

**Department of Physics,
University of Mumbai,
(UDPMU),**



Department of Physics, Tilak Bhavan, 3rd floor, University of Mumbai, Vidyanagari,
Santacruz (E), Mumbai 400 098, India.
Tel: (022) 2652 6250, Fax (022) 2652 8835 Email: kothari@physics.mu.ac.in

Tender Document for

Radiation survey meter

No: UDPMU/Tender/10/2012-2013

Date: 12th January, 2013

Part A - Terms and Conditions

Part B – Specifications

Price: Rs. 1000/- (non refundable)

Important Dates:

Period of Sale of Tender Document	12 th January, 2013 to 1 st February, 2013 between 10:30 am to 5:30 pm
Last Date of Receiving sealed Bids/Tenders:	2 nd February, 2013. at 4.00 pm

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Part A - Terms and Conditions

Tender Notice

Department of Physics, Tilak Bhavan,
3rd floor, University of Mumbai,
Vidyanagari, Santacruz (E),
Mumbai 400 098, India.
Tel: (022) 2652 6250,
Fax (022) 2652 8835

UDPMU/10/ of 2012
Date: 12th January, 2013.

Sealed Tenders bids for the purchase of **Radiation survey meter**, for Department of Physics, University of Mumbai are invited for and on behalf of University of Mumbai by the Head, UDPMU.

Tender Document containing terms and conditions and technical specifications of the equipment are available in the Office of The Head, Department of Physics University of Mumbai, Vidyanagari, Santacruz (E), Mumbai 400 098, on all working days between 11.00 a.m. to 5.30 p.m. from 12th January, 2013 to 1st February, 2013. by paying Rs.1000/- (Rs. One hundred only) in cash /Demand Draft from any Scheduled Bank/Nationalized bank, drawn in favour of **“Finance and Accounts officer, University of Mumbai”**. Terms & conditions and technical specifications can also be downloaded. In case, the tender document is downloaded from the website, the Tender Document fee of Rs. 1000/- should be enclosed in the Technical Bid Envelope, in the form of a Demand Draft from any nationalized bank, drawn in favour of **“Finance and Accounts officer, University of Mumbai”**. The tenders bids duly complete in all respects, along with the necessary documents and EMD of Rs 50,000/- (Rs. Fifty thousand only) should be submitted to **The Head, Department of Physics University of Mumbai, Vidyanagari, Santacruz (E), Mumbai 400 098 on 2nd February, 2013. at 4.00 pm..**

The tenders bids so received shall be opened on a schedule and venue to be arranged later in the presence of the representatives of the suppliers. The names of shortlisted tenderness shall be announced on the website after scrutinizing the Technical bids and evaluating their suitability to meet the University requirements.

Right to reject any or all tenders without assigning any reason there for is reserved by the University of Mumbai.

Sd/-

The Head,
Department of Physics
University of Mumbai,

Terms and Conditions of Supply:

The tender document along with terms & conditions are available for sale from 12th January, 2013 to 1st February, 2013 in the office of the The Head, Department of Physics University of Mumbai, Vidyanagari, Santacruz (E), Mumbai 400 098 Vidyanagari, Santacruz-(E), Mumbai during office hours from 11.00.am To 5.30.pm by paying tender fee of Rs 1000/- in cash or a Demand Draft by any Scheduled Bank / Nationalized bank drawn in favour of **“Finance and Accounts officer, University of Mumbai”**. **The tender fee is not refundable.** The completed sealed Tender/Bid in all respect will be accepted up to 2nd February, 2013.at 4.00 pm pm in the office of The Head, Department of Physics, Tilak Bhavan, 3rd floor ,University of Mumbai, Vidyanagari, Santacruz (E), Mumbai 400 098, India.

