

No. Date

TENDER NOTICE

Sealed tenders are invited from the manufacturers / Authorised distributors / Dealers for the supply of equipments. 1 UV-VIS Spectrophotometer, 2 Lab fermenter 3 Gel-Electrophoresis Unit, 4 Water purification system, 5 Phase contrast microscope, 6 -20 °C Deep freezer, 7 Lyophilizer, 8 Bomb Colorimeter, 9 GPS, 10 Portable photosynthetic unit.

Tender document containing terms, conditions & specifications (along with EMD amount for each item) of the items can be obtained from the Store, Jiwaji University, Gwalior – 474011 up to 5.00 PM of 26.03.2016 on payment of Rs. 1000/- through DD (separately for each item) drawn in favour of Registrar, Jiwaji University, Gwalior.

Alternatively, the tender form may be downloaded from the website www.jiwaji.edu and a demand draft for Rs. 1000/- favouring The Registrar, Jiwaji University, Gwalior may be attached.

The last date for submission of tenders in the University office is 26.03.2016 (up to 5.00PM) by speed post / registered post / drop box only.




REGISTRAR

जीवाजी विश्वविद्यालय, ग्वालियर

निविदा आमंत्रण

खुली निविदा के अंतर्गत उपकरणों क्रय करने हेतु उपकरणों 1. यूव्ही - विस स्पेक्ट्रोफोटोमीटर, 2. लैब फरमेंटर, 3. जेल ऐलेक्ट्रोफोरेसिस यूनिट, 4. बाटर प्यूरिफिकेशन सिस्टम, 5. फहेज कॉन्ट्रास्ट माइक्रोस्कोप, 6. -20°C डीप फ्रीजर, 7. लयोफिलीज़र, 8. बॉम्ब कोलोरीमिटर, 9. जीपीएस, 10. पोर्टेबल फोटोसिन्थेटिक यूनिट, के निर्माता कंपनियों या उनकी अधिकृत एजेंसियों या सोल डिस्ट्रिब्यूटर्स से निविदा आमंत्रित की जाती है। इच्छुक कंपनियों/ फर्म निविदा आवेदन पत्र (उपकरणों की तकनीकी विशेषताएँ EMD प्रत्येक आइटम की EMD राशि तथा नियम एवं शर्तों के साथ) राशि रु 9000/- के डी.डी. (प्रत्येक आइटम हेतु पृथक से वापिसी योग्य नहीं) जो कि कुलसचिव, जीवाजी विश्वविद्यालय, ग्वालियर के नाम देय हो अदाकर स्टोर शाखा जीवाजी विश्वविद्यालय, ग्वालियर- 474011 से दिनांक : 26.03.2016, 17:00 बजे तक से प्राप्त कर सकते है या निविदा आवेदन पत्र विश्वविद्यालय की वेबसाइट www.jiwaji.edu से डाउनलोड कर कुलसचिव, जीवाजी विश्वविद्यालय, ग्वालियर को देय रु 9000/- के डी.डी. (वापिसी योग्य नहीं) के साथ भी भेजा जा सकता है। सभी निविदा आमंत्रण पत्र दिनांक : 26.03.2016 17:00 बजे तक स्पीड पोस्ट/ से रजिस्टर्ड पोस्ट प्राप्त हों या विश्वविद्यालय में निविदाओं के लिये निर्धारित ड्राप बाक्स में डालने से ही मान्य होंगे ।


कुलसचिव

Annexure-1 (To be enclosed with the Technical Bid)
SCHOOL OF STUDIES IN BOTANY, JIWAJI UNIVERSITY, GWALIOR

Tender No. JU/IE/

Name of the party in whose : -----
favour the Tender form has -----
been issued -----

