MAHARSHI DAYANAND UNIVERSITY ROHTAK

TENDER NOTICE

Sealed Tenders are invited subscribed as "Tender for Equipments" for supply of Instruments along with earnest money equal to 2% of the quoted rates on the total amount involved in the shape of Bank Draft in favour of Finance Officer, M.D. University, Rohtak so as to reach the Department of Zoology upto 07.08.2012.

The Tenders will be opened on 08.08.2012 at 11.30 a.m. in the Office of the undersigned. Interested supplier may have the detailed specifications and Terms & Conditions from the Department of any working day upto 5.00 p.m. or from University Website www.mdurohtak.ac.in

Extension in last date of submission of tenders (DST-FIST) – Department of Zoology

Last date of submission of quotes in response to tenders : 14.8.2012

Opening date for opening of quoted tenders : 16.8.2012

HOD-Zoology

MAHARSHI DAYANAND UNIVERSITY ROHTAK

DEPARTMENT OF ZOOLOGY

General Specification (Tentative) of the instruments claimed for the DST-FIST 2011 [187]

1. General Specification or equivalent for Refrigerated Bench Top Centrifuge

Quick Set and forget Rotor System – Must have auto lock and secure mechanism for Rotors System
Quiet Operation - Noise abating insulation in the console including lower noise fans combine to reduce the audible operating noise to ≤58 dB.
High imbalance tolerances - Innovative motor engineering and mounting including a flexible drive shaft should be provided for greater imbalance tolerances, so much so that samples can be balanced simply with the naked eye. Without the need of Weighing.
Safety is Paramount

Guard barrier
Dual lid electronic interlock
Auto-hinge for improved sealing and door opening
Over speed detection and shutdown
Motor overheat detection and shutdown

Powerful Refrigeration - A powerful non -CFC compressor cools the chamber quickly whilst maintaining the rotor at set temperature during centrifugation.

Technical Specifications:

Maximum Speed: 18,000 RPM to 20000RPM
Maximum RCF: 27,070 x g
Maximum Capacity: 1,000 ml (4 x 250 ml)
Drive Mechanism: Brushless Induction
Control: Microprocessor based
Speed Range: 300-18,000 RPM (50 RPM increments)
Speed Accuracy: ±20 RPM
Speed / RCF Conversion: Yes
Timer: 1 min - 99 Hrs 59 mins plus HOLD function
Display: Backlit LCD
Operating Noise: <58dB (A)
Temperature Range: -20°C to +40°C
Temperature Accuracy: ±2°C
Memory: 9 Programs
Acceleration/Deceleration: 9 stages / 9 stages
Automatic Rotor Identification:
Imbalance Detection
Power Supply: Single Phase AC 220V - 240V, 50/60Hz, 10A
FA15B Medium Capacity Angle Rotor 4x50ml PP tubes

OPTIONAL Requirements

1. Optional Rotor Micro Tube Angle 24x1,5/2ml microtubes, Maximum Speed:15,000rpm
SW% large capacity Swing Rotor 4x250ml PP tubes, Maximum Speed: 4,800rpm
2. Voltage Stabilizer: 5KVA

2. Electrophoresis unit with power supply

A) HORIZONTAL GEL UNIT

Complete System includes:
Mini-plus horizontal gel unit with removable casting tray and
2 x 1mm thick, 16-sample combs and coloured loading strips

TECHNICAL SPECIFICATION	
Unit Dimensions (W x L x H)	16.5 x 23 x 6.5cm
Gel Dimensions (W x L)	10 x 11.5cm
Buffer Volume	450ml
Maximum Sample Capacity	80
Combs	2
Comb Thickness	1, 1.5 or 2mm
Comb Throughput	4 to 20 samples
Comb Slots	4
Migration Distance Between Comb Slots	2.5cm
Recommended Running Voltage	75 to 125V
Power Output Connectors (diameter)	Shrouded, 4mm

B) MINI GEL UNIT

Complete System includes:
Twin-plate wide format mini-gel unit with GRM and gel tank, lid,
2 x (20.5 x 10cm; W x H) plain glass plates, 4 x 1mm spacers,
2 x spacer aligners, 2 x (20.5 x 10cm) notched glass plates,
1 x dummy plate and 2 x 1mm thick 24-sample combs

