

INSTITUTE FOR PLASMA RESEARCH
NEAR INDIRA BRIDGE, BHAT, GANDHINAGAR 382 428
GUJARAT STATE

Phone: 079 23962021, 23962023 Fax: 079 23962277

TENDER NOTICE DATED 26-04-2010

Itemwise sealed tenders are invited from reputed and eligible parties for the following.

Sr. No	Tender Notice No.	Item	Qty.	Due Date & Time for		Tender Fee	EMD (Rs.)
				Submission of tender	Opening of tender		
1.	IPR/TN/PUR/006/10-11	1. Cr-Mo Alloy Steel Plate (ASTM A387 Gr91 Class 2) of size 8' x 4' x 5mm 2. Cr-Mo Alloy Steel Plate (ASTM A387 Gr91 Class 2) of size 8' x 4' x 6mm	1 No. 2 Nos	10-6-2010 by 1.00 p.m.	10-6-2010 2.30 p.m.	200.00	10000.00
2.	IPR/TN/PUR/007/10-11	Supply of Different Capacity all geared type SS-SC Precision Center Lathe Machine	3 Nos	14-6-2010 by 1.00 p.m.	14-6-2010 2.30 p.m.	200.00	15000.00
3.	IPR/TN/PUR/008/10-11	Manufacture, testing, supply, installation and commissioning of 0-20V (Variable), AC, Single Phase 50Hz, 15A, 70kV DC isolated, filament power supply at IPR site	1 No.	15-6-2010 by 1.00 p.m.	15-6-2010 2.30 p.m.	200.00	5000.00
4.	IPR/TN/PUR/009/10-11	Manufacture, testing, supply, installation and commissioning of 35 kV, 100mA, HVDC power supply, Floating type at IPR site	1 No.	16-6-2010 by 1.00 p.m.	16-6-2010 2.30 p.m.	200.00	20000.00
5.	IPR/TN/PUR/010/10-11 (TWO PART TENDER)	Design, Analysis, fabrication, testing, supply, installation and commissioning of Vacuum Chamber	1 No.	17-6-2010 by 1.00 p.m.	17-6-2010 2.30 p.m.	200.00	20000.00

Tender documents are available on IPR Website : www.ipr.res.in/purchasetenders.html. Tenderers meeting the eligibility criteria mentioned in the tender documents may, at their option, download the tender documents from the website and submit their offer along with prescribed **Tender Fee (non refundable) and EMD** in the form of Demand Draft from any nationalized/scheduled bank drawn in favour of **Institute for Plasma Research** and payable at **Ahmedabad** as per the details given in the tender documents. In case party desires to collect the tender documents by post, they may contact the Purchase Officer along with prescribed tender fee. Tender documents will be issued upto **17-5-2010**. Representative who is going to attend the tender opening should carry an authorization letter from the organization for participation in the tender opening failing which he will not be allowed to attend the tender opening.

TENDER NOTICE No.IPR/TN/PUR/010/10-11 DATED 26-04-2010
(TWO PART)

For Design, Analysis, fabrication, testing, supply, installation and commissioning of Vacuum Chamber – 1 No.

NOTE: THIS IS A TWO PART TENDER. KINDLY SUBMIT PART-A (TECHNICAL BID & COMMERCIAL TERMS AND CONDITIONS AND (PART-B) PRICE BID SEPARATELY IN TWO DIFFERENT ENVELOPES SUPERSCRIBING TECHNICAL BID AND PRICE BID IN ONE SINGLE ENVELOPE

NOTE:

1. Full details and specifications of the items and general instructions to be followed regarding submission of tenders are indicated in the tender documents.
2. **Proof for fulfillment of eligibility criteria mentioned hereunder should be submitted along with the tender. If the tender is submitted without valid documents, we shall not consider your offer. Tenders received without proof of eligibility criteria will be rejected.**
3. Tender documents can also be obtained by submitting a written request to the Purchase Officer together with prescribed tender fee, provided that the eligibility criteria is fulfilled. Last date for issue of Tender documents is 17-5-2010.
4. While requesting for Tender Documents, such request shall indicate **the “REQUEST FOR TENDER DOCUMENTS AGAINST TENDER NOTICE NO.IPR/TN/PUR/010/10-11 DATED 26-04-2010”.**
5. **The tender fee of Rs.200/- (non refundable) should be made in the form of DEMAND DRAFT from any nationalized/scheduled bank drawn in favour of Institute for Plasma Research and payable at Ahmedabad.** Vendor's name and tender number shall be indicated on the reverse side of the Demand Draft.
6. **DD should not be prior dated to the date of advertisement. Separate request letter and separate Demand Draft shall be sent for each tender.**
7. Those who use the downloaded tender documents from IPR Website may submit the prescribed Tender Fee keeping in a separate envelope along with the tender.
8. **Tenders received without the prescribed tender fee will be rejected.**
9. No request for the extension of due date will be considered.
10. Late/Delayed offers will not be accepted.
11. **Tender in a sealed envelope (Technical Bid, Commercial terms and conditions and EMD [Part-A] in one envelope and Price Bid [Part-B] in another envelope) superscribing the envelope with the above tender no., date, due date and brief**

description of tendered item should be submitted to the *Purchase Officer* at the above address by 1.00 p.m. on 17th June, 2010. Part-A (Technical Bid along with Tender Fee of Rs.200/-, commercial terms and conditions and EMD for Rs.20,000/-) received upto 1.00 p.m. on 17-6-2010 will be opened on the same day at 2.30 p.m. in the presence of attending tenderers.

12. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.
13. IPR will not be responsible for any delay/loss of documents in transit.
14. Tenders received without the details asked for including proof of eligibility for participating in the tender may not be considered.
15. Tenderers should furnish/enclose full technical details/literature, delivery period and confirm the terms and conditions attached with the tender.
16. **Those who do not meet with the eligibility criteria need not submit Tender.**
17. **Those who are quoting on behalf of their foreign Principals should submit a Proforma Invoice of Foreign Principals in foreign currency.**
18. The Director, IPR reserves the right to accept or reject any offer in full or part thereof without assigning any reason thereof.
19. **Quotations received without EMD will not be considered.**
20. **The representative who is going to attend the tender opening should carry an authorization letter from the organization for participation in the tender opening failing which he will not be allowed to participate in the tender opening.**

ELIGIBILITY CRITERIA:

A:

- 1) Prior experience of similar nature of job covering the scope of work as stipulated herein [i.e. Design, Analysis, Fabrication, testing, installation and commissioning of vacuum chamber], with a single purchase order of Rs.~8 lacs or more in last three years (attach copy of purchase orders)
- 2) Understanding and domain knowledge of all relevant fields /areas covered in the scope of work.

B: Documents to be attached with the bid

- 3) In house facility details of the Software / hardware / manpower for the design and analysis of components covered in the scope of work in this document (Name of outsourced agency if it is going to be subcontracted / outsourced with their details).
- 4) Details of in House facilities for machining, Rolling / bending (provide the details like name of agencies planned for outsourced / subcontract activities along with their infrastructure details) for manufacturing the components covered in the scope of work herein.
- 5) In house Welding facility details of Tungsten-Arc Welding with list of qualified welder and radiography testing/ arrangement (provide the details of agencies planned for outsourced / subcontract activities) for testing.

- 6) Details of in house experience /arrangement (provide the details of agencies planned for outsourced / subcontracted activities) for high vacuum testing and helium leak detection and necessary equipments (helium leak detector, vacuum pump, appropriate valves, gauges etc.

NOTE: Issue of tender documents does not mean that a vendor is qualified to submit tenders. IPR's decision to consider as to whether a vendor has met with the eligibility criteria is final.

TENDER DOCUMENT FOR DESIGN, ANALYSIS,
FABRICATION, TESTING, SUPPLY AND INSTALLATION
OF A VACUUM CHAMBER

SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

Contents:

- 1.0 Introduction
- 2.0 Codes and Standards
- 3.0 List of the Drawings
- 4.0 Scope of Work and Technical specifications
- 5.0 General Terms and Conditions
- 6.0 Compliances requirement

1.0 INTRODUCTION:

This part of the document contains the Scope of Work and Technical Specifications for the design, along with guide lines for fabrication, inspection, testing, packaging, delivery & erection of a vacuum chamber as shown in supplied guide line drawings.

