

पत्रांक संख्या/आपूर्ति/92-1-03-2017(पार्ट-1)/.....³⁶⁴
बिहार पुलिस मुख्यालय,
(आधुनिकीकरण,अपराध अभिलेख एवं प्रोविजन प्रभाग)

पटना, दिनांक-05/08/20

सेवा में,

निदेशक,
सूचना एवं जनसम्पर्क विभाग,
बिहार, पटना।

विषय— निविदा आमंत्रण सूचना सं0-03/2020-21 के प्रकाशन के संबंध में।

निदेशानुसार उपर्युक्त विषय के संबंध में निविदा आमंत्रण सूचना सं0-03/2020-21 की प्रतियाँ भेजते हुए अनुरोध है कि इसे राज्य एवं राज्य से बाहर के प्रमुख समाचार पत्रों में (अंग्रेजी एवं हिन्दी) के अगले दो संस्करणों में प्रकाशित कराने की कृपा की जाय साथ ही पी0आर0डी0 वेबसाईट पर भी प्रसारित करने की कृपा की जाय।

इस निविदा आमंत्रण सूचना का प्रकाशन किन-किन समाचार पत्रों में किया गया इसकी सूचना देने की कृपा की जाय।

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पुलिस महानिरीक्षक के सहायक (क्यू0),
बिहार, पटना

प्रतिलिपि:-

1. आई0टी0 मैनेजर, पुलिस महानिदेशक का कार्यालय, बिहार, पटना को कृपया सूचनार्थ। कृपया इसे आज ही वेबसाईट पर अपलोड किया जाय। साथ ही Indian Trade Journal, Kolkata के अंक में प्रकाशन हेतु Government of India, the Controller of Publications, Civil Lines, Delhi : 110 054,(Tel No. 011-23812527, FAX : 011-23817846), Email Id-sk.mondal.dgcis@nic.in के पतेपर भी अनिवार्य रूप से भेजा जाय।
2. Government of India, the Controller of Publications, Civil Lines, Delhi : 110 054,(Tel No. 011-23812527, FAX : 011-23817846), Email Id- sk.mondal.dgcis@nic.in को कृपया सूचनार्थ एवं आवश्यक क्रियार्थ प्रेषित। अनुरोध है कि उक्त निविदा का प्रकाशन Indian Trade Journal, Kolkata के अंक में करने की कृपा की जाय।

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पुलिस महानिरीक्षक के सहायक (क्यू0),
बिहार, पटना

Police Headquarters, Bihar, Patna
Notice Inviting Tender No.-03/2020-21

1. Name of the Department: Office of Director General of Police, Bihar, Patna.
2. Last date & time for the acceptance of the tender : 01/09/2020, Till 02:00 PM
3. Date & time fixed for the opening of the tender : 01/09/2020, At 04:00 PM
4. Place fixed for receiving & opening the tender : Office of Director General of Police, Bihar, Patna.
5. Details of Job:

S.N.	Item name	Quantity
1	F.T.I.R. Spectrophotometer	02
2	Deep Freezer	05
3	Ion Chromatograph	02
4	Flash Point Apparatus	02
5	Aniline Point Detector	02
6	Automatic Distillation Analyzer	01
7	Ballistics Botoscop	02
8	UV Visible Spectropotometer	01
9	Water Purification System	03

Specifications and other terms & conditions of the tender may be obtained in person from this office or may be downloaded from the website www.prdbihar.gov.in or www.biharpolice.bih.nic.in.

