

# Tender Document for the Purchase Lab Equipments



Charotar Education Society

Tender Form fee Rs. 1000/-

## INDEX

Sr No	Description	Page No
1	Tender Notice	3
2	Terms and Condition	4-5
3	Instructions to be followed by the Supplier / Tenderer	6
4	Annexure - I Tender Application form	7
5	Annexure - II Technical Bid	8
6	Annexure - III Format for Quoting the rates of the Instruments / Equipments (Financial Bid)	9
7	Annexure - IV Acceptance of Terms and Condition of Tender	10
8	Annexure - V Technical Specifications of Items	11-19

## CHAROTAR EDUCATION SOCIETY, ANANAD

Website: [www.cesociety.in](http://www.cesociety.in)

### SHORT TENDER NOTICE FOR THE PURCHASE OF LAB EQUIPMENTS

TENDER NOTICE No CES/ 20 /2024-25

Dt.29-04-2024

Charotar Education Society, Anand invites sealed tender from reputed manufacturer/authorized dealers for purchase and supply of the following items.

Item Name	Earnest Money	Last date/time of submission of tender form	Date/time of Opening of Technical Bid	Date/time of Opening of Financial Bids
Lab Equipments	Rs. 10,000/-	29-05-2024 3.00 pm	30-05-2024 3.00 pm	Shall be informed to technically qualified bidder

Interested firm may submit their sealed tender in two bid form as per term and condition of tender documents. The filled-in tender form for each item with tender fee of Rs. 1000/- (Not Refunded) and earnest money Rs. 10,000/- both by demand draft in favor of Charotar Education Society, Anand should reach to the office up to above date. The tender documents maybe downloaded from our website [www.cesociety.in](http://www.cesociety.in).



Secretary  
Charotar Education Society  
Anand

### Terms and conditions

1. Sealed tender should reach OFFICE OF THE Secretary, Charotar Education Society, D N High School Campus, Station Road, Anand - 388001 or before 29-05-2024, 3:00 P.M.
2. Suppliers should send their tender through Registered Post/Speed post only. No other mode will be accepted.
3. The Tender document may be downloaded from trust Website: [www.cesociety.in](http://www.cesociety.in) Bidders using downloaded tender forms from trust website must submit cost of tender document by demand draft drawn in favour of Charotar Education Society, Anand Payable at Anand along with technical bid. The bid form downloaded through trust website submitted without tender fees will not be accepted.
4. The bidders enrolled under MSME are exempted from EMD submission and relevant documents shall be submitted as proof of the same.
5. The tender without EMD, Less EMD and document fee will summarily be rejected.
6. The amount of EMD will be refunded in case of unsuccessful tenderer on submission of application with money receipt in original soon after the final decision. In case of successful tender, it will be refunded on production of original receipt after completion of validity period of the agreement to be executed between the tenderer and the college without any interest.
7. Company/firm should be registered manufacturer/supplier of the item.
8. The tenderer must enclose adequate documents to prove their authorization claim. If not enclosed this trust reserve the rights to accept or reject tenders of these agencies. The decision of the trust in this regard will be final and shall be binding on tenderer.
9. The College at its discretion may extend the last date of submission of tender and opening of tenders.
10. Late and delayed tenders will not be considered and shall be returned unopened to the Bidder.
11. If tenderer give wrong information, trust reserves the right to reject such bid at any stage and forfeit the Earnest Money Deposit.
12. Bids submitted without supporting documents bare liable to be rejected.
13. In financial bid the rate of item should be inclusive of all taxes, packing, forwarding, transit etc.
14. The rate both in words and figures without any corrections or over writing should be quoted for each individual item separately. The rates must be valid up to March 31,2025.
15. Quoting merely the lowest price does not confer any right to any bidder for award of supply order. The trust, reserves the right to select the equipment any bid under the grounds of specification compliance, technologically advanced quality, proven

performance track record, brand reputation, service backup support & training, offer of additional / special features, compatibility with the existing System, etc.