Features of the vacuum chamber are as follows:

- The chamber will have two parts: one Main chamber and two inventory chambers on both sides. The main chamber is a horizontal cylindrical one and two inventory chambers which will be L-shaped ones. The diameter of the main chamber will be larger (420mm) than the inventory chambers (152mm), hence an appropriate reducer has to be used in between them on either sides of the main chamber.
- The inventory chamber will have baffles welded inside as shown in the line diagram and also have copper pipes welded on the outside surface with required nozzles for cooling water connections (inlet and outlet) with a flow rate of about 100 liters /hour
- Ports : Appropriate ports of different sizes (16 CF, 25 KF, 63 CF etc along with blank flanges, center ring, O-ring and claw clamp as per German DIN 28403 or equivalent) for different interfaces as mentioned in the guide line drawing.
- Saddle supports / Support structures attached with chamber as mentioned in guide line drawing.

NOTE:

- The gate valves and the pumps shown in the drawings will be available at IPR during installation with appropriate accessories.

Operating conditions:

For Main chamber.

Pressure: Min: 10^{-6} mbar (vacuum) Max.: Approx. 2 bar (g)

Temperature: Min: **Approx. 25⁰ C and Max: 200⁰ C** (due to heating elements placed inside)

For Reducers.

Pressure: Min: 10^{-6} mbar (vacuum) Max.: Approx. 2 bar (g)

Temperature: Min: **Approx. 10⁰ C and Max: 40⁰ C** (outside atmospheric condition)

For inventory chamber:

Pressure: Min: 10^{-6} mbar (vacuum) Max.: Approx. 2 bar (g)

Temperature: Min: **Approx. 10⁰ C and Max: 40⁰ C** (outside atmospheric condition)

2.0 CODES AND STANDARDS

- In general ASME Section VIII-Division 1 shall be used for design, fabrication, inspection, testing and acceptance.
- For welding procedure qualification, welders' qualification and all other welding details ASME - Sec. - IX shall be followed.
- For testing methods ASME - Sec. - V shall be followed.
- Material shall be according to relevant ASTM/ASME standard.

3.0 LIST OF DRAWINGS

Following guide line drawing is supplied by IPR along with this document.

SR. No.	TITLE	SHEETS
1.	General Assembly : Main chamber, reducers and inventory chambers	Page 15-22 (end of the document)

4.0 SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

The total scope of work includes the activities mentioned herein following paragraphs to be carried out by bidder. The bidder shall be responsible for design, analysis, fabrication/ manufacturing drawing preparation, QAP preparation for entire manufacturing activities, material procurement, manufacturing / fabrication and testing at the manufacturing site. Delivery, unloading at Institute stores, shifting the material to experimental laboratory, assembly and erection of the supplied components in laboratory in IPR and final testing are part of the scope of work.

4.1 SCOPE OF WORK AT BIDDER'S SITE

The scope of work at bidder's site includes,

a) Design, Analysis & Engineering / fabrication drawing:

Design:

- 1 Design of a main vacuum chamber, secondary vacuum chambers and their components, accessories required for specific high vacuum (10^{-5} mbar) application.
 - Design of chamber as per ASME section VIII Div I/ Div II.
 - Estimation of wall thickness
 - Estimation of Collar Thickness and width with joint less O-ring seal.
 - Vacuum seal to with stand a temperature of 200° C.
 - Design of an appropriate reducer to attach the detachable inventory chamber on both sides of main chamber.
 - Estimation of numbers of bolts for attaching the inventory chambers.
 - Size estimation of O- ring for 1×10^{-6} mbar vacuum and 1×10^{-6} mbar l/s gross leak rate.
 - Design of support structures/ saddle supports for the main chamber.
- 2 Design of two inventory chambers and its components, accessories required for specific high vacuum (10^{-6} mbar) application.
 - Design of chamber as per ASME section VIII Div I/ Div II.
 - Estimation of wall thickness
 - Estimation of Collar Thickness and width with joint less O-ring seal.
 - No of Baffles to be welded inside (baffles to be welded form both side of the plate to the cylindrical chamber)
 - Appropriate design of copper pipes to be brazed on the outside for cooling water circulation
 - Design of support structures/ saddle supports for the two inventory chambers with wheels to detach it from the main chamber.
- 3 Design of two interfaces between the DN 160 ISO-K pump and the DN 160 ISO-LF flange of the gate valves as shown in the line diagram.

Analysis

- Complete steady state structural analysis of vacuum chamber for operating conditions as mentioned in section 1.0 above using standard software's like PvElite or Compress or any other equivalent standard software. (If any more information or data is needed, for carrying out the analysis bidders should communicate in this regard to Institute for the same).
- Complete steady state structural and thermal FE analysis of inventory chambers (Plate and tube pattern) and reducers for operating conditions as mentioned in section 1.0 using standard software's ANSYS / NISA or equivalent standard software etc.
- Coupled thermo- hydraulic analysis for Sizing of tube, tube-pitch estimation, and tube-plate brazing length (Stitch length), estimation for copper tube on inventory chambers and temperature profile on all the chambers.

Prior to Starting of the analysis Successful bidder shall submit the draft copy of procedure of the analysis containing the various parameters like geometry, load cases, output parameter tables, etc. After review of the draft copy, analysis procedure shall be agreed mutually and shall form the basis of the analysis to be carried out.

Preparation and submission of design and analysis reports in word document format, submission of these reports to IPR for review and approval. The Design / Analysis document shall include all the relevant calculations, assumptions, material properties, load cases, 2D-3D models (whichever is applicable), analysis procedure, interpretation of results, Final Design parameters for the components and conclusion (mentioning the design is safe) etc. Any other items which are not mentioned herein but are a part of standard format of the any design and analysis report shall also be included in the final submission. Final Reports shall be submitted in soft copy along with 3 numbers of Hard copies.

Engineering / fabrication drawing:

The bidder shall prepare engineering and fabrication drawings based on approved design report and from guidelines of supplied general assembly drawings. The bidder shall submit the same to IPR for final approval. Fabrication of any of the components shall be undertaken only after obtaining the approval of fabrication / engineering drawings.

b) Selection & Procurement of material:

- In General all components of chamber i.e. shell, large size ports, flanges and blanks shall be made of stainless steel of ASTM A240 SS304L or ASME SA240/ 240M SS304L annealed grade.
- All ports shall be made of seam less SS pipes as per SA312 TP 304L.
- Alloy steel and stainless steel bolting shall be as per ASTM A-193/A 193 M. Required size “HILTI” make anchor fasteners/ foundation bolts shall be used for the anchoring support structure.
- Aluminum shall be used for support structure. (made up out of grades AA 6063 (63400), 6061 (65032), 6351 (64430), 64423, 6262, 6005, 6082, 6060,2014)

Note:

Any deviations if needed prior approval shall be taken before implementing the same. With out prior approval, the components not following the guidelines above shall be summarily rejected.

c) Fabrication & assembly

The bidder shall in consultation with IPR representative formulate the manufacturing / fabrication methodology for all the entire scope of manufacturing which included following major components.

- 1) Main chamber with appropriate ports and blank flanges as shown in the drawing;
- 2) Adaptor;
- 3) Reducer with ports and blank flanges;
- 4) Two L-shaped inventory chamber with baffles, ports, cooling tubes welded / brazed on outer surface,
- 5) Three different support stands (one for the main chamber with adjustable height, and two for the L-shaped inventory chamber with wheels).

Any changes (addition / deletion / modification) shall be done with prior approval for the same) shall be All the chambers shall have suitable provision for lifting (like lifting lugs) during their handling. Central support stand is fixed (not movable). Two side support stands are movable and shall have castor wheel provision.

A single rail shall be provided on which the castor wheels (grooved) of the support stands will be guided for lateral movement while dismantling the assembly.

➤ Fabrication guide lines

All welding involved in the fabrication of different components shall be carried out in accordance with applicable code or approved equivalent. WPS for all weld joint configurations shall be prepared and submitted for approval to the Institute. Details for the welding filler to be used in welding (if any) shall be mentioned in WPS along with other details. Welding procedure and parameters shall be established based on based on the test samples prepared on the basis of WPS. All the welding parameters shall be recorded in PQR. All welded samples shall be subjected to tests. After test specimens qualify all the testing, the submitted WPS shall be approved and followed during entire fabrication activities.

