

**ADMINISTRATION OF UT OF DNH & DAMAN & DIU
OFFICE OF THE PRINCIPAL,
GOVERNMENT ENGINEERING COLLEGE,
VARKUND, NANI-DAMAN 396210.**

Notice No. 26.2/EQU/GEC/CIVIL/2020-21/272

DATED : 05/10/2020.

E-TENDER

The Principal, Government Engineering College, Daman on behalf of President of India, invites Tender for purchase of following items :

1. Supply of Equipment's for Civil Engineering Laboratory of Government Engineering College, Daman through On-line bidding from the website of Gepnic.

| | |
|---|--------------------------------------|
| * On-line downloading of Tender documents | 06.10.2020 to 25.10.2020 -04:30 P.M. |
| * On-line submission of Tenders | Upto 25.10.2020 – 04:30 P.M. only |
| * On-line Opening of Technical Bids | On 26.10.2020 at 10:00 A.M. |

* Bidders have to submit their PRICE bid in Electronic format only on <https://ddtenders.gov.in/nicgep/app> till the last date & time for submission. PRICE for Technical bid in Physical format shall not be accepted in any case.

Only Tender fees & EMD to be submitted in physical form, all other documents related to Technical Bid shall be uploaded only through e-tender website of NIC i.e. <https://ddtenders.gov.in/nicgep/app> . The Tender fees & EMD shall be done by RPAD / Speed post or by hand in Tender Box in Office of the Principal, Govt. Engineering College, Daman upto 23/10/2020 by 04:30 P.M. However Tender inviting authority will not be responsible in case of Postal delay.

The inviting authority reserves the rights to accept or reject any tender without assigning any reason. Tender opening can be postponed depending on the decision of the Tender committee.

In-case bidder needs clarification / training for participating in online tender, they can contact: National Informatics Centre, Daman, GePNIC Portal, 24x7 Help Desk Nos. 0120-4200 462, 4001 005 and 6277 787, Email: support-gepnice-dd@nic.in

- Sd -

(Dr. Avinash R. Chaudhari)

I/c. Principal,

Ph No. 9426888068

Email ID: gecdaman@gmail.com

Copy to :

1. The NIC, Daman, with request to put-up on website of Administration of Daman & Diu.
2. The Field Publicity Officer, Daman with a request to publish in news papers specified in the office letter.

**U.T. ADMINISTRATION OF DNH & DAMAN & DIU
OFFICE OF THE PRINCIPAL,
GOVERNMENT ENGINEERING COLLEGE,
VARKUND, NANI DAMAN. 396210.**

Terms & Conditions for Supply of Equipment's for Civil Engineering Laboratory of
Government Engineering College, Daman.

Tender Notice No. 26.2/EQU/GEC/CIVIL/2020-21/272

DATED : 05/10/2020.

General terms and Conditions:

1. Tender bids should be submitted duly signed and stamped on every page by the vendor's authorized signatory on or before 25/10/2020 by 4:30 pm. (TENDER Fee Rs. 1000/-) in the form of Demand Draft.
2. The EMD of Rs. 88,000/- in the form of F.D.R. in favour of "The Principal, Govt. Engineering College, Daman" should be submitted with the Technical Bid.
3. The EMD FDR must have a due date of at least 06 months.
4. The bidders who are registered under NSIC/MSME organisation of Govt. of India for exemption of submitting EMD/Bid security may enclose documents proof of authenticate their firm's registration for the specific item(s).
5. The rates quoted should be valid for 180 days from the date of submission of the Tenders.
6. The Vendor should be the authorized manufacturer / supplier / dealer of the required item.
7. The item should be complied with the specifications / configuration given in the Annexure – III.
8. Minor variation/Deviation/ Relaxation in the technical specification will be only subjected to acceptance by the concerned department and tendering inviting authority.
9. Model, Make and standards of the item should be specified clearly.
10. Technical literature / brochure of item indicating the quoted make and model shall be enclosed.
11. The Committee or a respective member will visit the successful bidder for Demonstration, Inspection & Physical verification of the said items to be purchased.
12. **Manufacture / Company of each product of Tender should be ISO Certified with valid License.**
13. **Calibration Certificate to be submitted for all items mentioned in ANNEXURE-III (Column No. 5 Calibration Submission).**
14. Clause number 12 & 13 applicable to major / important components (subject to acceptance by technical Expert of the tendering committee that has to be submitted on demand) along.
15. Items / Machineries / Equipment's to be supplied / quoted should be standard make / reputed brand. Sub-standard or made in China items will be rejected from the Bid (proof of make may be sought if needed later).
16. Supply, transportation, installation, testing, integration of the item shall be sole responsibility of the selected supplier.
17. The supply and installation of items should be done within 60 days from the date of receipt of supply order.
18. Minimum (01) one-week onsite training shall be given to users on operational modules of the item or as required.

19. Head of Office reserves the right to cancel the order in the event of delay in supply and installation beyond 60 days from the date of Purchase Order resulting in forfeit of the EMD amount.
20. **Delivery: (60 Days from the receipt of Supply Order)**
 - (a) **The Equipment's / Items should be ready for inspection within 40 days from the date of supply order.**
 - (b) **The Inspection committee shall inspect respective items of supply, by way of selecting any random piece from the quantity ordered within 35th to 40th day of supply order (any extension for supply and inspection shall not exceed more than 45 days from the date of supply order) failing to which the order shall be liable for cancellation.**
 - (c) **The expense / arrangement for inspection by the inspection committee of respective items at the factory / franchise site award of supply order, will be borne by the bidder.**
21. Penalty: If the suppliers fails to deliver all or any of the Tendered items or perform the service within the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted, and also be liable to be blacklisted for future participation etc. and thereafter the L2 /bidder for the respective item will be awarded the supply order.
22. Complete warranty for minimum (01) one-year period for the Tendered items from the date of installation.
23. Any required Replacement in part or complete, required services / calibration, Transportation related to such occurrence etc. during the warranty period shall be fully borne by the vendor / supplier.
24. Price of the item should be quoted as per the sample price format given in the (Annexure – III) in Electronic format only through GePNIC.
25. Price of the item quoted in the tender shall be inclusive all charges like tax, freight, installation, activation, integration, documentation, training etc. (if any).
26. Item-wise lowest bids will be accepted for purchase of the respective Mechanical Machinery & equipment's and accordingly the tender awarded to the respective suppliers.
27. The lowest quoted item should be compatible with other purchased items. (Committee reserved the right to choose best compatible supporting equipments to the Primary item.
28. The prices as quoted would be considered as the final prices for evaluation. In any case, upward revision will not be allowed.
29. After the submission of bids, no change in the content of the bid would be allowed. However, the Institute at its discretion may request the vendor to provide additional inputs if required. In case of the vendor not being able to submit the additional input in writing on or before the date specified by the Institute, the bid received from the vendor would be rejected and no explanation would be offered to the vendor for the rejection.
30. The earnest money deposited (EMD) with the bid shall be returned along with the final payment in case of successful bidder. In case of other bidders it will be returned after finishing the codal formalities or after placing the supply order to the eligible bidder.
31. The bidder must be able to service / replace / repair the instruments within 03 to 04 days of the complaint during the warranty period.
32. Tenders will be opened in the presence of the committee member & the representatives of the firms who may like to be / will be present on the date and time of opening of the tenders.
33. The Selected vendor will be required to submit a Security Deposit in the form of FDR, in the favour of "The Principal, Govt. Engineering College, Daman" of 10% of total order value for a warranty period from the date of supply and installation within one week of receipt of the supply order. (the security deposit shall remain with the principal for the entire warranty period).

34. Payment will be made on submission of bill in duplicate after satisfactory completion of all the formalities of supply, installation, testing and integration of the products at Govt. Engineering College, Daman after obtaining NOC of the concern department or principal.
35. Decision of the Head of the institute will be final and binding in any matters relating to the tender, also the Tender inviting authority reserves the rights to relax T&C related to this tender.
36. In case the vendor requires any further information / clarification related to this tender or specifications, they may contact the undersigned in writing on or before the due date & time of submission of tender, any arguments after the due date will not be acceptable.

The following documents among others must be submitted online ONLY (through GepNIC in the form of PDF duly numbered as per below Sr. No., without which tender will be liable for rejection.

