



क्रय अनुभाग  
वन अनुसंधान संस्थान  
देहरादून-२४८००६  
GSTIN 05AAAAI1708G2Z6  
PAN NO. AAAAI1708G

Purchase Section  
Forest Research Institute,  
DEHRADUN-248006  
Phone: 0135-2224205  
http://fri.icfre.gov.in/tender/  
Email: po\_fri@icfre.org



## Notice Inviting Tender (E-Procurement mode)

### पुनः निविदा दस्तावेज/ Re-Tender Document

Ref. No X-76/POFRI/ECC/HS/AICRP/2019-20

Date: 28/02/2020

Online Bids under two bid systems (Technical and Commercial) are invited at CPP portal (<https://eprocure.gov.in/eprocure/app>) from the reputed manufacturer /authorized supplier/dealer for the following items. Manual bids will not be accepted.

#### वस्तु की तकनीकी विशिष्टताये / Technical Specification of item:

Sr. No.	Name of item / Specifications/	Qty	Warranty	EMD (Rs.)	Tender Fee (Rs.)
1.	Trace Gas Analyser	01	3 Years	52,000/-	1180/-

(For Detailed Technical Specification Plz refer Annexure-VI)

नोट-1: कृपया वस्तु का मूल्य एवं कर अलग-अलग दर्शाए / Please quote the rate & Taxes of the item separately.

Note-2: E-way bill is to be issued by the Venders/Transporter

Note-3: The HSN / SAC Code of the item must be mentioned.

For Reasonability of Rates, The firm must enclose the last two supply orders for the same item with Financial Bid (Annexure-IV) only.

Technical Clarifications:	Dr. Hukum Singh	Forest Ecology & Climate Change Division, FRI Dehradun	Ph: 0135-222-4413 Email: hukum@icfre.org
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#### Critical Date Sheet

1.	Published Date	29.02.2020 10.00 A.M	Newspaper/FRI website and CPP portal
2.	Bid Document Download Start Date	29.02.2020 1000 A.M	Central Public Procurement Portal (CPPP)
3.	Seek Clarifications Start Date	01.03.2020 5.00 P.M	Through Ph/Email
4.	Seek Clarification End Date	15.03.2020 5.00 P.M	Through Ph/Email
5.	Bid Submission Start Date	01.03.2020 5.00 P.M	CPP portal
6.	Bid Submission End Date	16.03.2020 3.00 P.M	CPP portal
7.	Technical Bid Opening Date	17.03.2020 3.00 P.M	CPP portal / Purchase Section Main Building, FRI
8.	Financial Bid Opening Date	To be decided after technical evaluation	CPP portal

#### Chapter-1: Instruction to bidders

A. The Tender should be enclosed with proper certifications like Agency Certification, Authorization certificate and /or Proprietary Certificate, as the case may be, in support of your offer.

B. बोली का जमा किया जाना / Submission of Bids:

1) The bids should be submitted online in two parts:

(i) The Technical Bid (Annexure-I, II, III, V & VI)

(ii) The Financial Bid (Annexure-IV) Price Bid in BoQ.XLS format.

2) The bids should be printed on official pad preferably with GST Number of the firm.

3) The Bid should bear full details and where possible may be duly supported with CATALOGUES, PAMPHLETS, LITERATURE, samples of the item/items as the case may be for comparing the quality and rates of the item(s).



- 4) The Bid should bear full details of **USER LIST** preferably from Central Govt./State Govt./PSU or reputed institutes like IITs/NITs/AIIMs/IISERs etc. and where possible may be duly supported with their Purchase/Contract Orders as the case may be.
- 5) The Bid should ensure the **genuineness & brand new item** from the Principal and certified that the quoted item(s) is NOT going to be obsolete in near future and ensure the **availability of spares parts** for next five years.
- 6) The transportation cost, insurance charge etc., if any, Percentage/ rate of GST or all-other taxes and duties should be clearly mentioned.
- 7) The bids / rates / tenders should remain valid for a minimum period of 90 days from the date of opening.
- 8) **Since this purchase being for research purpose, the Forest Research Institute, Dehradun is registered in DSIR, New Delhi; it is therefore exempted from the payment of custom duty and GST @ 5% as per the Govt. Rules. The bidder should quote accordingly.**
- 9) The rates shall not be subject to escalation of any nature.
- 10) The rates quoted should be applicable to educational institutions and any cost advantage received in lieu thereof should be passed on the Institution.
- 11) While quoting/ sending rates, the firm shall give an undertaking as per Annexure-II.

