

## Tender Details

**Tender No:** PRL/PURCHASE/2018E0076201

**Tender Date:** 23/04/2018

**Purchase Entity:** Physical Research Laboratory

## Tender Notice

PHYSICAL RESEARCH LABORATORY (PRL)

A Unit of Dept. of Space, Govt. of India

Navarangpura, Ahmedabad 380 009, (Gujarat), INDIA.

Tel: 91-79-2631 4113/4112/4119, FAX: 91-79- 26314910

Email: [purchase@prl.res.in](mailto:purchase@prl.res.in) , Web: [www.prl.res.in](http://www.prl.res.in)

INVITATION FOR BIDS

E-Procurement Tender Notification No.PRL/PURCHASE/GT-01/18-19 Dated 14-05-2018

The Director, Physical Research Laboratory, Ahmedabad invites bids in Two parts i.e. (Part I Technical Bid and Part-II Price bid) for the supply, installation, testing and commissioning of item/equipment listed below:

Sl. No.

E-Procurement

File No.

Description of items / equipment

Quantity

1

PRL/PURCHASE/2018E0078901

IMPACTOR

1 Set

2

PRL/PURCHASE/2018E0078801

SENSOR BASED ToF TRIGGERRED VISUAL DATA ACQUISITION

1 Set

3

PRL/PURCHASE/2018E0073001

APPLICATION VIRTUALIZATION

1 No.

4

PRL/PURCHASE/2018E0074301

CAMC OF PRL HPC

1 No.

5

PRL/PURCHASE/2018E0075201

HIGH RESOLUTION LINEAR POSITIONER, ROTATOR, ETC.

1 Set

6

PRL/PURCHASE/2018E0073301

MICRO SAMPLING MILLING DEVICE

1 Nos.

7

PRL/PURCHASE/2018E0075001

HOLLOW-CORE FIBER COMPRESSOR KIT (FOR SUB-5 FS)

1 Pkg.

8

PRL/PURCHASE/2018E0075501

DRY-COMPRESSION ROOTS VACUUM PUMPS

2 Nos.

9

PRL/PURCHASE/2018E0075301

SPIDER FOR ULTRAFAST PULSE CHARACTERIZATION

1 No.

10

PRL/PURCHASE/2018E0071202

FID ANALYZER

1 Set

11

PRL/PURCHASE/2018E0076201

PUMPING SYSTEMS WITH PRESSURE GAUGES

As per Tender

12

PRL/PURCHASE/2018E0075701

VACUUM CHAMBER WITH PRECISION DOSING VALVE AND GAS

1 No.

13

PRL/PURCHASE/2018E0074901

COMMUNICATION ACCESSORIES ULTRA STABLE OSCILLATOR

3 Nos.

14

PRL/PURCHASE/2014E0037701

HIGH ENERGY ION GUN

1 No.

15

PRL/PURCHASE/2018E0075401

DIGITAL STORAGE OSCILLOSCOPE (4GHz, 20 GS/S, 4 Ch, 16 Mpts/Ch)

1 No.

16

PRL/PURCHASE/2018E0078601

MASS FLOW CONTROLLERS

1 Set

17

PRL/PURCHASE/2018E0078401

MASS SPECTROMETER (1-5000 amu)

1 Set

18

PRL/PURCHASE/2018E0074601

STABLE ISOTOPE RATIO MASS SPECTROMETER(IRMS)

1 Nos.

19

PRL/PURCHASE/2018E0075101

TOROIDAL MIRROR, DIFFRACTION GRATING, DOUBLE MIRROR AND AIR FILTER

As per Tender

20

PRL/PURCHASE/2017E0067802

SPECTROPHOTOMETER

1 No.

21

PRL/PURCHASE/2018E0073701

BROADBAND CAMERA

1 Nos.

22

PRL/PURCHASE/2018E0076301

CRYOSTAT (CYROGENIC TANK & VACUUM PUMPS)

As per Tender

23

PRL/PURCHASE/2018E0076101

HIGH PERFORMANCE QUADRUPOLE MASS SPECTROMETER

1 Nos.

24.