1. Copy of EMD of Rs. 88,000/- in the form of F.D.R. valid up to 06 months from a nationalised bank.
2. Copy of Authorised Supplier / Dealer / Distributor of the said items.
3. Copy of Registration Certificate of the firm of a competent authority.
4. List of current two major clients with satisfactory completion certificate.
5. Copy of Calibration Certificate for all items mentioned in ANNEXURE-III. (Column No. 5 Calibration Submission)
6. Copy of Manufacturers latest ISO / ISI certification. (as mentioned at clause no.11)
7. Copy of VAT / CST/GST and PAN Card.
8. Copy of Income Tax return for last three years A.Y. 2017-18, 2018-19, 2019-20.
9. Self-certified certificate of assurance to service / repair / replace the complaint in reference of the instruments within one week of intimation.
10. Self-certified certificate of not being a "Black listed company / supplier etc.

NOTE : UPLOAD SINGLE COPY FOR ALL ABOVE DOCUMENTS, THE DEPT. SHALL REQUEST ADDITIONAL INPUTS IF & WHEN FOUND NECESSARY.

(Dr. Avinash R. Chaudhari)
I/c. Principal,
Ph No. 9426888068
Email ID: gecdaman@gmail.com

TENDER FORM (TECHNICAL BID)

TENDER DOCUMENT FOR
SUPPLY OF EQUIPMENT'S FOR CIVIL ENGINEERING LABORATORY OF
GOVERNMENT ENGINEERING COLLEGE, DAMAN

Tender Notice No. 26.2/EQU/GEC/CIVIL/2020-21/272 DATED : 05/10/2020.

From:

Date:

To,
The Principal,
Government Engineering College,
Varkund, Nani Daman.

| | | | |
|-----|---|---|--|
| 1. | Full name of the Company / Firm / Supplier (in block letters) | : | |
| 2. | Full address of the Company / Firm / Supplier with telephone number, E-mail number, fax number | : | |
| 3. | Year of incorporation | : | |
| 4. | Name(s) of the Proprietors / Partners / Directors with their full address, Telephone Number, e-mail, fax etc. | : | |
| 5. | Tender Fee Demand Draft No. & Date | | |
| 6. | Details of EMD of Rs. 88,000/- in the form of F.D.R. | | |
| 7. | Name of two major clients with their Address etc. | : | |
| 8. | Details of Registration, Trade License, Labour Licence, other license held / obtained from the various authorities | : | |
| 9. | Copy of Last three years Income-tax return i.e. 2017-18, 2018-19 & 2019-20. | : | |
| 10. | Company / Firm / Supplier Bank Details A. Bank Account No.- B. Bank Name & Branch location - | : | |
| 11. | Copy of "TEST Certificate" from National Laboratories (ERDA/ETDC/ERTL etc.) for components mentioned TEST Certificate Necessary | : | |
| 12. | Service tax / VAT / CST/ GST No. | : | |
| 13. | PAN No. | : | |

I / We certify that I / We read, understood and accept the contents of the broad terms and conditions incorporated in the Tender Form submit this Tender for consideration. I / We certify that the above statements are true.

(Signature of the Owner / Partner / Contractor with SEAL)

Full Name _____

Address _____

Schedule of Tender

Tender Notice No. 26.2/EQU/GEC/CIVIL/2020-21/272

DATED : 05/10/2020.

| Sr. No. | Particulars | Details |
|---------|--|--|
| 1. | Name of the Work | Supply of Equipment's for Civil Engineering Laboratory of Government Engineering College, Daman |
| 2. | Estimated Cost | Rs. 29,29,881/- lakh (approx.) |
| 3. | Earnest Money Deposit | An EMD amounting to Rs. 88,000 /- FD from any nationalized bank in favour of "The Principal, Govt. Engineering College, Daman. |
| 4. | Address for issue of Tender Papers | Download from the website i.e. https://ddtenders.gov.in/nicgep/app |
| 5. | Last Date/ Time of Submission of Tender | Upto 25/10/2020 – 04:30 P.M. only |
| 6. | Address at which tender to be submitted | Office of the Principal, Govt. Engineering College, Daman. |
| 7. | Venue of Tender Opening | Office of the Principal, Govt. Engineering College, Daman. |
| 8. | Date & Time of opening of Tender | On 26/10/2020 at 10:00 A.M. |
| NOTE | Tender to remain valid till 60 days from opening the tender. Supply & Installation shall be within 30 days of award of work. | |

(Dr. Avinash R. Chaudhari)
I/c. Principal,
Ph No. 9426888068
Email ID: gecdaman@gmail.com

Schedule for Supply of Equipment's for Civil Engineering Laboratory of Government Engineering College, Daman

Tender Notice No. 26.2/EQU/GEC/CIVIL/2020-21/272

DATED : 05/10/2020.

Table below must be filled as required and submit in Technical Bid Cover

| Sr No | Equipment | Specifications | Qty | Calibration Submission | Configuration offered with Brand / Make | Whether offer model compiles to configuration on given parameter? (Yes/ No.) with deviation. |
|-------|--|---|-----|------------------------|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Transportation Engineering Laboratory | | | | | |
| 1.1 | Automatic Marshall Stability Test Machine | <p>a) Standards: EN 12697-34, 12697-23, 12967-12; ASTM D1559, D5581, D 6927; AASHTO T245</p> <p>b) Specification:</p> <ol style="list-style-type: none"> Load cell 50 kN capacity Automatic Marshall Stability Test Machine. Suitable for testing 6” dia. 4” dia. specimens conforming to ASTM D5581 Linear potentiometric displacement 25 x 0.001 mm PC software for the test control and advanced report generation, Connection cable Hand wheel for manual control Test result visualization and memory management interface USB flash disc for importing test results and for firmware, direct printer support Camera support for real-time video recording during test <p>c) Accessories/ spare part supplied with machine:</p> | 01 | YES | | |

| | | | | | | |
|-----|---|---|----|-----|--|--|
| | | <ol style="list-style-type: none"> 1. Load Cell, 50 kN 2. Penetration Piston for Marshall Stability Test 3. Linear Potentiometric Displacement Transducer 25 x 0.001 mm with holder 4. Software for support 5. Cable for connection to PC 6. Hand Wheel for Manual Control | | | | |
| 1.2 | Automatic Digital Ring and Ball Apparatus | <p>a) Standards: EN 1427; ASTM D36; AASHTO T53</p> <p>b) Specification:</p> <ol style="list-style-type: none"> 1. Uses both water and glycerol as bath liquid (30-150°C) 2. Real time display of the Temperature (°C) 3. Time(sec) graph along the entire test. 4. Automatic pre-conditioning and test start 5. User defined test sequences and automatic finalization of the test 6. Controlled heating and cooling system 7. Optic sensors for accurate determination of softening point 8. Motorized beaker lift 9. Touch screen graphic display 10. Title information input such as date/time, test number, operator name 11. Versatile calibration and calibration preparation menu 12. USB-Port for PC connection 13. PC-software for data acquisition and excel output <p>c) Accessories/ spare part supplied with machine:</p> <ol style="list-style-type: none"> 1. Heater and magnetic stirrer with speed control 2. Temperature probe 3. Glass beaker, test rings and ball support 4. Application and centering device of steel balls 5. Light barrier system 6. Microprocessor system and large graphic display with membrane keyboard 7. Port for PC or printer | 01 | NO | | |
| 1.3 | Fully Automatic Digital | a) Standards: EN 1426; ASTM D5; AASHTO T49 | 01 | YES | | |

| | | | | | | |
|-----|----------------------|--|----|----|--|--|
| | Bitumen Penetrometer | <p>b) Specification:</p> <ol style="list-style-type: none"> 1. Fully automatic operation. 2. Automatic identification of the needle contact point and needle positioning, avoiding any possible operator lack of concentration and ensuring a reliable repeatability of the results. 3. Electro-magnetic needle probe release to perform the test. 4. Automatic zero at the contact before starting penetration 5. Penetration measurement thanks to a high-tech contactless displacement transducer with 0.01 mm resolution, in a range of 0 - 50 mm. 6. Total Test Load: 100 g (plunger 97.5 g + 2.5 g penetration needle) 7. Loading Time: 5 seconds (adjustable from 0.1 to 9999 sec.) 8. Screen display equipped with an user friendly software and clear interface. 9. Real time display of penetration/time curve, average result and test temperature. <p>c) Accessories/ spare part supplied with machine:</p> <ol style="list-style-type: none"> 1. Penetration Needle, 1 piece. 2. Needle holder, 1 piece. 3. Weights of 50g and 100g 4. Transfer Dish 5. Sample Cup, Ø 55x35 mm, 6 pieces, stainless steel | | | | |
| 1.4 | Thickness Gauge | <p>a) Standards: IS 2386 (PART-1) & BS 812</p> <p>b) Specification: Used for determining the Flakiness Index of Aggregates. It Consists of a frame with a sliding panel. The Panel has slots of Different Standard Lengths and Widths accurately Cut.</p> <p>The aggregate to be classified is separated into seven sieve fractions from 6.3 to 63 mm, and each fraction is examined separately. Slot sizes are 4.9 x 30 mm, 7.2 x 40 mm, 10.2 x 50 mm, 14.4 x 60 mm, 19.7 x 80 mm, 26.3 x 90 mm and 33.9 x 100 mm.</p> <p>c) Accessories/ spare part supplied with machine: Thickness gauge plate</p> | 01 | NO | | |

