

Specification for Laboratory Equipment
Department of Export Agriculture
Bid No. – SUSL/SU/07/EA/2018-PP/5345

1. Incubator (0°C – 25°C) 01 Nos.

University Requirement

Stainless steel interior volume: (50 - 55) L

Dimensions w(A) x h(B) x d(C): 400 x 400 x 330 mm

Working-temperature range: from 0°C to +70°C

Temperature: 1 Pt100 sensor DIN class A in 4-wire-circuit

Setting accuracy temperature: 0.1 °C

Safety – Temperature control:

adjustable electronic over temperature monitor,

Mechanical temperature limiter.

Heating concept: energy-saving Peltier heating-/cooling system integrated in the rear (heat pump principle)

Ventilation – Convection: forced ventilation by Peltier fan

Standard equipment: 1 stainless steel grid(s), electro polished

Door: Fully insulated stainless steel door with 2-point locking (compression door lock)

Inner glass door

Control COCKPIT: Single DISPLAY, Adaptive multifunctional digital PID-microprocessor controller with high-definition TFT-colour display

Adjustable parameters:

Temperature (Celsius or Fahrenheit),

Programme time

Max. number of internals: 04

Max. loading of chamber: Less than 85 kg

Electrical data - Voltage Electrical load: 230 V, 50/60 Hz

approx. 275 W

Warranty: 02 Years comprehensive against manufacturer's defects

After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc.

Letter of authority required from the manufacturer.

Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.

**2. Blender Laboratory with cool jacket 01 Nos.
University Requirement**

Heavy duty Laboratory Blender

Overall Length: 15 in. / 38.1 cm

Electrical Requirements :220 V AC; 50/60 Hz; 40 W

Weight :11 lb / 5 kg

Warranty: 1Year

Max Holding Capacity: 250 ml. – 1500ml

Autoclavable: Yes

Material: Stainless Steel

Liquid Inlet Dimensions: Hose Fitting: 3/8" Hose ID, 1/8 NPT Male End

Weight: 3 lbs

Dimensions: Height - 5.08 in| Width - 8.035 in

Containers:

1-liter Glass container 01 nos.

Mini Cool Jacket container 50 -250ml 2Nos.

1 liter Cool Base Container with stainless steel

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**3. Water Deionizer (Ultra-pure water system) 01 Nos.
University Requirement**

The system should produce ASTM I & ASTM II type water simultaneously.

It should be suitable to feed with direct tap water

It consists of a microprocessor control system that will ensure proper working condition

The system should be supplied with UV-oxidation facility

Out put water rate should be not less than 5.5 L/hr

Flow rate should be at least 1-1.2 L/min

Conductivity should be 0.06 μ S/cm or better

Resistivity should be 18.2 Mohm x cm or better

Particles level should be less than 1 μ m/mL

Bacterial content should be less than 1 CFU/ml

TOC value should be less than 5 ppb

"Combination of pretreatment and the reverse osmosis membrane and Polishing cartridge containing high-quality ultrapure resin will ensure consistent purity and long cartridge life"

System should have ion exchange cartridge to remove ions from the pretreated water

The model should be constructed with pigment-free material

Conical bottom outlet will allow for complete draining and efficient cleaning and disinfection

It should consist of a built in tank with 5-7.5 L

It should have automatic water recalculation through the dispenser tubing to protect it from internal bacteria growth

It should have real-time clock and code protected operating system

There shall be a alphanumeric LCD display

Conductivity measuring cell will be available to display conductivity of purified water

It should have an ergonomic controlling unit that can be swiveled for best keypad use

Power: 230V/50Hz

A pretreatment filter should be supplied to increase the life time of the cartridges in the water system