PRL/PURCHASE/2018E0078501

## UHV VIEWPORTS

As per Tender

25.

PRL/PURCHASE/2018E007901

Aerosol Hygroscopic growth Analyser

3 Nos

Interested Bidders may obtain further information including Technical Specifications, Tender Documents, Submission Forms and all other relevant information with terms and Conditions of bidding from our website <https://www.prl.res.in> and [www.isro.gov.in](http://www.isro.gov.in) under link Business with PRL -Tenders / Contracts and Tender Notices respectively.

There is no fee for Tender Document/s.

On line bid submission :

The interested bidders must submit their offer on Line by registering their firms under E-procurement within the Due date and time. The concerned Web link for E-Procurement is <https://eprocure.isro.gov.in/isro/index.asp>? For vendor registration supplier has to have digital certificate and non public domain email id.

This is a two stage process. After submission of bid, bidder has to give open authorization also. Digital Certificate is to be used at every stage of Submission i.e. Open authorization and Opening of the Bids. Accordingly interested bidders are requested to visit the above web link and read the instructions carefully to ensure that the bids are submitted correctly and open authorization is confirmed at

appropriate time. Bids of those bidders who have completed above two steps will only be opened. Please note that time slot for various activities for E-Procurement is to be followed rigidly.

For any problem during the process of bidding online, bidders may contact help line as mentioned on E procurement website i.e. at 9167969601 during working hours as per Indian standard time.

Suppliers are requested not to wait till last date for submission of Open Authorization and Bid Submission as Technical Support shall be available only on working days during working hours and any delay shall result in Invalid Bid.

Suppliers are NOT required to submit hard copy of bids.

Schedule of tendering :

Last date for online bid submission : 25-06-2018 23:00 hrs ( IST)

Last date for online open Authorization : 05-07-2018 23:00 hrs ( IST)

Date and time for Technical bid opening : 06-07-2018 14:00 hrs ( IST)

Supplier can attend Technical Bid Opening with prior intimation.

The Price Bids of only those technically qualified bidders will be opened for which Date and Time will be informed separately.

In the event of the date specified for bid opening being declared as a closed holiday for purchaser's office, the due date for bid opening will be the following working day at the appointed time.

The Director, PRL, Ahmedabad reserves the right to accept any or all tenders either in part or in full or to split the order without assigning any reasons thereof. The Director, PRL also reserves the right to

reject any bid and annul the bidding process at any time prior to award of contract, without assigning any reasons and there by incurring any liability to the affected bidder or bidders.

Soft copy of Tender Terms are also uploaded in pdf format on our website.

Registrar, PRL

## Tender Attachments

### Technical Write-up/Drawings

#### Attachment - I:

IDT0015380000000000isro05401.pdf

#### Attachment - II:

#### Attachment - III:

#### Attachment - IV:

#### Attachment - V:

### Instructions to Tenderers (PT)

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I. INSTRUCTIONS TO TENDERERS 1.The Tenderers should submit quotations online complete in all respects with technical specifications, including pamphlets and catalogues. 2.A Proforma Invoice may also be given which should contain the following information: a)FOR QUOTATION IN FOREIGN CURRENCY :Supplier has to submit offer only on EX WORKS / FOB / FCA basis duly packed for air / sea transportation as applicable. We shall add 5% freight charges on this cost and 2% of total landed cost shall be added for custom clearance charges. We shall add duty (notional) to arrive at PRL landed cost as per applicable norms as on date of preparation of cost comparative statement.b)FOR QUOTATION IN INDIAN RUPEES : Supplier has to submit offer only on Free on Road – PRL Ahmedabad only. If supplier has quoted imported items and informs PRL to pay duty, it shall be added as mentioned above i.e. We shall add duty (notional) to arrive at PRL landed cost as per applicable norms as on date of preparation of cost comparative statement.c)Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject

