



सीएसआईआर-केंद्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान
CSIR- CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE
मैसूरु / MYSURU-570 020, भारत / INDIA

(Constituent Laboratory of CSIR, New Delhi (Ministry of Science & Technology)
An ISO 9001:2008, ISO 14001:2004 & ISO 17025:2005, NABL Accredited Laboratory

Dt. 23-11-2023

Corrigendum: Tender for FT-NIR Spectrometer for reflection measurement

Corrigendum Title: Revised Technical Specification based on PBC

Tender Ref: CFTRI/52340A/2023 Date: 09-11- 2023

Tender ID: 2023_CSIR_174005_1

The revised specification based on the proceeding of the Pre Bid Conference held on 17-11-2023 @ 11. 00A.M is uploaded herewith.

All the prospective bidders are requested to take cognizance of the revised specification and submit their bids accordingly on or before 04/Dec/2023 by 02.00 p.m.

All other terms and conditions of the tender remain unaltered.

Controller of Stores & Purchase
CSIR-CFTRI, Mysore

Revised Detailed Technical Specifications for FT-NIR Spectrometer Reflection measurement

- Design: Rugged, sealed and desiccated housing
- Spectral Range: 11,500 – 4,000 cm^{-1} . (Wavelength 800 nm to 2500 nm)
- NIR Source: Tungsten
- Laser: Class 1 laser with average life 5 years warranty
- Resolution: 2-8 cm^{-1}
- Wavenumber repeatability (RMS): 0.04 cm^{-1} or better
- Wavenumber accuracy: 0.2 cm^{-1} or better
- Detector: InGaAs detector
- Minimum 5 years warranty on Interferometer
- **Operating environment:**
 - o Operating temperature: Ambient Temperature (25 °C) \pm 7 °C
 - o Humidity: <80% relative, non-condensing
- **Sampling Accessories:**
 - o NIR spectrometer should be compatible with various sampling accessories to accommodate different sample types (solid, liquid, semisolid/viscous sample and any other food matrix) wherein we can use the measurement techniques such as Reflection, transfectance, and transmission with dedicated module. Transmission module with inbuilt Heating facility.
 - o External standards for calibrations to be provided.
 - o NIR sample accessories such as sample holders, plates, vials, cuvettes, and Spinning Accessory are required for the analysis of solid, liquid, or semi-solid samples (minimum of 3 each).

- o System should have facility for upgradation in future to fiber optic probes, as accessories.

Data Analysis Software:

o It should be accompanied by branded (HP/Dell/IBM etc) dedicated computer for data acquisition. Minimum configuration of the computer with latest generation Pentium i9 Quid, A high-quality 32-inch LED monitor with a high-resolution display (4K), 32 GB DDR5 RAM, Primary Drive: 1 TB NVMe SSD for fast data access and application loading, Secondary Drive: 10 TB HDD (7200 RPM) for sample data storage and archiving. It should be included with MS WINDOWS 10/ WINDOWS 11 OS that is compatible with Data analysis software. Future upgrades of this data analysis software, compatible to future OS of Windows10/ WINDOWS 11 and all future versions, must be provided free of charge for period of 5 years.

Connectivity and Control:

- o Connection to PC or LAN: USB, WIFI or Ethernet interface
- o System should allow for data transfer, remote control, and integration with laboratory systems.
- o Separate Branded computer (HP/DELL/IBM) with 32-inch monitor is required for robust statistical data including multivariate analysis, parallel to the data acquisition system for seamless analysis. It shall feature a latest-generation Pentium i9 Quid or higher processor for rapid data processing, 64 GB of high-speed RAM, and a 1 TB NVMe SSD for quick data access. An external 10 TB HDD to be provided sample storage and Nivida RTX 3090 graphics card. Statistical software SOLO™ (Third Party software) (<https://eigenvector.com/software/solo/>) should be supplied with media and with valid perpetual license. Unscrambler™ (Third Party software) should be supplied with media with subscription for one year. GraphPad Prism™ (Third Party software) with valid perpetual license should also be supplied. The maintenance and training of these software will not be under the scope of NIR Instrument suppliers. Installation, operation, training and maintenance of these software are by the respective OEM/Authorized distributors of these software's. The system should easily be upgradable with extra RAM slots up to 64 GB and storage options.
- o One printer HP LaserJet Pro MFP 4104fdw or equivalent Printer and other accessories required for the complete working of the unit and software should be included.
- o UPS system for the smooth and uninterrupted functioning of the equipment to be installed along with the system. 10 KVA UPS online system (APC/ Emerson /equivalent) with parallel system (1

working and 1 stand by) including SMF batteries (Quanta/Exide/equivalent) to have 30 minutes back-up on full load conditions.

- **Warranty:** Minimum of two years from date of installation.

- Please provide the Annual Maintenance Contract (AMC) rate per year in the BOQ/financial bid for a period of 5 years from the date of expiry of warranty (This will not be a part of the financial comparison).

- Installation, demonstration and training to be given free of cost at our site.

- All the accessories essential for the application and its functions of the system should be provided along with additional NIR source with desiccants is required.

- o The workflow/flowchart for method development, Ready to use calibrations and database support for different/various proximate parameters pertaining to cereals/millet/pulse and other food matrices to be provided (**Desirable**).