected plan fluorescence grade phase objective: 10X (ph), 20X (ph), 40X (ph). (Specification of each objective should be supported by company catalogue or on the company website and the technical specifications should be quoted with the manufacturer part number).

Color & focus corrected plan fluorescence grade phase objective 60X/63X (ph) with a NA value of minimum 0.75 (**to be quoted optionally**)

Condenser: ELWD suitable for fluorescence/phase contrast/bright field. The condenser should include a novel LED based RGB illumination scheme to enable high quality, low noise color image acquisition on a monochrome camera (*only applicable if monochrome camera is given.*)

Visualization system: System should include 15 inch or higher color LCD display with or without appropriate eye piece (10X, F.O.V 20-22 mm).

Nose Piece: Extra large working distance, adjustable that accommodate atleast four objectives or better.

Camera: System must have an infinity corrected optical system and should include a high sensitivity monochrome camera with CCD/CMOS sensors **OR** both color & monochrome cameras separately in dual camera port module with CCD/CMOS sensors **OR** dual mode cooled color CCD camera (should have dedicated grayscale mode for fluorescence imaging) with at least 3MP or better. Camera should be provided with best suitable resolution according to the system which can generate high quality fluorescent, phase contrast and bright field images.

Mechanical stage with holders: X-Y scanning Mechanical stage preferably with Z-stacking having universal holder. Other holders like T-25 flask holder, Terasakli holder (accepts 60/65 mm petri dish); slide glass holder (accepts 54 mm petri dish); multi-well plate holder, Hemacytometer holder etc **should be quoted optionally.**

Fluorescence attachment & illumination:

- Fluorescence LED light illuminator/cube that can be easily removed and installed manually / fluorescent filters should be easily replaceable manually. System should come with filters: DAPI, GFP and RFP.
- System should have Fluorescence LED illuminators with a lifetime of 25000 hours or better.
- LED illuminator should have a lifetime of 50,000 hours or better (transmitted light).
- System should be able to accommodate atleast 3 fluorescent LED/3 fluorescent filter channels or better.
- System should have fluorescence LED /filter channels for DAPI, GFP and RFP.

Additional requirements:

- System should have image overlay software module and able to sequentially acquire a phase contrast image and fluorescence image and then overlay them automatically. Fluorescence and transmitted light (Bright field & phase contrast) both should be possible on the same platform.
- The system should preferably have automated focusing with Z-plane single step accuracy.
- The system should have software with automated and manual cell counting, Z-stacking capability, histogram etc.
- System must include time lapse imaging capability.
- System should support direct output to USB and networked storage.
- System must provide the following output file formats: jpg, bmp, tif and png or all formats.
- Power requirement: 210-240V /50-60Hz
- Conforming to international certificate like CE certified or equivalent.
- Dust cover, all wires, cords, connector and standard accessories needed for proper functioning of the microscope should be accompanied with microscope.