to any further exchange variations. This payment will be released to the Indian Agent immediately after Customs clearance of the goods in India. d)The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent. e)The earliest delivery period and country of origin of the Stores. f)Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor. g)The approximate net and gross weight and dimensions of packages / cases. h)Recommended spares for satisfactory operation for a minimum period of one year. i)Details of any technical service, if required for erection, assembly, commissioning and demonstration. 3.The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country. 4.The offer should be valid for a minimum period of 120 days from the due date of opening of the tender. 5.Samples, if called for, should be sent free of all charges. 6.Late and delayed tenders will not be considered. 7.Offer made by Indian Agents on behalf of their Principals, should be supported by the proforma invoice of their Principals. 8.The details of Import Licence will be furnished in the Purchase Order. 9.The authority of person signing the tender, if called for, shall be produced. 10.Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only. 11.The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason. 12.It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser. 13.a) Part shipment is not allowed unless specifically agreed to by us. b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through any Agency nominated by us. 14.Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractors. 15.Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility. 16.For items having shelf life, those with maximum shelf life should be supplied if order is placed. II. TERMS AND CONDITIONS 1.DEFINITIONS: (a)The term 'Purchaser' shall mean the President of India or his successors or assignees. (b)The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract. (c)The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores of plant, machinery or equipment of part thereof. (d)The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order. 2.PRICES: Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. 3.TERMS OF PAYMENT: 3.1Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon. 3.2The Sight Draft / Letter of Credit will

be operative on presentation of the undermentioned documents: a)Original Bill of Lading / Airway Bill  
b)Commercially certified invoices describing the stores delivered, quantity, unit rate and their total value, in triplicate. The invoice should indicate the discounts, if any, and Agency Commission separately.  
c)Packing List showing individual dimensions and weight of packages. d)Country of Origin Certificate in duplicate. e)Test Certificate. f)Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.

4.IMPORTANT LICENCE: Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide para 3.2

5.DEMURRAGE: Supplier shall bear demurrage charges, if any, incurred by the purchaser due to delayed presentation of shipping documents as prescribed in para 3.2 to the bankers within a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

6.ADDRESS OF INDIAN AGENTS: .....

7.GUARANTEED TIME DELIVERY: The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

8.INSPECTION AND ACCEPTANCE TEST: 8.1The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under this Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract. 8.2For tests on the premises of the Contractor or of any of his subContractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the purchaser's representative to carry out the tests efficiently. 8.3When the stores have passed the specified test, the purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the purchaser as may be required.

9.MODE OF DESPATCH: Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

10.PORT OF ENTRY: Ahmedabad/Mumbai

11.CONSIGNEE: Purchase & Stores Officer, Stores, Physical Research laboratory, Navrangpura,Ahmedabad-380009, India

12.SHIPPING MARKS. The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow: PURCHASE ORDER NO. .... DATED ..... GOVERNMENT OF INDIA A UNIT OF DEPARTMENT OF SPACE PHYSICAL RESEARCH LABORATORYNAVRANGPURA, AHMEDABAD-380009, INDIA

Destination: ..... & Port of Entry: .....13.INSURANCE OF THE STORES: The necessity or otherwise of insurance will be as indicated in the Purchase Order.

14.CONTRACTOR'S DEFAULT LIABILITY: 14.1The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder: a)If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor. b)If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15.In the event the Purchaser terminates the Contract in whole or in part as

provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores. 15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser: a) Any completed stores. b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted, by the purchaser and for manufacturing material delivered and accepted. 15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

16. REPLACEMENT: If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees, the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender. 17. REJECTION: In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the purchaser. If the Contractor fails to do so, the purchaser may at his option either – a) replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or b) terminate the Contract for default as provided under clause 14 above, or c) acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice the Purchaser's rights under clause 19.

18. EXTENSION OF TIME: If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract. 19. DELAY IN COMPLETION / LIQUIDATED DAMAGES: If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages as under. (1) PRL Reserves the right to levy Liquidated Damages @ 0.5% of total order value per week of delay in deliveries / installation / execution of the order successfully. Subject to maximum of 10% of the order value. (2) Part of the week shall be considered as full week PRL reserves the right to cancel the order in case the delay is more than 5 weeks. Transit period will be excluded while deriving applicability of this clause depending upon agreed delivery term. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not

delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered. 20.GUARANTEE & REPLACEMENT: a)The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance. b)For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty. c)If in the opinion of the purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the purchaser provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof. d)Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores. e)The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor. f)To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser - Bank Guarantee format enclosed) from a Bank approved by the purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest. g)All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at purchaser's site. h)Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months. 21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED: The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations. 22.PACKING: a)The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing. b)The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved. c)The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival. d)The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc. e)Transshipment of equipment shall not be permitted except with the written permission of the purchaser. f)Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the purchaser within 7 days from the date of shipment by sea and within 3

days in case of air-consignments: a)Commercial Bill of Lading / Air Way Bill / Post parcel Receipt. (Two non-negotiable copies) b)Invoice (3 copies) c)Packing List (3 copies) d)Test Certificate (3 copies) e)Certificate of Origin. The Contractor shall also ensure that one copy of the packing list is enclosed in each case. 23.ARBITRATION: If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India. 24.LANGUAGE AND MEASURES: All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract. 25.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, copyright or trade mark and shall at all times indemnify the purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or 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 fulfillment of the Contract. 26.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. 27.SECURITY INTEREST: On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the purchaser in accordance with the terms of the Contract. Such security interest of the purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity. 28.BANK CHARGES: While the purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions. 29.TRAINING: The Contractor shall, if required by the purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores, number of such personnel to be mutually agreed upon. 30.APPLICABLE LAW: The Contract shall be interpreted, construed and governed by the laws of India. ---  
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## Bid Templates

### Specification

#### Item Specifications

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	A. Specifications for Turbo molecular pump for main chamber with suitable dry backing pump and related items (a, b, c, and d) – 1 No: (a) Turbo molecular pump for main chamber with suitable dry backing pump Connections:-Flange (In-let): DN 100 CF – F-Flange (Out-let): Compatible to Backing pump Pumping Speed:-For Nitrogen: &#8805;260 lps- For Helium : &#8805; 255 l/s Gas throughput at full rotational speed -For Nitrogen: &#8805; 1.5 mbar. l/s-For Hydrogen :			