**C. निविदा शुल्क/ Tender Fee एवं/and अग्रिम धन राशि / Earnest Money Deposit (EMD)**

The Technical Bid should accompany **non-refundable Tender Fee** in form of Demand Draft only and an **EMD in the form of FDR only of the value mentioned at the first page of this tender document only for the equipment(s) bidding by the bidder**, issued from any of the Commercial Banks of India drawn in favour of "**Director, Forest Research Institute, Dehradun**" valid 90 days beyond the validity period of bid. The Bidder have to fill up Tender Fee and EMD details online as per quoted item(s) and the hard copy of these payment(s) should be deposited in a separate sealed cover super-scribed as Tender Fee and EMD for Tender No. & Item Name, addressed to: Purchase Officer, Purchase Section Forest Research Institute, Dehradun-248006 on or before the Bid Opening date and time as mentioned in Critical date sheet.

Exemption on submission of Tender Fee/EMD will be given against valid MSME/NSIC certificate under valid category and within the validating period of the certificate.

The earnest money shall be refunded to all the unsuccessful firms, without any interest after finalization of the contract. EMD shall be refunded to the successful firm on receipt of PBG/Security Deposit. No interest is payable on the EMD to either the successful firms or the unsuccessful firms.

**D. निष्पादन बैंक प्रत्याभूति / Performance Bank Guarantee (PBG):**

5% of the cost price in the form of Bank Guarantee or FDR pledged in favour of "**Director, Forest Research Institute, Dehradun**" is required to be submitted by successful bidder before the delivery / installation of the items(s) which should remain valid at least during the warranty period plus sixty days. No interest shall be claimed by the bidder on the PBG submitted. The Bank Guarantee may be forfeited in case of improper services provided by the bidder/firm and duly certified by the concerned Consignee/HOD.

**E. बोलियों का खोला जाना / Opening of Bids:**

- 1) The Technical Bids will be opened online at CPPP Portal (<https://eprocure.gov.in/eprocure/app>)-Plz refer Critical Date Sheet
- 2) The Financial bids of only the Technically Qualified bidders will be opened. The date and time for opening the Financial Bid will be communicated to the respective firm later by the system (CPP Portal (<https://eprocure.gov.in/eprocure/app>))
- 3) Representatives of the firms(s) may be present at the time of openings, if they so desire.

**Chapter-2: Conditions of Contract**

**A. कार्य अनुबन्ध / Award of Contract:**

The final selection of the bidder for the award of the contract will be made on the basis of the lowest commercial bid amongst the Technically Qualified Bidders.

**B. पूर्व आपूर्ति निरीक्षण/ Pre-supply Inspection:**

Authorized representative of the Institute shall make the final inspection before supply of the item at site of the firm, if required.

**C. वस्तु की आपूर्ति / Supply of Item:**

The whole supply as per order shall have to be completed within the time mentioned in the order failing which the FRI Dehradun shall have the right to accept or reject any quantity of items ordered. The firm will have to arrange for supply of the material/equipment in good condition.

**D. भुगतान की शर्तें / Payment Terms:**

- 1) **Payment in INR after SUPPLY/INSTALLATION/TESTING/COMMISSIONING/TRAINING of Item(s) as the case may be:**  
Where installation is not required: 100% payment will be made after satisfactory delivery of material duly certified by the Consignee/HOD. **OR**  
Where installation is required: 100% payment will be made after satisfactory delivery and installation of the material duly certified by the Consignee/HOD. **OR**  
100% Advance will be paid against submission of 110% Bank Guarantee of the Total Order value.
- 2) **Payment in INR for AMC/CMC/Service:**  
Quarterly/Half yearly after satisfactory completion of work/service duly certified by the Consignee/HOD .
- 3) **Payment in Foreign Currency for supply of goods:**  
Payment will be made as below after deducting Indian Agency Commission (if any). IAC is payable in Indian Rupee after satisfactory installation.
  - (i) 50% of the LC amount shall be release on presentation of complete and clear shipping documents and 50% of LC amount shall be released after the satisfactory delivery/installation/demonstration of the equipment duly certified by the concerned HOD and Indenter.