To
The Registrar
Jiwaji University
Gwalior 474 011, MP, India

Dear Sir,

- 1 I/We hereby submit our tender for the.....
- 2 I/WE now enclosing herewith the D.D. No..... dated..... For Rs.....drawn in favour of the "The Registrar, Jiwaji University, Gwalior" towards EMD, and D.D. No..... dated..... For Rs. 1000 towards tender fee for downloaded tenders. (TENDERS NOT ACCOMPANIED WITH EMD ALONGWITH THE TECHNICAL BID SHALL BE SUMMARILY REJECTED).
- 3 I/We have gone through all terms and conditions of the tender documents before submitting the same.
- 4 I/We hereby agree to all the terms and conditions, stipulated by the Jiwaji University, in this connection including delivery, warranty, penalty, etc. Quotations for each item are being submitted under separate covers, and sheets and shall be considered on their face value.
- 5 I/We have noted that overwritten entries shall be deleted unless duly cut & re-written and initialed.
- 6 Tenders are duly signed (No thumb impression should be affixed).
- 7 I/We undertake to sign the contract/agreement, if required, within 15 (Fifteen days) from the date of issue of the letter of acceptance, failing which our/my security money deposited may be forfeited and our/my name may be removed from the list of suppliers at Jiwaji University, Gwalior.

NOTE: ALL TERMS & CONDITIONS SUCH AS TAXES ETC, HAS BEEN INDICATED IN THE QUOTATIONS FAILING WHICH IT WILL BE PRESUMED THAT THE RATES ARE INCLUSIVE OF ALL TAXES AND OTHER TERMS AND CONDITIONS ARE ALSO AS PER YOUR REQUIREMENTS.

Yours faithfully,
Signature of Tender(s) with full Address.

Signature of the Bidder with seal

Annexure- 2
(To be enclosed with the Technical Bid)

CHECK LIST FOR TERMS AND CONDITIONS

Check list for Terms and Conditions (To be filled by the bidder and submitted along with the technical bid)

1. Whether rates quoted included all taxes, customs clearance, i.e., FOR Gwalior
2. Whether rates are quoted as per tenders specifications _____
3. Authority letter from manufacturer/principal enclosed _____
4. Quotation being submitted directly by the manufacturer or authorized distributor
5. Proof of having filled IT Return for the assessment years 2013-14, 2014-15 & 2015-16 attached _____
6. EMD draft is enclosed _____
7. Tender fee for downloaded tenders enclosed _____
8. Comprehensive Guarantee/Warranty period for one year

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

**SCHOOL OF STUDIES IN BOTANY
JIWAJI UNIVERSITY, GWALIOR**

Tender Form No :

Name of Work :

(i) Supply of following equipments;

- 1 UV-VIS Spectrophotometer
- 2 Lab fermenter
- 3 Gel-Electrophoresis Unit
- 4 Water purification system
- 5 Phase contrast microscope
- 6 -20 °C Deep freezer
- 7 Lyophilizer
- 8 Bomb Colorimeter
- 9 GPS
- 10 Portable photosynthetic unit.

Last Date for Purchase of Tender Document :

Tender Opening Date :

Office :

Tender Cost :

EMD Cost : Rs

Terms and Conditions

Tenders will be considered subject to following terms and conditions.