16. On the acceptance of the rates as per the approved tender, the supply order will be placed by the Secretary, Charotar Education Society, Anand.
17. The trust will reserve the full right to open/consider the second envelope if and only if the trust is satisfied with information contents in envelope No.1.
18. The trust has the right to accept or reject any tender partly or fully without arising any reason thereof.
19. The items have to be supplied in standard packing at the premises of Shri Alpesh N Patel PG Institute of Science and Research, M B Patel Science College Campus, Sardar Gunj Road, Anand - 388001, Gujarat.
20. In event of any loss, damage, breakage or leakage or any shortage the bidder shall be liable to make good condition such loss and shortage found at the checking/inspection of the supplied Instrument/Equipment. "No extra cost" on such account shall be admissible.
21. Delivery has to be made within 15 days from the date of receipt of supply order.
22. Each item should be strictly as per the specification. In case of any deviation the trust has the right to reject the item.
23. Installation, successful demonstration of equipment in the respective department is obligatory.
24. The training should be provided by the supplying companies for a minimum period of two days from the date of installation with an expert team.
25. If any item covered under warranty fails, the same shall be replaced free of cost including all the applicable charges including shipping cost both ways.
26. Final payment of Instrument/Equipment will be made only after installation and successful demonstration at the respective department of the college.
27. If the tenderer fails to comply with supply order within the specified period his order will be cancelled and EMD will be forfeited.

All the Tenders should be addressed to:



Secretary  
Charotar Education Society, Anand

Instructions to be followed by the Supplier/Tenderer

- (a) Submission of tender bid (sealing and marking of bids)  
Bid should be submitted in two envelopes as mentioned below: -

**1. Envelope -1 Technical Bid (duly sealed) should contain**

- (a) Application form (as per Annexure-I)
- (b) Tender fee in the form of demand draft of Rs.1000
- (c) EMD of Rs 10000/-in the form of demand draft for each instrument separately.
- (d) Technical bid form (as per Annexure-II) duly filled.
- (e) Copies of all certificate/documents in support of technical Bid.

NOTE:-Above (a) to (e) not enclosed, the envelope 2 will not be opened.

**2. Envelope –2 Financial Bid (Duly Sealed) should contain**

- (a) Financial bid form (as per Annexure-III) duly filled.
- (b) The supplier should quote the rate inclusive of all expenses, charges, taxes, duties, transportation, packing and forwarding, insurance etc.
- (c) The rate in both words and figure without any correction or over writing should be quoted in financial bid.

**3. Envelope –3 (Duly Sealed): Should contain**

- (a) Both Envelopes 1&2
- (b) This envelope must bear the following Identifications:
  - (i) TENDER NOTICE FOR THE PURCHASE OF LAB EQUIPMENTS
  - (ii) Tender Reference No. CES/ 20 /2024-25 DT. 29-04-2024
  - (iii) Name & Address of the Tenderer

## TENDER APPLICATION FORM

To,  
Secretary  
Charotar Education Society  
D N High School Campus,  
Station Road, Anand - 388001, Gujarat

Sir,

With reference to your Notice Reference No. CES/ 20 /2024-25 DT. 29.04.2024 I am hereby submitting my tender for the supply, installation and maintenance of TENDER NOTICE FOR THE PURCHASE LAB EQUIPMENTS accepting the terms & conditions mentioned in the tender document.

1	Name of the Bidder/Company name	
2	Full Postal Address	
3	Telephone Nos./Mobile Nos./Fax Nos. name of the Person	
	Post Held	
4	Email ID	
5	PAN No.	
6	GST No.	
7	Tender submitted for the Brand (Please specify)	
8	EMD Demand Draft No. & date	
	Issuing Bank Details	
	Amount (in INR)	

**Undertaking**

I, the undersigned certify that I have gone through the terms & conditions mentioned in the bidding document and undertake to comply them.

The rates quoted by me are valid and binding upon me for the entire validity period and it is certified that the rates quoted are minimum and rational as per existing market rate.

I give the rights to the competent authority of the Office of The Secretary, Charotar Education Society, Anand - 388001 (Gujarat) to forfeit the Earnest Money Deposit (EMD)/security Deposit by me/us if any delay occurs on my/agents part or fail to abide by the provision of the bidding document.

I hereby undertake to execute the work/supply order as per direction given in the tender document within stipulated period.

Date:  
Place:

(Signature of the Bidder)  
Name –  
Designation –  
Registration No. of supplier/tenderer  
(Official seal of the Bidder)

## TECHNICAL BID

Instrument /Equipment / Item Name.....