- (ii) Payment through Wire transfer after satisfactory delivery and installation of the material duly certified by the concerned Consignee/HOD.
- 4) **Payment in Foreign Currency for AMC/CMC/Services:**  
Quarterly/Half yearly after satisfactory completion of work/service duly certified by the Consignee/HOD through wire transfer.
- E. **दंड/ Penalty:**  
A penalty of 0.5% of the total order value per week shall be levied for the delay subject to a maximum of 5% of the total order value. In case of the non-supply of the item after the acceptance of the work/supply order, EMD will be forfeited by the Institute.
- F. **अप्रत्याशित घटना/ Force Majeure:**  
For the purpose of and within the scope of contract by way of indication and not of limitation, the term "Force Mejeure" shall mean acts of nature, strikes, Lockouts, or other industrial disturbances, act of public/enemy, wars, blockades, insurrection, riots, epidemics, landslides, earthquakes, storms lightening, flood, washouts, civil disturbances, explosion and any other similar even not within the control of either party on which by exercise of due care and diligence neither party is able to prevent or overcome.
- G. **मध्यस्थता/Arbitration:**  
In the event of any difference or dispute arising out this work, all effort shall be made by both the parties to settle the same amicably. Failing an amicable settlement, the dispute shall be finally settled through arbitration conducted under the Arbitration and Conciliation Act 1996, by arbitrators appointed in accordance with the said Act. The arbitration shall give reasoned and speaking award. All disputes are subject to Dehradun jurisdiction only.
- H. **बोली अस्वीकृती के लिए मानदंड/ Criteria for bid rejection:**
- 1) If technical bid found without the required undertaking (Annexure-II).
  - 2) If it found at a later date that any information given in the bids is incorrect/false then the bid is liable to be disqualified/rejected.
  - 3) Canvassing in any form will result in disqualification.
- I. **प्रशिक्षण/Training**  
The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost.

### Chapter-3: Schedules of requirements

#### A. टिप्पणी/Note:

- 1) If the Supplier/firm is manufacturer/authorized dealer/sole distributor/of the item, the certificate to this effect should be attached.
- 2) Please note that the firms must submit the compliance Statement in an organized and structured manner in respect of all the specifications as per Annexure-VI with the supporting printed catalogue/leaflet of the firm. Annexure-I, II, III, V & VI have to be submitted with Technical Bid and Annexure-IV with Financial Bid.
- 3) It may also be noted that the tender bids received after the stipulated date & time or found incomplete and tender bids containing false/incorrect information shall be summarily rejected. The Institute shall not entertain any communication in this regard, whatsoever.
- 4) The firm is required to give its Bank Account details with IFSC for the purpose of making e-payment.
- 5) The Forest Research Institute (FRI) Dehradun reserves the right to reject any quotation wholly or partly without assigning any reason.
- 6) The quantity shown against the item is approximate and may vary as per demand of the Institute at the time placing order.
- 7) The decision of the Institute in all matters relating to eligibility, acceptance, rejection of the bid will be final and binding on the applicants.
- 8) Forest Research Institute (FRI) Dehradun discourages High Sea Sale Purchase. All tenders with High Sea Sale will be rejected.
- 9) The firms should clearly mention (in the financial bid) the Harmonized System of Classification (HS code) defined by the Central Custom and Excise Board (Govt. of India) for the item (s) involving import.
- 10) **If the due date happens to be a holiday, then the bid will be accepted till 03:00 PM and opened at 04:00 PM of the next working day followed by the holiday.**
- 11) If an agent submits bid on behalf of the Principal/OEM, the same agent can not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
- 12) Indian Agent should submit the certificate from the Foreign Principal that they are the Authorized & Registered Indian Agent.
- 13) The quantity shown against the item is approximate and may varies as per demand of the institute as the time of placing order. Also, the final requirement of each line item will be decided by the Institute at the time of placing the PO.
- 14) **Any corrigendum/addendum/errata in respect of the Tender Notice/ Enquiry letter shall be made available on CPP portal (<https://eprocure.gov.in/eprocure/app>). Hence prospective bidders are advised to visit the CPP portal regularly.**
- 15) Bidders shall be responsible for the correctness of the information provided in the enquiry letter/tender document. If it is found at later date that any information given in the bid is incorrect/false then the bid is liable to be disqualified/rejected.
- 16) Institute will not be responsible for non-receipt of bid(s) within the stipulated date due to any postal delay or delay for any other reason in transit.
- 17) Before submission of bids, bidders should read the complete enquiry letter/tender document carefully and ensure that the bidders fulfill the eligibility criteria.
- 18) In case the item /product is under rate contract with DGS&D or GeM, than bidder should certify that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.
- 19) In item wise BoQ.xls sheet, in column 'M', leave blank for the item/service not provided/quoted by you. If quoted 0 (zero) then it will be considered that the item/service will be provided free of cost.
- 20) The Institute reserves the right to rectify any discrepancy of this advertisement, if found later on. In case of any inadvertent mistake in the process which may be detected at any stage even after the issue of purchase order, the Institute reserves the right to modify/withdraw/cancel any communication made to the bidder.
- 21) The successful bidder is required to inform about the pre-requirements of the delivery/installation like: (1) Custom Duty Exemption certificate (GATT declaration/Authority letter for custom clearance/Bank Release Order (BRO)/ Road Permit/ Trade tax declaration (against Form-32)/ GST Exemption Certificate (2) Complete Address of Freight Forwarder, Airlines etc. in whose favor BRO has to be issues/ Complete address of the firm or supplier or Cha to whom original clearance documents will be