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Bihar, Patna

Terms & Conditions of Tender No.-03/2020-21

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1. The tender should be submitted in two parts: (i) Technical Bid and (ii) Financial Bid, duly sealed in two separate envelopes super-scribed as "Technical Bid" and "Financial Bid".
2. All relevant papers/ E.M.D./certificates/specifications etc. of items should be enclosed in the Technical Bid.
3. The rates of the items shall be quoted in the Financial Bid only.
4. All charges like IGST/CGST/SGST etc. shall be clearly mentioned in the Financial Bid and the net rate (in figures and words) including all taxes and duties must also be quoted. Vague offers like indicating taxes "as applicable" will not be accepted.
5. The rates of the items shall be quoted in the Financial Bid in two parts :
(i) With AMC (Annual Maintenance Contract) and (ii) Without AMC
6. There should be no cutting, over writing or correction on the rates.
7. The technical and financial bids for each item should be submitted separately in separate envelopes. The technical and financial bids for more than one items submitted together in the same envelope shall not be accepted.
8. If the financial bid is submitted in the same envelope containing the technical bid then also it shall be summarily rejected.
9. The technical and financial bids should be put in two separate sealed envelopes and the envelopes should be marked Tender No-03/2020-21 (Technical Bid) and Tender No-03/2020-21 (Financial Bid) along with the name and address of the firm. The sealed envelopes containing the technical and the financial bids should be sent in another sealed envelope which should be marked as Tender No-03/2020-21. This envelope should not bear the name and address of the firm.
10. Income Tax Returns of last three years, a photocopy of GST registration number of the participating firm and turn-over of any two of the previous three financial years should be submitted with the technical bid. It should be specifically mentioned whether IT return has been filed manually or electronically.
11. The turnover of the firm for the last reported financial year should be at least equal to the amount of the supply order which is being issued. A copy of the profit and loss Account of the firm for any two of the previous three financial years, certified by a Chartered Accountant should be submitted along with the tender. If the tenderer is authorized dealer or authorized supplier of manufacturing firm, then the certified details of the turnover of authorizing firm may be accepted. Tender specific authorization from the OEM must be submitted, but in certain cases where authorization from OEM is not required, the Technical-cum-User committee (T.U.C.) shall decide about exemption (if any) on a case-by-case basis; citing appropriate reasons for the same.
12. If there is some discount in the price of any item, it should be deducted from price itself and such discounts should not be quoted separately.
13. If the product is available on DGS & D rate contract, then a copy of the contract must be attached and pricing be done including all taxes.
14. A copy of the test report for the product issued by any established and recognized private Laboratory or by agency accredited by the Government should be attached with the technical bid. However if required, the Technical-cum-User committee (T.U.C.) can take decision regarding exemptions/relaxations (if any), citing appropriate reasons.
15. In case of Bullet Proof/Bullet Resistant items, test report of TBRL or any Government Approved/Recognized Laboratory is compulsory.

16. Firms participating in this tender shall also submit duly sworn affidavit to the effect that " this firm has not been black listed/debarred by any Government or Semi Government or Private Agency and no sister concern of this firm is participating in this tender."
17. Firms participating in this tender shall also submit the self attested list of users of its equipments.
18. All items shall be received at Central Clothing Store, Patna; therefore price should be quoted FOR Central Clothing Store, Phulwari Sharif, Patna.
19. Firms will have to deposit a sum of Rs. 50,000/- (Fifty Thousand) only as an earnest money deposit in the form of Bank Draft duly pledged in favor of the undersigned along with the quotations. The small scale units located in Bihar shall not be liable to deposit earnest money. Exemption from submitting E.M.D. will also be available to those who are registered with the Central Purchase Organization/State Purchase Organization and National Small Industries Corporation (NSIC).
20. Technical Bids will be opened on scheduled date and time in the office chamber of Police Headquarter. Representatives of the firms competing in the tender may remain present at the time of opening of the technical bid.
21. The technical bids will be opened first and placed before the Technical Committee of the Police Headquarters, Bihar. If the technical bids are found satisfactory as per tender conditions, it will be put before Central Purchase Committee of the Police Headquarters, Bihar. The firms may be required to participate in the demonstrations of the quoted product and discussions with this committee.
22. Any paper/document will not be accepted after opening the tender.
23. Successful firm will have to enter into an agreement after depositing a sum of 5% of the total value of the order as security money in the form of Bank Guarantee duly pledged in favor of undersigned.
24. The firm will be required to provide satisfactory after-sales service after the delivery of the product.
25. The firm will be required to supply all the items within the stipulated time frame as mentioned in the purchase order.
26. Payment for the delivered items will be made only after the acceptance report of the Inspection Committee of the Police Headquarters, Bihar.
27. The firm whose quotation is approved by the Central Purchase Committee of the Police Headquarters, Bihar, shall be invited to enter into an agreement with the undersigned.
28. It is expected to submit the duly filled chart attached herewith, along with the technical bid if not the tender shall be summarily rejected.
29. Indexing of the requisite documents must be done and submitted along with the technical bid.
30. Hands on training for 3 weeks of the equipment must be imparted to the user group by the firm after successful installation.
31. Director General of Police Bihar, Patna reserves the right to reject any or all the quotations partially or fully, without assigning any reason thereof.
32. The Quantity indicated may increase or decrease at the time of issuing purchase order.
33. The bids must include the data sheet of individual item.