TECHNICAL SPECIFICATION	
Unit Dimensions (W x D x H)	30 x 15 x 14cm
Inner Tank Dimensions (W x D x H)	27 x 11 x 11.5cm
Plate Dimensions (W x H x T)	20.5 x 10 x 0.4cm
Standard Spacer Dimensions (W x H x T)	2 x 20 x 0.1cm
Active Gel Dimensions (W x H)	16.5 x 8.5cm
Maximum Sample Capacity	2 x 48
Recommended Buffer Volume	
Inner Buffer Chamber	300ml
Gel Tank	2800ml
Recommended Running Conditions for Denaturing/Native PAGE Gel	
Voltage	100 - 150V (10 - 15V/cm)
Current	10 - 15mA
Time	1.5 - 2h
Snap-lock Connectors for Cooling Coil	
	Inner Diameter n/a
	Outer Diameter n/a

Quick-fit Tubing	
	Inner Diameter n/a
	Outer Diameter n/a
Power Output Connectors (diameter)	Shrouded, 4mm

C) POWER PACK

Output Voltage (V)	10 - 300 V
Type of Output	Constant Voltage/ Constant Current
Output Current (mA)	4 - 400 mA
Maximum Power (W)	75 W
Number of Output	4
Resolution Voltage Setting	1V
Resolution Current Setting	1mA
Warranty	3 years
Maximum Ripple	1%
Display for Voltage	3Digit
Display for Current	3Digit
Timer	1mnt to 999 mnts
Input Supply	230 V AC
Voltage Regulation (No load to full load)	1%
Maximum Operating Temperature	45°C ambient
Weight	3 Kg

3. Gel Documentation

System for DNA, protein, gels stained with coomassie blue, silver stain, etc

System should have:

- 16-Bit monochrome CCD camera with 4096 gray levels of TIFF
- Image resolution: 1360 x 1024 pixels, approx 1.4M Pixels
- Linear dynamic range: 3.4 orders of magnitude
- S/N ratio : Greater than 55dB
- Firewire interface connectivity
- Simple operation with One-Click image capture
- Detection Level capability : 0.1ng of DNA per band in Etbr gel
- Lens: Motorized Lens for zoom, focus & iris with zoom of 8-48mm, F1.2
- 8 position motorized Filter Wheel with on-board filter for EtBr.
  Possibility to easily mount additional filter
- Dark Room Cabinet should have followings.
  - Completely enclosed cabinet enclosing camera and lens
  - Illumination cut-off on opening the doors, preventing UV exposure to the user
  - Transillumination light sources: UV (312 nm), coversion screen for WL
  - Built-in Epi-illumination light sources: Dual Epi-White Light
- Image Capture & Analysis Software - 21 CFR Compliant, LIFE TIME FREE UPGRADE
- Advanced software for 1D gel analysis
  - Auto lane mark, Auto band marks, Molecular weight, Mass/Conc calculation, Standard curve, etc., smiling correction, MW library for auto / semi auto or manual std identification
  -1D electrophoresis gel analysis - Single click identification of lanes and bands, and accurate calculation of molecular weights from even the most distorted 1D images.
  - Array analysis - Ideal for the quantitative analysis of dot and slot blots, microtitre plates and other basic arrays, creating grids of up to 1,536 cells.
  - Colony counting - Accurate counts in seconds, adjustable parameters and editing tools if fine tuning is required.
  - General image analysis using Toolbox - General quantitation on any image from a wide range of biological samples using the easy-to-use range of tools provided.

Optional: UPS 5KVA backup

4. Upright Trinocular Microscope

Magnification:	40x-1000x
Optical System:	Infinity Optical System
Illumination:	LED Illuminator for Pure white Light with LED Bright field, Phase, Dark field, Polarising.
Eyepiece Lens:	10×(F.O.V.: 22mm)
Coarse/Fine Focusing:	Coaxial coarse/fine focusing, Focusing stroke: 30mm, Coarse: 9.33mm/rotation, Fine: 0.1mm/rotation, Minimum reading: 1um Coarse motion torque adjustable, Refocusing function
Eyepiece Tube:	Trinocular Tube, F.O.V 22mm-25mm (observation/photo: 100:0, 0:100)
Nosepiece:	At least Sextuple Nosepiece
Controls	Image capture button in main body
Condenser:	Universal Condenser for Bright field, Phase Contrast, Dark field up to 40x, and Fluorescence microscopy
Observation Method:	Brightfield, Epi-fluorescence, Dark field, Phase contrast, Simple polarizing, sensitive colour polarizing
Objective:	Plan Achromat 4x NA 0.10, WD 30.0 mm Plan Achromat 10x NA 0.30, WD 16.0 mm, ph1 Plan Fluor 20x NA 0.75, WD 0.66 mm, ph2, Spring loaded Plan Fluor 40x NA 0.75, WD 0.75mm, Ph2, Spring loaded Plan Achromat 100xoil, NA 1.25, WD 0.20 mm, Ph3, Spring loaded