| | | | | | | |
|-----|------------------------|--|----|-----|--|--|
| 1.5 | Length Gauge | <p>a) Standards: IS 2386 (PART-1) & BS 812</p> <p>b) Specification: Consists of a hard wood base with vertically mounted metal studs as Specified in the IS 2386 (Part-1) & BS 812.</p> <p>The aggregate to be classified is separated into six sieve fractions from 6.3 to 50 mm and each fraction is examined separately.</p> <p>c) Accessories/ spare part supplied with machine: Length gauge plate with wooden base</p> | 01 | NO | | |
| 1.6 | Rolling Thin Film Oven | <p>a) Standards: ASTM D2872; AASHTO T240</p> <p>b) Specification:</p> <ol style="list-style-type: none"> 1. Construction : Double-walled construction, interior corrosion resistant stainless steel and exterior mild steel duly painted 2. Insulation : 75 mm of high density fiberglass insulation 3. Temperature display : Measured temperature - 4 digit red LEDs 4. Temperature Controller : PID Controller 5. Thermal Protection : Prevents oven from overheating in the event of control failure 6. Temperature Range : Ambient to 200°C 7. Temp. Control Accuracy : 0.5C 8. Vents : Double exhaust vents for dissipation of expended volatile from specimen 9. Air Flow Adjustment : Needle valve (long taper) 10. Air Pressure Gauge : Range 0 - 60 PSI 11. Heat Exchanger : 5/16 inch dia. copper tube 12. Electrical Supply : 230 V AC 50 Hz single phase 13. Dimensions : H 381 mm X W 483 mm X D 445 mm ± 13 mm 14. Rotating Speed : 15R ±0.2R / Min. 15. Timing Device : 85 Min Alarm 16. Specimen Qty : 8 Nos 17. Ambient Temp. : 5~50°C 18. Power Supply : 220 VAC, 50 HZ 19. Power Rating : 2.6 KW 20. Estimated Weight : upto 100 Kg <p>c) Accessories/ spare part supplied with machine:</p> | 01 | YES | | |

| | | | | | | |
|------|--|--|--------|----|--|--|
| | | 1. Glass sample collector 2. Thermometer range 155 -170 degree Celsius | | | | |
| 1.7 | Cylindrical Metal Measures (Set of 3) | a) Standards: IS 2386 (PART-III) & BS 812 b) Specification: Cylindrical Metal Measures with ISI Certification Mark of measure 3 litres, 15 litres, 30 litres Supplied Complete with Tamping Rod of 16mm dia x 60 cm long having ISI Certification Mark IS: 10086 | 01 Set | NO | | |
| 1.8 | Crushing Value Apparatus | a) Standards: IS:9376 b) Specifications: Consists of M.S. Cylindrical Container 150mm +/-0.5mm dia x 130mm to 140mm high with base plate 200 to 230mm/sqr x 6mm thick. A Plunger of 148mm +/-0.5mm dia x 100 to 115mm high. Supplied complete with Tamping Rod, 16mm dia x 600mm long, both ends rounded, 1 no. Metal Measure 115+/- 0.5mm dia x 180 +/- 0.5mm high. | 01 Set | NO | | |
| 1.9 | Aggregate Impact Testing machine | a) Standards: IS 2386 (PART IV) 9377 & BS 812:112 b) Specification: It is robustly designed to determine the aggregate impact value of aggregates which provides a relative measure of the resistance of an aggregate to sudden shock or impact. The counter fitted to the machine automatically records the number of blows delivered to the sample, manufactured from heavy duty plated steel to resist corrosion. The instrument consists of a circular base with Two vertical guides. The Hammer of weight 13.75 +/-0.25kg can be raised to fall freely down the vertical guides. The Height of fall can be adjusted through 380 +/- 5mm. The Hammer is provided with a locking arrangement. The hammer falls freely to the base and is removable for employing. c) Accessories/ spare part supplied with machine: 1. Blow Counter to count the number of strokes (detachable) 2. Tamping Rod 230mm long x 10mm diameter. 3. Metal measure 75mm dia x 50mm high. (for specimen preparation) | 01 | NO | | |
| 1.10 | Centrifuge Extractor Electrically Operated | a) Standards: ASTM D2172 AASHTO T-58, T-164 b) Specification: Centrifuge Extractor, Electrical Operation, Capacity 1500g, with a Dimmer stat for speed control from 0 to 3,600 rpm. Suitable for | 01 | NO | | |

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|------|--|---|----|----|--|--|
| | | operation on 230 V, 50 Hz, Single Phase, A.C. supply. c) Accessories/ spare part supplied with machine: Filter Paper Discs, Set of 25 | | | | |
| 1.11 | Ductility Testing Machine with digital display & cooling | a) Standards: IS:1208, ASTM D113, AASHTO T 51 b) Specifications: 1. Stainless steel bath 2. Temperature controller (Digital) 3. Immersion electric heater 4. Constant speed Pump cum stirrer 5. Carriage holding up to three standard briquette moulds 6. Electric motor with gear mechanism 7. Stainless steel scale and pointer 8. Suitable for operation on 220 V, 50 Hz, Single Phase, AC supply. 9. Two rates of travel i.e. 5 cm/min and 1 cm/min are provided. c) Accessories/ spare part supplied with machine: 1. Ductility Mould, with Base Plate 3 Nos. 2. Thermometer IP 38° C, Range: 23° C to 27° C | 01 | NO | | |
| 1.12 | Automatic Compactor for Bituminous Mixes | a) Standards: BS 598-107 b) Specifications: This equipment consists of a drive mechanism that lifts a 4.5kg weight and drops it through a height of 457mm. A removable rammer foot facilitates preheating. A compaction pedestal with specimen holder is fixed to the base. An automatic blow counter enables the number of blows to be preset before each test and automatically stops the machine on completion. c) Accessories/ spare part supplied with machine: 1. Compaction mould 2. Base plate 3. Extension collar | 01 | NO | | |
| 1.13 | Aggregate Density Basket | a) Standards: IS 2386 (PART-III) & BS 812. b) Specification: Made of Brass / GI with Stainless steel Wire Mesh 6.3mm / 4.75mm size Ruggedly Constructed, Approximately 20cm dia x 20cm high. Complete with Handle. | 01 | NO | | |
| 1.14 | Digital Flash Point Tester | a) Standards: EN 22719, ASTM D93, AASHTO T73 | 01 | NO | | |

| | | | | | | |
|------|--|--|--------|-----|--|--|
| | - Pensky Marten apparatus | b) Specifications: Used for the determination of the flash point between 40°C to 360°C. Supplied complete with stirrer, shield for radiations, cast iron bath, electric heater with digital thermo-regulator two thermometers ASTM 9C -5 + 110°C div. 0,5 C, and ASTM 10C +90 +370°C div. 2°C. The stirrer should allows to perform both "A" and "B" methods. The tester equipped of a gas flame feeder. Power supply: 230 V 1 ph 50 Hz 600 W. c) Accessories/ spare part supplied with machine: 1. Thermometer | | | | |
| 1.15 | Universal sample divider | a) Standards: ASTM C136, C702, C778, D75; AASHTO T248, T27 b) Specifications: The universal sample splitter divides samples of aggregate and other granular materials up to 3 inches in diameter. The splitter is great for use in both the lab and field. The lever release allows controlled, accurate splits from the 1 cubic foot hopper. | 01 | NO | | |
| 1.16 | Stainless steel scoops made of 16 mm gauge 304 quality, s. s. with handle 10"x5" | | 01 set | NO | | |
| 1.17 | Kinematic Viscosity Bath | a) Standards: ASTM D445, D2532, D6074, D6158, IP 71, ISO 3104. b) Specifications: <ol style="list-style-type: none"> 1. Type of bath: – electrically heated bath. 2. No of viscometer can be accommodated: 6 No. 3. Inner chamber dimension: 18” x 15” x 7” 4. Outer body size: 26” x 23” x 13” 5. Max working temperature :- 120.0 degree c 6. Bath capacity: – 6 sample at a time. 7. Bath volume : 22 Ltr capacity 8. Heater: – SS tubular heater. 9. Accuracy: – +/- 0.01 to +/- 0.03 degree c 10. Readability: – +/- 0.01 Deg. c up to 99.99 Deg. and 0.1 Deg. Up to 150.0 Deg. C 11. Temperature Controller : Temp. Is controlled by microprocessor based PID temp. Controller of Eurotherm or reputed make, having dual display with solid state relay for switching on & switching off the heater. 12. Input power supply: 230 v ac, 50 Hz, 1 phase with 12 amp current | 01 | YES | | |