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Technical specifications of FT-IR Spectrometer

1. The spectrometer should be able to record the spectrum of a sample in the wave number region of $7500 - 350 \text{ cm}^{-1}$.
2. The spectral resolution should be better than 0.20 cm^{-1} .
3. The spectrometer must have a motorized, continuously variable aperture, for optimal peak shape collection of data.
4. The interferometer must be a dynamically aligned, non-air bearing/air bearing/any other advanced type Michelson design.
5. Instrument should have the optional rapid scan facility and it should be able to collect 90 spectra per sec.
6. Instrument should be upgradeable to Vis, Near IR and Far IR range.
7. The interferometer must be capable of supporting an optional Automatic Beamsplitter Exchanger accessory without modification and it should cover Near, Mid and Far IR.
8. The instrument must be capable of 53,000:1 peak to peak (in one minute scan) signal to noise ratio, measured at 4 cm^{-1} resolution in the well proved standard region of $2200-2100 \text{ cm}^{-1}$.
9. Wavenumber precision should be better than 0.01 cm^{-1} .
10. The spectrometer cover shall be sealed and desiccated and must be equipped with coated KBr sample compartment windows. The instrument must be equipped with the necessary internal plumbing and external connector for optional purge operation.
11. Optics: Gold Coated.
12. The system should have one DLATGS detector to function at room temperature and it should have the facility to keep MCT detector (with liquid N₂ hold time of more than 12 hrs) simultaneously if purchased at a later stage.
13. The instrument must support up to three detectors and it should have the facility to place it permanently in the detector compartment and should be software selectable.
14. Major components like Source, Laser, and interferometer must have default warranty of five years.
15. Other Accessories: 1) Demountable cell with KBr windows & Assorted PTFE Spacers for Liquid Samples. 2) General Purpose FT-IR Sampling Kit: 15 Ton Hydraulic KBr Press, KBr pellet holder, 13 mm KBr Die set, Agate Pestle and Mortar etc. should be quoted.
16. Optional Accessories: Single Bounce ATR with Monolithic Diamond crystal to meet complete MIR range ($7,800 - 400 \text{ cm}^{-1}$).
17. The instrument should be upgradable with Raman, TGA, GC and FT-IR Microscopy systems.
18. System should have the facility of at least two external output beams and two external source inputs.
19. Branded Desktop PC, Inject Printer should be provided along with system.
20. Software should have tools for Quantification method development and prediction using Beers' law, PLS, PCR etc.

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Technical specifications of FT-IR Spectrometer

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21. Software should have feature for mixture analysis for automated spectral subtraction followed by library search with at least 8000 spectra.

Essential Accessories

1. Guarantee- one year
2. Comprehensive warranty for entire system next 2 years
3. Non comprehensive AMC for next 3 years. Please provide year wise AMC offer.
4. CMC for next 2 years, please provide year wise CMC offer(including service charges or any other taxes if applicable).
5. Complete operational trainings to be provided to working analysts at site.
6. All related and essential accessories are to be quoted.
7. System should have following safety and regulatory certifications like international electro technical commission (IEC), CSA, NRTL, EMC, RFI & ISO 9001.
8. At least 10 day's onsite training after installation should be provided.
9. Spare parts for two years/Requisite must be supplied with the system for smooth operation.
10. Installation, commissioning at the end user site - free of cost.
11. UPS- 3KVA Online UPS with minimum 30 minute backup to be quoted.

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DEEP FREEZER

Item No. 15

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SPECIFICATIONS

1. LOW FREEZER (-20°C) – Low Freezer - UPRIGHT TYPE-CE Marked

DESIGN:

Exterior	Outer cabinet made of stainless steel AISI 304 grade
Interior	Inner tank made of stainless steel AISI 304 grade.
Shelves/ Trays	Thick epoxy plastic coated Steel shelves, adjustable
Doors	Double external doors for convenient use.
Sub-doors	Four sub-doors made of stainless steel.
Insulation	Non-CFC, high density, Polyurethane Foam insulation of 75mm thickness.
Heater Line	Hot line around the front of the cabinet to prevent moisture condensation.
Castors	Equipment mounted on Heavy duty swivel castors with brakes.