	<p>       10 mbar. l/s-For Helium : 3.5 mbar .l/s Compression ratio: - For Nitrogen : 1 x 10<sup>13</sup> -For Hydrogen : 1 x 10<sup>7</sup>-For Helium : 2.5 x 10<sup>9</sup>-For Argon : 1 x 10<sup>13</sup>Fore vacuum pressure: -For Nitrogen: 30 mbar-For Helium : 28 mbarProtection: IP 54Ultimate pressure with dry backing pump: &lt; 1 x 10<sup>-10</sup> mbar as per standard norms.Other specifications of the pumping system: -TMP Bearing (Hybrid Bearing) : Oil lubricated ceramic bearing on fore vacuum side and Maintenance free &amp; lubrication free permanent magnetic bearing on high vacuum side is required.-Mounting Orientation of TMP : In any orientation-Run up time : @ 3.5 min-Cooling     </p>			
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	<p>system: Air -Interfaces: Remote &amp; RS-485Control Unit for all the above pumping systems should inform following parameters: •Speed of the pump in terms of revolutions per seconds. •Current drawn by the pump. •Operating hours for turbo molecular pump and electronics separately. •Temp erature of ceramic bearing, motor part, bottom part and electronics. •Displ ay two parameters like current of the motor and speed at one time. •Display the current status of the pump with LED indications. •Displ ay vacuum reading when connected to compatible vacuum gauge. •Display of</p>			
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	<p>present status of TMP like pump acceleration, heating, stand by, unit under remote/local, excess temperature, final rotation speed, error message LED blinking etc.;</p> <p>Able to store last 10 error/warning history ;</p> <p>List of faults / errors.</p> <p>;</p> <p>Single switch operation for the Turbo Pumping system along with the backing pump</p> <p>Provision to operate backing pump individually without TMP if required without disturbing the setup.</p> <p>Specification of Dry Backing Pump (Dry Multistage Roots Pump) :-</p> <p>Pumping speed : 14 m<sup>3</sup>/h-</p> <p>Ultimate pressure without gas ballast : ; 3.0 x 10<sup>-2</sup> mbar-Air cooling-Inlet flange : DN 25 ISO-KF-</p> <p>Helium Leak rate : 5.0 x 10<sup>-7</sup> mbar.l/s-Water vapour capacity : 80 g/h-</p>			
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	<p>Operating voltage : 230V /  50 Hz / Single phase AC-  Service life &gt; 20000  hours(b) UHV Gate valve  100 CF-F with Position  Indicator and Pilot valve –  1 No-Actuator: Electro-  pneumatic-Flange(IN/OUT)  : DN 100 CF-F-  Feedthrough : Bellows-  Tightness Body : 5 x 10<sup>-10</sup>  mbar.l/s-Tightness Valve  seat : 1 x 10<sup>-9</sup> mbar.l/s-  Pressure Range : 2000  mbar to 1 x 10<sup>-10</sup> mbar-  Opens to a pressure  difference of : 30 mbar-  Cycles until first service :-  50000 cycles-Seal :-  A.Bonnet : MetalB.Gate :  FKM-Valve plate : Stainless  Steel-Bakeout  Temperature : Valve  closed : 200 °C-Bakeout  Temperature : Valve open  under Vacuum : 250 °C-  Compressed air : 4 bar to 7  bar-Conductance : 1700  l/s-Closing/Opening time :  1.2s-Supply voltage : 230V</p>			
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	<p>AC/50 Hz-Mounting  Position : Any-Weight : 12  Kgs(c) Solenoid Angle  valve DN 25 ISO-KF – 1  Nos. -Housing : Stainless  Steel-Flange (In/Out) : DN  25 ISO-KF-Operating  pressure : 1300 mbar to 1  x 10<sup>-8</sup> mbar-Tightness : 1 x  10<sup>-9</sup> mbar.l/s-  Feedthrough : bellows,  Stainless Steel-Differential  pressure opening/closing :  1300 mbar-Operating  voltage : 230V AC / 50Hz /  Single phaseService life :  2000000 cycles (d)  Specifications Gauges &amp;  Controller with  Accessories (I)  Specification for Extractor  Gauge-Method of  measurement : Extractor  system-Connection flange  : DN 40 CF-F-  Measurement range :  1.0x10<sup>-4</sup>mbar to 2.0 x 10<sup>-</sup>  12 mbar-Filament :  Iridium-Collector :  Tungsten-Anode : Mo and</p>			
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	<p>CoNiCr-Bake out temperature : 400 °C-  Feedthrough : NiFe  Pirani gauge-Method of measurement : Pirani -  Connection flange : DN 16  CF-F-Measurement range : 5.0x10-4mbar to 1000 mbar-Filament : Nickel-  Bake out temperature : 250 °C-Electrical connection : Hirschmann GO 6 UM, 6-pin male on gauge side and Amphenol C91B on controller side-  Seal : Metal-Mounting Orientation : Any-  Resolution : 1% of reading-  Accuracy : 100mbar to 0.001mbar : at least +- 15%-Should be compatible with Extractor gaugeSuitable controller with connecting cables-  Measurement range : 1000 mbar to 2.0 x 10-12 mbar-Interface : RS-232-  Measuring channel : 3 pcs.-Operating voltage : 90 – 264 V AC / 50</p>			
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	<p>HzAdditional components:Conical Reducer, DN 25 ISO-KF DN 25-16 ISO-KF, stainless Steel, length 40 mm 3Full Nipple, DN 25 ISO-KF SS 304/1.4301, length 100 mm 3Corrugated Hose, DN 16 ISO-KF S, flexible, length 1000 mm 3Clamping Ring, DN 10 / 16 ISO-KF Aluminum ADC 12, for Elastomer Seal 8Centering Ring, DN 16 ISO-KF SS 304/1.4301, O-Ring FKM 6Centering Ring, DN 25 ISO-KF SS 304/1.4301, O-Ring FKM 10Clamping Ring, DN 20 / 25 ISO-KF Aluminum ADC 12, for Elastomer Seal 10Stud Screw Set, DN 63-250 CF SS A2-70, 10 count M8 8Copper Gasket, DN 100 CF OFHC Copper (Oxygen Free), 10 pieces per package 1Copper Gasket, DN 63 CF OFHC Copper (Oxygen Free), 10 pieces per package</p>			
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	<p>2Copper Gasket, DN 40 CF  OFHC Copper (Oxygen Free), 10 pieces per package 2Note:Any other additional components/fittings required for smooth installation of pumps should be included.Warranty : At least one year from the date of installation. &amp;#61548;If vendors can provide more than one year warranty from the date of installation without additional cost will be appreciated. &amp;#61548;If the price quoted by two vendors is same, then vendors who can provide additional warranty will be preferred.After sales services : In case of break down, complete repairs of the Turbo Pump, viz. bearing replacement, motor part replacement, complete cleaning of the</p>			
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	<p>pump etc. should be possible at site. The vendor should have Service Centre/Facility and complete infrastructure within India to handle complete repairs of the turbo pump, such as, changing of stator / rotor assembly, repairing of Dry pumps, Gauges, controllers, etc. and availability of critical spares off the shelf, from Indian office.</p>			
2	<p>B. Specifications for Turbo molecular pumping System for the gas line – No. 1 and related items (a, b, c and d): (a) Turbo molecular pumping SystemConnections:- Flange (In-let): DN 63 CF – F-Flange (Out-let): Compatible to Backing pump Pumping Speed:-For Nitrogen: &amp;#8805;65 lps- For Hydrogen : &amp;#8805; 45 l/s-For Helium : &amp;#8805;</p>			

