Sub: Supply of Automatic Nitrogen Analyzer Assembly.

Ref: No. F ( )/ACL/Tender/2020/6419-26 Dated 27.08.2020.

Dear Sir,

Please supply the following material and send your bill in the triplicate for arranging the early payment. In case VAT is charged, Please quote your TIN Number in Each Bill.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the article</th>
<th>Quantity Ordered</th>
<th>Rate</th>
<th>Amount Rs.</th>
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<tr>
<td></td>
<td>Automatic Nitrogen Analyzer Assembly</td>
<td>One</td>
<td>816340/-</td>
<td>816340/-</td>
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<tr>
<td></td>
<td>GST 5%</td>
<td>(KEL PLUS)</td>
<td>40817/-</td>
<td>40817/-</td>
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<td></td>
<td>KEL PLUS Automatic Nitrogen/Protein Estimation System</td>
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<td></td>
<td># Brand : KEL PLUS (Patented Trade Mark issued by Govt. of</td>
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<td>India)</td>
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<td># Make: Pelican Equipments, Chennai</td>
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<td># NSIC Certified by Govt. of India in Par with DGS &amp; D Registration</td>
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<td># ISO 9001:2015 Certified Organisation</td>
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<td># CE Certified Product - mark of Quality to comply with essential</td>
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<td>safety requirement to fulfill GLP Norms</td>
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<td>A</td>
<td>KEL PLUS Automatic Macro (250ml) Block PC Compatible Digestion System</td>
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<td></td>
<td>Model KES 12L R TS : KEL PLUS Superior Automatic Autosampling</td>
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<tr>
<td></td>
<td>Twelve Place PC Compatible Regular Version Macro Block Digestion System with Touch Screen Display (Suitable for plants, soils, water, food &amp; feed, Fertilizers &amp; pesticides samples)</td>
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<tr>
<td>B</td>
<td>KEL PLUS Fully Automatic Scrubber System</td>
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<tr>
<td></td>
<td>Model KEL VAC VA: Fully Automatic Four Stage Acid Neutralizer Scrubber with micro intelligent micro processor based with digital display of time</td>
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<tr>
<td>C</td>
<td>KEL PLUS Fully Automatic Distillation System with inbuilt Titration system</td>
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<tr>
<td></td>
<td>Model CLASSIC DX VA TS (E-T): KEL PLUS Fully Auto Run completely Programmable Autosampling Microprocessor based PC Compatible Touch Screen Distillation System (Elegant Version) with inbuilt software with Programmable steps and 100 Predefinable User Storage Auto Sequence Programmes with inbuilt Titration System</td>
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</tbody>
</table>

Total 857157/-

Note – Trams & Condition include and supply of one month.

(i) SGST + CGST – 5%
(ii) F.O.R. College of Agriculture, Lalsot
(iii) Discount - Nil
(iv) Budget Head - ICAR
(v) Balance Under Head - ICAR
(vi) Mode of Purchase – Open Tender

Yours Faithfully

[Signature]

DEAN
College of Agriculture
S.K.N. Agriculture University, Jobner (Jaipur)

[Signature]

DEAN
College of Agriculture, Lalsot
Annexure I

Technical specifications of Advanced Fully Automatic Nitrogen Analyzer with accessories

A. Automatic Digestion System
- Twelve Place 250 ml capacity PC Compatible Block Digestion System with all essential accessories
- TFT Graphic Touch Screen Display with wireless mouse to operate at a distance of 1-2 mtrs without PC directly.
- Should have 2 Ports in the motherboard one for PC connectivity another for direct connection to Remote Mouse/Datalogger/ Memory stick for data storage with separate port in mother board apart from PC Port
- Integrated auto sequencing time/temperature domain of 70 programs and 12 sequencing steps
- Temperature Controller isolated in a control tower to protect electronics from digestion heat zone and acid reaction zone
- Temperature Control Range: Room temperature to 450 °C, Temperature Accuracy : ± 0.5 °C
- PC software performs Live graphical representation of time/temperature gradient on touch screen display
- Remote control module for wireless data monitoring, control and transfer to PC at a distance of 5-10 feet.
- Data logger, real time clock, memory stick for data storage with separate port in mother board apart from PC Port
- All essential accessories like Digestion Tubes, SS Insert Rack, Exhaust Manifold, Suction assembly for safe removal of acid fumes. Suction Assembly wall mounted on rear side of unit for safe & easy access to drain area.