General Guidelines to be followed during entire welding/fabrication:

- Before welding all parts shall be cleaned initially with detergent and then with acetone or 1:1:1 Tri-Chloro-Ethane.
- As specified in the drawings all welds to be done on Material SS304L should be Tungsten argon arc welding (TIG) according to ASME - Sec. IX.
- Trapped volume should be avoided during welding on vacuum side surfaces. Full penetration weld should be employed wherever it is possible. When welding is to be done on both sides of the wall, continuous welding on inner side (high vacuum side) and tack welding outside is to be done.
- Single pass weld up to a maximum extent is preferred. Interruption during welding should be reduced to a minimum possible extent.
- If leak develops weld should be ground off with the base metal and re-welded. Grinding should be done using the wheel made of non-carbide material to avoid carbon deposition on the SS material surface.
- Filler material, if used, shall be compatible with the parent material and have compliances to AWS ER 308L or ER 316L procured from original manufacturer (Like ADOR, MODI, Lincoln Electric etc). Bidder shall submit the material test certificate of filler material from the original supplier. Bidder shall take approval from IPR, for the use of filler material needed.
- All welds should be ground smooth and flush with adjoining surfaces with convex curvature with adjoining walls everywhere prior to leak test.
- The welding shall be carried out only by qualified welders. A copy of certificate shall be submitted to IPR.
- All surfaces specifically the inner ones exposed to high vacuum shall have a mirror polished (better than 1.6 micron) surface finish.
- Brazing shall be done with fluoride free flux. Silver brazing shall be carried out using cadmium free filler rods as per BAg-8. Deformations developed on tubes due to brazing shall be rectified.

d) Inspection & Testing at bidder site

Along with the submission of the fabrication drawings, successful bidder shall submit the document containing the inspection and test plan for review and approval. Following points cover the scope of inspection, test and acceptance criteria's.

Bidder shall carryout the following tests during the execution of the work.

- All the raw materials (stainless steel) to be used for the fabrication shall be tested for
 - their chemical composition (with spectroscopy & Wet test),
 - physical properties,
 - mechanical properties and
 - Inter granular corrosion test for stainless steel following practice E as per A262-02 a.
- Chemical composition test is desired for copper tubes.
- Welding Fillers if used shall be procured along with the material test certificate from the manufacturer.

Approved fabrication drawings complete with dimensions and tolerances shall be used during inspection. Before offering the work for inspection to IPR, bidder shall generate the inspection report for all the dimensions highlighting any deviations are found during internal inspection. Entire manufacturing / fabrication shall be based on the IPR approved drawings.

All the test certificates shall be submitted to IPR.

Only after approval of raw material including the welding rod/filler wires, by IPR, fabrication shall be started.

Periodic (every 2 week) work progress reports shall be submitted to IPR during entire duration of manufacturing / fabrication activity.

- Welding samples for all weld joint configuration shall be prepared, tested and results shall be submitted along with their Welding Procedure Schemes (WPS) and PQR.
- Fabrication of all the components shall be as per applicable fabrication drawings and WPS / PQR approved by IPR (Ref. Section 4.0) and procedure discussed in sections 5.0.3 and 5.0.4

All components shall be checked for dimensions and surface finish. All the inside surfaces of chambers, reducers, ports connections shall be mirror polished buffing.

e) Final Acceptance tests at bidder site

- All the components of chamber and shield components shall be thoroughly cleaned with detergent, warm water and 1, 1, 1 tri-chloro-ethelene.
- After achieving satisfactory assembly of main chamber, adaptors and the inventory chambers, the entire assembly with the required fittings, blanking flanges shall be evacuated to 1×10^{-6} mbar vacuum in clean, cold and degreased condition. The complete assembly shall be helium leak tested with gross leak rate of 1×10^{-6} mbar-l/s (global leak rate) or less.
- The complete assembly placed on the support structure shall be checked for its stability, in two situations –
 1. Entire assembly of all the chambers assembled together along with all their components on all three support structure.
 2. Side chambers detached from the main chambers along with their support structure (in detached condition-).

The bidder shall make the provision /arrangement for the required pumping system, leak detector, liquid nitrogen (if diffusion pump is used), etc in-house or through outsourcing agency. After the completion of inspection and testing of manufactured system, complete inspection and test report shall be submitted to IPR for issuing dispatch clearance.

4.2 DELIVERABLES

4.2.1 Documents submission required at IPR:

Successful Bidder shall submit the specimen report formats for the approval to IPR for the below mentioned report which constitute the document submission. All the reports shall be submitted in the final and approved format in soft and 3 no. of hard copies.

- a) Design and analysis report: Detailed design/ analysis report to be submitted for review in hard copy as well as soft copy (Word format) and required database files of software used in analysis.
- b) Detail engineering drawings including fabrication details, in hard copy as well as soft copy (AUTOCAD/ MDT/ Solid works etc)
- c) Quality Assurance Plan (QAP); Material procurement details, WPS, PQR and Final WPS approved and followed for fabrication.
- d) Test report of raw material procured covering Chemical composition, physical properties and mechanical properties, original manufacturer /mill certificate etc for plates, tubes, pipes, filler material etc.
- e) Reports of Non destructive testing such as radiography, dye penetration of actual fabricated component and 100% Radiography Test (RT) of weld specimen,

- f) Report of dimensional measurement and surface finish of all individual components.
- g) Procedure and Test report for ultimate vacuum of 1×10^{-5} mbar of the assembled system and He leaks test report with Global gross leak rate of 1×10^{-6} mbar-l/s , LN₂ shield temperature profile measurement etc. at bidder site.
- h) Packing list for the items supplied including the spare, material along with its drawing number and quantity, test report number for the item if any.

4.2.2 Supply of Packaged components

Successful bidder need to ensure that all the components are properly wrapped with the proper packing material to avoid damages during transportation. All components will be cleaned thoroughly with detergent and dried completely before packing. Packing procedure shall be submitted to IPR for approval. Successful bidder shall obtain 'Release of Shipment' certificate from IPR authority before supply of the material to IPR stores.

4.3 SCOPE OF WORK AT IPR SITE

Below mentioned list describes the scope of work for successful bidders in this regard includes the followings

- Unloading of supplied components.
 - Erection of a support structure. (Bidders shall finalize the need and quantum of civil work if it is needed and shall indicate their willingness to undertake the necessary civil work in their scope if they desire so).
- Assembly and integration of vacuum chambers on the support structure.
- Evacuation and performance tests (Similar test as mentioned above)

Vacuum Test (Assembly of all the components covered in the scope of this tender shall undergo vacuum testing (order of vacuum -10^{-6} mbar) and

Helium Leak testing using MSLD for a Gross helium leak rate of 1×10^{-6} mbar l/s or less.

Upon successful demonstration of the Entire assembly for the parameters mentioned herein final acceptance shall be given by IPR.

Facilities provided by IPR during scope of work at IPR:

IPR will provide the required vacuum pumps, gate valves, vacuum gauges, leak detector, 240/ 440 V power at the IPR site.

Successful bidders shall bring to the notice of IPR regarding any other provision need to be made for the completion of scope of work at IPR in their offer.

4.4 QUALITY CONTROL AND ASSURANCE TESTS

The bidder shall submit Quality Assurance plan (QAP) to IPR for the approval with detailed time schedule for entire scope of work.

The quality assurance plan shall include all the stages starting from material procurement, identification of raw material to final acceptance. Design & engineering, fabrication, testing, inspection, erection etc shall be covered in Quality Assurance plan (QAP) which will be submitted to IPR for final approval.

4.5 GUARANTEE

Successful bidder shall give guarantee for the performance of the fabricated components for eighteen months (18 Months) from the date of delivery or twelve months from the date of final acceptance.

During this period if any fault occur bidder shall rectify at no extra cost.

5.0 GENERAL TERMS AND CONDITIONS:

Any deviation / discrepancy / change from the drawings shall be brought out in separate sheet by the bidder.

bidder shall submit to IPR a list of material, design, inspection plan, quality assurance plan, material procurement schedule, manufacturing schedule and release for fabrication . Procurement of all the tools, fixtures, jigs, equipment's, material, temporary blanks etc.; required for the fabrication, inspection and testing shall be in the scope of bidder. IPR authority / representative shall have access to all manufacturing facilities, inspection and testing facilities, tools, drawings etc.; during all stages of manufacture. IPR / its authorized representative reserve the right to add any supplementary requirements like random sample testing of raw material.

Safety issues: bidder shall submit the details of Safety norms/precautions followed for site activities in routine work.

Bidder is advised to make a visit at IPR site to understand the IPR site constraint before quoting if necessary.