REFRIGERATION: (Non-CFC, Non-HCFC)


Compressor	Heavy duty hermetically sealed compressor.
Refrigerant	Non-CFC, eco-friendly refrigerant.
Condenser	Air-cooled condensation system, aided by continuous rated motor fan.
Cooling coil	High purity (99.9%) copper cooling coil all around the inner cabinet.

CONTROL SYSTEM: (Microprocessor Based)

Controller	Microprocessor based temperature control system.
Display	Digital LED display of set and process temperature.
Alarms	Audio-visual alarms for High/Low temperature (deviation).
Probe	Fast response, NTC sensor for accurate temperature measurement.

OTHER FEATURES:

Safety	Refrigeration system with over-load protectors and MCB tripper.
Stabilizer	Automatic Voltage Stabilizer with time delay restart
Calibration	Temperature calibration traceable to National standards.

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Specification of Ion Chromatograph

Application-

Ion Chromatography system for analysis of all anions including cyanide, sulphide, oxalate and cations including Arsenic, Selenium, Ammonium etc. Transition metals and amines in ppb/sub ppb/ppm levels

A. Pumps- Two numbers

High pressure pumps of serial dual piston type

Flow rate range- 0.001 to 10ml/min.

Pressure range- 0-5000PSI

B. Detector-

1. Conductivity Detector- 2 numbers

Conductivity measurement range- 0-15000 uS/cm

2. Electrochemical Detector (for cyanide, sulphide, iodide etc.)

Potential range- -5.00 to +5.00 V

Measuring range- 2nA to 2mA

Should be able to measure both current and charge.

3. UV-Visible detector-

UV-Visible photo Diode Array Detector)

Wave length range 190 to 900nm

Deuterium and Halogen lamps

C. Post column Derivatisation unit.

D. Column Housing- 2 numbers (one for anion and one for cation)

E. Suppressor- High loading and High back pressure tolerance (at least up to 310 psi) with continuous regeneration.

F. Injector- Two numbers

Dual 6 port injector valve with fast response time and controlled through software along with degasser for samples.

G. GC Columns

For. Anions, Cations, Transition metals, Cyanide, Sulphides, Silicate, borat and gun shot residue should be individually coated with respective Guard columns. The columns should have electronic chip to store data and history of columns use.

H. Inline Dialysis system for sample preparation (fully automatic) to provide clean samples.

I. Auto sampler- Minimum 50 position vial (10ml) capacity.

J. Data Processor-

A PC based data acquisition and processing system along with complete system control and necessary software must be fully window based.

K. PC, Printer-

Branded PC (P IV) with minimum 1TB HDD, 4GB RAM, DVD (R/W), 17" TFT

monitor, Key Board, Optical mouse etc., window 7/ window 10 laser jet (mono) printer.

Others-

1. Calibration standards (mixed) for the standard ions shall be provided.

2. Two years consumables.

3. No gas should be required for the entire operation of the system.

Specification of Fully Automated Cyanoacrylate Fuming Chamber

To safely develop latent finger prints using ethyl cyanoacrylate (CAN) vapour in a controlled environment, where automatic control system should program the fuming cycle and should have a versatile system of hanging rods and shelves.

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Specification of Video Spectral Comparator (New-VSC 6000/HS)

1. Minimum 4.0 million pixel fire wire camera for high resolution imaging.
2. Spectral range of 350 to 1150 nm.
3. Minimum 25" wide screen monitor.
4. On screen magnification minimum X 150
5. Field of view from approx. 2.5 x 2.0mm to 200 x 175mm.

Specification of U. V. Lamp (imported Japan Made)

1. German made.
2. Must be able to decipher secret/invisible writings in the range of 300 nm to 400 nm.
3. Should be capable to examine the thread in bank notes.

Specification of Steromicroscope (With Photography attachment)

1. With attached Camera.
2. Must be versatile enough to provide three dimensional view of the object.
3. The technique used be non destructive in nature.
4. Magnification range 10x to 25x.

Specification of E.S.D.A.-2

1. Should be able to read indented marks.
2. Should be non destructive in nature

Essential Accessories

1. Guarantee- one year
2. Comprehensive warranty for entire system next 2 years
3. Non comprehensive AMC for next 3 years. Please provide year wise AMC offer.
4. CMC for next 2 years, please provide year wise CMC offer (including service charges or any other taxes if applicable).
5. Complete operational trainings to be provided to working analysts at site.
6. All related and essential accessories are to be quoted.
7. At least 10 day's onsite training after installation should be provided.
8. Spare parts for two years/Requisite must be supplied with the system for smooth operation.
9. Installation, commissioning at the end user site - free of cost.
10. UPS- 3KVA Online UPS with minimum 30 minute backup to be quoted.