1. Tenderer /Bidders shall submit the following documents along with their tender and **be placed in the Technical Bid Envelope i.e . Envelope No. 1).**
 - (a) Income-Tax clearance certificate from the Income-Tax Officer concerned, certifying that the tenderer has cleared all the Income-Tax dues.
 - (b) Tenderers should be either manufacturer or authorized dealer of the said equipment and should submit the proof for the same. Also, the Tenderers should state whether they are a Proprietary Firm, Partnership Firm or a Private/Public Limited Company and furnish the proof of the same. If the tenderer is a partnership firm, the necessary partnership deed, disclosing the names of all partners and their interest in the firm shall be enclosed.
 - (c) Tenderer should enclose the list of names of the organizations and laboratories to which similar equipment have supplied and a certificate to the effect that the performance of the supplied equipment was satisfactory.
 - (d) The tender document must be accompanied by Earnest Money Deposit shall be EMD of Rs 50,000/-(Rs. Fifty thousand only). Earnest Money Deposit in the form of a Demand Draft drawn in favour of **“Finance and Accounts officer, University of Mumbai”** on any Scheduled/ Nationalized Bank, payable at Mumbai.
 - (e) In case, the tender document is downloaded from the website, the Tender Document fee of Rs.1000/-(Rs One thousand) should be enclosed in the form of a Demand Draft from any Scheduled / Nationalized Bank drawn in favour of **“Finance and Accounts officer, University of Mumbai”**
 - (f) VAT Registration No.
 - (g) Technical specifications offered by the Supplier.
 - (h) Technical compliance table
 - (i) Proprietary certificate
 - (j) The authority to sign to tender document shall be submitted invariably by the tenderer.
2. The rates should be mentioned in the **Schedule** attached with the Tender Document. Each page of the tender shall be signed in full and stamped with the seal by the Tenderer. The Tenderer must clearly state in what capacity he or she is signing the tender

(Which should be placed in the Financial Bid Envelope i.e. Envelope No.2)

3. The Tenderer shall submit the tender in two envelopes. The first envelope (Technical Bid) shall contain all the documents referred to in **para One above** and sealed. The second envelope (Commercial Bid) shall contain the **Schedule**, in which the Tenderer shall register the rates of equipment. The second envelope shall also, likewise, be sealed. Both the envelope then should be put together, and shall be sealed in an envelope, and shall prescribe time and date. The Technical Bid shall be opened first to ensure that Tenderer have submitted all the requisite documents. If the Technical Bids are found not in order or are deficient in some respect, the commercial bids in respect of such tenders shall not be opened. The date and time of opening the financial bids shall be announced immediately after opening all the Technical bids.
4. Tender bids not accompanied by the requisite amount of Earnest Money Deposit are liable to be rejected.
5. The Earnest Money Deposit paid by the supplier shall be forfeited, if the supplier fails to pay the necessary security deposit in the event of his tender being accepted.
- 6 . Bidder should read carefully all the instructions and terms and conditions, etc before registering rates in the prescribed schedule of the tender. Price registering in the schedule of price to tender should be inclusive of all taxes and duties. The rate /price quoted shall be C.I.P/C.I.F Mumbai and to reach to the office of UDPMU or as directed in the order.
7. The offers made by the Tenderers shall be valid for 120 days after the last date of submission of tender.
8. **The Technical Documents shall be opened** on a schedule and venue to be arranged later, for those bids for which minimum three Bidders have participated. The tenderers or their authorized representatives shall be allowed to be present at the time of opening of the tenders. Financial bids of only qualified tenderers shall be opened. The date and time of opening the financial bids shall be announced after opening and evaluating all the Technical bids.
9. In case of imported items/equipments, the rates should be quoted in the light of exemptions enjoyed by educational institutions. University is exempted from the payment of Octroi and the necessary certificate/form can be issued by the University.
10. Technical specifications of the instruments/equipments/articles are given in **Annexure** to these papers i.e. Part B.
11. The delivery, installation & operational training of the instruments/equipment should be completed within 3 months from placing of the order, in case of the imported equipment and within 15 days if the instrument/equipment is made in India. No extension shall be granted