- 1 All tenders must be carefully accompanied by a bank draft for the specified amount for the item drawn in favor of the Registrar, Jiwaji University, Gwalior as earnest money. Tenders received without earnest money will be liable to be rejected and may not be considered.
- 2 Tenderers can obtain tender documents against payment of Rs 1000.00 through demand draft drawn in favor of the Registrar, Jiwaji University, Gwalior, on or before 26.03.2016 up to 5.00 pm. on any working day. The document may be downloaded from our web site and a separate draft of Rs. 1000 in favour of the Registrar, Jiwaji University, Gwalior may be enclosed with the EMD draft.
- 3 The last date for submission of Tender is 26.03.2016 before 5.00 P.M. at the office of the Registrar, Jiwaji University, Gwalior.
- 4 Proof of having filed Income Tax return (Checklist point no. 5)
- 5 The rates should be FOR Gwalior and inclusive of all applicable charges/ duties/ taxes. The prices should be inclusive of sales tax and other charges. The exact details of taxes should be given separately. The total FOR price shall be considered as the price of the equipment.
- 6 This institution is exempted from payment of Central Excise duty in terms of Govt. Notification No. 1097-Central Excise dated 01.03.1997. Necessary copy to be provided by the University.
- 7 For imported equipments: The institution is registered with Department of Science and Industrial Research (DSIR) Govt. of India vide Government Notification No. TU/V/RG-CDE(56)/2009, dated 26.11.2009 is exempted from payment of custom duty. Necessary certificate copy shall be provided by the University. The bidder shall be responsible for getting the consignment cleared and deliver the goods. The expenses on it and concessional duties, if any should be included in the cost of the equipment.
- 8 The price should be FOR destination failing which the offer will be ignored.
- 9 The tenderer should quote their best willing price which should be firm from the period of 120 days from the due date of tender.
- 10 The minimum period of delivery of the material should be quoted.
- 11 The quantities of each item to be purchased may vary according to actual requirement at the time of placing order.
- 12 If there is any DGS&D rate contract of Government approved rates the same should be quoted enclosing the copy of the rate contract.
- 13 The tender should avoid the use of vague terms such as "extra as applicable". Such tenders will be rejected.
- 14 Printed conditions on the back of the offer submitted will not be binding unless separately mentioned.
- 15 Advance payment either direct or through bank will not be accepted in any case. As per rule, full payment will be made after receipt of material, inspection there of and after satisfactory installation and working of the entire equipment. LC is acceptable in imported equipments.
- 16 The successful tender, if so required by the University, shall furnish Bank Guarantee/FDR from the Nationalized Bank up to 10% of the total value of the order, which is refundable, after satisfactory execution of order within the stipulated delivery

period. The penalty of half percent per week shall be imposed by the University, subject to a minimum of 10% for the delivery of the material. No interest shall be paid on the Security Deposit or Earnest Money. The EMD drafts shall be returned to the unsuccessful bidders immediately after the Purchase Committee of the University takes a decision on the purchase.

- 17 The Tenders should have no extra charges for installation, etc. of the equipment, if any.
- 18 Offers received not according to our terms and conditions within the time prescribed shall be rejected. Delay due to postal service of any kind will not be considered for acceptance of the order.
- 19 In all matters of dispute the decision of the Registrar, Jiwaji University, Gwalior shall be final and binding on the tenderers.
- 20 In case of an authorized dealer, a copy of the current Certificate from Manufacturer must be attached as proof.
- 21 Date and time of opening is 29.03.2016 at 3.30 P.M. in the presence of intending Tenderers or their representatives who may like to be present in the University office, Jiwaji University, Gwalior.
- 22 If any of the dates of the receipt or opening the tender happen to be declared as holiday, the schedule will be shifted to the next working day automatically.
- 23 The Sealed Tender Envelope should contain three sealed envelopes.
- A. First superscribed as "Technical Bid for _____". This should contain the specifications of the equipment & terms and conditions of supply. No price should be mentioned.
- B. The second should be superscribed as "Commercial Bid for _____"
- C. The third should contain separate drafts for the Earnest money and tender fee of Rs. 1,000 in favour of the Registrar, Jiwaji University, Gwalior.
- 24 These three separately sealed envelopes should be placed in one sealed envelop and should be superscribed as "Tender Form No. _____ for _____ to be opened on _____ at 3:30 P.M." Only those who fulfill the technical specifications shall be considered for opening the commercial bid.
- 25 Canvassing for support in any form for the acceptance of any tender is strictly prohibited. Any tenderer doing so will render him liable to the penalties, which may include removing of his name from the register of approved suppliers.
- 26 All the accessories are to be treated as one unit and separate tenders are not required for each accessory.
- 27 Tender, duly sealed, should reach the Registrar, Jiwaji University, Gwalior by speed post, registered post or at the drop box of the Store of the University.
- 28 Any item or offer may increase in number or even might not be purchased without assigning any reason. Registrar, Jiwaji University, Gwalior reserves the right to accept or reject any or all tenders without assigning any reason there of.
- 29 The bidder shall forfeit the EMD if we find the bidder providing any false information and no further communication in this respect shall be entertained.