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Specifications for Automatic Flash Point Apparatus

- The apparatus should conform to test method ASTM D 93 (A+B+C), EN 22719, DIN 51758, NF M07-019, IP 34 (A+B), ISO 2719 (A+B)
- It should have Automatic microprocessor controlled operation.
- **Multi-Function-Head for easy one-hand simultaneous connection of all sensors and actuators such as shutter-actuator, stirrer, igniter and detector contacts.**
- Temperature range of ambient to + 405 degree C
- Apparatus should have program methods of ASTM, ISO and also should have facility of several rapid heating programs, user defined and search programs.
- Apparatus should have adjustable stirring speeds from 60 to 250 rpm.
- Apparatus should have adjustable heating rate from 1 to 10 degree C per minute
- Apparatus should have a differential-thermocouple method of sensing system
- **Apparatus should be suitable for testing standard & small sample volumes (7 ml).**
- **In-built memory for 1000 test results ,20 operator & 100 sample names**
- It should have Automatic Barometric pressure correction, with built-in pressure sensor.
- **Large LCD display with Visible display (from up to 10 m distance)**
- The Same device should be able to use with both electrical and gas ignition
- **Apparatus should have Integrated Automatic Fire Extinguishing System**
- **Device should have Heating control with rapid heating stage and equipped with safety over-temperature shut-off.**
- **Facility for Dynamic Calibration - Temperature probe can be calibrated inside the unit with a certified thermometer in a ramping mode to get temperature correction including thermometer lag time.**
- The device should have power controlled/monitored for electric or gas igniter with Automatic re-ignition of flame.
- Apparatus should have RS232 interface for data printer and computer connection with possibility of providing USB Converter
- Connection to LIMS is a must (direct from unit, or via PC)
- **Cooling by in-built fan only.**
- Vendor to offer a calibration standard or a CRM as option.

Essential Accessories

1. Guarantee- one year
2. Comprehensive warranty for entire system next 2 years
3. Non comprehensive AMC for next 3 years. Please provide year wise AMC offer.
4. CMC for next 2 years, please provide year wise CMC offer(including service charges or any other taxes if applicable).
5. Complete operational trainings to be provided to working analysts at site.
6. All related and essential accessories are to be quoted.

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7. System should have following safety and regulatory certifications like international electro technical commission (I.E.C), CSA, NRTL, EMC, RFI & ISO 9001.
8. At least 10 day's onsite training after installation should be provided.
9. Spare parts for two years. Requisite must be supplied with the system for smooth operation.
10. Installation, commissioning at the end user site - free of cost
11. UPS- 3KVA Online UPS with minimum 30 minute backup to be quoted.

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Detector
Aniline point Apparatus

Instrument should be capable for determination of Aniline point of petroleum products ranging from clear to very dark based on IP2; ASTM D611, ISO-2977, DIN 51775; FTM 791-3601 etc (e.g. diesel, Petrol Kerosine oil etc.).

1. Consists of thin film tube.
2. Platinum immersion heater
3. Photoelectric detector.
4. Cabinet should be chemical resistant
5. Temp. range 0° to 150°C (32°F to 302°F)
6. 6V lamp with line cord and drive motor
7. Compatible with latest Technology.

Accessories -

- (i) Pyrex TM Test cell with drain
- (ii) Thermometer for different suitable temperature range.
- (iii) Accessories required for instrument installation.

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Specifications for Automatic Distillation Apparatus (Item No. - 2)

Technical Specification for Auto Distillation Equipment As per test method ASTM D 86 D850, D1078, IP 123 and ISO 3405, IS 1448: part 18 is as per following.

Auto Distillation Units should be a compact self-contained Instruments with liquid coolant free cooling system, delivered with all accessories to immediately begin testing. It should include one number each of the following: 125 ml flask, 100 ml receiver, vapor probe with centering device, heater plates 38 and 50 mm, Flask connection silicon tubes, receiver cap and condenser cleaner.

The Equipment should have the facility to calculate Cetane Index as per D 4737 and D 976 and Driveability Index according to D 4814.

