

### ASSAM UNIVERSITY, SILCHAR

TENDER NOTICE NO. AUS/TSSOT/AE/Procurement (ACF) / Tender/ 2018/ 01

DATED 01<sup>st</sup> June 2018

FOR SUPPLY OF LAB EQUIPMENTS AND ACCESORIES FOR THE DEPARTMENT OF AGRICULTURAL ENGINEERING

: AUS/TSSOT/AE/Procurement (ACF)/Tender/2018/01 : 01<sup>st</sup> June 2018 NOTIFICATION NO.

DATE OF ISSUE

BID CLOSING TIME AND DATE :14.00 Hrs of 2<sup>nd</sup> July 2018

APPLICATION FEE FOR SUBMITTING TENDER: Rs. 1000.00

DETAILS OF EQUIPMENTS: AS PER ANNEXURE. No.1



#### Assam University, Silchar-788011

Sealed tenders are invited from the manufacturers/authorized distributors /Suppliers for supplying Lab Equipments and accessories for the Department of Agricultural Engineering and must be submitted in two parts (Part-I: Technical Proposal, Part-II: Financial Proposal) in separate envelops. These two envelops may be put into a sealed envelope, super scribing therein "tender No., Bid, Closing Date, Bidder's name etc" and dropped in the tender box placed at the office of the undersigned on or before the bid closing time and date. -The details, and terms and conditions, etc. can be downloaded from the website http://www.aus.ac.in or collected from the office of the undersigned on payment of Rs. 1000.00 in the form of Demand Draft in favour of the Finance Officer, Assam University, Silchar. Last date of submission of tender is 2<sup>nd</sup> July 2018 by 02.00 PM.

Sd/-Head Deptt. of Agricultural Engineering Assam University, Silchar-788011

# ASSAM UNIVERSITY, SILCHAR TERMS AND CONDITIONS FOR SUPPLYING EQUIPMENTS/TOOLS AND MACHINES

- 1. Only manufactures / Distributors/ Authorized Dealers/Suppliers (Herein after called party) of reputed brands having wide experience in dealing with lab equipments only may submit the tenders.
- 2. The manufacturer having ISO 9002 certificate or similar certification would be preferred.
- 3. The party must submit the latest Income tax & Sales tax clearance certificates with the tender.
- 4. The party must have experience in supply & installation of lab equipments in Govt. organization / public sector etc with last three years. Certificates in this regard from the responsible officer of that organization with contact no. e-mail address etc. is to be submitted.
- 5. The tender should be submitted in a sealed envelope superscribed as "TENDER FOR SUPPLY OF LAB EQUIPMENTS FOR THE DEPARTMENT OF AGRICULTURAL ENGINEERING" addressed to the Head Department of Agricultural Engineering, Assam University, Silchar.
- 6. The tender should be accompanied with a call deposit receipt or 2.5% of the estimated value of the item quoted the call deposit to be drawn from any nationalized bank pledged in favour of the Finance Officer, Assam University, Silchar as earnest money.
- 7. The party should quote one rate per item, which should be inclusive of all taxes. The rate so quoted should be F.O.R Assam University, Dargakona, Silchar. The standard warranty period should be 1 year from the date of installation. In case vendor wishes to quote for extended warranty period it should be quoted separately.
- 8. The rate quoted should be for the items & specification as mentioned in the list. The party should not quote for specification. If the party wishes to quote for a higher /superior specification, it must be separately stated along with proof that the specification is higher/superior. In no case they should quote for lower/inferior specification. In that case the tender will not be considered.
- 9. Being an educational Institute, Assam University, Silchar is entitled for custom & central excise duty exemption for procurement of scientific equipment etc. The interested party while quoting rates should indicate the excise duty component and tax component separately.
- 10. The bidders shall have to submit their tenders within **02.00 PM of 2<sup>nd</sup> July 2018** at the Department of Agricultural Engineering, Assam University, Silchar. No tender shall be entertained after the scheduled time and date of submission of tenders. The same will be opened on **2<sup>nd</sup> July 2018 at 3.00 PM**. The bidder may depute only one representative to be present at the time of opening the tender.
- **11.** A committee of experts constituted by the University authority will check the technical and financial implications of each tender to prepare the panel of successful Tenders.