Registrar

Jiwaji University

I/We accept all the terms and conditions of the tender and understand that the decision of the University shall be final and acceptable to me/us.

Date


Signature and Seal of the Tenderer

Registrar
Jiwaji University
Gwalior (M.P.)

Signature of the Bidder with seal

(To be enclosed with the Technical Bid)

QUESTIONNAIRE TO BE FILLED BY THE BIDDER AND SUBMITTED ALONG WITH THE TECHNICAL BID

01	Reputed manufactures of equipment (specified in the tender notice) or their authorized agents with well established sales and services facilities only need to respond to the tender notice.	Confirm / do not Confirm requirement
02	In case the bidder is an authorized agent, documentary proof to this effect must be enclosed with the quotation.	Enclosed / not Enclosed
03	The bidder must indicate whether he is willing to supply complete circuit diagram, wiring diagram component layout diagram, service manual and component identification catalogue along with the equipment free of charge in case an order is placed with him. The supply of this literature will be considered as part of supply of equipment offered.	Will be supplied/ Cannot supply
04	Quotation must be furnished in sealed envelopes particular should be clearly indicated in the top of the envelope.	Complied / not complied
05	Bidders are requested to carefully go through the specifications given in the tender and quote only when they are sure they have product specified to offer. In case of any doubt, the bidder can contact the Registrar, Jiwaji University, Gwalior on any working day with prior appointment.	Complied / not complied
06	Warranty details and terms and conditions of warranty must be given. If any component of the equipment quoted is not covered by the warranty the same must be specified	Complied / not complied
07	Where the equipment offered is controlled by a personal computer and it is possible to use an indigenous PC, the same should be quoted instead of an imported PC. The same would apply to a printer or any compiled other accessory or subsystem of good quality available in India.	Complied / not complied
08	Bidders must indicate whether he can arrange for comprehensive service training to staff of the instrumentation department on the model offered at his expense.	Yes / No
09	The bidder is agreeable to install and test the equipment and undertake after-sales-service only through a factory trained certified engineer	Yes / No
10	Agency commission (percentage) payable in Indian Rupees should be mentioned in the quotation i.e. in "Commercial Bid".	Complied / not complied/ not applicable
11	Security deposit: In case the Purchase Order is placed, 10% of the quipment value has to be submitted as performance bank guarantee / FDR	Agreeable / Not Agreeable

Note: Unless the questionnaire is completely filled in and detailed information provided as required, your offer is liable to be rejected.

Signature of the Bidder with seal

List of item/s

S No	Item description	Quantity	EMD
01	UV-VIS Spectrophotometer	01	12,000.00
02	Lab fermenter	01	12,000.00
03	Gel-Electrophoresis Unit	01	2,000.00
04	Water purification system	01	30,000.00
05	Phase contrast microscope	01	9,000.00
06	-20 °C Deep freezer	01	6,000.00
07	Lyophilizer	01	15,000.00
08	Bomb Colorimeter	01	65,000.00
09	GPS	01	700.00
10	Portable photosynthetic unit	01	38,000.00

TECHNICAL SPECIFICATIONS

Technical specification of Double beam UV-VIS Spectrophotometer

Monochromator	:	High resolution concave diffraction Grating
Wavelength range	:	190nm to 1100nm
Accuracy	:	±0.3nm
Setting Repeatability	:	±0.1nm
Sample holder	:	10mm cuvettes
Power Requirement	:	200VA
Accessories	:	4 matched quartz cuvettes (cells), DNA/RNA software