	<p>55 l/s Gas throughput at full rotational speed -For Nitrogen: &amp;#8805; 1.3 mbar. l/s-For Hydrogen : &amp;#8805; 15 mbar. l/s-For Helium : &amp;#8805; 2.5 mbar .l/sCompression ratio: -For Nitrogen : &amp;#8805; 1x10<sup>11</sup> -For Hydrogen : &amp;#8805; 1 x 10<sup>6</sup>-For Helium : &amp;#8805; 1x10<sup>3</sup>-For Argon : &amp;#8805; 1x10<sup>11</sup>Fore vacuum pressure: -For Nitrogen: &amp;#8804; 20 mbarDegree of Protection: IP 54Ultimate pressure with the dry backing pump: &lt; 5 x 10<sup>-10</sup> mbar as per standard normsOther specifications of the pumping system: -TMP Bearing (Hybrid Bearing) : Oil lubricated ceramic bearing on fore vacuum side and Maintenance free &amp; lubrication free permanent magnetic bearing on high vacuum side is required-Mounting Orientation of TMP : In</p>			
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	<p>any orientation-Run up time : @ 2 min-Cooling system: Air -Interfaces: Remote &amp; RS-485Control Unit for all the above pumping systems should inform following parameters:</p> <ul style="list-style-type: none"> <li>&amp;#61656;Speed of the pump in terms of revolutions per seconds.&amp;#61656;Current drawn by the pump.&amp;#61656;Operating hours for turbo molecular pump and electronics separately.&amp;#61656;Temp erature of ceramic bearing, motor part, bottom part and electronics.&amp;#61656;Displ ay two parameters like current of the motor and speed at one time.&amp;#61656;Display the current status of the pump with LED indications.&amp;#61656;Displ ay vacuum reading when connected to compatible</li> </ul>			
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	<p>vacuum gauge.</p> <p>• Display of present status of TMP like pump acceleration, heating, stand by, unit under remote/local, excess temperature, final rotation speed, error message LED blinking etc.</p> <p>• Able to store last 10 error/warning history</p> <p>• List of faults / errors.</p> <p>• Single switch operation for the Turbo Pumping system along with the backing pump</p> <p>• Provision to operate backing pump individually without TMP if required without disturbing the setup.</p> <p>1. Specification of Dry Backing Pump (Dry Multistage Roots Pump) –</p> <p>1 Nos : -Pumping speed : 14 m<sup>3</sup>/h-Ultimate pressure without gas ballast : <math>3.0 \times 10^{-2}</math> mbar-Air cooling-Inlet flange : DN 25 ISO-KF-</p>			
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	<p>Helium Leak rate : 5.0 x 10-7 mbar.l/s-Water vapour capacity : 80 g/h- Operating voltage : 230V / 50 Hz / Single phase AC- Necessary accessories - Service life &gt; 20000 hours(b) UHV Gate valve 63 CF with Position Indicator and Pilot Valve : 1 Nos.-Actuator: Electro-pneumatic-Flange(IN/OUT) : DN 63 CF-F-Feedthrough : Bellows-Tightness Body : 5 x 10-10 mbar.l/s- Tightness Valve seat : 1 x 10-9 mbar.l/s-Pressure Range : 2000 mbar to 1 x 10-10 mbar-Opens to a pressure difference of : 30 mbar-Cycles until first service :- 50000 cycles- Seal :-a.Bonnet : Metalb.Gate : FKM-Valve plate : Stainless Steel- Bakeout Temperature : Valve closed : 200 °C- Bakeout Temperature : Valve open under Vacuum : 250 °C-Compressed air :</p>			
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	<p>4 bar to 7 bar-  Conductance : 600 l/s-  Closing/Opening time :  1.0s-Supply voltage : 230V  AC/50 Hz-Mounting  Position : Any-Weight : 10  Kgs(c) Solenoid Angle  valve DN 25 ISO-KF – 1  Nos. -Housing : Stainless  Steel-Flange (In/Out) : DN  25 ISO-KF-Operating  pressure : 1300 mbar to 1  x 10<sup>-8</sup> mbar-Tightness : 1 x  10<sup>-9</sup> mbar.l/s-  Feedthrough : bellows,  Stainless Steel-Differential  pressure opening/closing :  1300 mbar-Operating  voltage : 230V AC / 50Hz /  Single phaseService life :  2000000 cycles(d)  Specification of Full range  gauge (Pirani/Cold  cathode) : - 1 No-  Measurement Range Min.  : 5 x 10<sup>-9</sup>mbar-  Measurement Range Max.  : 1000 mbar-Bake out  Temperature : 150 °C with  electronic removed-</p>			
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	<p>Accuracy:10<sup>-8</sup> – 10<sup>-2</sup>mbar  : ± 30%-Repeatability:10<sup>-8</sup>  – 10<sup>-2</sup> mbar : ± 5%-Supply:  Voltage : 15 – 30V DC-  Supply :Power  Consumption : 2W-  Temperature Operating :  +5°C - 55°C-Seal : FPM-  Feedthrough : Al<sub>2</sub>O<sub>3</sub>-LED  Indication on change over  from Pirani to cold  cathode-Filament:  Tungsten and  Molybdenum-Volume :  20cm<sup>3</sup>-Flange : DN 40 CF-  F-Easy cleaning and  replacement of spares of  the gauge in case of sever  contaminationsingle gauge  controller with display for  the above gauges Qantity-  1 No.-Measurement Range  :- 55 bar to 5 x 10<sup>-11</sup>  mbar-Measuring channel :  1 pcs.-Display rate: 10 Hz-  Filter time constant: Slow  0.75/ Medium 0.15/ Fast  0.02s-Measurement rate :-  100 Hz-Measurement unit  :- mbar, hPa, Torr, Pa,</p>			
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	<p>Micron-Display : 3 rack units with bigger and brighter display (LCD) and simultaneous display of 6 units-Direct data storage on USB memory-Interface :- USB, RS-485, Ethernet-Signal output voltage: 0 - 10V DC-A/D Converter : Resolution 0.001% F.S-Set points :- Adjustable-Emission :- Adjust automatically-Operating temperature :- +5 to 50 deg. C-Protection category/Safety :- IP 30 / CE, UL-Mains supply voltage :- 100 – 240V,50Hz-Weight : &lt;2.5 KgsNote:Any additional components/fittings required for smooth installation of pumps should be included.Warranty : At least one year from the date of installation. &amp;#61548;If vendors can provide more than one year warranty from the</p>			
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	<p>date of installation without additional cost will be appreciated.</p> <p>&amp;#61548;If the price quoted by two vendors is same, then vendors who can provide additional warranty will be preferred.</p> <p>After sales services : In case of break down, complete repairs of the Turbo Pump, viz. bearing replacement, motor part replacement, complete cleaning of the pump etc. should be possible at site. The vendor should have Service Centre/Facility and complete infrastructure within India to handle complete repairs of the turbo pump, such as, changing of stator / rotor assembly, repairing of Dry pumps, Gauges, controllers, etc. and availability of critical spares off the shelf, from</p>			
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	Indian office.			
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**Vendor Specified Terms**