- 12. The selected bidder after receipt of supply order has to deposit 7.5% of supply order value in the form of FDR from any nationalized bank in favour of Finance Officer. Assam University payable at Dargakona, Silchar as Security deposit. In addition, the earnest money deposited shall also be retained as security deposit. The security deposit will be released only after completion of warranty period.
- 13. The successful bidder shall have to supply the materials strictly as per the configuration as stated in the supply order should conform to the made /brand quoted and shall have to complete the supply within 30 days from the date of issue of order. Otherwise, the order shall automatically stand cancelled and the security deposit of the bidder shall be forfeited. No communication in this regard will be entertained. In such eventuality the University will have the right to place order to the next bidder from the panel with proper justification.
- 14. Earnest money of unsuccessful bidders will be released after finalization of the deal.
- 15. No request for advance payment shall be entertained in any circumstances. After completion of the supply, the firm will submit bills in triplicate for payment, with a certificate of successful installation of the materials from the Head of the Department. Where applicable, GST will be deducted at source before release of payment to supplier.
- 16. The receipted copy of Challan shall have to be submitted to General Administration along with the bill though the Head/Competent Authority.
- 17. The successful bidder shall have to provide **on site warranty support for at least one year (or more as quoted in the tender paper)** from the date of successful installation. If any breakdown, non–functioning or malfunctioning of the machine occurs during the warranty period, the supplier shall have to attend to the complain within 24 hours (or in next working day in case of holidays) after receiving verbal /written /e-mail complain and will make the machines functional free of cost. In case the system has to be taken out of the University campus, the bidder should provide a stand by support system /peripheral with same or higher /new configuration / specification.
- 18. If the vendor/supplier /bidder fails to attend to the breakdown calls made within the warranty period , a portion or whole of the security Deposits decided by the University shall be forfeited .
- 19. The vendor should give a written undertaking that spares for repairing the supplied tools and machines will be available with them for the warranty period from the date of installation.
- 20. A) Rate: Various charges and taxes must be clearly mentioned separately.
  - B) **GST**: Rate inclusive of GST will be preferred however, where quoted separately, the rates payable should be clearly cited in accordance with provision of relevant Act and rules.
- 21. **A)** Consignee: All stores are required to be consigned to the Head/Competent Authority, Assam University, Silchar-788011 (Assam).
  - **B)** Mode of dispatch: The consignment is required to be dispatched by Road Transport or delivered at the Department of this University under supplier's own arrangement free of additional charges. All offers of delivery should be made ex-stock and clear note should be inserted in case of damage or loss in transit, if any will be borne by the supplier.