| | | | | | | |
|------|-----------------------------|---|--------|-----|--|--|
| | | rating. 13. Heating load: 2 kW 14. Thermocouple : Calibrated RTD type thermocouple will be provided capable of measuring up to 150 Deg. c at accuracy of +/- 0.01 Deg. C 15. Construction : Double walled construction, thermally insulated with high density puff. Powder coated external surface for aesthetic appearance | | | | |
| 1.18 | Pycnometer Bottle | Specifications: Specific gravity bottle of 50 ml capacity, ordinary capillary type with 6 mm diameter neck or wide mouthed capillary type bottle with 25 mm diameter neck Balance having least count of 1g | 01 set | NO | | |
| 1.19 | Digital Say Bolt Viscometer | a) Standards: ASTM D88, AASHTO T72 b) Specification: The viscometer can be used for temperatures between 21 to 99°C (70 to 210°F) the viscometer includes wateroil bath, stirrer, cooling coil, electric heater with digital thermo regulator, furol orifice, universal orifice, thermometer support and 2 x 60 ml glass Saybolt Viscosity Flask. Viscosity thermometer set consists of 6 thermometers with the temperature ranges; 19 to 27°C, 34 to 42°C, 49 to 57°C, 57 to 65°C, 79 to 87°C (250 mm length) and 95 to 103°C where each thermometer with 0.1°C subdivisions. Filter funnel, withdrawal tube and thermometer set should be ordered separately. c) Accessories/ spare part supplied with machine: <ol style="list-style-type: none"> 1. Universal orifice 2. Furol orifice 3. Thermometer support 4. Heat transfer oil, 5 lt 5. Key Saybolt Viscosity Flask, Glass, 60 ml, 2 pcs. 6. Saybolt Two-tube Digital Viscometer 220-240 v 50-60 Hz 7. Filter Funnel with Wire Mesh and Clip 8. Withdrawal Tube 9. Saybolt Viscosity Thermometer set, 6 Pcs. 10. Saybolt Viscosity Flask, Glass, 60 ml | 01 | NO | | |
| 1.20 | Standard Penetration | Specifications as per IS 2131 and IS 9640 Consists of Drive Weight, 65 kg, fitted with chain. | 01 | YES | | |

| | | | | | | |
|------|--|---|----|----|--|--|
| | test apparatus | <p>Guide Pipe Assembly, fitted with a driving head on one side having standard "A" drill rod thread & a cap on the second side. Drive weight falls freely through a height of 75mm</p> <p>Tripod stand, 6 meter high connected by a tie bolt. Each leg is made of three part for easy transport. Complete with pulleys and stirring arrangements.</p> <p>Tripod stand 5 meter long Each leg is made of two parts. Complete with pulley & stirring arrangement.</p> <p>Pulley Spare.</p> <p>"A" Drill Rod 1 meter long.</p> <p>"A" Drill Rod 1.5 meter long.</p> <p>"A" Drill Rod 3 meter long.</p> <p>Sampling Auger D – 1452</p> <p>Augur are used to collect disturbed solid samples at reasonable depths for laboratory tests Augurs are available in two types and each in different sizes.</p> <p>Blade Type (Post Hole type) Each Augur outfit consists one each of augur head, one meter long rod, Tee piece and handle. Depths of excavating can be increased by using additional extension rods.</p> <p>Auger Head - 150mm diameter</p> <p>Auger Head - 100mm diameter</p> <p>Auger Head - 75mm diameter</p> <p>Auger Head - 50mm diameter</p> <p>Auger Head - 38mm diameter</p> <p>Extension Road</p> <p>1 meter long for 150mm auger.</p> <p>1 meter long for 100mm/75mm/50mm/38mm</p> | | | | |
| 1.21 | Digital Los Angeles Abrasion Testing Machine | <p>Standards: IS 2386 – IV, ASTM C 131, C 535, EN 1097-2, AASHTO T96.</p> <p>Specifications:</p> <ol style="list-style-type: none"> 1. Suitable for determining the resistance to wear off small size coarse aggregates and crushed rock. 2. The machine consists of a heavy steel cylinder of 711 mm inside diameter x 508 mm inside length, mounted on a base frame. 3. A detachable shelf which extends throughout the inside length of the drum catches the abrasive charge and does not allow it to fall on the cover. | 01 | NO | | |

| | | | | | | |
|--|--|---|--|--|--|--|
| | | 4. The drum is rotated at a speed of 30-33 rpm by an electric motor through a heavy-duty reduction gear. 5. Supplied complete with a tray for collection of the material 6. The machine is fitted with an automatic digital counter which can be preset to the required number of revolutions of the drum. 7. The cylinder is counterbalanced so that the filling opening stays in position without tilting; a push-button allows to position such opening for the loading/unloading operations. 8. Power supply: 230 V 50 Hz 1ph 750W 9. Dimensions: 1000x800x1000 mm 10. Weight: 370 Kg approx. | | | | |
|--|--|---|--|--|--|--|