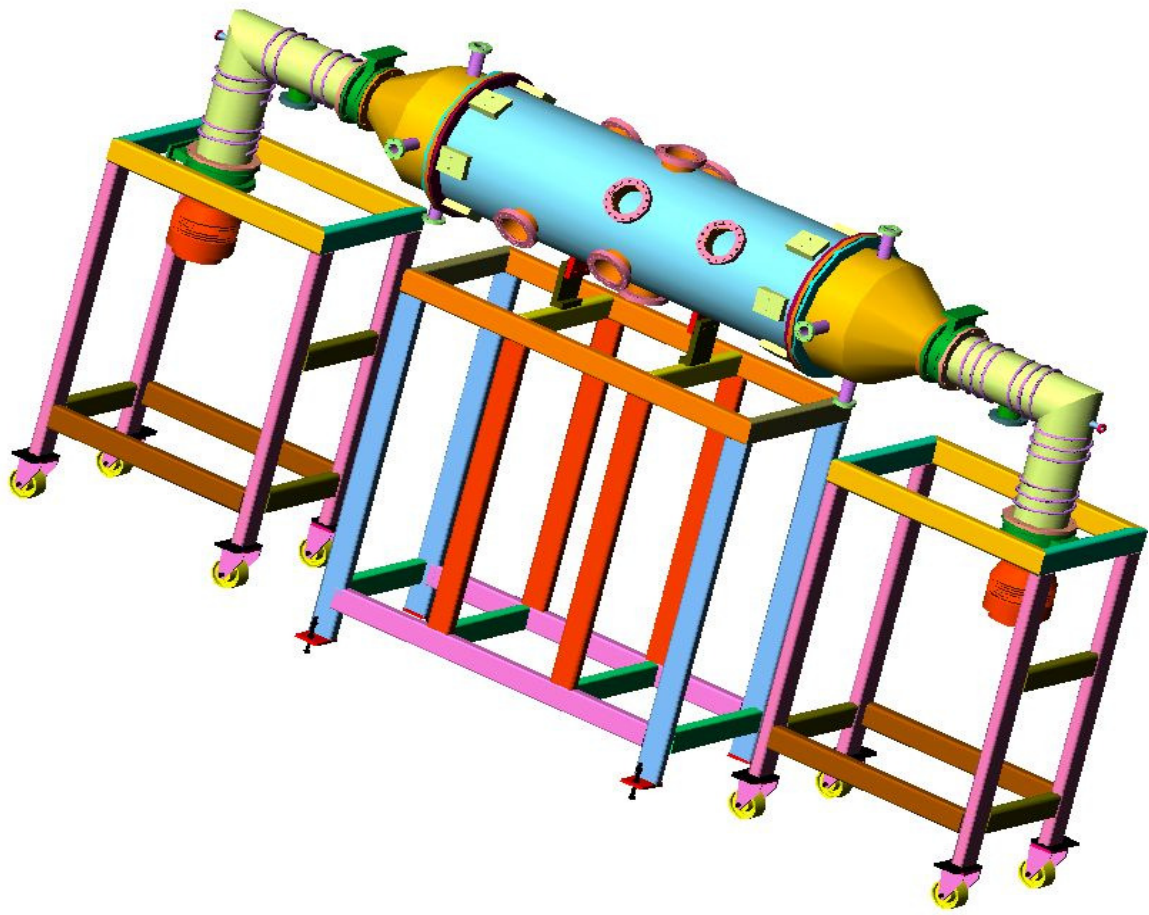
6. Compliances Requirement

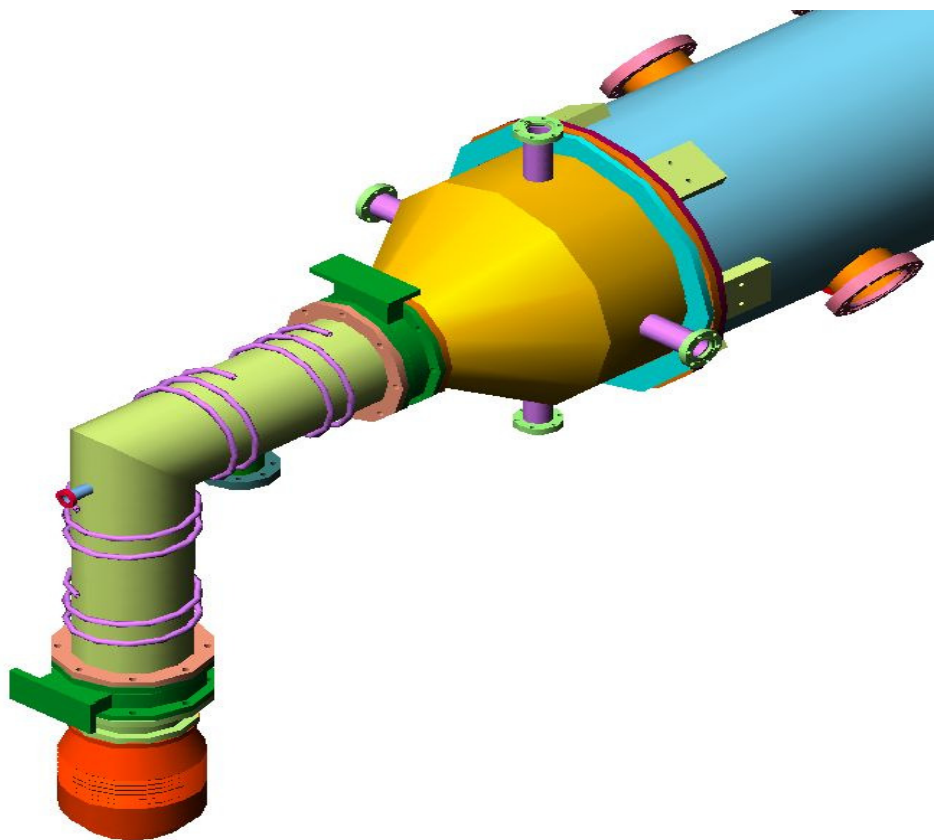
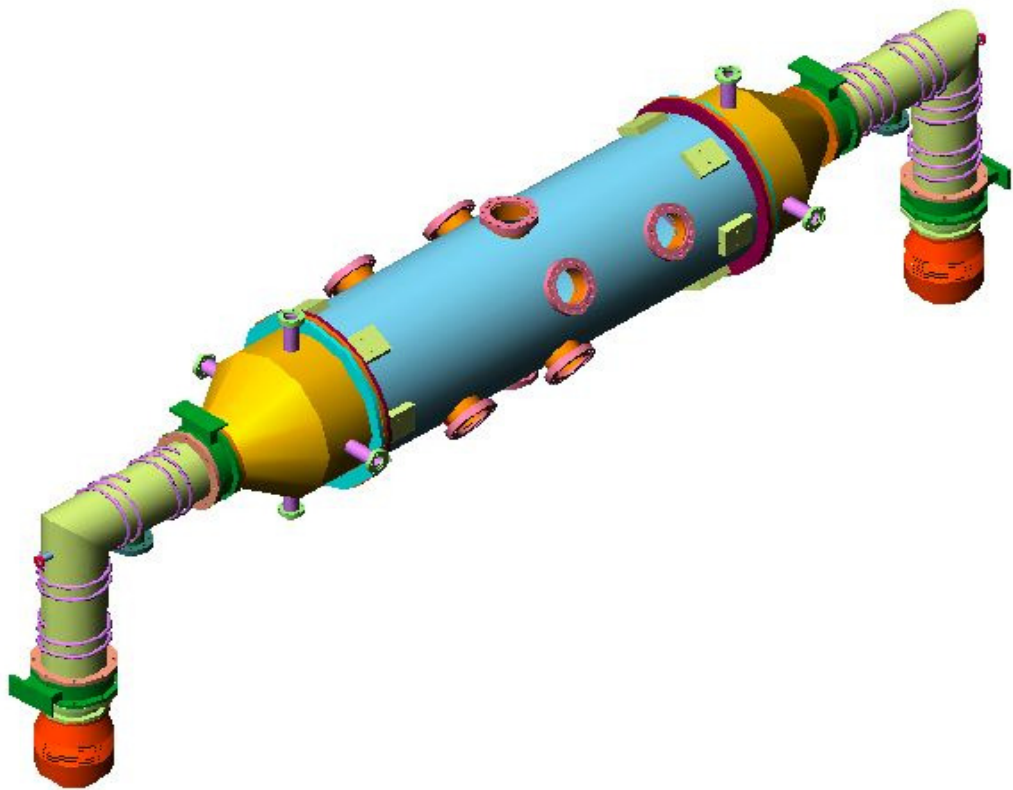
All the bidders are requested to fill up the compliance list mentioned herein below in details against all the points. Without the details provided, or incomplete details, the offer shall be considered as incomplete and may be rejected without any further communication.