sent. FRI, Dehradun custom House Agent (CHA) address: M/s Cwick (Import Consolidation) Private Limited, L-II/101, New Mahavir Nagar Extension, Outer Ring Road, New Delhi -110018 Email: info@cwickimport.com, followup@cwickimport.com. Tel: +91-9313996082, +91-25996082, +91-11-25992781

- 22) Import Export Code (IEC code of FRI): 0100000011, Bank Name: Union Bank of India, Main Branch Rajpur Road, Dehradun – 248001, Bank AD Code: 02900682870007

**Chapter-4: Specification and allied Technical details**

Plz. See Annexure-I, II, III, V & VI

**Chapter-5: Price Schedule (to be utilized by the bidders for quoting their prices online in BoQ.xls sheet format at CPP portal(<https://eprocure.gov.in/eprocure/app>))**

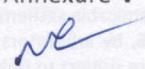
Plz. See Annexure-IV Price Bid in BoQ.xls format.

**Chapter 6: Contract Form**

Purchase Order is used as Contract Form

**Chapter-7: Other Standard Forms, if any to be utilized by the purchaser and bidders**

Plz. See Annexure-V

  
[PURCHASE OFFICER, FRI]

Document Digitally Signed on  
<https://eprocure.gov.in/eprocure/app>



**तकनीकी बोली/Technical Bid**  
**(To be given on Company Letter Head)**

Ref. No X-76/POFRI/ECC/HS/AICRP/2019-20

Date: 28/02/2020

विस्तृत विवरण अनुपालन रिपोर्ट के साथ प्रस्तुत किया जाना है (अपने आधिकारिक लेटरहेड पर विक्रेता/ फर्म द्वारा प्रस्तुत करने के लिए)  
 Detailed specification cum compliance report to be submitted with the Technical Bid  
 (to be submitted by the vender/firm on its official letter head)

(For Detailed Technical Specification Plz refer Annexure-VI)

Sr. No.	Name & Required Specifications of item (s)	Qty.	EMD	Offered specification of item (s) by the firm
1.				

	Firm's Profile
1)	Manufacturer/Authorized Agent/Distributor/Dealer/Supplier (Valid certificate must be attached)
2)	E-mail ID & Telephone/Mobile No. Detail of Bank A/C
Note:	(i) "Offered specification" should be filled up properly in the format provided as per Annexure-I
	(ii) Volume & Weight of the item should also be mentioned.
	(iii) The HSN / SAC Code of the item must be mentioned.

Signature:

Name:

Designation:

Seal of the Organisation



**उपक्रम/UNDERTAKING**  
**TENDER ACCEPTANCE LETTER**  
**(To be given on Company Letter Head)**

Date: .....

To,

Director  
 Forest Research Institute  
 Dehradun-248006

**Sub: Acceptance of Terms & Conditions of Tender.**

Ref. No X-76/POFRI/ECC/HS/AICRP/2019-20

Date: 28/02/2020

**Agreement/Contract Form**

Dear Sir,

- (i) I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from (including all documents like annexure(s), schedule(s), etc.), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
- (ii) The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter
- (iii) I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/ corrigendum(s) in its totality / entirety.
- (iv) I / We do hereby declare that our Firm has not been blacklisted/ debarred / banned by any Govt. Department/Public sector undertaking.
- (v) I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.
- (vi) It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

Signature:

Name:

Designation:

Seal of the Firm/Agency



**उपक्रम/UNDERTAKING**  
**TENDER ACCEPTANCE LETTER**  
**(To be given on Company Letter Head)**

Date: .....