| Sr No | Equipment | Specifications | | Qty | Calibration Submission | Configuration offered with Brand / Make | Whether offer model compiles to configuration on given parameter? (Yes/ No.) with deviation. |
|-------|--------------------------------------|--|---|-----|------------------------|---|--|
| 1 | 2 | 3 | | 4 | 5 | 6 | 7 |
| 2 | Environmental Engineering Laboratory | | | | | | |
| 2.1 | Turbidity Meter | Digital Turbidity Meter 3 1/2 digit LED,display Range upto 1000 NTU/JTU | | 3 | YES | | |
| 2.2 | Digital pH Meter | PM-100-Digital PH Meter | | 3 | YES | | |
| 2.3 | Conductivity cum TDS Meter | Digital Conductivity cum TDS Meter 3 1/2 digit LED display with facility for temperature Compensation and digital cell Constant adjustment along with TDS Cell | | 3 | YES | | |
| 2.4 | Spectrophotometer | Specifications | | 1 | YES | | |
| | | | | | | | |
| | | Optics | Double beam, Czerny Turner monochromator (Grating should be 1200 lines/mm or better For Ultra violet and visible range | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|---|----------------|--|-------------|--|------------------|---------------|--------------------|------------|-------------|--------------------|--------------------------|-----------------|---------------------|--------------------|-----------------------------|-------------------|----------------------|----------------------|-------------------|--|-----------------------|-----------------------|-------------------|------------------------|-------------------|---|-------------------|--|--|--|--|--|
| | | <table><tr><td>Source</td><td>Xenon flash lamp (80 Hz) with typical lifetime of 7-10 years</td></tr><tr><td>Detector</td><td>2 silicon diode detectors for simultaneous sample beam and reference beam measurements</td></tr><tr><td>Measurable range</td><td>190-1100 nm</td></tr><tr><td>Spectral bandwidth</td><td>Up to 2 nm</td></tr><tr><td>Stray Light</td><td>≤ 0.05%T or better</td></tr><tr><td>Photometric Linear Range</td><td>4 Abs or better</td></tr><tr><td>Wavelength Accuracy</td><td>± 0.5 nm or better</td></tr><tr><td>Wavelength reproducibility:</td><td>± 0.1nm or better</td></tr><tr><td>Photometric Accuracy</td><td>±0.001 Abs or better</td></tr><tr><td>Baseline Flatness</td><td>±0.001 Abs or better throughout UV-Vis range</td></tr><tr><td>Photometric Stability</td><td><0.0004 Abs or better</td></tr><tr><td>Photometric noise</td><td>≤ 0.0001 Abs or better</td></tr><tr><td>Local accessories</td><td>Branded PC, Display Screen, Printer and UPS with 4 sets of quartz cuvette to be offered</td></tr><tr><td>Baseline Flatness</td><td>±0.001 Abs or better throughout UV-Vis range</td></tr></table> | Source | Xenon flash lamp (80 Hz) with typical lifetime of 7-10 years | Detector | 2 silicon diode detectors for simultaneous sample beam and reference beam measurements | Measurable range | 190-1100 nm | Spectral bandwidth | Up to 2 nm | Stray Light | ≤ 0.05%T or better | Photometric Linear Range | 4 Abs or better | Wavelength Accuracy | ± 0.5 nm or better | Wavelength reproducibility: | ± 0.1nm or better | Photometric Accuracy | ±0.001 Abs or better | Baseline Flatness | ±0.001 Abs or better throughout UV-Vis range | Photometric Stability | <0.0004 Abs or better | Photometric noise | ≤ 0.0001 Abs or better | Local accessories | Branded PC, Display Screen, Printer and UPS with 4 sets of quartz cuvette to be offered | Baseline Flatness | ±0.001 Abs or better throughout UV-Vis range | | | | |
| Source | Xenon flash lamp (80 Hz) with typical lifetime of 7-10 years | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Detector | 2 silicon diode detectors for simultaneous sample beam and reference beam measurements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Measurable range | 190-1100 nm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spectral bandwidth | Up to 2 nm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stray Light | ≤ 0.05%T or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Photometric Linear Range | 4 Abs or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wavelength Accuracy | ± 0.5 nm or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wavelength reproducibility: | ± 0.1nm or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Photometric Accuracy | ±0.001 Abs or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Baseline Flatness | ±0.001 Abs or better throughout UV-Vis range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Photometric Stability | <0.0004 Abs or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Photometric noise | ≤ 0.0001 Abs or better | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Local accessories | Branded PC, Display Screen, Printer and UPS with 4 sets of quartz cuvette to be offered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Baseline Flatness | ±0.001 Abs or better throughout UV-Vis range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | Sound Level Meter | Measuring Instruments - 4001(A & C),Frequency - INT. Calibration Measurement : 3 Range ,35 to 130 dB (typical 30 Range to 130dB),input signal only, Accuracy : 0.1dB . | 2 | YES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.6 | Floculator (Jar Test) | <table><tr><td colspan="2">Specifications</td></tr><tr><td>No. of Jars</td><td>6</td></tr><tr><td>Speed range</td><td>25 to 200 RPM</td></tr><tr><td>Pre-set programs</td><td>2</td></tr><tr><td>Timer</td><td>0 to 99 minutes</td></tr><tr><td>Controls Keypad</td><td>Touch sensitive</td></tr><tr><td>Digital Display</td><td>LED</td></tr><tr><td>Power</td><td>230V, 50Hz, 100W</td></tr></table> | Specifications | | No. of Jars | 6 | Speed range | 25 to 200 RPM | Pre-set programs | 2 | Timer | 0 to 99 minutes | Controls Keypad | Touch sensitive | Digital Display | LED | Power | 230V, 50Hz, 100W | 1 | YES | | | | | | | | | | | | | | |
| Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Jars | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Speed range | 25 to 200 RPM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-set programs | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Timer | 0 to 99 minutes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Controls Keypad | Touch sensitive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Digital Display | LED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power | 230V, 50Hz, 100W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|-----|-------------------------|---|---|-----|--|--|
| 2.7 | COD Digestion Apparatus | <p>To determine Chemical Oxygen Demand. It is a solid state block heated unit with provision for samples to be digested at a time in 38 mm. diameter reaction vessels with 20 ml sample size of heat at temperature Of 150°C + 1°C controlled by Micro Processor PID Controller. It has provision for 15 samples and is supplied with 15 nos. glass reaction vessels and 15 nos. air condensers. Fitted with a 2 hour timer, the samples after being digested for 2 hours can be analyzed using calorimeter or conventional titration method. To work on 220/230 volts AC. Up to 15 holes with Glass Part & Strength.</p> <p>Close reflex and open reflex.</p> | 1 | YES | | |
| 2.8 | Hot Air Oven | <p>Specifications</p> <p>1. Construction: Double Walled.</p> <p>2. Outer Chamber: Mild steel, white powder coated / stove enamelled.</p> <p>3. Inner Chamber: Aluminium / Stainless Steel OR FULLY S.S.</p> <p>4. Insulation: About 75mm thick glasswool.</p> <p>5. Heaters: 80 / 20 Nichrome heating elements placed at bottom and sides for uniform heat distribution.</p> <p>6. Temp. Range: 50°C to 250°C</p> <p>7. Temp. Control: By Sensitive Thermostat</p> <p>8. Temp. Indication: On Built - in "L" Shaped mercury thermometer.</p> <p>9. Standard supply: Perforated and adjustable aluminium trays, pilot indicating lamps, ON/OFF switches cord wire and power plug.</p> <p>10. Operation 220/230V Ac.</p> | 2 | NO | | |
| 2.9 | BOD Incubator | <p>Specifications</p> <p>1. Exterior boy is fabricated from Mild Steel material, which is powder coated in attractive shades.</p> <p>2. Interior chamber is also fabricated from Mirror polished Stainless Steel S.S. - 304 Material</p> <p>3. Double walled metal door with sponge - type silicon gasket to offer air-tight sealing</p> <p>4. Air-tight sealing avoids leakage of chamber uniformity</p> <p>5. Electrical wiring as per CE</p> <p>6. Cord wire is duly tested and inspected with stress factor as per CE standard</p> <p>7. Electric Motor of blower is located at the back side of unit, which is protected with safety cover to avoid accident</p> <p>8. Standard motor of Marathon/CG/Equivalent reputed make</p> <p>9. User friendly and tactfully designed chamber door and locking mechanism</p> <p>10. Aesthetic outer appearance and unique design features</p> | 1 | YES | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--|---|----------------|-----|------------------|--------------|------------|---|----------------|------------|------------|------------|---------------|-----------|----------|-----------|----------------|-------------------------------|---------|--|----------|----------------------------------|--------------|-------------------|--------------|-----|---------------|--|--------|---|-------------------|--|------------|-------------------|--------|----------------|--------------|---|-------------|--|---|----|--|--|
| | | 11. Unit mounted on castor wheels for easy movement. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 12. Supplied complete with Stainless Steel Trays for sample placement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 13. Supplied complete IQ, OQ, PQ, DQ Documentation and instruction manual. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14. Temperature regulation for 20 degree Celsius and 27 degree Celsius | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.10 | Colorimeter | <p>A compact and easy to operate instrument for Photo Colorimeter analysis of any concentration. The output is available on a 16 x 2 line alphanumeric backlit LCD display in terms of %Transmission (%T), Absorbance (Abs.), Concentration (Conc.), and K-Factor. This instrument has 100 sample storage memory and printer output facility for printing data with any dot matrix printer.</p> <table><tr><td colspan="2">Specifications</td></tr><tr><td>Wavelength Range</td><td>400 – 700 nm</td></tr><tr><td>Resolution</td><td>%T: 1, Abs: 0.01, Conc.: 1, K-Factor: 1</td></tr><tr><td>% Transmission</td><td>0 – 100% T</td></tr><tr><td>Absorbance</td><td>0 – 1.99 A</td></tr><tr><td>Concentration</td><td>0 – 19999</td></tr><tr><td>K Factor</td><td>1 – 19999</td></tr><tr><td>Photo Detector</td><td>Silicon Photodiode/Photo Cell</td></tr><tr><td>Display</td><td>16×2 line alphanumeric LCD display for %T, ABS., Conc., K Factor</td></tr><tr><td>Keyboard</td><td>8 Keys, soft touch membrane type</td></tr><tr><td>Data Storage</td><td>Up to 100 samples</td></tr><tr><td>Light Source</td><td>LED</td></tr><tr><td>Sample System</td><td>10 mm path length matched glass test tubes</td></tr><tr><td>Filter</td><td>400, 450, 490, 520, 540, 570, 620, 680 nm</td></tr><tr><td>Printer Interface</td><td>Printer Interface for any dot matrix printer</td></tr><tr><td>Dimensions</td><td>250 x 240 x 90 mm</td></tr><tr><td>Weight</td><td>3 Kg (Approx.)</td></tr><tr><td>Power Supply</td><td>230V AC±10% 50 Hz. with in-built stabilizer</td></tr><tr><td>Accessories</td><td>Matched Test Tube: A set of 5, Mains Lead, Operation Manual and Dust Cover, Test Tube Stand.</td></tr></table> | Specifications | | Wavelength Range | 400 – 700 nm | Resolution | %T: 1, Abs: 0.01, Conc.: 1, K-Factor: 1 | % Transmission | 0 – 100% T | Absorbance | 0 – 1.99 A | Concentration | 0 – 19999 | K Factor | 1 – 19999 | Photo Detector | Silicon Photodiode/Photo Cell | Display | 16×2 line alphanumeric LCD display for %T, ABS., Conc., K Factor | Keyboard | 8 Keys, soft touch membrane type | Data Storage | Up to 100 samples | Light Source | LED | Sample System | 10 mm path length matched glass test tubes | Filter | 400, 450, 490, 520, 540, 570, 620, 680 nm | Printer Interface | Printer Interface for any dot matrix printer | Dimensions | 250 x 240 x 90 mm | Weight | 3 Kg (Approx.) | Power Supply | 230V AC±10% 50 Hz. with in-built stabilizer | Accessories | Matched Test Tube: A set of 5, Mains Lead, Operation Manual and Dust Cover, Test Tube Stand. | 1 | NO | | |
| Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wavelength Range | 400 – 700 nm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resolution | %T: 1, Abs: 0.01, Conc.: 1, K-Factor: 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Transmission | 0 – 100% T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Absorbance | 0 – 1.99 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Concentration | 0 – 19999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K Factor | 1 – 19999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Photo Detector | Silicon Photodiode/Photo Cell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Display | 16×2 line alphanumeric LCD display for %T, ABS., Conc., K Factor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Keyboard | 8 Keys, soft touch membrane type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Data Storage | Up to 100 samples | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Light Source | LED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample System | 10 mm path length matched glass test tubes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filter | 400, 450, 490, 520, 540, 570, 620, 680 nm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Printer Interface | Printer Interface for any dot matrix printer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | 250 x 240 x 90 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | 3 Kg (Approx.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Supply | 230V AC±10% 50 Hz. with in-built stabilizer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accessories | Matched Test Tube: A set of 5, Mains Lead, Operation Manual and Dust Cover, Test Tube Stand. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.11 | High Volume Sampler | Make with low noise Brushless AC Blower. Indicating Digitally STP corrected online Flow Rate, Volume of sampled Air & Time of Sampling) | 1 | YES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|-------------|---------------|-------------------|-------------------------------|-------------|--------------------|------------------------|--------------------------|------------------|-------------|---------------|---------------|-----------|----------|--------------|------------------------|-------------------------|------------|--------------|-----------------------|----------|----|-------------------------|----------------|----|----------------------------|------------|-----|------------------------|------------------------|-----|------------------------|---------|-----|----------------|------------------------------|---|----|--|--|
| 2.12 | Hot Plate with Energy Regulator and stirrer | <p>Top plate made of heavy C.I. or stainless steel and is fitted with the body in such a way that, the body gets minimum heat while the top plate is fully heated. Supplied complete with pilot indicating lamps, power plug and cord wire to work on 220/230 AC, Single phase. With three heat control switch and energy regulator. Digital Temperature Controller with sensor in place of energy regulator control.</p> <p>With digital RPM display</p> | 1 | NO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.13 | Laboratory Stirrer with hot plate | <p>Laboratory Stirrer, 1/20 HP 4000 RPM AC/DC Motor, S.S. shaft with chuck & mount on electronic speed regulator. Cap 6-8 ltrs.</p> <p></p> <p>Specification:</p> <table><tr><td>1.</td><td>Type Of Motor</td><td>: AC/DC Universal</td></tr><tr><td>2.</td><td>Horse Power</td><td>: 1/20HP</td></tr><tr><td>3.</td><td>Electric Supply</td><td>: 230 V 50 Hz 10</td></tr><tr><td>4.</td><td>Maximum speed</td><td>: 4000 RPM</td></tr><tr><td>5.</td><td>Capacity</td><td>: 6-8 Ltr.</td></tr><tr><td>6.</td><td>Stirring Shaft Diameter</td><td>: 6mm</td></tr><tr><td>7.</td><td>Stirring Shaft Length</td><td>: 250 mm</td></tr><tr><td>8.</td><td>Propeller Sweep & Type:</td><td>38 mm 3 Bladed</td></tr><tr><td>9.</td><td>S.S. for Shaft & Propeller</td><td>: AISI 304</td></tr><tr><td>10.</td><td>Shaft & Motor Coupling</td><td>: Self Centering Chuck</td></tr><tr><td>11.</td><td>Height of Retort Stand</td><td>: 600mm</td></tr><tr><td>12.</td><td>Speed Controls</td><td>: Electronic speed regulator</td></tr></table> | 1. | Type Of Motor | : AC/DC Universal | 2. | Horse Power | : 1/20HP | 3. | Electric Supply | : 230 V 50 Hz 10 | 4. | Maximum speed | : 4000 RPM | 5. | Capacity | : 6-8 Ltr. | 6. | Stirring Shaft Diameter | : 6mm | 7. | Stirring Shaft Length | : 250 mm | 8. | Propeller Sweep & Type: | 38 mm 3 Bladed | 9. | S.S. for Shaft & Propeller | : AISI 304 | 10. | Shaft & Motor Coupling | : Self Centering Chuck | 11. | Height of Retort Stand | : 600mm | 12. | Speed Controls | : Electronic speed regulator | 1 | NO | | |