- C) **Dispatch of Document**: The consignment note along with the quadruplicate of copy of relevant bill and two copies of priced challan should dispatch to the Head, Department of Agricultural Engineering, Assam University, Silchar-788011 (Assam) immediately on completion of dispatch of consignment. If these documents do not reach the said office in time all wharf age/demurrage incurred, if any will be recoverable from the suppliers.
- 22. **Delivery:** The equipment/tools are required to be delivered/dispatched **within thirty days** from the date of receipt of the supply order/or as per mutual agreement. Suppliers are requested to take care that all the items mentioned above are to be supplied **in full set basis** and the items are required to be installed in the Laboratory/field. User's manuals for the items (as applicable) are also to be provided along with the items supplied.
- 23. **Quality Specification**: The stores offered should be of the best/standard quality available unless, otherwise specified conforming strictly to the specification cited. The Head/Competent Authority reserves the right to reject such stores as are found unacceptable on these grounds. Items of only reputed manufacturers will be given preference.
- 24. **Liquidated damages**: If a firm accepts the order and fails to execute the order in full or part as per terms and conditions stipulated therein, it will be open to the Competent Authority to recover liquidated damaged from the firm at the rate of 1% per month or the part thereof, subject to a maximum of 5% of the value of the undelivered stores. It will also be open to the Competent Authority, alternatively to arrange procurement of the required stores from any source, at the risk and expense of the firm that has accepted the order and failed to execute the order according in stipulations agreed upon. This will also entail removal of the defaulters name from the approved/registered list of suppliers.
- 25. **Quantities**: The approximate quantities of item proposed to be purchased as mentioned in the list are liable to be **increased or decreased** at the time of placement of purchase order.
- 26. **Special discount/rebate:** Special discount/rebate admissible to Educational Central University may be specifically indicated in the quotation.
- 27. **Rejection of offer**: Tenders not conforming to the terms and conditions and procedure so outlined are liable to be rejected summarily.
- 28. **Guarantee/Warranty:** The tools and machines should be covered by warranty of quality/warranty of performance and manufactures defect for a minimum period of twelve month from the date of satisfactory installation as the case may be.
- 29. **Special condition**: Special condition, if any, printed on the quotation sheets of the tenders or condition attached with the tender will not be applicable to the contract unless these are expressly accepted in writing by the Director. Due weight age will be given to bidder offering warranty for a longer period.
- 30. **ISI Marks**: The tenders shall specify whether the articles offered bear bureau of Indian standard certification mark or not. In such cases they shall produce copies of certification mark along with their tender in support of it. Also specific make and model No. of the equipment is to be mentioned.
- 31. **Discretionary power**: The Head/Competent Authority, Assam University Silchar, reserves the right to accept or reject any or all tenders without assigning any reason there of and also to modify in exceptional case any of the stipulated terms and conditions on merit on genuine and justifying grounds if it is in the larger interest of the Institute. The final acceptance of the tenders rests entirely with the Head/Competent Authority who does not bind himself to accept the lowest tender.

- 32. If any dispute arising out of this supply contract, it will be subject to Silchar jurisdiction only.
- 34. The following updated documents should also accompany with the tenders:
  - Trade Licence/ISO/Similar Certificate
  - PAN Card
  - GST Registration and certificate

Those tenderers, who accept the above terms and conditions, may submit their tenders in the prescribed format along with all relevant documents / brochures to the office of the undersigned on or before the stipulated date. The tenderer must also submit a certificate in their official pad starting that all the above terms and conditions are acceptable to them.

#### Sd/-Head Department of Agricultural Engineering

Memo No. AUS/TSSOT/AE/Procurement (ACF)/Tender/2018/01 Dated 1st June 2018

#### **Copy To:**

- 1. The P.S. to VC for kind information of Hon'ble Vice Chancellor.
- 2. The Finance Officer, Assam University Silchar for kind information.
- 3. Registrar, Assam University Silchar for kind information
- 4. The Dean, Triguna Sen School of Technology for kind information.
- 5. Director, Computer Centre, Assam University, Silchar for Web site uploading.
- 6. Sri/ M/S for kind information.
- 7. File