		Enclosed Yes/No
1	Name of the Tenderer/Company name	
2	Contact address, Telephone No., Mobile No.,	
3	Company/firm Registration No. (Copy to be enclosed)	
4	GST registration certificate(Copy to be enclosed)	
5	Experience Certificate in this field (Attach separate sheet)	
6	Annual Turnover (Copies to be enclosed)	
7	Certificate of Sole Manufacturer / authorized dealers of manufacturers / authorized supplier	
8	EMD Demand Draft No. and date	
	Issuing Bank details	
	Amount (in INR)	
	EMD Exemption certificate (if applicable)	

We agree with all the terms and conditions of the tender.

Name &amp; Signature with Seal of the supplier



## Financial Bid for Instruments

Name of the tenderer .....

Financial bid submitted for (Item Name.....Item No.....)

Make/Model.....

Sr No	Price Details		Price per Unit
1	Cost of instruments/equipment with essential accessories		
2	GST payable	CGST	
		SGST	
		IGST	
3	Packing and forwarding charge upto station of dispatch		
4	Transportation and insurance charges upto destination		
5	Installation, commissioning and training charges if any		
6	Any other charges, if any		
	Total Price inclusive all charges and tax (Sum of 1 to 6)		

Total Bid price in figures.....

In words.....

(Seal &amp; Signature of the bidder)

Acceptance of terms & conditions of tender (Must be on Letter Head)

To,  
Secretary,  
Charotar Education Society,  
D N High School Campus,  
Station Road, Anand - 388001, Gujarat

Date:

Subject: **Acceptance of Terms & conditions of Tender.**

Tender ref. No.: **No. CES/ 20 /2024-25 DT. 29.04.2024**

Dear Sir,

1. I/We have downloaded/obtained the tender document(s) for the above-mentioned Tender enquiry no. from the Website: [www.cesociety.in](http://www.cesociety.in)
2. I/We hereby certify that I/we have read entire terms & conditions of the tender documents from Page 01 to 19 (including all documents like annexure, schedules etc.) which form part of the tender document and I/we shall abide by the terms & conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by Secretary, Charotar Education Society, Anand to have also been taken into consideration, while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above-mentioned tender document(s)/corrigendum(s) in totality/entirely.
5. In case any provisions of this tender are found violated, Secretary, Charotar Education Society, Anand shall be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely and we shall not have any claim/right against Secretary, Charotar Education Society, Anand in satisfaction of this condition.
6. I/We confirm that we or our Proprietor/Director/Partner have not been blacklisted or debarred or declared ineligible for corrupt/fraudulent practices either indefinitely or for a particular period of time by any Government or other agency. I/we further declare that no criminal case is registered on pending against the firm/company or its owner/partners/directors anywhere in India. Also, there are no contractual restrictions or legal disqualifications or other obligations which prohibit the applicant from entering into tender process.

-

(Seal & Signature of the bidder)

List of equipments & their technical specification:-

Item serial No	Name of Equipment
1	Fully Automated Clinical Chemistry Analyzer
2	ELISA Reader
3	Bench-top laboratory fermenter and bioreactor
4	Flame Photometer
5	HPTCL
6	Vacuumed Freeze Dryer
7	Keithley 2450 Source Measure Unit (SMU)
8	Gas Chromatography
9	HPLC
10	Microwave Synthesizer
11	Spectrum-3 Tri-Range MIR/NIR/FIR Spectrometer