| 1. | Type Of Motor | : AC/DC Universal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Horse Power | : 1/20HP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Electric Supply | : 230 V 50 Hz 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Maximum speed | : 4000 RPM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Capacity | : 6-8 Ltr. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Stirring Shaft Diameter | : 6mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Stirring Shaft Length | : 250 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Propeller Sweep & Type: | 38 mm 3 Bladed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | S.S. for Shaft & Propeller | : AISI 304 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Shaft & Motor Coupling | : Self Centering Chuck | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Height of Retort Stand | : 600mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Speed Controls | : Electronic speed regulator | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.14 | Water Bath | <p>Specifications:</p> <table><tr><td>No of holes</td><td>12</td></tr><tr><td>Lid</td><td>Concentric rings (75 mm dia.)</td></tr><tr><td>Temperature</td><td>Ambient+5 to 100°C</td></tr><tr><td>Temperature controller</td><td>Thermostatic rotary knob</td></tr><tr><td>Display</td><td>LED Display</td></tr><tr><td>Construction</td><td>Double walled</td></tr><tr><td>Inner MOC</td><td>SS 304</td></tr><tr><td>External MOC</td><td>Powder coated GI sheet</td></tr><tr><td>Insulation</td><td>Glass wool</td></tr><tr><td>Power supply</td><td>220 Volts 50 Hz</td></tr></table> | No of holes | 12 | Lid | Concentric rings (75 mm dia.) | Temperature | Ambient+5 to 100°C | Temperature controller | Thermostatic rotary knob | Display | LED Display | Construction | Double walled | Inner MOC | SS 304 | External MOC | Powder coated GI sheet | Insulation | Glass wool | Power supply | 220 Volts 50 Hz | 1 | NO | | | | | | | | | | | | | | | | | | |
| No of holes | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lid | Concentric rings (75 mm dia.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature | Ambient+5 to 100°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature controller | Thermostatic rotary knob | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Display | LED Display | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | Double walled | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inner MOC | SS 304 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| External MOC | Powder coated GI sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Insulation | Glass wool | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power supply | 220 Volts 50 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | |
|------|--------------------|---|---|---|-----|--|--|
| | | Controller | Digital temperature controller SS 304 exterior | | | | |
| 2.15 | Centrifuge Machine | Specifications: | | 1 | NO | | |
| | | | | | | | |
| | | Variable speed up to 6000 RPM | | | | | |
| | | Zero RPM lid safety lock and rotor unbalance sensor | | | | | |
| | | Automatic rotor recognition | | | | | |
| | | Auto unbalance detection | | | | | |
| | | Built-in oversized LCD Display | | | | | |
| | | Digital timer 0-99 min | | | | | |
| | | Maintenance free brushless DC motor | | | | | |
| | | Detachable power cord with fuse holder in plug housing | | | | | |
| | | Exterior is chemical resistant and easy to clean and disinfect | | | | | |
| | | Lid window for strobe tachometer RPM check | | | | | |
| | | Maintenance free brushless DC motor is powerful and super quiet | | | | | |
| | | 6 Place rotor | | | | | |
| 2.16 | Portable Autoclave | Working Chamber :35 x 50 (dia x height) (Cm). Cap.Ltrs : 35,Rating 2.0KW | | 1 | NO | | |
| 2.17 | Colony Counter | Body made of mild steel with attractive paint. Sloping at front cover with large magnifying lens. Built in large free illumination with black reflection free background. Complete with woulfheugel, counting plate. Special pen type probe allows marking & counting simultaneously. Counting is registered on a four digit resettable Electronic counter. With audio beep at every count. A fluorescent light provides uniform day light illumination | | 1 | NO | | |
| 2.18 | Flame Photometer | Specifications: | | 1 | YES | | |
| | | | | | | | |
| | | | | | | | |
| | | Range | Na: 0 – 100 ppm, K : 0 – 100 ppm, Ca: 15 – 100 ppm, Li: 10 – 100 ppm | | | | |
| | | Sensitivity | Na: 5 ppm, K : 5 ppm, Ca: 10 ppm, Li: 10 ppm | | | | |
| | | Accuracy | ± 2% upto 40 ppm, ± 5% above 40 ppm | | | | |
| | | Measurement System | One element at a time | | | | |
| | | Readout | 2½ Digit, 7-Segment LED | | | | |
| | | Ignition System | In-built electronic Ignition by press of switch | | | | |
| | | Repeatability | ± 2 Counts | | | | |
| | Detector | Silicon Photodiode | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|-----------------------|--|-----------|---------------------------------|---|------------------------|--|------------|---|---------------------------|--|--|---|------------------|--|--|------------|--|----------------|---------------------------------------|-------|---------------------------|------------|--|--------|----------------|--|--|--|--|
| | | <table><tr><td>Filters</td><td>Narrow band interference glass filters</td></tr><tr><td>Nebulizer</td><td>Black bakelite, axial flow type</td></tr><tr><td>Flame System</td><td>LPG & dry oil free air</td></tr><tr><td>Warm-Up Time</td><td>10 minutes</td></tr><tr><td>Power</td><td>230 V \pm 10% AC, 50 Hz</td></tr><tr><td>Dimensions</td><td>375 x 245 x 220 mm (L x B x H) (Approx.)</td></tr><tr><td>Weight</td><td>7.5 Kg (Approx.)</td></tr><tr><td colspan="2">Compressor Unit details</td></tr><tr><td>Air Supply</td><td>By oil free mini compressor unit with pressure regulator</td></tr><tr><td>Combustion Gas</td><td>LPG controlled by precision regulator</td></tr><tr><td>Power</td><td>230 V \pm 10% AC, 50 Hz</td></tr><tr><td>Dimensions</td><td>290 x 255 x 210 mm (L x B x H) (Approx.)</td></tr><tr><td>Weight</td><td>8 Kg (Approx.)</td></tr></table> | Filters | Narrow band interference glass filters | Nebulizer | Black bakelite, axial flow type | Flame System | LPG & dry oil free air | Warm-Up Time | 10 minutes | Power | 230 V \pm 10% AC, 50 Hz | Dimensions | 375 x 245 x 220 mm (L x B x H) (Approx.) | Weight | 7.5 Kg (Approx.) | Compressor Unit details | | Air Supply | By oil free mini compressor unit with pressure regulator | Combustion Gas | LPG controlled by precision regulator | Power | 230 V \pm 10% AC, 50 Hz | Dimensions | 290 x 255 x 210 mm (L x B x H) (Approx.) | Weight | 8 Kg (Approx.) | | | | |
| Filters | Narrow band interference glass filters | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebulizer | Black bakelite, axial flow type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flame System | LPG & dry oil free air | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Warm-Up Time | 10 minutes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power | 230 V \pm 10% AC, 50 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | 375 x 245 x 220 mm (L x B x H) (Approx.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | 7.5 Kg (Approx.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Compressor Unit details | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air Supply | By oil free mini compressor unit with pressure regulator | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Combustion Gas | LPG controlled by precision regulator | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power | 230 V \pm 10% AC, 50 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | 290 x 255 x 210 mm (L x B x H) (Approx.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | 8 Kg (Approx.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.19 | Stack Monitoring Kit | <table><tr><td colspan="2">Specifications</td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2">1. Pitot tube: “S-type” fabricated from SS304 or equivalent grade. Coefficient of Pitot tube should be above 0.95 in stack monitoring system. S Type Pitot Tube</td></tr><tr><td colspan="2">2. Stack velocity Range: we can find the velocity of gaseous pollutants through stack with the help of inclined manometer.</td></tr><tr><td colspan="2">3. Temperature of gaseous effluents: we can use digital temperature indicator with thermocouple to find the temp of gaseous effluents. Range is from (0-6000C). Velocity & temperature is different at different location inside the stack diameter. To achieve a desired sample, samples are taken at various traverse points inside the stack diameter in stack monitoring procedure.</td></tr><tr><td colspan="2">4. Thimble holder: It is designed to capture particulate matter form gaseous effluents. It is incorporate with the thimble to capture PM size greater than 0.3 micron.</td></tr><tr><td colspan="2">5. Nozzles: Nozzles shall be fabricated with SS 304 or equivalent material with internal diameters suitable to cover the full range of stack velocities. The leading edge of the nozzle should be sharp and tapered. The minimum internal diameter of the nozzle shall not be less than 8 mm to achieve iso-kinetic sampling. (Iso-kinetic condition can be achieved by adjusting suction velocity at nozzle through pump equal to velocity of stack gases i.e. both needs to be same. If any of those increases might changes in higher or lower side results)</td></tr><tr><td colspan="2">6. Rotameter: 0 to 60 LPM for particulate monitoring and 0 to 3 LPM for gaseous monitoring</td></tr></table> | Specifications | | | | 1. Pitot tube: “S-type” fabricated from SS304 or equivalent grade. Coefficient of Pitot tube should be above 0.95 in stack monitoring system. S Type Pitot Tube | | 2. Stack velocity Range: we can find the velocity of gaseous pollutants through stack with the help of inclined manometer. | | 3. Temperature of gaseous effluents: we can use digital temperature indicator with thermocouple to find the temp of gaseous effluents. Range is from (0-6000C). Velocity & temperature is different at different location inside the stack diameter. To achieve a desired sample, samples are taken at various traverse points inside the stack diameter in stack monitoring procedure. | | 4. Thimble holder: It is designed to capture particulate matter form gaseous effluents. It is incorporate with the thimble to capture PM size greater than 0.3 micron. | | 5. Nozzles: Nozzles shall be fabricated with SS 304 or equivalent material with internal diameters suitable to cover the full range of stack velocities. The leading edge of the nozzle should be sharp and tapered. The minimum internal diameter of the nozzle shall not be less than 8 mm to achieve iso-kinetic sampling. (Iso-kinetic condition can be achieved by adjusting suction velocity at nozzle through pump equal to velocity of stack gases i.e. both needs to be same. If any of those increases might changes in higher or lower side results) | | 6. Rotameter: 0 to 60 LPM for particulate monitoring and 0 to 3 LPM for gaseous monitoring | | 1 | YES | | | | | | | | | | | | |
| Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Pitot tube: “S-type” fabricated from SS304 or equivalent grade. Coefficient of Pitot tube should be above 0.95 in stack monitoring system. S Type Pitot Tube | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Stack velocity Range: we can find the velocity of gaseous pollutants through stack with the help of inclined manometer. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Temperature of gaseous effluents: we can use digital temperature indicator with thermocouple to find the temp of gaseous effluents. Range is from (0-6000C). Velocity & temperature is different at different location inside the stack diameter. To achieve a desired sample, samples are taken at various traverse points inside the stack diameter in stack monitoring procedure. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Thimble holder: It is designed to capture particulate matter form gaseous effluents. It is incorporate with the thimble to capture PM size greater than 0.3 micron. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Nozzles: Nozzles shall be fabricated with SS 304 or equivalent material with internal diameters suitable to cover the full range of stack velocities. The leading edge of the nozzle should be sharp and tapered. The minimum internal diameter of the nozzle shall not be less than 8 mm to achieve iso-kinetic sampling. (Iso-kinetic condition can be achieved by adjusting suction velocity at nozzle through pump equal to velocity of stack gases i.e. both needs to be same. If any of those increases might changes in higher or lower side results) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Rotameter: 0 to 60 LPM for particulate monitoring and 0 to 3 LPM for gaseous monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---|----------------------------|---|---------------------------|-----------------|----------------|---|-----------------|--------------------------------|------------------|--------------------------------------|-----------|----------------------------------|------------|--|----------|---|----------------|-------|---------|-----------|---|----|--|--|
| | | <div>7. Impingers: Four number 100 ml and four to six number 225 ml capacity. Facility should be there for keeping ice at the bottom of impinger box to increase the collection efficiency in absorption media/reagent. Electrical cooling is desirable in Stack monitoring system.</div> <div>8. Vacuum pump: Vacuum pump shall be of rotary design, with a capacity of to 0 to 120 LPM gas flow with single phase motor, 220 V. The pump shall also have a moisture trap and air inlet valve. It shall be mounted inside pump housing and shall be portable.</div> <div>9. Dry Gas meter: The sampling train shall have a dry gas meter with the facility for measuring temperature and static pressure. The capacity of the meter should be adequate to record upto 60 lpm of airflow and a minimum readout of 0.001 cubic meters.</div> | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.20 | PTFE PM 2.5 Membrane, sequential with ring | <div>Specifications:</div> <table><tr><td>Description</td><td>PM 2.5 PTFE Membrane Disk, EPA Conforming</td></tr><tr><td>Membrane material</td><td>PTFE</td></tr><tr><td>Details</td><td>High purity, thin membrane for PM 2.5 ambient air monitoring. Sequentially numbered with PP support ring.</td></tr><tr><td>Pore size</td><td>2</td></tr><tr><td>Quantity per box</td><td>50</td></tr><tr><td>Thickness</td><td>30-50 μm</td></tr></table> | Description | PM 2.5 PTFE Membrane Disk, EPA Conforming | Membrane material | PTFE | Details | High purity, thin membrane for PM 2.5 ambient air monitoring. Sequentially numbered with PP support ring. | Pore size | 2 | Quantity per box | 50 | Thickness | 30-50 μm | 1 | YES | | | | | | | | | | |
| Description | PM 2.5 PTFE Membrane Disk, EPA Conforming | | | | | | | | | | | | | | | | | | | | | | | | | |
| Membrane material | PTFE | | | | | | | | | | | | | | | | | | | | | | | | | |
| Details | High purity, thin membrane for PM 2.5 ambient air monitoring. Sequentially numbered with PP support ring. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pore size | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Quantity per box | 50 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thickness | 30-50 μm | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.21 | Glass Fibre PM 2.5 Membrane Filter 37 mm) | <div>Dimensions</div> <table><tr><td>Exterior Diameter of Ring1</td><td>46.2mm ± 0.25mm</td></tr><tr><td>Interior Diameter of Ring</td><td>38.8mm ± 0.25mm</td></tr><tr><td>Ring thickness</td><td>0.38mm ± 0.04mm</td></tr></table> <div>Materials</div> <table><tr><td>Filter Membrane</td><td>PTFE (polytetrafluoroethylene)</td></tr><tr><td>Ring Media</td><td>FEP (fluorinated ethylene propylene)</td></tr></table> <div>Properties</div> <table><tr><td>Pore Size</td><td>2μm as measured by ASTM F 361-94</td></tr><tr><td>Efficiency</td><td>99.99% min on 0.1 μm particles @ 10.5 fpm air velocity</td></tr><tr><td>Air flow</td><td>2.5 cfm / ft2 minimum air flow @ 0.5” H2O</td></tr><tr><td>Typical weight</td><td>400mg</td></tr><tr><td>Density</td><td>2.16 g/cm</td></tr></table> | Exterior Diameter of Ring1 | 46.2mm ± 0.25mm | Interior Diameter of Ring | 38.8mm ± 0.25mm | Ring thickness | 0.38mm ± 0.04mm | Filter Membrane | PTFE (polytetrafluoroethylene) | Ring Media | FEP (fluorinated ethylene propylene) | Pore Size | 2μm as measured by ASTM F 361-94 | Efficiency | 99.99% min on 0.1 μm particles @ 10.5 fpm air velocity | Air flow | 2.5 cfm / ft2 minimum air flow @ 0.5” H2O | Typical weight | 400mg | Density | 2.16 g/cm | 1 | NO | | |
| Exterior Diameter of Ring1 | 46.2mm ± 0.25mm | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Diameter of Ring | 38.8mm ± 0.25mm | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ring thickness | 0.38mm ± 0.04mm | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filter Membrane | PTFE (polytetrafluoroethylene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ring Media | FEP (fluorinated ethylene propylene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pore Size | 2μm as measured by ASTM F 361-94 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Efficiency | 99.99% min on 0.1 μm particles @ 10.5 fpm air velocity | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air flow | 2.5 cfm / ft2 minimum air flow @ 0.5” H2O | | | | | | | | | | | | | | | | | | | | | | | | | |
| Typical weight | 400mg | | | | | | | | | | | | | | | | | | | | | | | | | |
| Density | 2.16 g/cm | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.22 | Combined Multi Parameter Assembly (with | <table><tr><td>Application</td><td>Laboratory Use, industrial Use</td></tr><tr><td>· Resolution</td><td>0.01 pH</td></tr><tr><td>· pH Range</td><td>0 to 14 pH</td></tr></table> | Application | Laboratory Use, industrial Use | · Resolution | 0.01 pH | · pH Range | 0 to 14 pH | 1 | | | | | | | | | | | | | | | | | |
| Application | Laboratory Use, industrial Use | | | | | | | | | | | | | | | | | | | | | | | | | |
| · Resolution | 0.01 pH | | | | | | | | | | | | | | | | | | | | | | | | | |
| · pH Range | 0 to 14 pH | | | | | | | | | | | | | | | | | | | | | | | | | |