Sd/-Head Department of Agricultural Engineering

#### Annexure-I

## List of Laboratory Equipments and Accessories for the Department of Agricultural Engineering, 2018

| Sl.<br>No. | Name of Item                  | Description  | Required<br>Quantity | Unit Price<br>including<br>GST<br>(Rs.) | Amount including GST (Rs.) |
|------------|-------------------------------|--|----------------------|---|----------------------------|
| 1          | Smart Weather<br>Sensor       | Smart Weather Sensor for measuring Air Temperature,<br>Relative Humidity, Wind Speed, Wind Direction,<br>Atmospheric Pressure and solar Radiation (Part<br>No.8375.U10 WS502-UMB).   | 1                    | (==0)                                   | (===1)                     |
| 2          | 30 cm Soil<br>Moisture Sensor | Soil moisture sensor (Adcon SM-1 V2, 30cm, SDI-12 4M Cable, A2.007.338.1.0 Adcon SM  | 2                    |   |                            |
| 3          | 90 cm Soil<br>Moisture Sensor | Soil moisture sensor (Adcon SM-1 V2, 90cm, SDI-12 A2.007.338.1.2)  | 1                    |   |                            |
| 4          | Sensor extension Cable        | Cable for Soil Moisture Sensor-60M   | 1                    |   |                            |
| 5          | Datalogger                    | 7310 Datalogger  | 1                    |   |                            |
| 6          | Laboratory Spray<br>Dryer     | Water evaporation capacity: 1 ltr / hour at Inlet temperature 250° C/ Outlet temperature 85° C Heater capacity: 3 KW Feed Pump: Peristaltic pump with variable flow rate Air Compressor: Included Spray nozzle: 2 Fluid nozzle Air Flow: Downward concurrent Power supply: 230 V, 50Hz Compact unit: The unit is very compact Air Compressor: An air compressor for atomization of the feed is included. No external compressed is required. Inlet temperature controller: A digital temperature controller for precise control of the inlet air temperature is provided Feed Pump: A peristaltic pimp with controller for regulating the feed rate to the nozzle is provided Blower: A centrifugal blower in SS 304 material of construction is included  Air Filter: The air filter is mounted on the SS housing Air Blower: Centrifugal blower in SS 304. The blower is located before the heater so that it does not handle any powder laden air, unlike the case where the blower is located after the dryer. The blower is provided with a damper, for adjustment of the air flow rate  Electrical air heater: The heating element is enclosed in a SS 304 housing. The element is of nichrome. The heater is insulated. The heater output is controlled through a SSR by the output from the inlet temperature PID controller  Drying chamber in glass: The drying chamber is of Borosilicate glass, with easy clamp type fittings  Cyclone Separator: The Cyclone Separator is of Borosilicate glass. The cyclone is equipped with a glass collection bottle.  Peristaltic Pump: The peristaltic pump is a self –priming pump. The pump delivers the sample liquid from a container through the silicon tubing to the spray nozzle. The pump is provided  Spray nozzle: This is a two fluid nozzle. The nozzle |                      |   |                            |
|            |                               | assembly consists of an inner tube for the liquid sample leading to a small diameter jet. Compressed air passes  |                      |   |                            |