Documentation

Manufacture product catalogs with requested informations should be supplied

Manufacture authorization for the bidder to represent the given brand

User reference list should be attached

Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately

Warranty: 01 Year comprehensive against manufacturer's defects

4. HPLC /UV Detector / Computer software column for Pigments 01 Nos.

University Requirement

Description of Goods or related service	Technical Specification and standards	
Ultra High Performance Liquid Chromatography	System Requirement	
	Ultra high performance liquid (UHPLC system should be upgradable with mass detector (MS)	
	The system shall comprise the following major components: 1. Degasses 2. Quaternary gradient pump 3. Auto sampler 4. Column compartment 5. Diode array detector / Fluorescence Detector 6. Accessories	
	Detailed specification for UHPLC SYSTEM	
	Degasser	
	Degasser	Should have a built-in vacuum degassing unit
	Number of channels	4 channels of eluent lines should be available
	Quaternary gradient pump	

	Flow range	Flow range should be 0.1-10mL/min or better
	Pressure range	Pressure range should be up to 600bar or better
	Flow accuracy	Flow accuracy +/-0.1% or better
	Flow precision	Flow precision <0.05% RSD or better
	Pump seal wash	Rear/pump seal wash facility should be available
	Delay volume	Delay volume 600-700uL
	Application capability	The system should have the capability to perform conventional HPLC applications as well as high throughput UHPLC applications. This should be confirmed by manufacturer literature.
	Composition precision	Composition precision should be <0.15% SD or better
	Composition accuracy	Composition accuracy should be +/- 0.5% or better
	Display	Built in large display to indicate flow rate and pressure should be available in the module.
	Auto sampler	
	Injection volume	Injection volume range of 0.1 -50uL or better
	Injection linearity	Injection linearity <1% RSD or better
	Carry over	carry over <0.02%
	Pressure range	Compatible up to pressure range of 600 bar
	Sample capacity	120 position capacity for 2.0mL vials
	Display	Built in large display to indicate injection volume and sample position should be available in the module
	Column compartment	
	Temperature range	Temperature range up to 50°C or better
	Temperature precision	Temperature precision should be +/- 0.10C or better
	Column capacity	Column capacity up to 30cm length HPLC columns
	Display	Built in large display to indicate column temperature should be available in the module
	Diode array detector	
	Detection type	1024 elements photodiode array system should be available

	Light source	Deuterium lamp and Tungsten lamp with temprture control lamps should be avaiable
	Data rate	100Hz
	Wavelength range	190 - 800nm or better
	Linear absorbance range	Up to 1.5 AU or bettr
	Wavelength accuracy	+/-1.0nm or better
	Flow cell	Analytical flow cell, 10mm path length volume of 10-15uL
	Detector performance diagnostic software	Software should have capability to perform detector diagnostic testing including, Holmium Oxide Test, Intensity Test, Dark Current Test etc.
	Spectral scanning	Should have full spectral scanning feature and Spectral identification, spectral library creation and 3-D spectrum analysis.
	Display	should have a built in large screen display on the module to indicate the wavelength measured
	Accessories required	
		Brand new computer(500 GB Hard Disk, 8 GB RAM and core i5 processor) and laser printer with 21” LCD monitor should be supplied
		3 KVa UPS or manufacture recommended power protection system for Complete instrument with minimum 15 minutes backup
		Column for pigment detection C18 column (3.5micron 150 mmX4.6mm column) - 2 no (compatible column size to the machine)
		C18 column (5micron 150 mmX4.6mm column) - 2 no(compatible size column to the machine)
		0.45 µm disposable Nylon syringe filter membranes-500 nos
		2ml auto sampler vials for sample injection - 500 nos
		5 Nos of 2.5 L of HPLC grade methanol
		5 Nos of 2.5 L of HPLC grade Acetonitrile
		5 Nos of 2.5 L of HPLC grade ethyl acetate