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|------|--|--|----------|-----|--|--|
| | Digital water and soil analysis kit) | <div><div>· Power Electric</div><div>· Voltage 240 V</div><div>Packaging Type Boxes</div></div> | | NO | | |
| 2.23 | Set of Impingers (35ml. capacity) Pack of 4 | <div><div>Specifications:</div><div>Material Glass</div><div>Automation Grade Manual</div><div>Sampling Volume 35 ml</div><div>Usage/Application For Air Sampling</div></div> | 02 packs | NO | | |
| 2.24 | Dissolved Oxygen Meter | <div><div>Specifications:</div><div><div>Range:</div><div>O₂:- 0.00 to 45.00 mg/L % Saturation O₂:- 0.0 to 300.0%, Temperature:- 0.0 to 50.0°C</div></div><div><div>Resolution:</div><div>O₂:- 0.01 mg/L % Saturation O₂:- 0.1%, Temperature:-0.1°C</div></div><div><div>Accuracy (@ 20°C)</div><div>O₂:- ±1.5% F.S. % Saturation O₂:- ±1.5% F.S., Temperature:- ±0.5°C</div></div><div><div>Calibration</div><div>Automatic, in air, at 100%</div></div><div><div>Temperature Compensation</div><div>Automatic, 0 to 50°C (32 to 122°F)</div></div><div><div>Altitude Compensation</div><div>0 to 4 km (resolution 0.1 km)</div></div><div><div>Salinity Compensation</div><div>0 to 80 g/L (resolution 1 g/L)</div></div><div><div>Probe (included)</div><div>Micro 87518/4F with 4 m cable</div></div><div><div>Power Supply</div><div>(4) 1.5V AA batteries / approx. 200 hours of continuous use; auto-off after 4 hrs of inactivity; or input for 12 Vdc power adapter</div></div><div><div>Environment</div><div>0 to 50°C (32 to 122°F); RH max 100%</div></div></div> | 1 | YES | | |
| 2.25 | Weigh balance | <div><div>Specifications:</div><div><div>Backlite LCD Display:</div><div>Customized, large, attractive LCD with multiparameter display illuminated by white backlite.</div></div><div><div>Bi directional RS 232 interface:</div><div>RS 232 port with selectable baud rate 4800,9600. Various interface formats adopting this Balance in a setup to replace any other leading international brand Balance. Can be configured for an USB interface using optional RS 232 to USB converter.</div></div><div><div>GSM function:</div><div>GSM function for paper & cloth quality checking.</div></div><div><div>Multiple Weighing Units:</div><div>Grams, Ounces, Troy Ounces, Carats, Mommies, Pennyweights, Grains</div></div></div> | 1 | YES | | |