| through an outer tabe. The compressed air adomizes the liquid into a time spary. The nozzle assembly is in SS 316  Air compressor. The air compressor is a displangmany type compressor, bear growting cleans are witton any danger of sil contamination. The compressor is a displangmany type compressor has provided for controlling the air pressure. A pressure transmitter gives the display of the air pressure.  Control Panel: The control, panel is in SS 304. It houses the controlls. The following are provided: Inlet air arrangements controller (PID) with SSR output) Outlet compressure indicator (PID) Order of works and minication for pump Order which and indication for pump order order order which are the pump or pump speed count with indication for pump order ord |    |                  |   |   | <br> |
|--|----|------------------|---|---|------|
| compressor, benne providing clean air without any dianger of oil contamination. The compressor is located within the stainless steel housing. An air regulator is provided for controlling the air pressure.  Control Panel. The control, panel is in SS 304. It houses the controls.  The following aer provided: Inlet ar temperature controller (PID) with SSR output)  Out-off which and indication for blower On only which and indication for level on only off which and indication for level on one of the pressure indication.  Stainless seel housing: A stainless steel calmine houses all the mechanical components.  Cartridge Filter: For collection of fines from the exhaust air. The filter will be housed in a stainless steel endosure. Factures:  Baced on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities. First and accurate results Chatomatic adultation of the provided of the protrable Chatomatic adultation of the protrable Chatomatic adultation of the protrable Chatomatic adultation of the protrable Technique Automatic operation with integrated weighing system Extensive collection of commodities of the protrable Technique Automatic personal of the protrable Technique Automatic temperature compensation of the protrable Technique Automatic temperature concention. All commodities of the protrable Technique Automatic temperature concention. All commodities of the protrable Technique Automatic temperature concention. All commodities of the protrable Techn |    |                  |   |   |      |
| the controls. The following are provided: Inlet air temperature controller (PID) With SSR output) Outlet temperature indicator (PID) Mains connection indicator On off switch and indication for blower On off switch and indication for blower On off switch and indication for blower On off switch and indication for electrical air heater Conformation Dumy speed control with indication (Digital) Compressed air pressure indication.  Stainless steel housing: A stainless steel cabinet houses all the mechanical components.  Carridge Filter: For collection of fines from the exhaust air. The filter will be housed in a stanless steel enclosure.  Features: Based on non-destructive technique Automatic operation with integrated weighing system Endows Model: GO25  Features: Carridge Filter: For collection of fines from the exhaust air. The filter will be housed in a stanless steel enclosure.  Features: Based on non-destructive technique Automatic operation with integrated weighing system Endows Model: GO25  Features: Collisional of the standard of the sta |    |                  | compressor, hence providing clean air without any danger<br>of oil contamination. The compressor is located within the<br>stainless steel housing. An air regulator is provided for<br>controlling the air pressure. A pressure transmitter gives |   |      |
| Inlet air temperature controller (PID with SSR output) Outlet temperature indicator (On/off witch and indication for blower On/off switch and indication for pimp On/off switch and indication for electrical air heater On-off switch and indication for air compressor Pump speed control with indication (Digital) Compressed air pressure indication.    Stailles set ech lossing A stainless steel earlier bousses all the mechanical components.  |    |                  | the controls.   |   |      |
| On/off switch and indication for pimp On/off switch and indication for pimp On/off switch and indication for pimp On/off switch and indication for air compressor Pump speed control with indication. Stainless steel housing: A stainless steel cabinet houses all the mechanical components.  Cartridge Filter. For collection of fines from the exhaust air. The filter will be housed in a stainless steel enclosure.  Cartridge Filter. For collection of fines from the exhaust air. The filter will be housed in a stainless steel enclosure.  Features: Based on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities Fast and accurate results Customized calibration can be made available Easy to use with auto temperature compensation Calibrated to basic standard over method Measurement time less than one minute per sample Portable  Fest and accurate results. Cartridge Filter for consecutive to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gard makinum (depending upon the commodities) Temperature correction: Automatic emperature correction Size: 51cm 31cm; 50cm (Lx B;H) (Approx) Power supply: 220V. Soltz Range: 05th; Automatic temperature correction Size: 51cm; 31cm; 50cm (Lx B;H) (Approx) Power supply: 220V. Soltz Range: 05th; Automatic temperature correction Size: 51cm; 31cm; 50cm (Lx B;H) (Approx) Power supply: 220V. Soltz Commodities on which presently calibrated Cereal: Paddy-witerat, maize. Commodities which can be calibrated on receipt of sample weight which an he calibrated on receipt of sample from customer on demand Cereals: Jowan, Baja, Ragi, Navane Pulse: Green Grann, Black grann, Red gram Cowpea Benegi gram Oil Seeds: Groundmut Fibre: Cotton Tibre:  |    |                  | Inlet air temperature controller (PID with SSR output) Outlet temperature indicator (PID)   |   |      |