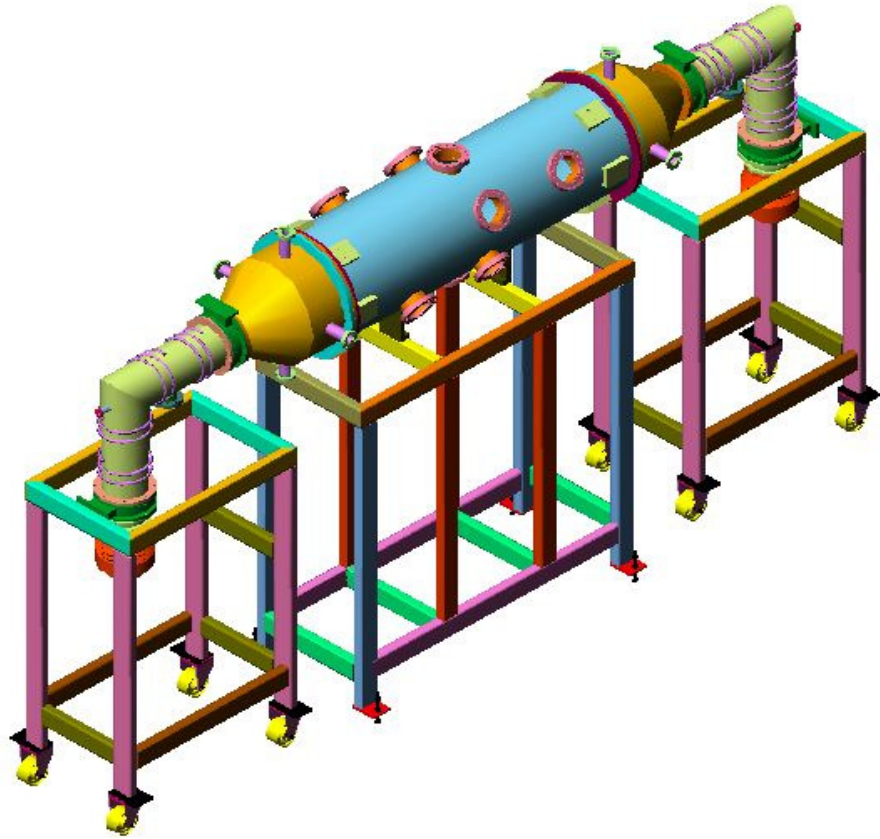
Following details shall be provided by bidder along with the quotations.

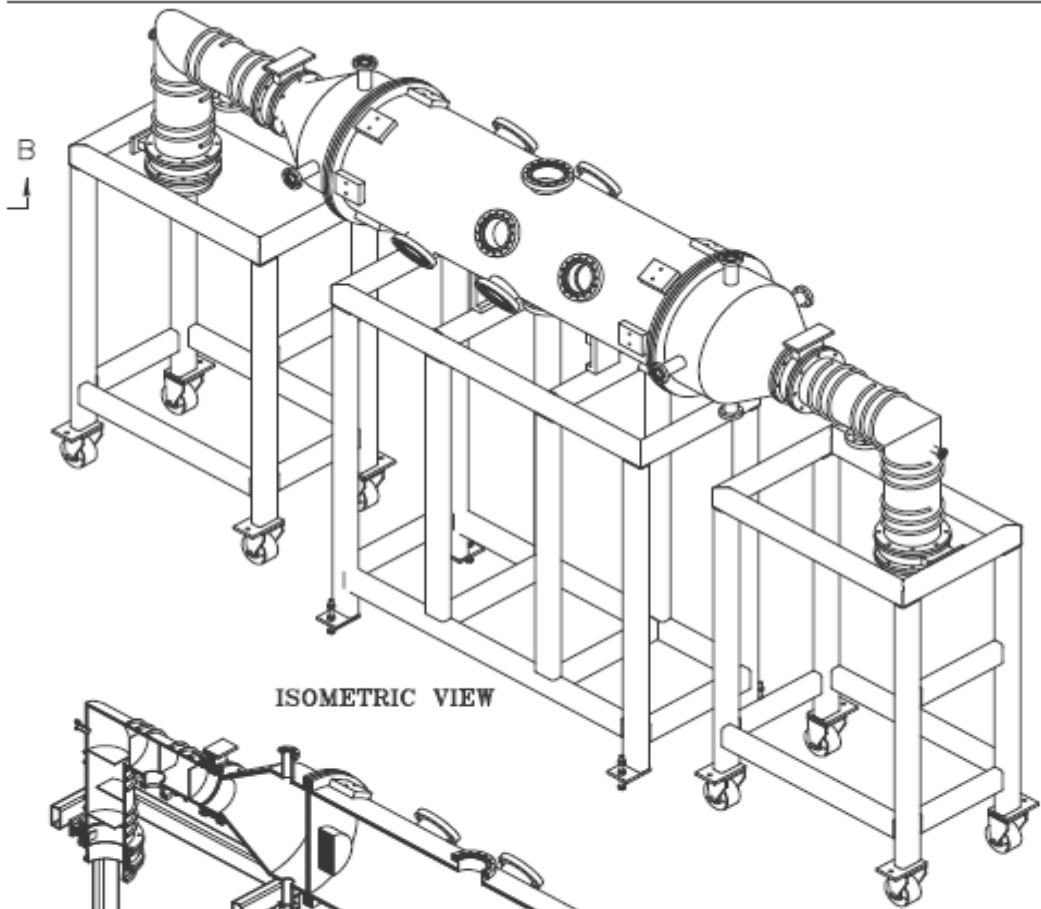
Sr. No.	Area	Points to be covered in detail	Compliance Yes /No
1.	Organisational structure & profile	- Details of the Organisational details with structure	
2.	Manpower division wise	- Details of available manpower in house with brake up of permanent / contracted / temporary in different category.	
3.	Design and Analysis	- Standards / codes which are followed / used routinely in-house. - Software to be used to carry out the analysis (Software reliability to be Assured by bidder)	
		- in-house/ outsourced facility (Hardware with configuration, details of licensed software, its version, manpower to use available software etc.).	
		- If Analysis is outsourced then the name of the contractor and details of their facility - Bidder shall provide the access to IPR engineers to analyze the modeling, analysis details at their facility.	
4.	Report Format	Details of design/ analysis report to be submitted for review in hard copy as well as soft copy (Word) and required database file.	
5.	Material Procurement Procedure	Details of the material procurement procedure followed in house regularly.	
6.	Material Testing	Inspection / testing Agency (Govt approved lab/ Original manufacturer certificate)	

7.	QAP	Quality Assurance followed <ul style="list-style-type: none"> - Internal QAP followed - description - QAP followed for out sourced activities detailed description. 	
		<ul style="list-style-type: none"> - In-house QC /QA facility: List of instruments, facilities - List of Facilities that are outsourced with details of the outsourced agencies. 	
8.	Manufacturing	<ul style="list-style-type: none"> - List of activities / processes planned to be done with in-house facilities - List of activities planned to be outsourced. Details of agencies planned for outsourced activities	
9.	Description of work execution plan to cover the entire scope of work.	<ul style="list-style-type: none"> - Detailed list of activities planned to execute the scope of work covered herein. 	
10.	Safety	<ul style="list-style-type: none"> - Details of Safety norms followed for in-house activities in routine work Details of Safety norms/precautions followed for site activities in routine work	
11.	Scope of work	<ul style="list-style-type: none"> - List entire scope of work as understood by you from the description covered herein above in para # 4.3 	

