

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
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Department of Physics

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30/08/2013

Enquiry no.: PHY/MSCLAB/2013-14/EQP/4

Enquiry date: 30.08.2013

Closing date: 12.09.2013

Sealed quotations should reach the undersigned latest by 4.00 pm on 12th September, 2013 for the following items:

S.N	Items	Qty.	Remarks
1	Gamma ray spectroscopy complete experimental setup	01	Setup should have universal Bin with its power-supply (With ± 6 volt, ± 12 volts, ± 24 volts), High Voltage unit, Amplifier unit, Scintillation detector, gamma standard reference set
2	Universal Bin with power supply (With ± 6 volt, ± 12 volts, ± 24 volts)	01	
3	High voltage unit	02	
4	Amplifier unit	02	
5	Scintillation detector	01	
6	Gamma standard reference set	03	
7	LEAD SHIELD	01	

Technical Specification:

Specification of Scintillation detector

	Specifications
Type	Flat/ Well type NaI crystal
Crystal Sizes	2" x 2"
a. Flat crystal	
b. Well size	0.656" dia x 1.546" deep
Photo multiplier	EMI 9857 or 9266
Resolution (Better than)	8.5 %
Pre-amplifier	Built – in
Gain (Approx.)	25
Noise (RMS. referred to input)	Less than 50 μ V
Operating Voltage	600 to 900 V
Out put	Positive Tail Pulse
Output impedance	90 Ohms
Power Requirement (Typical)	-12 V @ 12mA

- **GAMMA REFERENCE STANDARD SET**

Gamma Isotope	Energy Mev	Nominal Activity	Half life
Co-57	0.123	2-5 μ ci	273 Days
Ba-133	0.36 (Main)	2-5 μ ci	7.5 years
Cs-137	0.662	2-5 μ ci	30 years
Co - 60	1.17; 1.33	2-5 μ ci	5.3 years
Na-22	0.511; 1.280	2-5 μ ci	2.6 years
Mn-54	0.84	2-5 μ ci	314 days

- **LEAD SHIELD**

Lead Shield should be compact and just enough to accommodate the Scintillation Detectors .

Dimensions :

- External : 200mm dia x 433mm height
- Internal : 120mm dia x 360mm height
- Weight : Approx. 92 Kgs.

- EXPERIMENTAL BOOK LET

Terms and conditions:

- Quotations should have a validity of a minimum of 60 days.
- All the equipment should be provided with a replacement warranty of 1 year against manufacturing defects.
- All the parts should be replaced free of cost in case of any damage in transit / deviation from specifications.
- Maximum possible educational discount should be specified on the quotation since all are for teaching purposes.
- Quotations are required in a sealed envelope with enquiry number mentioned on the envelope.
- Quantity of items may vary (increase/decrease) in order
- The delivery period should be within 60 days of placing the purchase order.
- The rate offered should be F.O.R Kanpur for firms located outside Kanpur and free delivery at the Institute premises for local firms.
- Institute is exempted from payment of E. Duty under notification no.10/97
- Institute is entitled to avail concession rate of sales tax as admissible under Sub-sec 5 of Sec 8 C.S.T Act 1956 applicable to Educational/Research institution in inter-state purchase.