| On/off switch and indication for air compressor Pump speed control with indication (Digital) Compressed air pressure indication.  Stainless steel housing: A stainless steel cabinet houses all the mechanical components.  Cartridge Filter: For collection of fines from the exhaust air. The filter will be housed in a stainless steel enclosure.  Features:  Moisture Meter Indosaw Model: 6025  Features: Based on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities Fast and accurate results Customized calibration can be made available Easy to use with auto temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications: Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LOD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane Keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm × 31cm × 50cm (L.× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: -0.02% Commodities on which presently calibrated Correll: Paddy, wheat, maize. Off Seeds: Siya bean, Rape-seed (Hyhrid), sunflower Vegetables which can be eathbrated on receipt of sample from customer on demand On Seeds: Siya bean, Rape, Seed: Carrot, Cauliflower, Bottle guard, Chilli, Beand, Spinech, Peas, Reddish Commodities which can be eathbrated on receipt of sample from customer on demand On Seeds: Groundrunt Fibre: Corton Vegetables seed: Tomato Vegetables seed: Tomato 10 Palnet (Tractor drawn)  Stotion 45 bp tractor   |    |                  | On/off switch and indication for blower   |   |      |
| Stainless steel housing: A stainless steel cabinet houses all the mechanical components.  Cartridge Filter For collection of fines from the exhaust air. The filter will be housed in a stainless steel enclosure.  Features: Based on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities Fast and accurate results Customized calibration can be made available Easy to use with auto temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications: Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodities esseds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upo 250 gms Maximum (depending upon the commodities) Temperature correction: Size: 51cm x31cm x50cm (Lx B-H) (Approx) Power supply: 220V, 50Hz Range: 69% + 40% (depending open crop type). Accuracy: 50.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, Oil Seeds Soya bean. Rapseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, Bhendi, Spinch, Pasa, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajin, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds Groundnut Fibre: Cotton Vegetables seed: Tomato Jose Plough Disc plough   |    |                  | On/off switch and indication for air compressor<br>Pump speed control with indication (Digital)   |   |      |
| air. The filter will be housed in a stainless steel enclosure.    Features:- Based on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities Extensive collection of commodities Fast and accurate results Customized calibration can be made available Easy to use with anot temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications:   Commodity Calibration: Vegetables seeds and grains Rs 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction Size: 51cm ×31cm × 50cm (L×B × H) (Approx)   Power supply: 220V, 50Hz Range: 05% + 40% (depending open crop type). Accuracy: :0.2%   |    |                  | Stainless steel housing: A stainless steel cabinet houses all   |   |      |
| Moisture Meter Indosaw Model: 6025  Based on non-destructive technique Automatic operation with integrated weighing system Extensive collection of commodities Fast and accurate results Customized calibration can be made available Easy to use with auto temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications: Commodity Calibration: Vegetables seeds and grains RS 232 Post: Post for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upo 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm ×31cm × 50cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 50% - 40% (depending open crop type). Accuracy: 40.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, burley, rice Oil Seeds: 50ya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundmut Fibre: Cotton Vegetables seed: Cromato Vegetables seed: Groundmut Fibre: Cotton Vegetables seed: Som with all accessories 1 Disc plough 2 bottom 35cm with accessories 1 Disc plough 7 Lange Maxwell and Lacessories 1 Up Lange Cup Feed metering mechanism, 6-row furrow openers 1 Suitable for 45 hp tractor with all accessories 1  |    |                  |   |   |      |
| Fast and accurate results Customized calibration can be made available Easy to use with auto temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications:- Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: \$1cm x31cm x50cm (Lx BxH) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: 30.2% Commodities on which presently calibrated Cercal: Paddy, wheat, maize, Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cercals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato Vegetables seed: Tomato Planter (Tractor drawn)  8 M B plough 2 bottom disc plough for 45 hp tractor with all accessories 1 Planter (Tractor drawn)  | 7  | Moisture Meter   | Based on non-destructive technique<br>Automatic operation with integrated weighing system   | 1 |      |
| Easy to use with auto temperature compensation Calibrated to basic standard oven method Measurement time less than one minute per sample Portable Technical Specifications:- Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm ×31cm × 50cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 409% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, whaat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato Vegetables seed: Tomato Vegetables seed: Tomato Pulses: Green Gram, Back gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Pegetables seed: Tomato Vegetables seed: Tomato Vegetables seed: Tomato Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers uitable for 45 hp tractor   |    |                  | Fast and accurate results   |   |      |