Signature of the Bidder with seal

Technical specification of Lab fermenter

- 1 Capacity of vessels : 3.0 ltrs
- 2 Total working vol : 2.225 ltrs
- 3 MOC of vessel
Borosilicate glass with round bottom and SS top flange, Table top
- 4 Autoclave type
- 5 Top flange : Made of SS with ports for pH/temperature /heater/
sample/ feed/ inoculation, nitrogen pipe for anaerobic fermentation etc.
- 6 Aeration : With inbuilt oil/ moisture free pump and meter
- 7 Rotameter : 0-5LPM variable with online PTFE 0.2
microns Hydrophobic filter autoclave.
- 8 Sparger type : Ring type air sparger
- 9 Agitation : Digital RPM indication with variable speed.
- 10 Impellers : 4 blades two impellers removable type.
: Four baffles in built removable type.
- 11 **Temperature control** : Digital temperature indicator cum controller
- 12 **Heating/ Cooling** : inbuilt heating rod of 100watt Cooling SS
coil loop provided for the circulation of chilled /cold water inside vessel.
- 13 **Inlet/. Exhaust Filters** : 0.22 microns absolute hydrophobic
PTFE/Autoclavable 20 minutes.
- 14 **pH module** : online gel filled sterilizable at 121 °C 15psi
pH probe with transmitter and display of pH in the TFT with calibration window to
control the pH (2-14).
- 15 **Peristaltic pumps** : **Total-3 No. fixed speed peristaltic pumps**
for acid /base dosing one peris
- 16 **Software for PC Connectivity**

Optimal Accessories:

DO₂ probe with Transmitter:

Online DO₂ Babe, Sterilizable at 121.5⁰C and .5 psi and complete with DO transmitter, display and cable for monitoring dissolved oxygen having the DO Range 0-100

Technic
of 67e

Technical specification of Gel-Electrophoresis Unit

Horizontal Electrophoresis Kit:

1 Mini units:

- (a) Complete Set - Including base gel running unit, safety lid, at least two casting trays and combs. ✓
- (b) Gel Casting Tray : Standard form; ✓
- (c) Combs sizes : 1.0 mm -4 wells, 8 wells & 12 wells; ✓
2.0 mm - 4 wells, 8 wells & 12 wells ✓

2 Midi units:

- (a) Complete set: Including base gel running unit, safety lid, at least two standard casting trays and combs. ✓
- (b) Gel Casting Tray : standard form ✓
- (c) Combs sizes : 1.0 mm -10 wells, 12 wells, 16 wells, 24 wells ✓
2.0 mm - 10 wells, 12 wells, 16 wells & 24 wells ✓

3 Maxi units:

- (a) Complete set : Including base gel running unit, safety lid, at least two standard casting trays and combs ✓
- (b) Gel Casting Tray : standard form ✓
- (c) Combs sizes : 1.0 mm -16 wells, 20 wells, 28 wells, 40 wells ✓

Vertical Electrophoresis Kit:

1 Mini unit set:

- (a) Including base gel running unit, safety lid, connecting leads spacers etc.
- (b) Gel casting unit including glass plates, combs, casting frame etc.
- (c) Comb size includes 0.75mm, 1.0mm, 1.5mm, 2mm etc.
- (d) Number of wells 10/12/15
- (e) Clamp based gel casting unit will be preferred
- (f) All accessories needed to make the unit fully functional must be included /quoted.

2 Midi Unit Set

- (a) Including base gel running unit, safety lid, connecting leads, spacers etc.
- (b) Gel casting unit including glass plates, combs, casting frame etc.
- (c) Comb size includes 0.75mm, 1.0mm, 1.5mm, 2mm etc.
- (d) Clamp based gel casting unit will be preferred
- (e) All accessories needed to make the unit fully functional must be included /quoted.

3 Power Supply:

- (a) Power Supply suitable for vertical (mini and standard) and horizontal gel electrophoresis, semi-dry and mini tank blotting.
- (b) Constant voltage and constant current modes
- (c) Output Voltage : Adjustable from 0/5/10V to 500V/600V
with an increment of 1 V or less

- (d) Output Current : up to 800/1000 mA with increment of 1 mA
- (e) Output power : 300W or more
- (f) Terminals/ Sockets : 4 Pairs/4
- (g) Safety : All necessary safety provisions like Over load, No load, Sudden change in load, power failure indication, Over Temperature and safe plugs and sockets
- (h) Input Voltage : 230V \pm 10VAC, 50Hz

