



Government of India  
Bhabha Atomic Research Centre  
Radiation & Photochemistry Division

भारत परमाणु अनुसंधान केंद्र  
BHABHA ATOMIC RESEARCH CENTRE

Dr. Sudhir Kapoor,  
OS & Head,  
Ph.no. 02225590298  
Email : sudhirk@barc.gov.in

Mod Labs,  
2-197-S  
Trombay  
Mumbai 400 085

Limited Tender

Ref: RPCD/EA&RCS/2019/91408

Date: 10/05/2019

Head, RPCD

To,

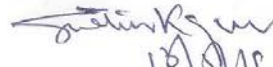
Sub: Fabrication, supply and testing of two nos of HV power supplies (30KVDC-200mA, 3phase & 40KVDC-150mA, 3phase ) used in 7Mev Nano second LINAC and Pico second LINAC respectively, RPCD, Mod. Labs. BARC, Trombay, Mumbai -85

Dear Sir,

1. Quotations are invited for the fabrication / ~~repair job~~, as per the above said subject.
2. Bidder shall quote for fabrication of the system with his own material.
3. The quotations must reach, **RPCD Office, by 31st May, 2019** and must be sent in a sealed envelope super scribed with the above reference number and due date.  
Last date for receipt of quotation 31<sup>st</sup> May 2019 up to 18.00 Hrs.  
The quotations will be opened on the next working day at 10.00 hrs
4. The address on the envelope should read: **Dr Sudhir Kapoor**  
**Head, RPCD,**  
**2<sup>nd</sup> floor, 199-S, RPCD office, Mod Labs, BARC - Trombay, Mumbai-400 085**  
**Attn: Smt Madhu A Toley**
5. The bidder shall have to take an insurance against any material issued to him by the purchaser.
6. The fabrication work shall be completed at bidder's place. The finished components shall be checked by our officers at indenter's place. Necessary tools should be brought by the supplier for installation and testing of the units at indenter's place (in the machine).
7. The bidder shall deliver the finished items / components after fabrication and testing, within 45 days from the date of the issue of the final work order. The finished items/components and the scrap from the issue materials if any shall be delivered by the bidder at LINAC Facility/RPCD, Mod Labs, BARC-Trombay, Mumbai 400 085

8. The party must offer warranty on the fabricated and tested units for satisfactory performance for a period not less than two years.
9. No advance payment in full or in part will be admissible and payments will be made after satisfactory installation at purchaser's site.
10. The goods proposed to be fabricated based on this NIT (Notice Inviting Tender) is meant for research purposes of Research Institution under the Dept. of Atomic Energy and therefore the prices to be quoted for the product should be exclusive of the excise duty. The purchaser will make available to the successful bidder with whom a work order is placed the excise duty exemption certificate duly signed by the authorized officer in the Dept. of Atomic Energy well before the dispatch of the goods by the supplier. While submitting the offer, the bidders should specify in his offer that the price quoted by him does not include any element of excise duty, subject to production of exemption certificate. Where however, the prices quoted are inclusive of excise duty, the percentage/quantum of Excise included in the quoted price should be specifically indicated in the tender.
11. The acceptance of quotation will rest with Dr Sudhir Kapoor, Head RPCD, BARC who does not bind himself to accept the lowest or any quotation and reserves to himself the right to reject any or all quotations received without assigning any reason whatsoever.
12. Bidder shall provide PAN Number, GST Number, TIN Details should be mention in then quotation.

Yours faithfully,

  
18/01/18  
(Head, RPCD)

**डॉ. सुधीर कपूर / Dr. Sudhir Kapoor**  
अध्यक्ष, विकिरण एवं प्रकाशरसायनिकी प्रभाग  
Head, Radiation & Photochemistry Division  
बी.ए.आर.सी., ट्रॉम्बे / BARC, Trombay  
मुंबई / Mumbai - 400 085