Description	Vendor Terms
NAME, ADDRESS, PHONE, FAX, EMAIL OF THE COMPANY ON WHICH ORDER IS TO BE PLACED ON.	
DELIVERY TERM - WE PREFER EX WORKS/ FOB / FCA. EX WORKS - FOR QUOTATIONS IN FOREIGN CURRENCY.F.O.R. - PRL AHMEDABAD FOR QUOTATIONS IN INDIAN RUPEES.	
DELIVERY PERIOD IN NO. OF DAYS FROM DATE OF ORDER.	
PAYMENT TERM:WE PREFER SIGHT DRAFT / WITHIN 30 DAYS AFTER RECEIPT, INSTALLATION AND ACCEPTANCE / LETTER OF CREDIT WITH ALL CHARGES TO SUPPLIER'S ACCOUNT.	
COUNRTY FROM WHERE MATERIAL WILL BE DISPATCHED.	
CURRENCY OF QUOTATION.	
MODEL NO., NAME OF MANUFACTURER OF EACH OF THE PRODUCT QUOTED	
MODE OF DISPATCH I.E. BY AIR OR BY SEA	
INFORMATION FOR RELEASING PAYMENT BY WIRE TRANSFER LIKE BANK NAME, ADDRESS, PHONE, FAX, SWIFT CODE, ACCOUNT NO., IBAN NO., ANY OTHER INFORMATION	

