

Corrigendum 02

02.11.2020

With reference to the tender notification for “Bioreactor” Tender Notification No: NITK/CH/DST-FIST-Bioreactor/2020-2021/167 Date: 08.10.2020, please note the following changes.

There is some changes in the specifications. So here we are attached the revised specifications of the instrument.

Sl. No	OLD SPECIFICATIONS	REVISED SPECIFICATIONS
1	Total volume: 3 Liter, Working volume: 2.2 liters	<b>Total volume: 3.5 Litre, Working volume: 2.5 liters Insitu Sterilizable Borosilicate glass vessel.</b>
2	Top Driven PMDC brushless motor, Glass vessel with Glass Jacketed. Top Plate with Acid, Basic, Antifoam, and Air Out let, and Air In let. Top Plate having pH, DO, Temperature Sensor port and inoculum port with Rubber septum lur lock system and Level sensor. Provision of extra port for upgrade.	AC Servo motor bottom driven with mechanical seal, Top Plate with Acid, Basic, Antifoam, and Air Out let, and Air In let. Top Plate having pH, DO, Temperature Sensor port and inoculum port with silicon septum. Provision of extra port for upgrade.
3	Impeller & Baffles: ● Type: Ruston urbine, Should supply 3 numbers of SCABA impellers, 3 numbers of pitched blade impellers and 3 number of hydrofoil impellers ● Number of Impellers: 3 no (Adjustable), ● Number of blades: 6 no, ● Baffles Size : 10 % of the Die of vessel, ● Baffles Height : 80 % of Vessel Height, ● Baffles Type : Removable, ● Baffles no : 4 no.	<b>Impeller &amp; Baffles: * Type: Ruston Turbine – 3 sets of different impeller diameters, Should supply 3 sets of SCABA impellers of different diameters and 3 sets of pitched blade impellers of different diameters.</b> ● Number of blades: 6 no, ● Baffles Size: 10 % of the Die of vessel, ● Baffles Height : 80 % of Vessel Height, ● Baffles Type : Removable, ● Baffles no : 4 no.
4	Sampling Device: Complete Contamination free, Autoclavable glass container, should come with 0.22 micron filter with vacuum syringe device.	Sampling Device: Complete Contamination free, Autoclavable glass container, should come with 0.22 micron filter with vacuum syringe device or Back pressure sampling device with sterile container 30ml with vent valve
5	Inoculation system: Absolutely contamination free, Lur lock rubber septum/sterilizeble direct connection, With sterile container / sterile syringe	Inoculation system: Absolutely contamination free, silicon septum with hyperdermic needle arrangement.

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6	<p>Air Sparger: ● Air Sparger : S.S. 316, ● Type : Ring Type, ● Design : DN 3/8 " Sch 10, Air inlet &amp; Out let Filter: ● Inlet Filter : 0.2 Micron PTFE, ● Outlet Filter : 0.2 Micron PTFE, Type : Autoclavable, Air in let through 0.02 micron air filter, air flow rate using Rot meter 0 to 10 LPM controlled.</p>	<p>Air Sparger: Air Sparger : S.S. 316, Type : Ring Type, Design : 6mm OD tube Sch 10, Air inlet &amp; Out let Filter reusable SS sintered filter 0.2 Micron., Type : Autoclavable, air flow rate using Rotameter 0.5 to 5 LPM controlled.</p>
7	<p>CONTROL SYSTEM : Large colour Touch panel with PLC controlled (PLC should be able to control four Parallel bioreactors with Single Control Panel), Attach with Industrial PC 18 inch connection distance maximum.200 M. Remote controlled via window base application via PC/LAPTOP/MOBILE. Temperature control: PID controlled, 4 to + 70° C, pt 100 RTD sensor, PLC controlled Amplifiers, temp controlled via Chiller/circulator, Aeration: 0 to 10 LPM with Rotameter passed through 0.22-micron Filter, Agitation: 30 to 1200 rpm, with programmable Drive, 5 to 300 rpm with programmable Drive.</p>	<p><b>Direct immersed electrical heater 400W x2nos usable for minimum working volume and cooling coil to maintain the temperature for the temperature control.</b> Agitation: 30 to 1200 rpm, with programmable Drive, 5 to 300 rpm with programmable Drive.  Temperature control: PID controlled, 4 to + 123° C, pt 100 RTD sensor, PLC controlled Amplifiers, temp controlled via Chiller/circulator. <b>PLC should be of Siemens or Allen Bradley or better.</b></p>
8	<p>PH Measurement and control: There should be provision for accommodating PH probe of Mattler make. Acid and Basic dosing Peristaltic Pump: Dosing of minimum of 0.4 ml or less, 0 to 100 % Programmable as per scientist application, Pump motor equipped with varistor for electric noise Suppression, Screw Less &amp; Compact, Pump can standardized as per application</p>	<p>PH Measurement and control: Insitu Sterilizable PH probe of Mattler make or better make with transmitter. Acid and Basic dosing Peristaltic Pump 2 x fixed speed peristaltic pump enable to control with precise accuracy <math>\pm 0.05</math> pH</p>