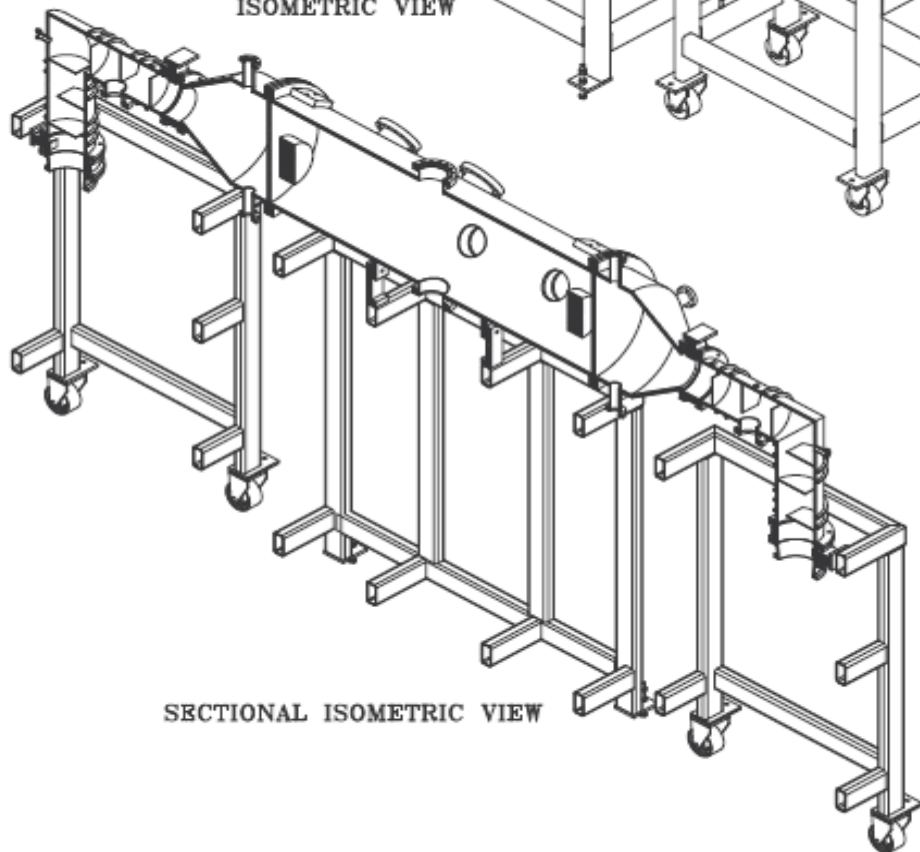




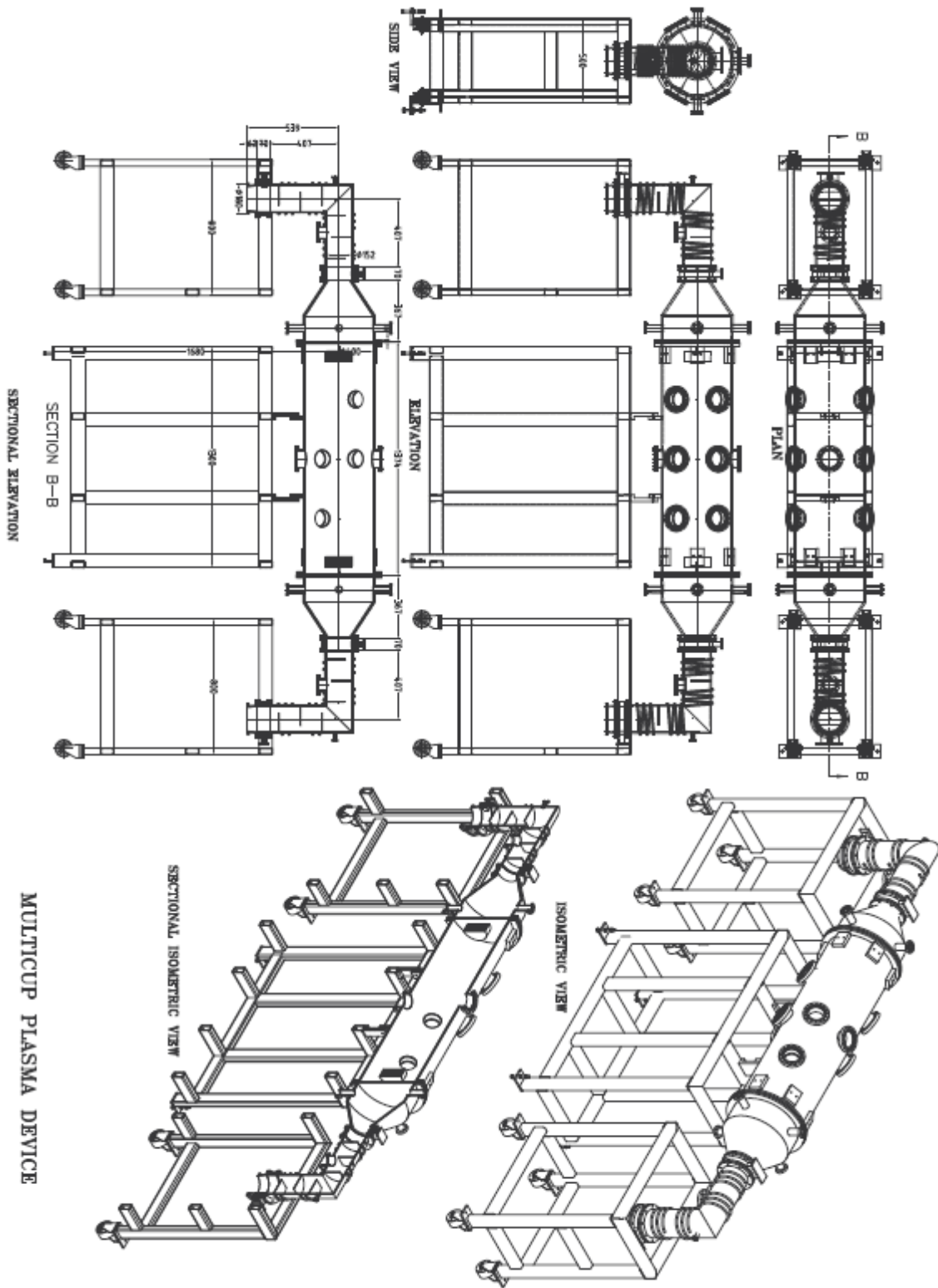




ISOMETRIC VIEW

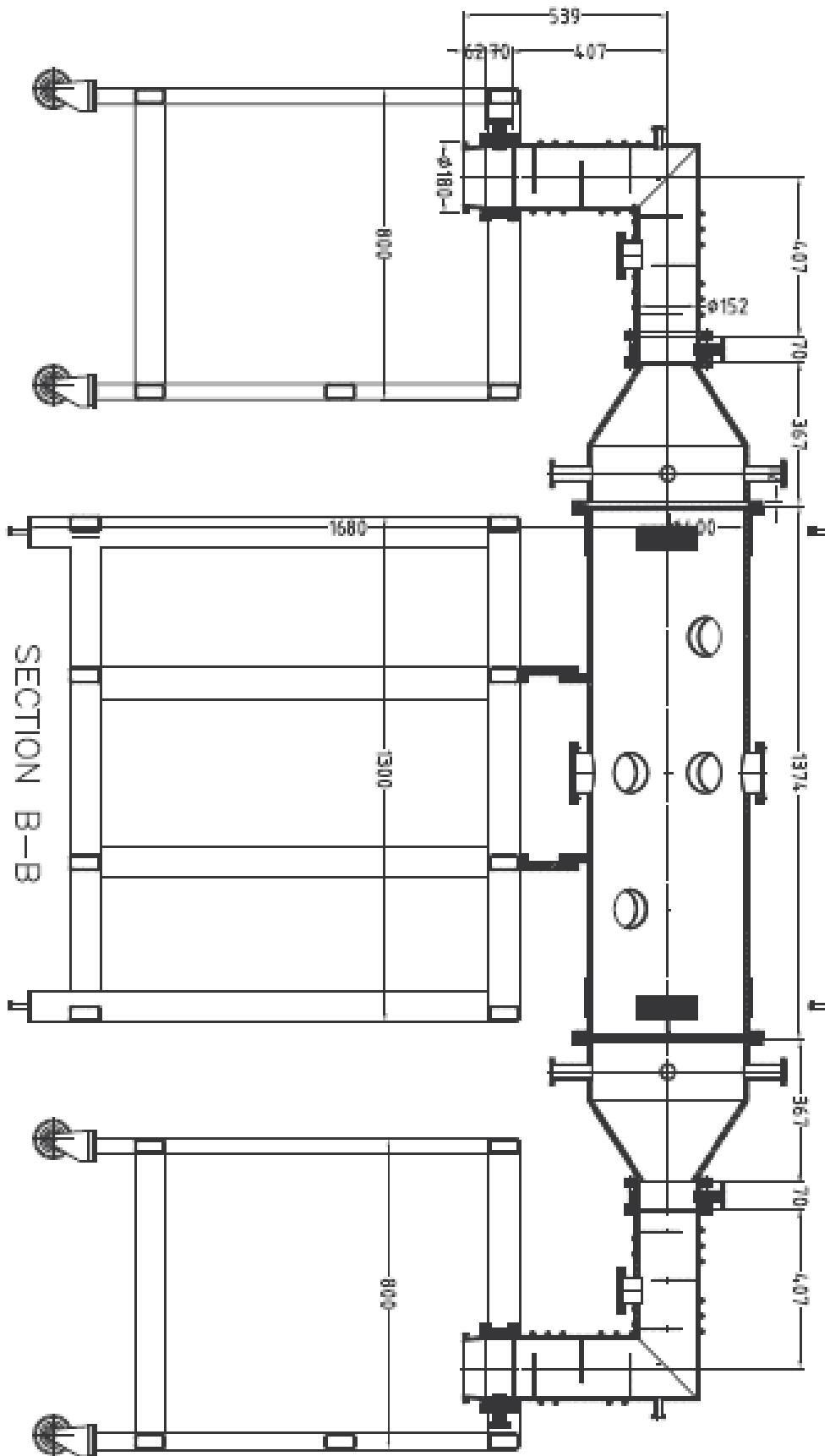


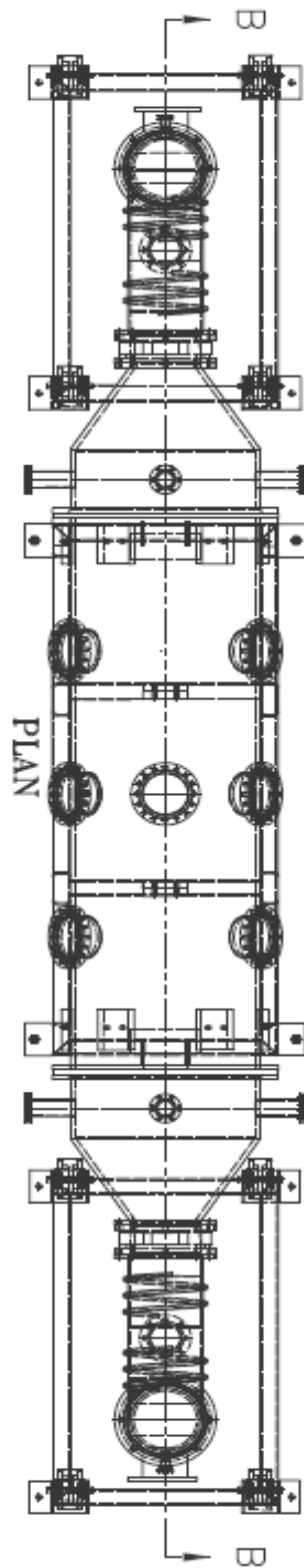
SECTIONAL ISOMETRIC VIEW

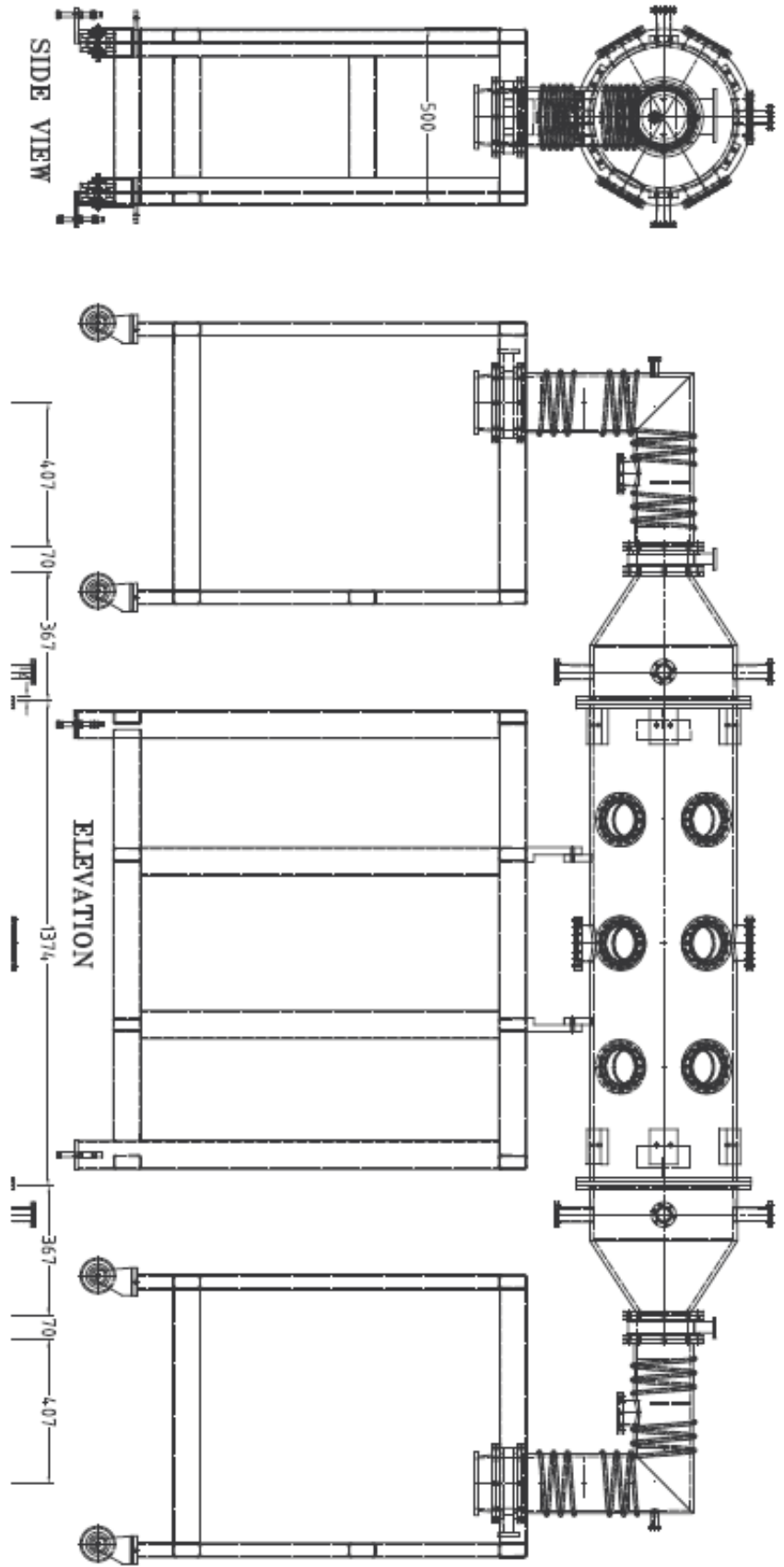


SECTIONAL ELEVATION

MULTICUP PLASMA DEVICE







INSTRUCTIONS TO BIDDERS AND TERMS AND CONDITIONS

1. The quotation and any order resulting from this tender/enquiry shall be governed by our Conditions of contract and supplier quoting this enquiry shall be deemed to have read and understood the same in toto.
2. Where counter terms and conditions have been offered by the supplier, the same shall not be deemed to have been accepted by us, unless our specific written acceptance thereof is obtained.
3. **Tender Fee: Tenders received without the prescribed Tender Fee will be rejected.**
4. **Clarifications:**
Any technical and commercial questions, information, clarifications, etc. that may be required pertaining to this Tender/enquiry may be obtained from the Purchaser before submitting the tender.
 - 4.1 Bids shall be complete in all respects and shall include properly filled in prices, other specifications, schedules, relevant drawings and catalogues as necessary alongwith the bid covering letter, all in duplicate.
5. **QUOTATION:**
Quotation should be submitted **in two parts, i.e. Tender Fee, Technical Bid & Terms and conditions (Part-A) and Price Bid (Part-B).** Tender should be submitted in two separate sealed envelopes (in duplicate) superscribing the above tender no., date, due date and brief description of tendered item along with Earnest Money Deposit (EMD) for Rs.20,000/- by way of Demand Draft from a nationalized/scheduled drawn in favour of ***Institute for Plasma Research*** and payable at Ahmedabad should be submitted to the Purchase Officer at the above address latest by 1.00 p.m. on **17-6-2010.** **Part-A (Technical Bid along with Tender Fee of Rs.200/-, terms and conditions and EMD for Rs.20,000/-)** will be opened on the same day at 2.30 p.m. in the presence of attending tenderers.
 - 5.1 Late and delayed quotations will not be considered. IPR will not be responsible for postal delays or any other delays in receipt of quotation. Envelopes received without Tender number, date, due date and short description of item may be rejected. The quoted prices should be firm for a period of 120 days from due date for placing order. IPR is not bound to accept lowest rate/s. IPR reserves the right to place order on one or more parties irrespective of whether he is lowest or not. The scope of supply includes insurance by the Contractor/Supplier.
6. **Specifications:** Material should be offered strictly conforming to our specifications/drawings. Deviation, if any, should be clearly indicated by the supplier in their quotation. The supplier should also indicate the Make/Type number of the materials offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation.
7. **Terms of prices:** Quotation should be submitted on door delivery basis without extra charge wherever possible. For quotations on Ex-Works, Ex-godown basis the approximate packing and forwarding charges should be indicated by the supplier. In the case of local suppliers, the material is to be delivered at our stores free of charge. Unit rate/s should be valid throughout the validity of purchase order/contract period for

addition/deletion purposes. Break-up of price should be furnished. The quoted price should not be subject to price escalation for whatsoever reasons. The quoted price shall be firm, fixed and non-revisable during the validity/extended validity of purchase order/contract.