# 1. Fully Automated Clinical Chemistry Analyzer

## Technical Specifications

<b>System Function</b>	
Description	Fully Automated, discrete, random access clinical chemistry analyzer
Measuring principle	Spectrophotometry
Photometric throughput	Up to 240 tests/hour
Photometric system	HCFG rear spectrophotometry
Methodology	End point, Fixed time, Kinetic, Single & Dual reagent chemistries Mono & Bi chromatic, Linear & non-linear multipoint calibration
<b>Optical System</b>	
Light source	Halogen - Tungsten lamp (12V/20W)
Monochromator	Grating Photometry (Holographic Concave Flat Field Grating)
Wavelength	340nm, 380nm, 405nm, 450nm, 480nm, 505nm, 546nm, 570nm, 600nm, 660nm, 700nm, 750 or 800nm
Linear range	0 ~ 3.3 Abs
Detector	Photodiode array
<b>Reagent/Sample Handling</b>	
Reagent/Sample tray	Multi-functional reagent and sample carousel
Reagent/Sample position	Up to 80 positions
Sample cuvette specification	Standard cup, original blood tube, multi-specification tube (10~13) x (75~100) mm
Sample reagent probe	Digital liquid level detection and vertical collision protection
Sample dilution	Pre & Post dilution facility
Reagent volume	10~300 µl
Sample volume	2~35 µl
Dilution vessel	UV plastic semi permanent cuvette
Reagent bottle volume	20 & 70 ml
<b>Reaction System</b>	
Reaction cuvette	56 positions optical plastic cup
Reaction volume	100~360 µl
Reaction temperature	37±0.1°C
Reaction disk constant temperature	Thermostat air bath
Mixing system	Teflon coated stirrer with triple speed mixing mechanism
Laundry system	Efficient system adopting 7 stops, 11 steps
<b>Operation Unit</b>	
PC operation system	Windows 7 or Windows 10
PC configuration	CPU > 2.9 Ghz (dual core processor); RAM > 4 GB; Harddisk ≥ 160 GB
Analysis control	Graphical operating software
Report printing	Supports user-defined mode, QC and state information etc
System connection	TCP/IP network connection, standard RJ-45
<b>Calibration &amp; Quality Control</b>	
Calibration method	Linear (One-point, two-point and multi-point), Logit-Log 4P, Logit-Log 5P, Spline, Exponential, Polynomial
Quality control method	Real-time, daily, monthly & QC chart   Visual QC assessment   QC histroy checking QC error analysis
Parabola control rules	Westgard multi-rule, L-J chart
<b>Working Conditions</b>	
Power supply	100~240 VAC   50/60Hz   Power 600VA
Ambient temperature	15°C~25°C
Relative humidity	40% ~ 85%
Atmospheric pressure	70~106kPa
Water consumption	4L/hour
Dimensions (LxWxH)	744x703x530 mm
Weight	Approx. 100 kg

## 2. ELISA Reader/ Microplate Reader

- 10.4-inch colored LCD touch screen display with android operating system
- 360° Rotatable LCD screen easy viewing
- Sophisticated visualization of panel and panel data
- Upload and download through USB Disk
- Good repeatability, stability and accurate measurements
- Offers multi-mode options like endpoint method, kinetic method and inhibition rate
- Fast scanning speed with high sensitivity
- Automation of switch door and sampling test
- Ultra-fast quantification of ELISA, DNA and RNA
- Three-point measurement of the cup which includes center, rear and the front.
- Direct control through desktop with software accessible to latest windows operating system

## 3. Bench-top laboratory fermenter and bioreactor

Technical description	Advanced Kit	Start-up Kit
<b>Reactor scale</b>	Laboratory bench-top fermentor and bioreactor	
<b>Reactor design</b>	Stirred Tank	
<b>Operation mode</b>	batch, fed-batch*, continuous*, (perfusion*)	
<b>Parameter control</b>	Stirrer speed, temperature, pH, Dissolved Oxygen, airflow, free parameter, level control for continuous mode.	
<b>* Optional Parameter control *</b>	weight control for continuous mode, antifoam, REDOX, LUMO (light)	
<b>Microprocessor</b> With internal software, display and keypad	yes	yes
<b>Agitation</b> Automatic stirrer controller 0, 0.1, 0.2, ..., 19.9, 20 Hz min. 0 Hz (= 0 rpm) min	yes	yes

ax. 20 Hz ( = 1200 rpm)		
Measurement whole range 0 - 20 Hz	yes	yes
<b>Temperature</b> Automatic temperature control from 5 °C over RT to 70 °C	yes	yes
Measurement with Pt100 from 0 to 99.9 °C in 0.1 °C steps	yes	yes
IR (infrared) heater	yes	yes
Cooling loop	yes	yes
<b>pH</b> Automatic pH controller 0 - 13	yes	yes
Measurement with pH probe 0 -13	yes	yes
Acid pump (PRECIFLOW)	yes	optional
Base pump (PRECIFLOW)	yes	optional
Holders and rods for the pumps	yes	optional
Storage vessels and lines for acid and for base	yes	optional
<b>DO (pO<sub>2</sub>)</b> Automatic DO controller (proportional) 0 - 25 mg Oxygen/L (in 0.1 mg steps)	yes	yes
Measurement with DO probe 0 - 25 mg Oxygen/L (in 0.1 mg steps)	yes	optional
<b>Airflow</b> Automatic aeration controller (proportional) 0 - 5 L/min in 0.01 L/min steps	yes	yes
Measurement with internal Massflow 0 - 5 L/min in 0.01 L/min steps	yes	yes
<b>Free Parameter</b> Automatic controller, socket, display	yes	yes
<b>Alerts</b> For high and low values of each parameter	yes	yes
<b>Overpressure valve</b>	yes	yes
<b>Sampling device</b>	yes	optional
<b>Cooling device for outlet gas</b>	yes	yes
<b>PC-software</b> (FNet, SIAM), Laptop	optional	optional
<b>Feed and harvest pump:</b> PRECIFLOW / MULTIFLOW / HiFLOW / MAXIFLOW / VIT-FIT / VIT-FIT HP, pump INTEGRATORS	optional	optional
<b>WEIGHING MODULE for continuous mode</b>	optional	optional
<b>automatic Antifoam-system (ANTIFO &amp; DOZITO)</b>	optional	optional