## Technical Specification

### 30KVDC-200mA HV three phase Power Supply:

Input Line Voltage	385 - 425V AC, 50Hz, Three Phase ; with 90% Efficiency
Output Voltage	0 to 30kV DC
Output Current	0 to 200mA
Polarity	Positive (negative terminal at earth)
Voltage Regulation (Load)	$\pm 0.05\%$ of maximum voltage +500mV for full load change
Voltage Regulation (Line)	$\pm 0.05\%$ of full voltage +500mV over specified input range
Current Regulation (Load)	$\pm 0.01\%$ of maximum current $\pm 100\mu\text{A}$ for full voltage change
Current Regulation (Line)	$\pm 0.05\%$ of maximum current for $\pm 10\%$ input line change
Ripple	0.1% p-p +1 $V_{\text{rms}}$
Temperature coefficient	10ppm/°C Voltage or current
Temperature	0 °C to 40 °C
Humidity	10 to 90% relative humidity, non-condensing
Stability	0.02%/hour after ½ hour warm-up for both voltage and current
Metering	Voltage and Current meter, accurate within 1%
Output Cable	~3m shielded HV cable removable from rear panel
AC Line Input cable	IEC 320 cord set 1.8m
Voltage Control	By 10-turn potentiometer on the front panel
Current Control	By 10-turn potentiometer on the front panel
Input Power Factor	>0.85 at full load
Overall efficiency	90% at full load
Protections	Against overload, over current, short-circuit, Over temperature and arc
Special Protection	Capacitor charging power supply need to be protected against back EMF
Front Panel indicator	Control Power ON, High Voltage OFF/ON
Remote Control and Monitoring	Yes, Remote HV ON/OFF, Output current control and monitor, Output voltage control and monitor (0-10V), HV ON/OFF status
Interface	Ethernet, RS-232 ; Detailed command set need to be provided by supplier
Software	GUI based application/software (Window compatible) need to be provided by supplier for controlling power supply with a PC through Ethernet and RS-232
Connections	Output, Input, Earthing, Remote
Regulatory Approvals	Offered Unit Must Compliant to 2004/108/EC of EN61000. RoHS Compliant, without this unit will not be accepted
Safety Standard	EMI-EMC Approved.

*Mech Safety*

## Technical Specification

### 40KVDC-150mA HV three phase Power supply:

Input Line Voltage	385-425 V AC, 50Hz, Three Phase ; with 90% Efficiency
Output Voltage	0 to 40kV DC
Output Current	0 to 150mA
Polarity	Positive (negative terminal at earth)
Voltage Regulation (Load)	$\pm 0.05\%$ of maximum voltage +500mV for full load change
Voltage Regulation (Line)	$\pm 0.05\%$ of full voltage +500mV over specified input range
Current Regulation (Load)	$\pm 0.01\%$ of maximum current $\pm 100\mu\text{A}$ for full voltage change
Current Regulation (Line)	$\pm 0.05\%$ of maximum current for $\pm 10\%$ input line change
Ripple	0.1% p-p +1 $V_{\text{rms}}$
Temperature coefficient	10ppm/°C Voltage or current
Temperature	0 °C to 40 °C
Humidity	10 to 90% relative humidity, non-condensing
Stability	0.02%/hour after ½ hour warm-up for both voltage and current
Metering	Voltage and Current meter, accurate within 1%
Output Cable	~3m shielded HV cable removable from rear panel
AC Line Input cable	IEC 320 cord set 1.8m
Dimension	~10.5" x ~19" x ~21" (HxWxD)
Voltage Control	By 10-turn potentiometer on the front panel
Current Control	By 10-turn potentiometer on the front panel
Input Power Factor	>0.85 at full load
Overall efficiency	90% at full load
Protections	Against overload, over current, short-circuit, Over temperature and arc
Special Protection	Capacitor charging power supply need to be protected against back EMF
Front Panel indicator	Control Power ON, High Voltage OFF/ON
Remote Control and Monitoring	Yes, Remote HV ON/OFF, Output current control and monitor, Output voltage control and monitor (0-10V), HV ON/OFF status
Interface	Ethernet, RS-232 ; Detailed command set need to be provided by supplier
Software	GUI based application/software (Window compatible) need to be provided by supplier for controlling power supply with a PC through Ethernet and RS-232
Connections	Output, Input, Earthing, Remote
Regulatory Approvals	Offered Unit Must Compliant to 2004/108/EC of EN61000. RoHS Compliant, without this unit will not be accepted.
Safety Standard	EMI-EMC Approved.

*Madhvi*