	Warranty	years warranty for the system should be provided
	Essential documentation qualification criteria for evaluation	
		Printed literature for the instrument manufacturer should be attached with the offer.(All specifications requested should be highlighted and tagged for evaluation reference),In the event of all technical features not mentioned in the broacher instrument manufacture should confirm availability of features on their letter head
		Should provide a letter of authority from the manufacture, certifying that the local agent In Sri Lanka. Offers not carrying authentic letter of authority will be rejected.
		Instrument should be a fully workable system. If any other accessory, consumable is needed for completed operation supplier must quote for required accessories, consumables and chemicals
		Supplier should have an established after sales service unit with proven records and necessary tools. supplier should have at least 5 year experience for supply and maintaining similar type of instruments. Should attached list of instruments supplied last 10 years. In the event of Instrument is malfunctioning local agent should attend to the job within 48 hours.
		Manufactures independently provide a written confirmation that they will provide their services and support even they change the local agent in Sri Lanka. This letter should be signed by the most senior and empowered manager responsible for Sri Lankan Market. Closest support center of the manufacturer and Contact person details need to be attached to the tender.
		One year warranty from the date of acceptance after satisfactory

		installation and commissioning of the instrument.
		One set of Operation Manual and Method Manual, in the English language.
		Complete training for operation, maintenance and calibration of instrument should be provided by the Local Agent/Manufacturer at installation site. Trainer should have sufficient knowledge on Technology as well as sample preparation.
		The supplier must agree to provide necessary spare parts at least for 10 years after installing the instrument.
		In order to get the maximum usage of the Instrument Manufacturer should agree to offer its technical advice free of charge.
	Essential documentation qualification criteria for evaluation	
		Five years' experience of the bidder in the field of supplying of analytical equipment of similar types
		Bidder shall furnish the past supply records including, Name of the Institution, Type of Instrument, Contact details of the user.
		Organization chart of the supplier with details of Year of company registration, no of staff (In the payroll and EPF paid) involved to scientific Instrument business, Address of the after sales unit/department, experience of after sales staff.
		The bidder shall furnish documentary evidence that it meets qualification criteria Working Capital of past 3 years (Shall furnish past 3 years audited balance sheets), Bidder should have positive working capital for at least two of the past 3 years, Bidder should have profits after tax equivalent to the 50% of the quoted value of the instrument during past 3 years.

5. Analytical balance 5 decimal 01 Nos.

University Requirement

Capacity should be 80 g - 210 g dual range
Readability need to be 0.001mg-0.1mg – Micro gram

Platform Size should be 90mm in diameter or better

Measurement units should be -Milligram, Gram, Carat, Ounce, Ounce Troy, Grain, Pennyweight, Momme, Hong Kong Tael, Singapore Tael, Taiwan Tael, Custom

Application modes should be weighing, Parts Counting with Automatic Sample Recalibration, Percent Weighing, Checkweighing, Animal/Dynamic Weighing, Gross/Net/Tare Weighing, Totalization, High Point, Density, Statistics, Pipette Calibration

Display 2-Line Liquid Crystal Display (LCD) with Backlight

Communication should be RS232 with GLP/GMP Data Output

Construction should be Metal base and top housing, stainless steel pan, glass draftshield doors with sliding top door, replaceable in-user cover

Design Features should be,

Selectable environmental filters, protective in-use cover,, user selectable communications settings, user selectable data print options,

removable wind ring in stainless steel platform for easy to clean

Integral weigh below hook for specific density calculations

up-front level indicator, stability indicator for easy viewing.

user selectable span calibration points, auto tare, user selectable printing options

Automatic internal calibration with two internal weights to perform

linear calibration to minimize the weighing errors.

user definable project and user ID's, software reset menu, software lockout menu

After Sales Service Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc.

Letter of authority required from the manufacturer.

Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.

Warranty: 01 Year comprehensive against manufacturer's defects

6. Orbital shaker 01Nos.

University Requirement

Should be an Orbital Shaker

Should be able to control the speed

Should comply with GS Safety standards and CE standards

Moving platform : 330 x 330 mm or better

Load: max. 8 kg or better

Shaking motion : orbital

Timer : up to 60 minutes, or continuous operation

Shaking amplitude : 10 mm

Shaking frequency : 20 - 500 rpm

Electrical connection : 230 V or 115 V* 50...60 Hz, 40 W

System supplied with Stainless Steel Shaking Tray, 8 Nos of Clamps for 250 ml flasks and with the universal mount.

After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc.

Letter of authority required from the manufacturer.

Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.

Warranty: 01 Year comprehensive against manufacturer's defects