To,

Director  
 Forest Research Institute  
 Dehradun-248006

**Sub: Acceptance of Terms & Conditions of Tender.**

Ref. No X-76/POFRI/ECC/HS/AICRP/2019-20

Date: 28/02/2020

**Agreement/Contract Form**

Dear Sir,

- (i) I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from (including all documents like annexure(s), schedule(s), etc.), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
- (ii) The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter
- (iii) I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/ corrigendum(s) in its totality / entirety.
- (iv) I / We do hereby declare that our Firm has not been blacklisted/ debarred / banned by any Govt. Department/Public sector undertaking.
- (v) I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.
- (vi) It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

Signature:

Name:

Designation:

Seal of the Firm/Agency



## CHECK LIST

SI No	(A) Qualifying documents	Yes/No	Page No.
1.	Whether <b>TENDER FEE</b> in shape of <b>Demand Draft</b> in favour of Director, Forest Research Institute, Dehradun OR Signed & Scanned copy of Exemption certificate like MSME, KVIC, NSIC etc with mentioning the validity date, is uploaded?		
2.	Whether <b>EMD</b> for applicable item No. (s) of Amount(s) in shape of <b>FDR</b> in favour of Director, Forest Research Institute, Dehradun attached OR Signed & Scanned copy of Exemption certificate like MSME/ NSIC/KVIC etc with mentioning the validity date, is uploaded?		
3.	Whether Signed & Scanned copy of <b>AUTHORIZATION</b> certificate issued by the manufacturer, if applicable, uploaded?		
4.	Whether Signed & Scanned copy of <b>PAN card</b> uploaded?		
5.	Whether Signed and Scanned copy of <b>GST certificate</b> , if applicable, uploaded?		
6.	Whether Signed and Scanned copy of Affidavit of <b>PARTNERSHIP DEED</b> , if applicable, uploaded?		
7.	Whether Signed and Scanned copy of <b>AUDITED BALANCE SHEET</b> of last two years, uploaded?		

SI No	(B) Technical Documents	Yes/No	Page No.
1.	Whether duly Signed/ Stamped & scanned copy of tender document along with all Annexure (I, II, III, V and VI) by the authorized signatory uploaded?		
2.	Whether <b>CATALOGUE</b> of the quoted item(s) uploaded?		
3.	Whether <b>USER LIST OF INSTITUTES/ORGANIZATIONS</b> where the quoted model of item(s) supplied by the bidder in India along-with supportive documents from the users for the satisfactory performance and after sales service, is uploaded?		
4.	Whether the firm uploaded the last two supply orders for Reasonability of Rates?		
5.	Whether scanned and signed copy of supportive documents from the Principal regarding all specifications certified and guaranteed for <b>GENUINENESS &amp; BRAND NEW ITEM</b> and that the model of the equipment is <b>NOT GOING TO BE OBSOLETE</b> in near future (5 years) is uploaded?		
6.	Whether supportive documents from the Principal regarding <b>AVAILABILITY OF SPARES/PARTS</b> for next five years are uploaded?		

**Note:**

1. It is compulsory to fill the above check list with pagination.
2. The document should be submitted/uploaded online in CPP portal in the above order of the check list and place the check list as cover page with pagination of documents.
3. In the absence of any of the qualifying documents, the bid shall be rejected.
4. The Tender Fee/EMD must be submitted by post/ hand to Purchase Section, Forest Research Institute, Dehradun-248006 on or before the opening date of technical bid and the scanned copy of the same should be uploaded in the CPP Portal before date-time of submission of bid.

Signature:

Name:

Designation:

Seal of the Firm/Agency



## Financial Bid

(to be submitted by the vendor/firm on its official letter head)

Ref. No X-76/POFRI/ECC/HS/AICRP/2019-20

Date: 28/02/2020

Rates:						
Sr. No.	Name of item / Specifications/	Qty.	Unit Rate (Rs.)	Amount (Rs.)	GST @ .....%	TOTAL (Rs.)
1.	Trace Gas Analyser					
2.	Optional: Monitoring soil CO <sub>2</sub> , H <sub>2</sub> O and CH <sub>4</sub> fluxes compatible with smart chamber trace gas analyser					
Total						
Grand Total Rs.						

1) Price of the items should be clearly mentioned if supplied Free of Cost.