WARRANTY PERIOD WE PREFER WARRANTY PERIOD WILL START FROM DATE OF INSTALLATION	
Any other Terms	
CONTACT PERSON WITH MOBILE NO. LANDLINE NO. AND E-MAIL ID.	

**Supporting Documents from Vendor**

**Attachment - I:**

**Attachment - II:**

**COMMERCIAL COMPLAINE SHEET PRL IMPORT**

**COMMERCIAL COMPLAINE SHEET PRL IMPORT**

PRL TERMS	MENTION AGREE OR DISAGREE
1.The supplier has read all the terms and conditions including Term No. 19 & 20, LD (Late Delivery) Clause and PBG (Performance Bank Guarantee) Clause and accepts them unconditionally.	
2.PRL will issue custom duty exemption certificate under 51 / 96 OR	

excise duty exemption whichever is applicable.	
3. Price should be stated separately for each item.	
4. Price is not mentioned in technical bid.	
5. Supplier confirms that price is not shown in any part of technical bid. Supplier has read and understood the scope of each template i.e. whether it is part of technical bid or commercial bid.	

### COMMERCIAL COMPLAINT SHEET PRL IMPORT

#### Price Bid Form

Item Description	Slab Range	Qty	UOM	Currency	Unit Price	Total Price
Vacuum Pumps Pumping Speed for Nitrogen: 260 lps Compression ratio for Hydrogen : $1 \times 10^{(7)}$ with backing pumps, gauge, valves	-	1	NOS	-	-	-
Vacuum Pumps Pumping Speed for Nitrogen: 67 lps with suitable	-	1	NOS	-	-	-

backing pumps and gauge, valves						
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Break-up of other taxes and other costs should be specified in respective narration columns.

Sum of these Break-up values should be specified in respective value columns.

**PRICE BID RELATED INFORMATION PRL IMPORT**

**PRICE BID RELATED INFORMATION PRL IMPORT**

PRICE BID RELATED INFORMATION	PRICE BID RELATED INFORMATION FROM SUPPLIER SIDE
This additional space is provided for vendors to write only price bid related information which could not be provided anywhere else. Do not duplicate any information here; do not write any technical information. Keep it short and clear. Confusing bid is liable for rejection.	
1.	
2.	
3.	
4.	
5.	

**PRICE BID RELATED INFORMATION PRL IMPORT**