

Department of Physics

Indian Institute of Engineering Science & Technology, Shibpur

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Notice Inviting Quotation

Sealed quotations are invited for supply of the following items/equipments or to carry out works listed below as per mentioned specifications. The relevant bidding document can be downloaded from the website. The document can be also obtained from the Department of Physics (**Contact: Dr. S.M. Hossain**) between 11.00 a.m. and 5.00 p.m. on all working days. The quotation should **include all kinds of taxes/duties and delivery, Installation charges etc** of the items and to be sent to the Office of the **Head, Department of Physics, IEST, Shibpur, Howrah-711103**. Last date of submission of sealed quotation is **7 working days from the date of publication** in the Website of the Institute and tenders will be opened on the next working day at 12 noon.

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List of Items:

1. DIGITAL THICKNESS MONITOR:

- i) Water cooled crystal holder of quartz crystal thickness monitor for the measurement of metal film thickness deposited by thermal coating.
- ii) The thickness monitor with water cooled crystal holder, oscillator box and digital display measuring unit
- iii) Thickness maximum : Transducer limited typically 5000 micro gm/sq.cm much as 20,000 Microgram/sq for Well behaved materials.

microgram/Sq.Cm=37 Angstrom)

- iv) Rate display : 3 digits LED.
- v) Thickness display : Automatically varied 0.4 to 5 update/sec.
- vi) Static thickness resolution : 1 Ang. At minimum update rate
- vii) Input parameter : Tooling factor, density and acoustic impedance Inputs allow readout directly in Angstroms.
- viii) Films No. : Allows input parameter for 1 to 100 films to be Entered.
- ix) Tooling factor : 1.0 to 999.9%.
- x) Film acoustic impedance : 5.000 to 99.99 x 10(-5) gm/cm. Sec
- xi) Shutter control : Dedicated replay.
- xii) Thickness set point : 0.000 to 990.9% K. Ang. Shutter closed when displayed thickness equals or exceed set point.
- xiii) Start Control : Zeros thickness and open shutter.
- xiv) Stop control : Zeros thickness and open shutter.
- xv) Shutter position indicator : LED on indicates shutter relay activated.
- xvi) Crystal compatibility : 5 or 6 MHz, jumper, Jumper selectable
- xvii) Crystal Holder : Water cooled.
- xviii) Crystal test display : Type of crystal being used (5 or 6 MHz)
- xix) Crystal Health : % of crystal life remaining 0% of life referenced to a film thickness of 925 K.A of aluminum.
- xx) Crystal Frequency : 5 or 6 MHz
- xxi) Output Control : Rate of thickness select. Full scale and zero scale output useful in calibration recording equipment.
- xxii) Self test : Automatic detection and indication of oscillator failure, power line failure, and internal failure.
- xxiii) Power Requirement : 230V AC, 50 Hz, 5 Amps.

2. Liquid Nitrogen:

Specifications

- I. Capacity: 30-35 Litre
- II. Neck diameter: 50 to 52 mm.
- III. Outer diameter: 17 to 20 inches.
- IV. Total height: 25 to 30 inches.

- V. Static evaporation loss rate: 0.1-0.15 Litre/day
- VI. No of canister: between 5 to 9
- VII. Canister OD: between 36 to 39 mm.
- VIII. Canister height: between 120 to 125 mm.
- IX. Straw holding capacity (0.5 ml): between 700 to 750.
- X. Straw holding capacity (0.25 ml): between 1520 to 1580.
- XI. The product should be ISO certified.

Terms & Conditions:

- a. Price should include Delivery and installation charges and taxes.
- b. Warranty for minimum One year
- c. Electrical power line requirement should be mentioned well before delivery(if applicable).
- d. Delivery has to be done within four weeks of placing the order.
- e. Installation has to be done within one week of delivery.
- f. The bidder must furnish
 - i) Trade Licence certificate
 - ii) GST Certificate
 - iii) IT return certificate
 - iv) Copies of installation certificates at Institutes and Universities as proof of Experience
 - v) Photo Copy of PAN