## Term &amp; Conditions:

1. Prices (if quoted in Rs.): For FRI, DEHRADUN
2. Prices (if quoted in Foreign Currency) : CIP/CIF New Delhi OR FOB/FCA/Ex-Work
3. Payment: Should be clearly mentioned, as per clause –2(D) of enquiry letter.
4. Validity:
5. Delivery period:
6. Other Charges:
7. Warranty: Onsite 03 Years
8. Rejection: Equipment if found not as per the required specification would be rejected.
9. Penalty Clause: As per clause-2(E) of enquiry letter.  
In case of the non-supply of the item after the acceptance of the work/supply order, EMD will be forfeited by the Institute.
10. PBG: 5% of the cost price in the form of Bank Guarantee or FDR pledged in favour of "Director, Forest Research Institute, Dehradun" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus sixty days.

It is certified that the rate quoted is not over and above (higher side) the rates under RC with DGS&amp;D or GeM.

## Signature:

Name:

Designation:

Seal of the firm/Organisation.



[illegible]

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

### Signature of Bidder

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization Name: \_\_\_\_\_

Contact No. : \_\_\_\_\_



## Item No. 1 Trace Gas Analyser

Specifications for trace gas analyser for measuring CO<sub>2</sub>, H<sub>2</sub>O & CH<sub>4</sub>

General specification	
Feature	Specification
Measurement Technique	OF-CEAS (Optical Feedback-Cavity Enhanced Absorption Spectroscopy)/ NDIR
Measurement Rate	1 sample per sec
Optical Cavity Volume	6.40 to 6.45CC
Flow Rate measurement and range	Standard cubic centimetres per minute(279 to 281sccm
Weight of instrument (total) including batteries	11 to 11.5 Kg
Power requirement	10.5to 30VDC
Power Consumption	20W steady State, up to 65W during warm-up
Gas Analyser Specifications	
CH <sub>4</sub>	
Response time	CH <sub>4</sub> : ≤2 Sec. from 0-2.2 ppm
Range	0.1 to 52 ppm
Precision	0.24 to 0.25ppb with 5 sec on an average
Accuracy	1.5 to 2.5 ppb @2000ppb and 25 <sup>0</sup> C from 1000 to 10000ppb
CO <sub>2</sub>	
Range	1 to 10,000ppm
Precision	1.4 to 1.6 ppm with 5Sec.
Accuracy	1.5% from 395 ppm to 710 ppm
H <sub>2</sub> O	
Range	98 to 60,100ppm
Precision	18 to 21 ppm with 5sec on an average
Accuracy	1.45 to 1.55 % from 495 to 60,100ppm
Operation	
Operating temperature ranges	-25 to 47 <sup>0</sup> C
Operating pressure ranges	70 to 115 kPa
Connectivity	Ethernet and Wi-Fi
Power supply	240VAC, 50 Hz
Battery life	7.5 to 8.5 hours typical with 2 batteries
"Option for monitoring soil CO <sub>2</sub> , H <sub>2</sub> O and CH <sub>4</sub> fluxes compatible with smart chamber trace gas analyser – specifications	
Bowl diameter	20 cm chamber
Volume	4244.1 cm <sup>3</sup>
Soil surface area	317.8 cm <sup>2</sup> (49.3 inches <sup>2</sup> )
Air temperature thermistor for	



<b>Smart chamber</b>	
Operating range of smart chamber	-20 to 72 °C
Accuracy of smart chamber	± 0.5 °C over 0°C to 72 °C
<b>Barometric Pressure Sensor</b>	
Operating Range of Barometric Pressure Sensor	50 – 110 kPa
Accuracy	± 0.4 to ± 0.42 kPa
Resolution	1.5 Pa (typical)
Operating Temperature Range of Barometric Pressure Sensor	-20 to 52 °C
<b>Other features for entire system</b>	
<b>GPS enabled</b>	
Accuracy	Circular error probable(CEF) of 2.5 to 2.7 meters
Connectivity ports	USB-A: sealed and strain-relieved, for connection to CO <sub>2</sub> /H <sub>2</sub> O Analyser
RJ-45 Ethernet	Sealed and strain relieved, for connection to Trace Gas Analysers
USB-B	Sealed and strain-relieved, for compatibility connection to the instruments gas analyser
USB-A	Standard, for connection to external Wi-Fi adapter. SDI-12 interface (with Stevens HydraProbe)
Type-E thermocouple adapter port	
Battery Life	19 to 21 hours (10 hours per battery, 2 batteries, when powering for a typical use case). Weight: 4 to 4.5 kg (including battery)
Memory	At least a total of 8 GB or above (including an operating system and user data files)
Optional	3 Years AMC