User Interface: Large 10" graphic TFT-LCD color touch screen and Alpha Numeric key pad with dedicated function keys and solvent proof protection. The distillation analyzer should have connectivity ports such as USB ports, HDMI and Bluetooth/Wifi to connect to mouse, keyboard, printer and monitor without any need of a PC.

Flask Heating System: Low mass and low voltage non-contact heater with self-positioning heating system and automatic heater lifting and lowering. Heating coil should not be in contact with the flask to avoid any damage to the flask. Fully automatic initial heat settings, distillation rate regulation and final heating regulation, to start test select the group and push start button.

Condenser Temperature range 0 to 80°C programmable constant temperature, temperature ramping or special temperature profile, instantaneously ready at switch on, automatic cooling via peltier cooling and switch between groups within 5mins. Receiver chamber should be capable of maintaining programmable temperature from 0 to 60°C and also should measure the charge volume before distillation.

The analyzer volume measurement system should have image capture based optical sensor technology with +/- 0.1ml accuracy and +/- 0.01ml Resolution.

The analyzer should have facility to detect temperature of the flask and LED system to indicate the operator.

The analyzer should have facility to detect right flask attached to the condenser line.

Instrument should be able to perform manual distillation with ASTM thermometer and manual heating control.

The pt100 sample vapor temperature probe should be wireless and easy to connect. It should have the facility to adjust the probe position in the flask without removing from the flask.

The door and the heating element in the heating chamber should move automatically without any manual intervention.

The offered instrument should have a built-in calibrated atmospheric pressure sensor and humidity sensor.

The analyzer should have built in fire extinguishing system with Optical fire sensor, and will automatically shut down the heater and other power devices in case of fire. The instrument should also detect whether the inert gas is connected or not.

The equipment should have Sensors to monitor and alert operators for the following cases: a) absence or improper placing of temperature probe in distillation flask b) Absence of distillate receiver cylinder c)

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Absence of distillate drop plate d) Wrong heater base plate e) condenser not cleaned f) Receiver Chamber door open e) flask not in position. The software should have function to disable the above sensors.

The analyzer software should have Temperature and Volume calibration functions and should store the calibration data with Last Calibration date, due and frequency of calibration etc. The software should have provision to record error log.

Supplier should supply below consumables and spares necessary for trouble free operation of the distillation analyzer.

Distillation Flask 125ml: 10] Nos.

Measuring cylinder with metal base: 5 Nos

Sample pt100 sensor: 1 Nos

Heater Plate 38mm & 50 mm: 2 Nos. Each

Boiling Stones: minimum 200g

Condensor Cleaning wire with plugs: 1Nos

Drip Plate: 1 Nos.

Condensor stopper: 5 Nos.

CRM Gasoline & Diesel: 250ml each

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Item No. - 3

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TECHNICAL DESCRIPTION OF RIGID BORESCOPE FOR GUN BARREL INSPECTION

TYPE OF BORESCOPE	RIGID (STAINLESS STEEL MATERIAL)
FIELD OF VIEW	NOT LESS THAN 40 DEGREE.
DIAMETER OF BORESCOPE	4MM TO 4.5MM
ANGLE OF VIEWING:	FORWARD VIEWING 0 DEG AND SIDE VIEWING 90 DEG WITH ROTATION TUBE.
WORKING LENGTH OF PROBE	550 MM TO 600 MM AND SHOULD BE SUITABLE FOR PROBING BARREL LENGTHS OF ALL SMALL FIREARMS.
TEMP RANGE (PROBE BODY)	-20 DEG C TO 120 DEG C
LIGHT SOURCE	35 W LED WHITE LIGHT AND SHOULD BE SUITABLE FOR VIDEOGRAPHY APPLICATION. LED LIFE 50,000 HRS. NO SPARE NEEDED
LIGHT GUIDE	HIGH QUALITY, 2 METER MINIMUM LENGTH.
ADDITIONAL ITEMS	
CAMERA (Detachable) <u>High resolution with standard TV adaptor</u>	<ul style="list-style-type: none"> • Imager : 1/4" CCD, high resolution • Shutter Type : speed 1/50 to 1/100,000 • Effective resolution: 520 TV lines or above • Scanning Method : Progressive • Scan Mode : Full Scan • USB Connector : USB 3.0 • Coupler: 25 mm focus Inbuilt • Boroscope should have facility to view thru eyepiece and camera as and when require.
SOFTWARE	FOR VIDEO IMAGE RECORDER LIVE AND STILL IMAGES, ALONG WITH BASIC MESAURMENT MODULE FACILITY.
LAPTOP AND PRINTER FOR IMAGE RECORDING AND PRINTER :	HIGH CONFIGURATION LAPTOP COMPATIBLE FOR BOROSCOPE INSTRUMENT FOR IMAGE SAVING AND RECORDING. A COLOR LASER PRINTER
SUPPLY REFERENCE	AT FSL UNIT FOR SAME APPLICATION