B. Automatic Fully Scrubber System
- Four Stage Fully Automatic Microprocessor based programmable acid neutralization scrubber with digital display integrated online with motherboard of digestion system. FOUR Stage include: Condensation with water condensor, Neutralization in Alkali, Neutralization in Water, Dissolution of air free of acid fumes in raw tank water.
- Non corrosive centrifugal inbuilt magnetic suction pump for water recirculation in 10 litres tank avoids requirement of running water during digestion. Fibre Reinforced plastic Tank of capacity 8 litres. Auto waste disposal, auto drain of tank water, Auto indication of drain cycles.

C. Fully Automatic Distillation System with inbuilt Titration System
- Autosequencing Programmable Microprocessor based Distillation with inbuilt software, Colour Touch Screen TFT LCD Display,
- Provision for direct calculation of results in LCD touch screen without need of PC with user programmable formulae.
• Auto calculation of results on feeding of titre value with built in formula includes preprogrammed data of all parameters including program numbers, total nitrogen by direct titration method, total nitrogen by back titration method, protein percentage by direct titration method, protein percentage by back titration method, ammoniacal nitrogen, further formulas customizable. All parameters can be viewed in touch screen.

• The suction module of waste residue should be door mounted for easy serviceability.

• Enables automatic monitoring and measuring of high temperature in distillate with sensor for auto warning signal and safety alarm to alert user to control distillate temperature. Temperature displayed digitally.

• Auto reagent level sensor with alarm for reagents tanks to be wall mounted for easy handling and user visibility.

• Stainless steel non corrosive steam generator, Perilstatic pump for reagent addition.

• The control panel unit along with inbuilt temperature controller, timer, mother board and SMPS should be isolated in separate compartment to protect electronics from wet chemistry & acid/alkali process area for longevity & safety of all electronics.

• Nitrogen level: 0.1 to 200 mg Nitrogen, Nitrogen Reproducibility: ± 0.1% RSD, Nitrogen Recovery: > 99.5%

• Compact inbuilt Titrator for potentiometric titration system pH Acid/Base titration with touch screen display

• The titration interconnectivity hardware enables online titration without need of sample transfer from receiver end.

• Intelligent inbuilt software enables simultaneous titration distillation process with auto start of titrator.

• 3 modes of titration in a single system. MET - Monotonic equivalence point titration 3 measured quantities are available: pH, U or lpol.

DETERMINATION - Dynamic equivalence point titration 3 measured quantities are available: pH, U or lpol. SET - End point titration 3 measured quantities are available: pH, U or lpol. One measurement mode for pH and milli volt.

• Status display: flashing patterns display status as Ready, In Operation, Waiting, Malfunctioning, Error etc.

• The instrument performs live titration curve display in touch screen.

• Upgradable facility to perform photometric titrations and voltamperometric titrations.

• Built in magnetic stirrer with adjustable speed 150 to 1800 rpm with status indication in touch screen.

• Incorporates facility to store > 100 methods with more than 30 standard methods.

• The instrument has the facility to generate pdf reports with date, time & store it in the USB memory stick.

• pH electrode with long life cartridge technology for extended life time. pH measurement with 5 point calibration facility.

• pH range & resolution: 0.0 to 14.0 pH with 0.001 pH or better

• Motor driven piston burette, with a high resolution of 1/20,000 of burette volume. Complies with DIN EN ISO 8655-6 standard.

• The instrument has the possibility of connecting burettes of volume 5, 10, 20 and 50 ml (20ml supplied with equipment)

• Live data entries like sample weight, stop criteria is possible, when the titration is in progress.

• Facility to lock date and time with password protection. High-precision measuring input, operation by mouse-click.
- Anti-diffusion/check valve at dispensing point avoids the diffusion of reagents back to burette tip ensures micro level dispensing.
- Automatic calculation of results and display up to 9 decimals. Results: Directly in %, ppm, g/L, mg/mL, mol/L, g, mg, mL, mg/pc.
- Incorporates > 100 operator programmable protocols with inbuilt standard 30 methods library to carry out all types of titration for different application. User can load methods, change methods, store methods, create new methods, Save methods to USB flash drive and Add methods from USB flash drive. Memory stick with USB port to store more than 50,000 values.
- Facility for Good Laboratory Practice (GLP) routines supported by sample data registration in the instrument with details such as user name, date, performance test, sample code, sample weight, etc.
- Company should have good performance track record of at least 10 years with references of users of similar equipment. The instrument shall strictly confirm to the specifications with relevant brochure. The company should be reputed supplier with at least 50 installations of Automatic Nitrogen Analyser in India and at least 10 installations in Rajasthan. The company should have the proof of at least 50 users using Nitrogen Analyser for more than 10 years in India. The company should not be blacklisted or should not have any adverse remarks in the past.