- to the contractors/suppliers for the period of delivery, under any circumstances.
12. If the supplier fails to deliver the article as per the delivery schedule, the University of Mumbai shall be free to procure the balance/undelivered supply, at the risk and cost of the supplier, from other such suppliers
 13. The goods, articles, materials equipment supplied by the supplier shall be accepted after inspection by an officer authorized by the competent authority. No articles/materials which do not conform to the specifications laid down in the terms and conditions or damaged in transit accepted.
 14. The bills of the suppliers shall be paid by the University after all the materials /articles/equipments have been received inspected and found in good condition as mentioned above.
 15. Vendor must submit Compliance statement in tabular form comparing each specification of the quoted item with that given in the Tender Document part B. The Vendor also must supply a soft copy of the Table only Microsoft in word format.
 16. If the equipment is imported and requires PC, printer other peripherals, they can be bought from India and should be of International brand such as HP. The monitor should be LCD/TFT screen. The printer should be LaserJet printer. The processor should be Intel latest processor. The amount quoted for the items bought in India, installation; servicing etc. can be in Indian Rupees and the imported items can be quoted in foreign currency.
 17. As the suppliers shall be responsible for the supply and installation (wherever necessary) of equipment at Mumbai, the cost towards insurance until destination in the University, shall be borne by suppliers.
 18. In the event of any breach of the terms and conditions of the supply, the University of Mumbai may terminate the contract placed with the supplier, forfeit the security deposit of the supplier and make alternative arrangements for procurement of supplies at the risk and cost of supplier.
 19. **Proprietary certificate**, if any, should be included in the Technical bid.
 20. The Conditional offers are liable to be summarily rejected.
 21. Right to reject any or all tenders without assigning any reason there for are reserved by the University of Mumbai.
 22. The payment shall be made after successful installation within a reasonable period as per the University of Mumbai rules and procedures.

Envelope No.1

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Part B – Specifications

Envelope No.2
(Financial/Price Bid)

SCHEDULE TO TENDER

Note:

1. Tenderers are advised to read carefully the Terms and Conditions of supply and the Instructions to the Tenderers" before recording the rates in this schedule.
2. No erasures or overwriting shall be allowed, unless they are authenticated under the full signature and the seal of the tenderer.
3. The Rates shall be FOR/CIF, at destinations/godowns/places indicated in the supply order.

Item no	Description of goods with details of specifications	Number/ quantity	Price/ Rate per Unit	Taxes	Duties	etc	Total

Total price

In wordsonly

Date

Place

Signature of the Tenderer
Name of the signatory on tender
Seal of the Firm/Co./

Specifications

Battery-Powered, Portable HPGe Gamma Spectrometer

INTERNAL HPGe DETECTOR

Dimensions max 65 mm diameter x 50 mm length nominal. Coaxial construction. P-type high-purity germanium.

Relative Efficiency >40% typical

Resolution max 3 keV @ 1332 keV

Cryostat and Cooler without Liquid N₂

DIGITAL MCA AND DATA PROCESSOR

Display VGA 640 x 480 TFT sunlight readable touchsensitive, operate with finger or stylus.

Data Storage To internal RAM and removable SD card.

Computer Interfacing USB connection to laptop

. Wi-fi (802.11) communication software optionally available.

GPS Internal NMEA compliant WAAS capable.

Digital MCA with Internal Storage of Multiple Spectral Data.

Conversion Gain 16k channel.

Maximum Number of Stored Spectra Unlimited on removable media.

Full Display and Zoom Modes Display of multiple ROIs.

Main Display Configurable Status Line User-configurable parameter display allows two parameter choices from the following selection: cursor energy, location, live time, live time remaining, real time remaining, battery life remaining, count rate, count rate in ROI, and counts.

Energy Calibration Quadratic fit of energy versus channel.

On Line Activity Calculation Activity and uncertainty are calculated and reported onscreen, on-line for up to 9 user-defined regions. Activity is calculated as net count rate divided by user supplied efficiency factor.

Multiple Presets Live time, real time, integral peak count, peak count, uncertainty and Multi-Nuclide MDA. Up to 20 nuclide ROI's may be specified. Acquisition halts when all MDA requirements have been satisfied. Real/Live Time in multiples of 1 sec.

MAIN MENU OPTIONS

View Status Displays all of the major MCA settings, including: Live time, Real time, Dead time, Battery voltage, Bias

voltage, Fine gain, Coarse gain, and Baseline restore [BLR] setting.