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Item No. - (20) ¹³¹⁴ ₁₁₈

General Specification - Double Beam Scanning UV-VIS Spectrophotometer

Microprocessor based double beam U.V visible spectrophotometer stand alone as well as PC. Software controlled with silicon diode detector/PMT with authenticated licensed window based operating system, including control and data handling software, compliance ready. Complete installation at site with IQ/OQ/PQ as per standards.

Specifications-

Wave length range	-	190 to 900nm
Variable Band width	-	from 0.5, 1.0, 2.0 & 4.0 or better
Wave length accuracy	-	+/-0.1nm
Wave length Reproducibility	-	+/-0.1nm
Stray light	-	less than 0.02%T
Scanning facility	-	200nm to 1000nm/min
Photometric accuracy	-	+/-0.002A (at 1 A) +/-0.005A (at 2A)
Photometric reproducibility-		maximum deviation of 10 measurements at 1A Less than 0.001 A
Photometric Stability-		at 1 A, at 500nm, better than 0.0001 a/hour
Baseline Flatness-		+/-0.001 A in full range
Optics-		Double beam, sealed quartz-coated mirrors

Monochromatic: Single or better.

With standard 10nm quartz cuvettes which covers 190-900nm.

Service diagnostics/operating CD.

System Qualification should comply IQ/OQ/PQ & 21 CFR Part II Compliance.

Supply accessories:-

1. Quartz cuvettes 3ml cavity - 12 Nos.
2. Quartz cuvettes 1ml capacity 06 Nos.
3. Spare Deuterium Lamp(D2 lamp)- 01 No./Xenon flash lamp (min 3yrs warranty)
4. 19 TFT monitor computer system with 500 GB hard disc, 04GB RAM with other latest configurations of reputed make laser printer of reputed make compatible online UPS online UPS with one hour backup.

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TECHNICAL SPECIFICATION OF LAB GRADE WATER PURIFICATION SYSTEM

Part 1: High Quality Pre Filter Before Main Unit to counter the feed water contamination
Manufactured by same equipment manufacture

1. Iron Removal Filter must be with the backwash and rinse facility, capacity should be upto 400 L/Hr and which can take care up-to 4 ppm of Iron contamination.
2. High quality Prefilter with Low pressure switch cuts off system which can able to take care high TDS upto 5000 ppm and high SDI up to 50 having 5 Micron and 1 Micron with DC diaphragm pump to boost water pressure from 0 to minimum 2.5 bar at approximately 120 L/hr with noise levels of Less than 50 Db.

Part 2: Main Unit Lab Grade Water purification System (Type II)

Feed water acceptance capability Specifications for main unit- Conductivity: < 2000 μ S/cm, Fouling Index (SDI): upto 12, Free Chlorine: upto 3 ppm

Product Water and main unit should meet or exceed Type II water quality

- Resistivity 10-15 Mega Ohms with Flow Rate - 3Ltrs/Hr and TOC < 30 ppb
- Automatic EDI - With Carbon Beads at cathode which doesn't required extra pre softening cartridges.
- System should have facility to control remotely with the help of software interface.
- No of Conductivity Cell to ensure the Input Output water quality- 3 Nos.
- RO pressure, RO water quality, RO membrane efficiency (% ion rejection) should be seen on display
- Inbuilt Pretreatment Cartridge- 0.5 Micron filter, anti-scaling compounds and RFID tag.
- Pre-treatment pack contains silver-impregnated activated carbon which prevents the proliferation of Bacteria present in tap water; antiscaling compounds must to eliminate hardness and protect the RO membrane against oxidation, scaling and plugging.
- RFID Tag- for Traceability of pretreatment cartridge and every Liter throughput water volume should be seen on the display. Date of installation also be seen on the display.
- Co axial resistivity meter-0.01/cm coefficient for optimum measurement accuracy of low ionic contamination as required by ASTM[®] D 1125-95 (2009) and comply USP <645>
- RO reject water recovery- up-to 50 % before and after RO conductivity cell to know the % rejection RO so that performance of RO can be seen in the display.
- 3 Way solenoid Valve- RO permeate is diverted to drain until the quality meets expectations. No. of Recovery loop - 1 Nos to save wastage of reject water. Recirculation in regular interval should be from system and reservoir to maintain the water quality.

