

**INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS NEW DELHI**

Date: 12th April 2012

Notice Inviting Quotation

Quotations are invited for the purchase of

10 MHz Precision LCR Meter

for the Department of Textile Technology. Interested suppliers are required to submit their quotations as per the specifications given below. The sealed Quotations are to be submitted in two Separate envelopes;

**A - for Technical Quote (Specifications) &
B - for Financial Quote
(For details, see Annexure I)**

Both these envelopes should be further enclosed in an outer envelope, which should also be sealed and addressed to, clearly mentioning on top right corner of the envelope "Quotations for purchase of Optical Microscopes"

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Department of Textile Technology
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The quotations should reach the above office of **by 5.00PM on 26th April 2012.** If needed, the suppliers may be asked to make a technical presentation before the committee. Institute reserves the right to accept or reject any of the offers without assigning any reasons.

Configuration

**10 MHz Precision LCR Meter / Impedance Analyser
(With Graphic Mode)**

Features:-

Width Test Frequency 20Hz ~ 10MHz
0.1% Basic Accuracy & 6 Digits Measurement Resolution
Large LCD Display with Intuitive User interface
Full Measuring Functions with DUT/ V/I Monitor
PASS/FAIL Function with judgment Alarm
DC Resistance Measurement
Multi Step Mode
Graph Mode
Standard RS-232C /GPIB Interface

Specification :

Test Frequency : 20Hz~10MHz

Input Impedance: 100Ω

Basic Accuracy : ± 0.1%

Test Speed

AC (>2kHz)

Max : 75mS

Fast : 150mS

Medium : 450mS

Slow : 600mS

Short Circuit Current : Max.20mA

Measurement Range

<u>Mode</u>	<u>Measure Range</u>
R,Z,X,Rdc	: 0.1mΩ~100mΩ
G,Y,B	: 10nS~1000S
L	: 0.1nH~100kH
C	: 0.01pF~1F
D	: 0.00001~9.9999
Q	: 0.1~9999.9
θ	: -180 ⁰ - + 180 ⁰

Test Signal Levels

Test Frequency	Test Signal Level(rms)	Step	Accuracy
≤3MHz	10mV ~ 2V	1mV/10mV	2%±5mV
>3MHz	10mV ~ 1V	1mV/10mV	2%±5mV

Measurement Parameters : Impedance (Z), Phase Angle(θ), Inductance (L),Capacitance (C), AC Resistance (Rac), Quality Factor (Q), Dissipation Factor (D), Admittance (Y), Conductance (G), Reactance (X), Susceptance (B), DC Resistance(Rdc)

Series or Parallel Equivalent Circuit :

C + R, C + D, C + Q, L + R, L + Q, L + D

Series Equivalent Circuit Only :

X + R, X + D, X + Q

Parallel Equivalent Circuit only :

C + G, B + G, B + D, B + Q, B + R, L + G

Polar Form : Z + Phase Angle, Y + Phase Angle

Average : 1 ~ 256 times
LCD Display: 320 x 240 DOT- MATRIX
Interface: RS-232C, GPIB
Power Source: AC 115V (+10%/-25%),
AC 230V (+15%/-14%) (Selectable), 50/60Hz)

ACCESSORIES REQUIRED

- 1. Axial & Radial Test Lead**
- 2. Four -Wire Kelvin Clip Adaptor**
- 3. Two- Wire Alligator Clips**
- 4. Measurement Fixture**
- 5. Dielectric material test fixture**

The test fixture is used to evaluate the dielectric constant of solid dielectric materials accurately, and complies with ASTM D150. The 16451B employs the parallel plate method, which sandwiches the material between two electrodes to form a capacitor. An LCR meter or an impedance analyzer is then used to measure the capacitance created from the fixture

Annexure I

Envelope A: Technical Quote: The following details are to be enclosed (Mention clearly on this envelope – **Technical Quote**)

1. Technical Printed brochures mentioning all details with complete address of the principals.
2. A compliance chart based on the specifications as per the NIQ.
3. Any optional equipment / accessory / spares advised to be included separately.
4. Installation requirements including gases and chillers, UPS, etc.
5. List and addresses of organizations where the equipment has been supplied in last 3 years in India.
6. Details of other equipment supplied to IIT Delhi specifying the Department/ centre / lab to which the equipment was supplied. Also mention if the equipment is being maintained by your organization.
7. Address of the technical office, in India, with telephone and FAX numbers. Kindly clarify the type of support available in India.
8. If quote is for imported equipment supplied through Indian Agent, Sole Agency-ship certificate on the letterhead of the principal company, if quotation is from an Indian Agent.

9. Proprietary Item Certificate from the principals, if applicable.

Envelope B: Financial Quote: The following details are to be enclosed/ ensured.

(Mention clearly on this envelope – **Financial Quote**)

1. The quotations for the equipment in foreign exchange, if it is to be imported. The cost of spares and optional equipment/accessories to be quoted separately. **The cost should be based on CIF, New Delhi. The country of origin certificate should be provided.** If equipment is indigenous, the quote should be in INR and all taxes applicable should be mentioned clearly.
2. Institute makes payment after delivery and successful installation. In case the payment terms are different, it should be mentioned clearly. If equipment is to be imported, the address of the company in whose name the LC is to be opened should be stated.
3. The comprehensive Warranty period.
4. The details of the AMC after the warranty period.
5. Cost for Installation and training at site to be inclusive
6. Validity of the quote should be minimum 90 days.
7. The delivery period to be clearly specified.