



# Department of Electrical Engineering, Indian Institute of Technology, Delhi

Hauz Khas, New-Delhi -110016, India

NIQ no. IITD/EE/PLN03-BEEN

Due Date: **8.03.2013, 5 PM**

## **Notice inviting quotations for a Upright Microscope**

Sealed quotations are invited for a Upright Microscope that can have Bright field, Dark field, Polarized light, Differential Interference Contrast (DIC) observation modes. The purchase will be made through a two part bidding process. Technical and Financial bids have to be made separately. Complete technical information should be provided along with the Technical bid. Please refer to the page on Terms and Conditions for details on how and when to submit the Technical and Financial bids.

### **Required Specifications for the Upright Microscope**

1. Microscope Type: Upright type with infinity corrected optical system. For both Transmitted and Reflected mode. Microscope Stand should be Y-shaped, providing wider work surface, should ensure smooth & efficient operation with less operator fatigue, even over extended use. Should incorporate a vertical position built-in transformer. Should permit convenient placement of samples as well as ancillary equipment near the stand. Electrical control including intensity control, light preset switch should be frame mounted.
2. Illumination: Built-in 12V 100W long life halogen bulbs using kohler illumination for incident light.
3. Observation Modes: Bright field, Dark field, Polarized light, Differential Interference Contrast (DIC) observation. And provision for upgradation to Fluorescence in future.
4. Magnification: 50X to 1000X Dry using a single set of 5X , 10X , 20X, 50X & 100X Dry Plan Semi Apochromatic BDP objectives. for all observation mode methods. Objectives 50x & 100x Should have a working distance of minimum 1mm & all objectives should be parfocal. Objectives should be based on UIS-2 Infinity Correction,

which compensates for spherical and chromatic aberration, so also for wave front aberrations control.

5. Observation Tube: Siedentop type wide field trinocular tube with tube inclination 30 degrees & interpupillary distance adjustment from 50 to 76 mm.

6. Focusing: 2 stage focusing mechanism with co-axial control knob. High sensitive focusing knob in 1  $\mu$  m increment, focusing stroke 25 mm. Should accommodate specimen size up to 65 mm height.

7. Optical System: Should incorporate universal infinity system for infinity correction so that no change of magnification occurs when the distance between tube lens & object is changed. Total magnification should remain constant even when prism / slider are inserted between object & tube lens, eliminating comma aberration. Wave front aberrations should be compensated for.

8. Eye Piece: Wide field eye piece 10x, with suitable provision for inserting eyepiece reticules.

9. C-Mount: Suitable C-Mount adaptor so that image seen through the eye piece & that on the monitor. The system should be provided with Dual Port body and 1X Dual port.

**Asst. Prof. A. Dhawan**  
(Principal Investigator)

## Terms and Conditions

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as "Technical Bid" and "Financial Bid" respectively. Both the sealed envelopes should be sent in a single sealed envelope, clearly marked as "Quotations for a Upright Microscope". The quote should reach the following address on or before **8.03.2013, 5 PM**:

Dr. A. Dhawan  
Block II, Room 216,  
IIT Delhi, Hauz Khas,  
New Delhi, 110016, India

2. Please quote prices at FOB New Delhi, inclusive of all taxes and duties.
3. Quote should be in Indian Rupees for Indian agents, or in foreign currency, for foreign agents, and needs to be valid for at least three months.
4. Attach all the technical literature and a list of similar installations done in India.
5. If the quote is being submitted by a representative of the manufacturer, a valid agency-ship or dealership certificate authorizing the agent to quote to IIT Delhi on behalf of the manufacturers should be enclosed.
6. Complete set of manuals for the operation of the equipment should be given.
7. Clearly specify the installation requirements – such as space, power, frequency, environment etc.
8. If the item quoted is proprietary in nature, please enclose proprietary certificate from the principals stating, "Certified that \_\_\_\_\_ is a proprietary of M/s \_\_\_\_\_ and no other manufacturer makes this item."
9. Please attach a signed and stamped compliance chart for the specifications. The format of the compliance chart is attached to this document.
10. Please specify all of your terms and conditions clearly, including delivery period.
11. Preferred modes of payment for foreign agents are through letter of credit, or as payment on delivery. For Indian agents, typically payment is on delivery.
12. The Institute reserves the right to accept or reject any or all quotations without assigning any reasons thereof.

**Asst. Prof. A. Dhawan**  
(Principal Investigator)

# Compliance Chart

	Parameter	Requirement	Model Spec	Complies
1	Microscope Type	Upright type with infinity corrected optical system. For both Transmitted and Reflected mode. Microscope Stand should be Y-shaped, providing wider work surface, should ensure smooth & efficient operation.		
2	Illumination	Built-in 12V 100W long life halogen bulbs using kohler illumination for incident light.		
3	Observation Modes	Bright field, Dark field, Polarized light, Differential Interference Contrast (DIC) observation. Provision for upgradation to Fluorescence in future.		
4	Magnification	50X to 1000X Dry using a single set of 5X , 10X , 20X, 50X & 100X Dry Plan Semi Apochromatic BDP objectives for all observation mode methods. Objectives should be based on UIS-2 Infinity Correction, which compensates for spherical and chromatic aberration, so also for wave front aberrations control.		
5	Minimum working distance of 50x & 100x Objectives	50x & 100x Objectives should have a working distance of minimum 1mm & all objectives should be parfocal.		
6	Observation Tube	Siedentopf type wide field trinocular tube with tube inclination 30 degrees & interpupillary distance adjustment from 50 to 76 mm.		
7	Focusing	2 stage focusing mechanism with co-axial control knob. High sensitive focusing knob in 1 $\mu$ m increment, focusing stroke 25 mm. Should accommodate specimen size up to 65 mm height.		
8	Optical System	Should incorporate universal infinity system for infinity correction so that no change of magnification occurs when the distance between tube lens & object is changed. Total magnification should remain constant even when prism / slider are inserted between object & tube lens, eliminating comma aberration. Wave front aberrations should be compensated for.		
9	Eye Piece	Wide field eye piece 10x, with suitable provision for inserting eyepiece reticules.		
10	C-Mount	Suitable C-Mount adaptor so that image seen through the eye piece & that on the monitor. The system should be provided with Dual Port body and 1X Dual port.		