Signature of the Bidder with seal

Technical specification of Water purification system

- 1 Feed water specification
 - Water quality : Portable tap water
 - Fouling index : 12
 - Free chlorine : <3 ppm
 - Conductivity : < 2000uS/cm
- 2 Product water specifications
 - Resistivity : $M\Omega$ at 25 °C
 - TOC : ppb
 - Flow Rate : L/Hour at 25 °C
- 3 Prefilter with antiscaling and activated carbon for the removal of free chlorine and organics.
- 4 To eliminate the need of deionization cartridges regular replacement, the water system should have self regenerating electro deionization principle with carbon beads on cathode for less recurring cost and consistent water quality.
- 5 Built in TOC monitor (range 1ppb to 999ppb)
- 6 30 liters reservoir with automatic sanitized module for 254nm low pressure mercury vapor UV lamp, selected for its germicidal effectiveness.
- 7 Ultra purification system should be class 100 clean room
- 8 Warranty for a period of one year against any manufacturing defects and workmanship.

Signature of the Bidder with seal

Technical specification of Phase contrast microscope

Phase contrast microscope with software

- 1 Trinocular head sientopf type 30° inclined 360° rotating.
- 2 Vide field high eye point eye piece N-WF10X/20mm with diopter adjustment on both eyepieces, with rubber eyecup (paired) quintuple nosepiece
 - Achromat objective 4X/0.1 (WD=7mm)
 - Achromat objective 10X/0.25 (WD =4.3mm)
 - Achromat objective 20X/ 0.4 (WD=1.3mm)
 - Achromat objective 100X/1.25/S-oil (WD=0.13mm)
- 3 Build in low position coaxial mechanical stage (Right hand Control)
- 4 Phase contrast 5 position (BF, 10X, 20X, 40X, 100X) turret condenser
- 5 **Tube used with plan phase objectives**
- 6 **Phase centering telescope**
- 7 **FD illumination 3W with intensity control**
- 8 **Inversal Power supply 100-200V**
 - Simple add on analyzer
 - Simple add on polarizer
- 9 High resolution digital camera with ½" CMOS chip USB 2.0 PC connection
 - Time live image resolution : 5.0 mega pixels (1580 x 1944 pixels)
 - Software
 - Real time full screen image capturing
 - Video capture by time setting
 - Easy measurement calibration
 - Measurement in microns, inches, millimeters, length measurements
 - Rectangular, irregular shape measurements, perimeter, radius, circumference measurements
 - Magnifier function
 - File sending receiving sound recording, cell counting, data export, report generating and print out.
- 10 Warranty of two years from date of installation, free warranty services.

Signature of the Bidder with seal

Technical specification of Deep freezer (-20 °C)
(SINGLE DOOR UPRIGHT FREEZER)

- **Dynamically Filtered Groups** – In addition to filtering by Workstation.Name, filter with options like Version, Status, Login Name etc. Advanced users can even use regular expressions.
- **Remote Launch** – run existing applications on selected workstations using Enterprise Console. Applications will run in the background (using a system account without user interaction). Optionally include command line parameters.
- **Push and Launch** – send and run applications on selected workstations using Enterprise Console. Send up to a 50MB file (.exe or .msi) to workstations. Optionally include command line parameters.
- **Format Thaw Space** – format Thaw Space(s) on selected workstations with just one click from the Enterprise Console.
- **View Select Columns** – hide unwanted columns. Navigate to View > Columns in the top toolbar.
- **Select by Status** – the console summary at the bottom left of the Enterprise Console is now clickable. Clicking each status will appropriately select workstations with that status in the current view.
- **Maintenance Countdown Timer** – a countdown is displayed to the end-user prior to a Workstation Task if Show Message is selected in the settings.
- **Change Frozen Drive State** – update the Frozen Drive settings in the Deep Freeze configuration without requiring a reinstallation. Changes will take effect at next reboot.
- **Touch screen** – Access.
- **Scheduler Enhancements** – can now edit existing scheduled tasks and remove workstations from a scheduled task.