Peak Info Reports centroid, FWHM, and net and gross counts for the region identified by the marker position.

MCA Settings Allows adjustment of MCA Controls.

1 - HV Settings

2 - Amplifier Settings

3 - Presets Settings

4 - ADC Settings

5 - Stabilizer Settings

6 - Nuclide ROI Settings

7 - Audio Settings

8 - State of Health Status (read-only)

General Settings Control of instrument access, calibration, and the LCD display.

1 - Change User Password

2 - Change Admin Password

- 3 - Enter Admin Password
- 4 - Lock Spectral Display
- 5 - USB control
- 6 - Calibrate
- 7 - Set PHA mode
- 8 - Status/Marker Line

Status/Marker Line Sets up the Status Line at the top of the spectrum display and the marker line at the bottom to show a selection of the following parameters:

Status line, two of: Live time, Real time, Live time remaining, Real time remaining, Battery time remaining, Count rate, Count rate in ROI.

Marker line, two of: Marker location (energy), Marker location (channel), Marker channel counts

Nuclide Report Displays a list of predefined nuclides and reports the activity for each.

Cooler Settings Allows user to turn cooler on or off and reports any fault condition.

SYSTEM HARDWARE SETTINGS

Coarse Gain 1, 2, 4, 8, 16, or 32

Fine Gain 0.45 to 1

With the available range of gain settings, the following FULL SCALE energy range is achievable ~40 keV to ~7 MeV.

Conversion Gain The trans-SPEC-DX-100T conversion gain is software controlled from 512 to 16k channels.

Battery-Powered, Portable HPGe Gamma Spectrometer

Dead-Time Correction Extended live-time correction according to Gedcke-Hale method. Accuracy:

Area of reference

peak changes $\pm 3\%$ from 0 to 50,000 counts per second.

Linearity

Integral Nonlinearity: $< \pm 0.025\%$ over top 99.5% of spectrum, measured with a mixed source.

Differential Nonlinearity: $< \pm 1\%$.

Digital Spectrum Stabilizer: Controlled via computer, stabilizes gain and zero errors.

Temperature Coefficient

Gain: < 35 ppm/ $^{\circ}\text{C}$. [Typically 30 ppm/ $^{\circ}\text{C}$.]

Offset: < 3 ppm/ $^{\circ}\text{C}$.

Overload Recovery At maximum gain, recovers to within 2% of rated output from X1000 overload in 2.5 nonoverloaded

pulse widths. (Measured using the MAESTRO InSight Oscilloscope.)

Pulse Pile-Up Rejector Automatically set threshold. Pulse-pair resolution typically 500 ns.

Digital Gated Baseline Restorer Computer controlled adjustment of the restorer rate (High, Low and Auto).

U.S. Patent No. 5,912,825.

LLD Digital lower level discriminator set in channels. Hard cutoff of data in channels below the LLD setting.

ULD Digital upper level discriminator set in channels. Hard cutoff of data in channels above the ULD setting.

Ratemeter Count-rate display on MCA and/or PC screen.

Internal Battery Life > 3 hours at 25°C with a cold detector on fully charged internal battery; battery lifetime may be extended indefinitely by the use of external battery packs which are available in "battery belt" formats. The unit is expected to be kept running once cold.

Input Power 10–17 V dc 30 Watt or via auto-sensing Mains powered Battery Charger.

Temperature Operation Range/Humidity 0 to $+40^{\circ}\text{C}$, Relative Humidity

<90% at 35 °C, non-condensing.

Communications Ports

External Connectivity to System

- 1 SD (Secure Digital) card slot (3.3 V).
- 1 USB connection for "ActiveSync" capability or MCA operation with external computer (ActiveSync and remote display software included).
- WiFi 802.11 communication software optional.
- 1 Audio headphone jack.

Cool Down Time The high reliability cooler is designed for continuous operation. Between measurements the unit is powered from a dc supply, car battery or other high capacity device. The cooler life is expected to exceed 50,000 hours continuous operation. Initial cool down time depends on ambient temperature, but is typically <12 hours at 25 °C.