- 7.1 Prices are required to be quoted according to the units indicated in the tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
- 7.2 Wherever options are specified in the tender documents, IPR reserves the right to accept any option/s irrespective of whether all the vendors have quoted for all the options or not. The decision of IPR in this regard will be final.
8. Tender should be free from Correction and Erasures. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
9. IPR shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rates quoted.
10. **Sales Tax etc.:** We have no "C" or "D" form. The percentage of Sales Tax/VAT, surcharge, if applicable, and other levies legally leviable and intended to be claimed should be clearly indicated in the tender. Where this is not done, no claim on these accounts would be admissible later.
- 10.1 **VAT Registration:** You may submit a copy of VAT Registration certificate along with your quotation (if applicable).
- 10.2. **Service Tax:** Wherever Service tax is applicable, it should be mentioned clearly. You may indicate percentage of Service Tax in your quotation.
- 10.3 **Excise Duty:** As per Notification No.10/97-CE (Central Excise) dated 1-3-1997, the Purchaser is entitled for availing Excise Duty exemption at present. Excise Duty Exemption Certificate, wherever applicable, and as per rules will be issued at the appropriate time. Hence Excise Duty should not be included in the BID. However, prevailing percentage of Excise Duty may be indicated.
- 10.4 **Octroi:** Octroi is not applicable in our case.
11. **Delivery Date:** The supplier must indicate the firm delivery date by which the materials will be despatched/delivered by them from the date of our order.
12. **Inspection:** Materials on its arrival at IPR will be inspected by Stores In-charge, and his decision in the matter will be final.
13. **EARNEST MONEY DEPOSIT (EMD):**
The Bidder shall submit interest free Earnest Money Deposit (EMD) for Rs.20,000/- (Rupees Twenty thousand only) by way of Demand Draft from a nationalized/scheduled bank issued in favour of ***"Institute for Plasma Research"*** and payable at **Ahmedabad**. **Tender received without EMD will be rejected at the discretion of IPR.**

- 14.1 **EMD of unsuccessful Bidder will be returned after finalizing the Contract/placing Purchase order.**
- 14.2 **The EMD shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the purchase order/contract.**

15. **Payment:**

- 15.1 10% advance against submission of Bank Guarantee for an equivalent amount from a nationalized/scheduled commercial Bank. This payment will be made only after signing the contract/Purchase order and submission of Security Deposit.
- 15.2 10% after approval of major drawings by IPR and on receipt of Bank Guarantee for an equivalent amount from a nationalized/scheduled commercial bank.
- 15.3 60% against delivery of material at IPR site, its verification by IPR representative and on receipt of Proforma Invoice in triplicate.
- 15.4. 20% within 30 days from the date of final acceptance and on receipt of Performance Bank guarantee for 10% of the contract value from a nationalized/scheduled commercial bank.

Wherever, advance payment is involved, it will be paid only against submission of Bank Guarantee from a Nationalised Bank. Bank Guarantees should be furnished as per IPR format.

16. No correspondence will be entertained within 30 days from the date of receipt of material and bills, whichever is later.
17. Quotation should be valid at least for 120 days from the date of opening of the tender.
18. **Guarantee:** The Stores/material/goods/equipment offered by the bidder should be guaranteed for a minimum period of twelve months, against defective materials, design, workmanship, operation or manufacture. For defects noticed during the Guarantee period, replacement/ rectification should be arranged free of cost within a reasonable period of such notification. In cases where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
19. **Security Deposit:** The successful Bidder will have to furnish to the Purchaser an interest free security deposit for 10% (Ten percent) of the order value in the form of Bank Guarantee of an equivalent amount from a nationalised/scheduled commercial Bank within 15 days from the date of LOI/Purchase order and the said Guarantee should be valid till the goods are accepted by IPR. The Security deposit shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the purchase order/contract.
20. **Liquidated Damages:** In addition to forfeiting Security Deposit, Liquidated Damages for the delay shall be 1/2% (half percent) of the total order value for the delay of each week in the scheduled time of supply or the scheduled date of final completion for the work as the case may be, subject to a maximum of 5% (five percent) of total order value. Liquidated Damages will be recovered from the payment due to the supplier.

21. **Performance Bank Guarantee:** The Contractor/Supplier will have to furnish to the Purchaser (IPR) an interest free performance bank guarantee for 10% (Ten percent) of the order value/ contract value by Demand Draft or by way of providing a Bank Guarantee from a Nationalised/Scheduled commercial Bank valid for a period of 12 months/guarantee period mentioned in the order from the date of installation/acceptance for satisfactory performance of the work carried out by the Contractor.
22. The Contractor/Supplier shall at all times indemnify the purchaser against all claims which may be made in respect of the stores/material/goods/equipment for infringement of any right protected by Patent Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.
23. **BAR/PERT Charts:**
To be provided as per the requirement of Purchaser.
24. **Sub-Contract:** All sub-contractors are required to be appraised and approved by the Purchaser before placement of orders by the Vendor.
25. **Jurisdiction:** The contract/Purchase order shall be governed by the Laws of India for the time being in force. The Courts of Ahmedabad only shall have jurisdiction to deal with and decide any legal or dispute arising out of this contract.
26. **Settlement of disputes:** Any disputes or difference arising out of or in connection with the Contract/Purchase order shall be to the extent possible settled amicably between the parties.

If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.
27. **Arbitration:** In the event of any dispute or difference arising under this Contract, the matter shall be referred to the Arbitrators one each nominated by the Purchaser and Contractor from their respective organisations. In case the said Arbitrators are not able to settle the dispute by themselves, the matter shall be referred to the Arbitrator mutually nominated by the Purchaser and the Contractor and whose decision will be final and binding on both the parties. The venue of arbitration will be IPR. Subject to as aforesaid the Arbitration Act, 1940 and the rules thereunder and any statutory modification thereof for the time being in force shall be deemed to apply to the Arbitration proceedings under this Contract.
28. **Permits and Licences:** The Contractor shall secure and pay for all permits and licence which he may require to comply with in respect of all laws, ordinances and regulations of the Government or Public Authorities in connection with the performance of his obligations under the Contract. The successful contractor shall be responsible for all damages and shall indemnify and save the Purchaser harmless from and against all claims for damages and liability which may arise due to his failure to comply with what is stated above.
29. **Training:** The successful tenderer shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering or technical personnel for their active association on the manufacturing process throughout the manufacturing period of the Contract/stores, number of such personnel to be mutually agreed upon.

30. **Operation/Instruction Manual:** Where operation/instruction manual is essential to enable the Purchaser to put the stores to proper use, the successful tenderer shall furnish such operation/instruction manual along with the stores.
31. **Test Certificate:** Wherever required, test certificates should be sent along with the despatch documents.
32. **Secrecy:**
 - 32.1 All information, drawings, designs and specifications imparted to the bidder/successful contractor shall, at all times, remain the absolute property of the Purchaser, the bidder/successful contractor shall not use them for purposes other than for which they are provided for and shall treat all these documents as confidential. These shall not be reproduced in whole or in part for any other purpose.
 - 32.2 The contractor shall use his best endeavours to ensure that such information are not divulged to third parties except where needed for the performance of the contract by the successful bidder with the prior consent of the Purchaser. In such cases, the successful contractor shall ensure and obtain similar obligation of confidence, from third parties in question.
33. **Indemnity:** The Contractor shall warrant and be deemed to have warranted that all stores supplied against this contract are free and clean of infringement of any Patent, copy right or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by patent. Registration of design or Trade Mark and shall all risk of accidents of damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the contract.
34. **Counter terms and conditions of Suppliers:** Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.
35. **Installation/commissioning/site works:** Wherever these activities are part of scope of work/specifications, Vendor should carryout out the same without any extra cost to IPR.
36. **Free Issue Material (FIM) (If specified in the tender documents):** Successful tenderer will have to furnish in the form a Bank Guarantee or in any other form as called for by the Purchaser towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material (FIM) for the due execution of the contract. Successful bidder shall submit Bank Guarantee from a nationalized bank and arrange insurance for the cost of FIM at his expenses.
37. Late/delayed tenders will not be accepted. Incomplete tenders may be rejected at the discretion of IPR.
38. **IPR is not bound to accept the lowest tender. IPR reserves the right to select any vendor at its sole discretion.**

39. **Result of the tenders:** Unsuccessful tenderers will not be informed of the result of their tenders.
40. The Director, IPR reserves the right to accept or reject any quotation/tenders fully or partly without assigning any reason.
41. IPR reserves the right to place order on a single party or to split the order at its sole discretion.

We agree to the above terms and conditions.

Place:

Signature of Bidder with seal

Date:

Note: A copy of our terms and conditions duly signed should accompany your quotation.

PRICE BID FORMAT

(Bidders are requested to offer their price bid in the following format)

S.No	Description	Quantity	Unit cost (Rs.)	Total price (Rs.)
1	Design, Analysis, fabrication, testing and supply of Vacuum Chamber	1 No.		
2.	Installation and commissioning charges (including unloading, shifting, handling with accessories) (Quote Lumpsum charge)	Lumpsum		
3.	Other charges, if any.			
Total Rs.				

	<u>Indicate percentage except Freight</u>		
	Percentage	Included	Excluded
Packing and forwarding			
Excise Duty			
Sales Tax/VAT			
Insurance			
Service Tax on Sr.No.2 above			
Freight	Rs.		

Place:

Signature of Bidder with seal

Date :