<b>O2-enrichment / 4-gas-mix:</b> controller and massflows MASSFLOW 500 /MASSFLOW 5000	optional	optional
<b>Air compressor</b> AEROSILENTO	optional	optional
<b>REDOX</b> probe, controller, pump / massflow	optional	optional
<b>PELTIER COOLER</b> for medium / off-gas	optional	optional
<b>LUMO</b> light and controller for <b>PBR</b>	optional	optional
<b>Operation manual and video</b>	yes	yes
<b>Warranty</b>	2 years	

## 4. Flame Photometer

- Robust modular design with body made up of engineering plastic
- 7-inch LCD touch screen
- User friendly one touch operation
- Direct reading of the element concentrations
- 5 Elements should be included (i.e Potassium, Sodium, Lithium, Calcium and Barium)
- An automatic calculation of correlation coefficient and pre-selection of flame sizes
- Flame-out protection device for safety
- Response time less than 8 seconds
- Compact in size with weight : 13 kg
- Machine houses air compressor

## 5. Specifications for HPTLC

- Microprocessor based fully automated Sample Applicator: for samples to be applied as “dot” or “line” on HPTLC/TLC plates; Dosing and Filling Syringe; Fillport; memory for multiple methods; Micro-preparative application; flexible delivery rate; Resolution  $\geq 2000$  steps/ $\mu$ l; Gas pressure :  $>2.5$  bar and  $< 10$  bar .
- Integrated Windows based PC-Software (WIN) compatible with Applicator: to document, control and manage steps in HPLC analysis including application, development, scanning and photorecording; should be upgradable.
- PC Controlled Densitometer with Scanning facility for automatic spectrum scanning, identification / purity check and quantitative measurement; Linear and meander scanning; Software for scanner; automatic quantitative

measurement of absorbance & fluorescence; Deuterium, Halogen, Mercury as Light sources; High sensitivity and High resolution photomultiplier; Dual wavelength and Multiwavelength spectrum recording; Spot Optimisation.

- 3-D display of Chromatograms; Linear and Polynomial Calibration modes; Automatic and manual peak integration; Measurements enabled by userdefined methods and user friendly software; system should be upgradable.
- Chambers for the chromatographic development of TLC/HPTLC plates: low solvent consumption; economical; reproducible.
- UV-Box : for UV detection thin-layer chromatography.
- PC & Printer specifications required for TLC System Operating System Windows 7 Professional / Windows XP Professional Intel Dual Core Processor or Higher Version, 1 GB RAM, 250 GB HDD ; Compatible Colour Printer; compatible UPS
- Two years warranty for the system to be included in the proforma invoice

## **6. Vacuumed Freeze Dryer / Lyophilizer (-80°C)**

- 7 inch TFT LCD touch Screen display with USB interface
- Compact in size floor model
- USB Drive connectivity
- System is based on Android operating system
- Inbuilt pre freezing chamber
- Highly efficient and quiet compressor refrigeration technology with (-80°C) no load temperature
- Single piece Bell type with organic glass transparent manifold for clear visualization of lyophilization process
- Machine comes with a vacuum pump, pre freezing plates, and a drying assembly.
- Inbuilt nitrogen inflation valve
- R- 23 Gas for quick freezing

## **7. Keithley 2450 Source Measure Unit (SMU)**

- The Keithley 2450 Source Measure Unit (SMU) offers voltage sourcing from 200nV to 200V and current sourcing from 10fA to 10.5A.
- It features
- 4-quadrant operation,



- A 5-inch touch screen,
- Integrated 6½-digit DMM,
- Built-in advanced measurement functions,
- USB, GPIB, and LAN interfaces,
- SCPI command compatibility,
- Versatile programming environment for automation.