| Portable Technical Specifications:- Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm ×31cm × 50cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato 2 bottom, 35cm with accessories  M B plough 2 bottom disc plough for 45 hp tractor with all accessories 1 Oplanter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers utilable for 45 hp tractor  |    |                  | Easy to use with auto temperature compensation<br>Calibrated to basic standard oven method  |   |      |
| Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer Display: LCD display for commodity selection, weight, temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51 cm ×31 cm× 50 cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajira, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato 2 bottom, 35cm with accessories  9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | Portable  |   |      |
| temperature and moisture percentage Keypad: 11 K Membrane keypad Sample weight: Upto 250 gms Maximum (depending upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm ×31cm×50cm (L×B×H) (Approx) Power supply: 220V, 50Hz Range: 65% - 40% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom 35cm with accessories 1  9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1  10 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  |    |                  | Commodity Calibration: Vegetables seeds and grains RS 232 Port: Port for connectivity to computer   |   |      |
| upon the commodities) Temperature correction: Automatic temperature correction Size: 51cm ×31cm×50cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1 9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  |    |                  | temperature and moisture percentage<br>Keypad: 11 K Membrane keypad   |   |      |
| correction Size: 51cm ×31cm×50cm (L× B×H) (Approx) Power supply: 220V, 50Hz Range: 05% - 40% (depending open crop type). Accuracy: -0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn)  Cur feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  |    |                  | upon the commodities)   |   |      |
| Range: 05% - 40% (depending open crop type). Accuracy: ±0.2% Commodities on which presently calibrated Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1 9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | correction<br>Size: 51cm ×31cm× 50cm (L× B×H) (Approx)  |   |      |
| Cereal: Paddy, wheat, maize, barley, rice Oil Seeds: Soya bean, Rapeseed (Hybrid), sunflower Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1  Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1  Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  |    |                  | Range: 05% - 40% (depending open crop type).  |   |      |
| Vegetables Seed: Carrot, Cauliflower, Bottle guard, Chilli, bhendi, Spinech, Peas, Reddish Commodities which can be calibrated on receipt of sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | Cereal: Paddy, wheat, maize, barley, rice   |   |      |
| sample from customer on demand Cereals: Jowar, Bajra, Ragi, Navane Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1  9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1  10 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | Vegetables Seed: Carrot, Cauliflower, Bottle guard,   |   |      |
| Pulses: Green Gram, Black gram, Red gram Cowpea Bengal gram Oil Seeds: Groundnut Fibre: Cotton Vegetables seed: Tomato  8 MB plough 2 bottom, 35cm with accessories 1  9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1  10 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | sample from customer on demand  |   |      |
| Fibre: Cotton Vegetables seed: Tomato  8 M B plough 2 bottom, 35cm with accessories 1  9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1  10 Planter (Tractor drawn)  Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | Pulses: Green Gram, Black gram, Red gram Cowpea<br>Bengal gram  |   |      |
| 8 M B plough 2 bottom, 35cm with accessories 1 9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor   |    |                  | Fibre: Cotton   |   |      |
| 9 Disc plough 2 bottom disc plough for 45 hp tractor with all accessories 1 10 Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  | 8  | M B plough       | 2 bottom, 35cm with accessories   | 1 |      |
| 10 Planter (Tractor drawn) Cup feed metering mechanism, 6-row furrow openers suitable for 45 hp tractor  |    | 1 0              | 2 bottom disc plough for 45 hp tractor with all accessories   | _ |      |
|  | 10 | Planter (Tractor |   | 1 | <br> |
| Seed drill (Tractor drawn)  Fluted roller metering mechanism, seed tank, fertilizer tank, furrow openers suitable for 45 hp, 11×18cm   | 11 | ,                | Fluted roller metering mechanism, seed tank, fertilizer tank, furrow openers suitable for 45 hp, 11×18cm  | 1 |      |

| 12 | Thresher (thrown  | Engine operated, 5hp                               | 1 |  |
|----|-------------------|--|---|--|
|    | in type) for      |  |   |  |
|    | multicrop         |  |   |  |
| 13 | Tractor operated  | Boom sprayer with PTO powered pump                 | 1 |  |
|    | sprayer           |  |   |  |
| 14 | Tractor drawn     | 1.2m, 18 L type for 45 hp tractor                  | 1 |  |
|    | rotavator         |  |   |  |
| 15 | STEPPER           | Phase 2-bipolar, 200 steps/revolution, 0.8 A/Phase | 5 |  |
|    | MOTOR 45 NCM      | current, 5V, 2.8 N.cm holding torque               |   |  |
|    | NEMA 17           |  |   |  |
| 16 | Reaction torque   | Capacity:0.2NM 0.5NM 1NM 2NM 3NM 5NM 10NM          | 1 |  |
|    | sensor reaction   | 20NM 30NM 50NM 100NM, excitation 5-15V             |   |  |
|    | torque transducer |  |   |  |