Signature of the Bidder with seal

LYOPHILIZER

- 1 Basic unit with a transparent drying chamber with 8- port flask manifold, Ampoule Adapter-8NOS and 100nos of 1ml Glass Ampoules.
- 2 3 drying tray with mechanical sealing device, 8 flasks, condenser with pre freezing facility.
- 3 Caster wheel to move the unit easily (trolley type)
- 4 Vacuum pump
- 5 Graphical larger LCD display
- 6 Microprocessor controller with feather touch keypad
- 7 Vacuum curve, temperature curve can be visualized.
- 8 Vacuum pump

Off gas result (L/S)	:	2
Limit Vacuum (pa)	:	6×10^{-2}
Electric machine power (v/kw)	:	380 220/0.37
Inner diameter	:	25 ϕ
Net weight	:	27 ka
Shape and size	:	478 x 148 x 277
9 Freeload temperature	:	<-45 to -55 deg C
10 Freeload freezing area	:	0.07 – 0.18m ²
11 Vacuum degree	:	<15 pa
12 Consuming wattage	:	1000VA
13 Power	:	220V, 50Hz
14 Dry volume:		

Plates are general or capping. Dry bottles are 100ml, 250ml, 500ml, and 1000ml.

Signature of the Bidder with seal

Technical specification of Bomb Colorimeter

1	Working mode	:	Adiabatic, isoperibol and dynamic
2	Permissive humidity	:	80%
3	System structure	:	Automated
4	Energy measurement range	:	40.000joule
5	Relative Standard Deviation (RSD)	:	0.05%
6	Working temperature	:	25 °C
7	Temperature measuring resolution	:	0.0001 °C
8	Corrections	:	Halogen, sulphur, nitrogen, moisture and ash
9	Fully automatic oxygen filling and venting		
10	Integrated Water Handling System		
11	System expansion	:	Network connection software.
12	Multical system	:	Control with PC
13	Power supply	:	115 / 230 V; 50 / 60 Hz
14	Auxiliary energy	:	Oxygen
15	Operating oxygen pressure	:	30 bars
16	Cooling Water supply	:	Chiller
17	Cooling medium	:	Tap water
18	Flow rate	:	70-140 litre / hour
19	Test memory	:	Yes

Signature of the Bidder with seal



Technical specification of Global positioning System (GPS)

- 1 Colors : 65K
- 2 Memory : 1.7GB
- 3 Automatic routing
- 4 Electronic compass
- 5 Barometric altimeter

Signature of the Bidder with seal

Technical specification of Portable Photosynthesis system

1 Stability (CO₂ Analysis)

Automatic zero at regular intervals corrects for sample cell contamination, source and detector ageing and preamplifier gain changes.

2 Control range

CO₂ : 0-2,000 $\mu\text{mol mol}^{-1}$ (6 preset levels)

H₂O : 0-dewpoint (4 preset levels)

3 Response Time : Electrical Display/Analog output and Pneumatic

4 Air sampling

100cm³ min⁻¹ using an integral DC pump

5 Recording option

By PC or by the instrument. Automatic logging at the user selectable intervals controlled by internal real time clock

6 Real Time Clock

Accuracy : better than 1min/month at 25⁰C

Operating temperature : 0-70⁰C

7 Measurement range

CO₂ Range : 0-9,999 $\mu\text{mol mol}^{-1}$ (Max Range)

H₂O Range : 0-75mb

8 CO₂ Precision : < 1% at 300ppm

H₂O Precision : <1% at 100% RH

9 Power supply

Internal, rechargeable 12V battery

10 Integral Cuvette Air Supply

300 cm³ min⁻¹ measured and controlled by a mass flow meter.

11 Operating environment

0-50 ⁰C, non-condensing.

12 Broad leaf cuvette

13 Air temperature Sensor

Range : 0-60⁰C
Accuracy : +/- 0.3⁰C at 25 ⁰C

14 PAR sensor

Response : 400-700nm
Range : 0-3,000 $\mu\text{mol mol}^{-2}\text{S}^{-1}$
Accuracy : 10 $\mu\text{mol mol}^{-2}\text{S}^{-1}$

Signature of the Bidder with seal