Specifications for Bottom Feed Storage Reservoir

- Cylindrical tank Capacity minimum 30 Liter. Conical in bottom and water dispensing from the bottom to avoid stagnation of water.
- Bottom feed tank to minimize airborne contamination, Fully Drainable tap should be there for easy cleaning, Opaque reservoir walls
- Single 3 stage vent filter consisting of soda lime, activated carbon and 0.45 micron to minimize airborne contamination
- Have the option of using submersible 254 nm UV Automatic sanitization Module. Tank should not be a consumable, it should be cleanable.

Display Type II system:- LCD Display must show all below parameter to understand the main system's performance, maintains and servicing quality and consumable status by the user itself.

- Product water Resistivity and % of RO rejection
- RO pressure, RO water quality, RO membrane efficiency % ion rejection, RO feed water conductivity and Permeate water conductivity
- Volume of main system's pretreatment cartridge consumption- so that service and cartridge replacement should be monitor by user. Consumable status on the display- like pretreatment so that user can easily understand no need to depend upon service person.
- Alarms and alerts with complete text description for better understanding, not just red or yellow indicator.

Certifications for Type- II Water System:-

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- CE, cUL, FCC, ISO® 9001 v. 2000- and ISO® 14001, All certificates need to be submitted along with tender
- GMP and GLP, ASTM® D 1193, ISO 3696, ASTM® D 1125-95 (2009) and
- USP (645)

Part3: Ultra-Pure Water (Type I) should meet:

Type I water should be produced from two stage mixed bed ion exchange and activated carbon cartridge, and conductivity sensor, and an option for final filter in dispensing arm.

1. Product Water Quality: UltraPure (Type I) water:

- Resistivity: 18.2Mohm.cm
- TOC: <5ppb with TOC Display
- Bacteria: <0.1cfu/ml
- Pyrogens (endotoxins) <0.001 EU/mL
- RNases <1 pg/mL
- DNases <5 pg/mL
- Flow rate 0.05 to 2 Liter/Min (Programmable flowrate)
- VOC filter.....To remove volatile organic compound
- EDS Polisher.....Water for endocrine disrupters experiments

STAGE 1.

- Type II water should pass through feed water specific cartridge for removal of trace contaminants.
- Application Specific cartridges to remove ionic and organic contaminants to trace levels
- To prevent deterioration of water quality during periods of non-use, the ultrapure water system will be able to recirculate water to maintain high water quality.
- Water production unit that can be placed either on the bench, under the bench or on the wall with LCD monitor displaying: resistivity, level of water in reservoir, volume dispensed and consumables replacement and service clearly written on the display alarms, printing etc.

Dispensing arm:

1. Adjustable height and rotating arm-adjustable to any glassware.

STAGE 2: Final Filters Options:

- VOC filter.....To remove volatile organic compound
 - EDS polisher.....Water for endocrine disrupters experiments
 - ❖ Compatible with LAN Port.
 - ❖ Inbuilt software provides data management, remote access to dashboard, and long-term archiving capabilities.
- Should have facility to control remotely with the help of software interface.

Mandatory Requirement:

- Minimum 10 appreciation letter from any government organization in India.
- Service should be directly from the manufacturer's engineer should be based at kolkata, provide contact details. Call should be attended within 24 hours.
- **Warranty – One Year.**

Essential Accessories

1. Guarantee- one year

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2. Comprehensive warranty for entire system next 2 years
3. Non comprehensive AMC for next 3 years. Please provide year wise AMC offer.
4. CMC for next 2 years, please provide year wise CMC offer (including service charges or any other taxes if applicable).
5. All related and essential accessories are to be quoted.
6. At least 1 day's onsite training after installation should be provided.
7. Spare parts for two years/Requisite must be supplied with the system for smooth operation.
8. Installation, commissioning at the end user site - free of cost.

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