



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



Tender No. X-29/POFRI/ECC/PBK/AICRP-31/2020-21

Date 4th August 2020

Tender ID: 2020_ICFRE_573109_1,
Website: <https://eprocure.gov.in/eprocure/app>

CORRIGENDUM

The upgraded technical specification as per Annexure-VII may please be read as below:

Annexure-VII

Updated specifications of “CHNS Analyser”

S. NO.	Technical Specifications
1.	The Analyzer should be able to achieve rapid and precise results for Carbon, Hydrogen, Nitrogen (CHN) and Sulphur in soil, plant and other mineral sample
2.	The Elemental Analyzer shall utilize a combustion technique with TCD/ IR detector optimized for each element, Carbon, Hydrogen, Nitrogen and Sulphur) for measurement of all elements of interest.
3.	The Elemental Analyzer should be available in Helium carrier gas models for the analytical flow path leading to the thermal conductivity cell.
4.	Analyzer must utilize an external or internal high temperature furnace for Sulfur determination.
5.	Should be able to analyze samples for Carbon, Hydrogen and Nitrogen in the internal furnace and samples for Sulfur in the external/ internal furnace simultaneously.
6.	Must provide compatibility to an external balance, printer, and Laboratory Information Management System (LIMS).
7.	All chemical reagents utilized in the Elemental Analyzer must have a minimum lifetime of 500 analyses before reagent change is required" maximizing the uptime and reducing the operator time requirement related to routine instrument maintenance.
8.	Must be manufactured by a recognized and reputable instrument manufacturer with an established user base (user list must be attached). All sales, support, and service must be directly available from the manufacturer and not a third party distributor.
9.	Specify if any similar scientific laboratory equipment has earlier been supplied for soil testing (must attach the relevant documents as an evidence)
10.	No parts or accessories which are locally fabricated will be accepted other than the genuine parts from the equipment manufacturer.
11.	The Elemental Analyzer must be able to analyze the maximum specified sample mass of the instrument regardless of the carbon content or matrix of the sample.

	<p>a. CHN: 30 mg or more to 1000 mg, 100 mg nominal.</p> <p>b. S: Up to 200 mg, 100 mg nominal.</p>
12.	<p>Detection Method</p> <p>Carbon/Hydrogen/Nitrogen/ Sulphur : By TCD or IR detector</p>
13.	<p>Instrument Range</p> <p>a. Carbon: 0.02 to 100 mg or more (0.1% to 100% at nominal weight of 200mg)</p> <p>b. Hydrogen: 0.1 to 12 mg or more(0.1% to 12% or more at nominal weight of 200mg)</p> <p>c. Nitrogen: 0.04 to 50 mg or more or more(0.1% to 50% or more at nominal weight of 200mg)</p> <p>d. Sulfur:0.01 to 18 mg or more or more(0.1% to 8% or more at nominal weight of 200mg)</p>
14.	<p>Precision</p> <p>a) Carbon: 0.01 mg or 0.5% RSD, whichever is greater</p> <p>b) Hydrogen: 0.05 mg or 1.0% RSD, whichever is greater</p> <p>c) Nitrogen: 0.02 mg or 0.5% RSD, whichever is greater</p> <p>d) Sulfur: 0.01 mg or 1% RSD. whichever is greater</p>
15.	<p>Analysis Time</p> <p>The Elemental Analyzer must be capable of performing an analysis for carbon, Hydrogen, Nitrogen and Sulfur simultaneously within 16 minutes</p>
16.	<p>Instrument automation must use a low-maintenance, rotating carousel that has a standard capacity of 30 samples or more</p>
17.	<p>The Elemental Analyzer must ensure complete combustion of macro samples by providing an internal two-stage combustion furnace that is capable of independent temperature control up to 1050°C'</p>
18.	<p>The external furnace shall utilize a horizontal/ vertical combustion tube capable of temperature control up to 1150 °C or more for Sulfur determination'</p>
19.	<p>The external high temperature Sulfur furnace must be capable of performing analyses on macro samples up to 350 mg in a reusable ceramic sample container/ or single use tin cup/ foil.</p>
20.	<p>The Elemental Analyzer must use Windows®-based operating software that supports compliance to 21 CFR part 11 regulations, contain an on-board help manual' and perform wellness checks of the instrument based on user-defined service conditions'</p>
21.	<p>The Elemental Analyzer software must contain real-time service diagnostics, including ambient charts of instrument temperatures, pressures, and detector signal; manual control of solenoids and switches; automated leak checks; and network and communications diagnostics.</p>
22.	<p>A complete operator's instruction and service manual shall be supplied in both hardcopy as well as a searchable PDF softcopy contained within the software'</p>
23.	<p>The quoted price shall include installation, start-up and on-site training for 3 days to the purchaser's staff by a qualified company representative. Prior to installation of the product, the purchaser will be contacted to</p> <p>(1) assure that the pre-installation guidelines have been completed and</p> <p>(2) arrange for the installation of the product'</p>

24.	Installation and Training must be provided onsite by the manufacturer and not a third party distributor.
25.	Thirty Six months warranty from date of installation.
26.	CHN and Sulphur Elemental Analyzer package must include the following; Model Combustion Furnace, Combustion Gas Handling and Aliquot Dosing System with Carbon, Hydrogen, Nitrogen and Sulphur Detection with 30 or more Position Autoloader, Sulfur Module, Windows based operating software, PC Tower, 19" Flat Panel Monitor, Operating Supplies
27.	The required items should not be less than quantity specified below. The supplier should also specify and include any other essential items required for initial testing of the equipment at the time of its installation, in case bidding documents has failed to include them. Anhydron 1bl./btlorequivqlent Reagent Furnace 100 gm
28.	Operating Supplies Instrument should be supplied along with consumables for 5000 samples along with Boat Crucible Zt 250/Pk, if required
29.	Other Accessories Instrument should be supplied alongwith required CRMs, if any Hot Plate Crucible Tray (requires 606-563 Hot plate Tray liner),If required Hot Plate Tray Liner, if required vendor should quote for Oxygen & helium cylinder (purity 99.99% or better) along with Regulators-one each Kit Regulator Pressure 2-stage Air Cga 3, (If required) Kit Printer Laser jet B&W Sartorius/ Mettler/ Shimadzu balance and interface kit, 0.01mg readability, 10 g or more capacity with cables for USB or serial interface Vendor should quote for 5 KVA Online UPS with at least 30 min back up
30.	Optional AMC:3 years

The other terms and condition will remain unchanged except the above.

Purchase Officer
FRI