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9	SCADA Software windows based Password protection, Multi users, providing access to all functions: set up, Control, Plotting, etc. On line Data acquisition in graphical & numerical mode. Data should come with operator name, start time, date, and product name. Automatic data logging, ISO 9001-2000 certified and as per cGLP (Good Laboratory Practice). Comparison for different complete run should be possible in the software. Provision for data exported for data handling facility.	7" touch screen for ease of operation. The WinCC SCADA software should be supplied to connect the bioreactor to the computer. The software should be able to monitor live feed from the bioreactor. PLC should be of Siemens or Allen Bradley or better.
10	DO Measurement & controlled System: Measurement: There should be provision for accommodating DO probe of Mattler make. Should have Controllable option for future upgrade.	DO Measurement & controlled System: Measurement: Insitu Sterilizable DO probe of Mattler make or better make with provision to control the DO as per set point.
11	Chiller/Circulator: Capacity: 15 L, Operation voltage : 220Volt, useful for 1 L to 25 L Bioreactor. Fully automatic attach with PLC controller, having facility to controlled temp - 4° C to 50° C, Having accuracy of 0.5 ° C. It should come with circulating pump and inbuilt heating element	Chiller/Circulator: Capacity: 10 L, Operation voltage: 220 Volt, Suitable to operate the reactor for maximum heat load (Sterilization). Tank MOC SS304 Control temperature +5°C to ambient. Circulation pump flow capacity 12LPM magnetic pump.
12	Air Compressor (PUMP): Capacity: 25 LPM, for 1 L to 25 L Bioreactor (Autoclavable), Oil Free Air pump.	Oil free Air compressor (PUMP): Flow: 25 LPM at 1 barg with 35 Liter tank capacity and necessary pressure regulator pressure gauge with pneumatic fittings.
13	A suitable autoclave should be provided for sterilization of the bioreactor.	We do not need this.

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14	Warranty: 2 years warranty after installation. Warranty does not have to cover electrodes and other consumable items.	Warranty 2 years after installation. Warranty does not have to cover spares and consumables
15	The company/product should have ISO 9001-2015 certification, CE certification and ISO 3690-2012 certification.	The company/product should have ISO 9001-2015 certification.
16	The bidder should have supplied at least two similar or equivalent equipment to the government or private entities in past two financial years (kindly attach the purchase orders). The bidder should provide the list of buyers (last three years) of similar equipment along with the contact information. The feedback will be taken from the provided contact information of buyers and if the feedback is negative then the bid may not be considered for financial bid opening, even if it qualifies all the technical criteria.	The bidder should have supplied at least two similar equipment to the CFTIs in past two financial years (kindly attach the last three purchase orders). The bidder should provide the list of last two buyers from CFTIs of similar equipment along with the contact information. The feedback may be taken from the provided contact information of buyers and if the feedback is negative then the bid may not be considered for financial bid opening, even if it qualifies all the technical criteria.
17	Supply and installation should be completed within 6 weeks after receiving the purchase order	Supply and installation should be completed within 6 weeks after receiving the purchase order.

Prepared by  
Name/Designation

Date of updation:

  
(PRASANNA B.D)

  
Approved by  
Name/Designation

Seal of the Office of the TIA