## **8. Gas Chromatography**

- Microprocessor based control system
- Synchronous bidirectional control with touch screen
- 7-Inch color touch screen for easy monitoring of flow rate and pressure value
- The multi-core, 32-bit embedded hardware system ensures the reliable operation of the instrument
- One key start-up function
- The memory function can store 20-sample test modes
- The extendable synchronous external trigger function can initiate workstation through external signals, such as automatic sampling device, thermal analyzer and so on.
- The instrument is equipped with automatic self-checking function and malfunction detection system coupled with alarm system.
- The machine has 8 external event interfaces with extendable functions which can work with a variety of functional control valve performing according to the set timing.
- RS232 communication port and LAN port.

### **OVEN:**

- Inside capacity 22 L
- Temperature range: room temperature up 5 °C – 400 °C Temperature accuracy:  $\pm 0.1$  °C
- Temperature programming: 9 steps
- Program total time: 9999.9 min
- Max heating rate: 0.1 – 60 °C/min
- Max cooling rate:  $\leq 10$  mins (250 °C - 50 °C)

### **SAMPLE INJECTOR**

- Temperature range: room temperature up 7 °C – 420 °C
- Temperature control type: independent

- Carrier gas flow control type: constant pressure
- Max quantity: 3PCS
- Type: Packed column or split
- Split ratio: Display
- Pre-Column pressure range: 0 – 400kPa
- Pre- column pressure accuracy: 0.1 kPa
- Flow setting range: H2: – 0 - 200 ml/min N2: – 0 - 150ml/min

#### **DETECTOR**

- Hydrogen flame ionization detector (FID) or Thermal conductivity detector (TCD)
- Temperature range: room temperature up 7 °C – 420 °C
- Max installation Qty: 2
- Ignition model: automatic

## **9. HPLC**

Column Format	Preparative Column, XtendedLife
Length (Metric)	150 mm
Particle Size	10 µm
Pore Size	130 Å
Temperature	60°C
Stationary Phase	C18
Carbon Load	10%
Endcapped	Yes
Diameter (Metric)	25 mm
Max. Pressure	3500 psi (240 bar)
pH	2 to 8
Surface Area	195 m <sup>2</sup> /g
USP Type	L1
Packing Material	Spherical, Fully Porous Silica
Column Type	Reversed Phase
Phase	Reversed Phase

## 10.MICROWAVE SYNTHESIZER

- Specification of Instrument:
- Capacity with a powerful 700 watts/ 2450 MHz microwave oven with digestion vessels & glassware to suit sample-preparation requirements.
  - Speed: Reaction rate increases 10-1000 times.
  - Yields: Increases 10-30% on an average.

## 11. FTIR Spectrometer

<b>Product Brand Name</b>	Spectrum 3 Tri-Range FT-IR Spectrometer
<b>Wave Length Range</b>	14,700 - 350 $\text{cm}^{-1}$
<b>Beam splitter</b>	ATR
<b>Depth</b>	30.0 cm
<b>Height</b>	21.0 cm
<b>Weight</b>	13.0 kg
<b>Width</b>	45.0 cm
<b>Detector</b>	LiTaO <sub>3</sub>
<b>Operating Range</b>	5 - 45 °C
<b>IR Source</b>	High intensity, long lifetime, air-cooled IR source
<b>Portable</b>	Yes
<b>Resolution</b>	0.85 $\text{cm}^{-1}$
<b>Signal to noise ratio</b>	Better than 20,000:1 (RMS value, at 2100 $\text{cm}^{-1}$ - 2000 $\text{cm}^{-1}$ )
<b>Wavenumber accuracy</b>	$\pm 0.01 \text{ cm}^{-1}$
<b>Scanning speed</b>	Microprocessor control, different scanning speed selectable
<b>Software</b>	Spectrum 10 ES
<b>Communication</b>	Ethernet interface (standard) WIFI wireless communication (optional)
<b>Data output</b>	Standard data format, report generation and output
<b>Status diagnosis</b>	Power on self-check, real-time temperature and humidity monitoring and reminders
<b>Certification</b>	FDA 21 CFR Part11 compliance, IQ/OQ/PQ (Available as an Accessory)
<b>Environmental conditions</b>	Temperature: 10 <sup>0</sup> C~30 <sup>0</sup> C, humidity: less than 70 %
<b>Power supply</b>	220V=22V, 50Hz=1Hz, 110v 50 Hz $\pm 1$ Hz
<b>Accessories</b>	Comprehensive range of Accessories and Starter kits