| | | | | | | | |
|------|-------------|---|--|---|----|--|--|
| | | <p>Percentage Weighing” Display of Reference weight, sample weight, % of sample with respect to reference weight</p> <p>Piece Counting: Parts calibration using preset quantity of samples or programmable quantity. Automatic count correction for precise calibration.</p> <p>Fill Mode: 1 set point - Indication when sample weight exceeds the set limit., 2 set points – Indication when the sample weight is between the lower & upper limits.</p> <p>Accumulation: Storage of maximum 200 samples.</p> <p>Multiple Printing Mode: 0,1,2,3 modes for various formats. Pause in case data storage capacity in a Printer is less.</p> <p>External Calibration: Using preset weights, Known weights can be corrected to ± 15 counts.</p> <p>Response Time: User selectable – Slow / Normal /Fast.</p> <p>Stability Band Width: Stability indicator appears on display with counts variation ± 1, ± 2, ± 3, ± 4.</p> <p>Auto Zero Tracking: User selectable 0,1,2,3</p> <p>Return to Zero Tracking: Variable: 0,1,2,3,4</p> <p>Display Updating: Speed setting : Fast / Normal.</p> | | | | | |
| 2.26 | Vacuum Pump | Specifications | | 1 | NO | | |
| | | Free Air Displacement: | 85 LPM (3.0 CFM) | | | | |
| | | Ultimate Vacuum: | 1-micron laboratory conditions/better than 25 microns field conditions | | | | |
| | | Pump Speed: | 1725 RPM | | | | |
| | | Oil Capacity: | 27oz. (785cc) | | | | |
| | | Operating Temperature: | 30 to 170°F | | | | |
| | | Vacuum Tubing Required: | 3/8” OD for 3/8” ID Tubing | | | | |
| | | Dimensions (W x L x H): | Approximately 27.5cm x 35CM x 12.5cm | | | | |