Fluorescene Attachment

130W mercury-fiber light illuminator with lamp lifetime of 2000 hours for Fluorescence and long term observation of the specimens. **2000 hours of lifetime for fluorescence and long term observation of the specimens.**

Should hold six fluorescence filter blocks in rotating turret with **in-built noise terminator mechanism which prevents stray light from the reflector from entering the optical path, resulting higher contrast & event blacker background.** Apterture & field diaphragm centable. Built-in nd4/nd8 & nd16 filter.

- Filter block for blue with excitation filter ex465-495, dichroic mirror dm505 and barrier filter ba515-555 for fitc/gfp

- Filter block green with excitation filter ex 540/25, dichroic mirror dm565 and barrier filter ba605/55 for tritc/rhodamine/propidium iodide.

- Filter block uv with excitation filter ex 330-380, dichroic mirror dm400 and barrier filter ba435-485for dapi/hoechst.

Camera Attachment

Digital CCD camera capable of handling Brightfield, Phase contrast, Fluorescence, DIC, Darkfield images with 2/3" high density ccd chip, at least 5 million pixel resolution, dynamic range more than 1000:1, At least 10 - 20 frame per second, binning modes: 2x2, 4x4, Sensitivity Equivalent to ISO 80, Software should be comes along with camera for acquiring & capturing of images. Camera should be compatible to attachment onto desktop/laptop through single wire.

Software should be with following features:

- Acquisition and device control up to three-dimensional acquisition.
- Image Acquisition,
- Z-series image capture,
- AVI live-stream capture,
- Objective calibration
- Capturing data saving
- Report Generator facility,
- Microscope, camera and software should be from same manufacturer for better compatibility.

Data station: Branded Computer Intel i5 processors with 2 GB RAM at least 300 GB HDD, DVD writer, 18.5" TFT Colour monitor with key board and mouse and UPS.
Optional: UPS 5KVA backup

Note: The Microscope, fluorescence unit and camera and Image analysis software should be of same make and manufacturer for future upgradability and flexibility This is a very essential terms to be followed .

5. Co_2 incubator:

Specifications for_CO2 Incubator

Heating method : Water-Jacketed System for stable temperature environment
PID Control plus chamber direct sensing system maintains a high-precision temp environment
Automatic stop mechanism for fan motor and CO2 valve
Automatic controlled door heater with thorough pursuit of high-precision cultivation
Exterior dimensions (W x D x H) : 770 x 620 x 900 mm
Interior dimensions (W x D x H) : 490 x 505 x 690 mm
Effective capacity : 170 Litres
Capacity of shelves:Standard 6, max provision for 19 ;Shelf dim.(WxDxH):450 x 450 x 10 mm
Exterior finish : Baked acrylic finish on galvanized steel
Interior finish : Stainless steel (SUS-304) R-corner structure
Door : Baked acrylic finish on galvanized steel with door heater
Inner door : Tempered glass
Insulation : Foamed in-place rigid polyurethane
Humidifying system : Natural vaporization with water in humidity pan (stainless)
Temperature control : PID control (Sensor : Pt 100 ohm)
C02 control : ON-OFF Control System, Automatic control (Sensor : Thermistor)
Air circulation system : Gentle air circulation
Temperature range : Ambient temperature plus 5 - 50°C
Temperature controllability : ± 0.1°C
Temperature uniformity : ± 0.2°C (Setting temp. 37°C with Ambient temp. 20°C)
C02 range : 0 - 20% volume
C02 controllability : ± 0.15% volume
Chamber humidity : More than 95% RH
Power source : Local Voltage AC 50 / 60 Hz, Heater : Cord heater 245 W
Alarm system : Operation sensor temp., C02 level, power failure, overheat, water level.
Alarm notification, continues for 9 hrs in case of power failure (with remote alarming terminal)
C02 level : Level deviates from the set level by more
than 1%, first digit of digital indication flashes (Upper limit C02 valve OFF)
Water level : Electronic lamp notification.
Overheat : Operates at deviation of approx. + 3° lamp notification, heater OFF
Capacity of contact point for remote alarm
Terminal output for remote control recorder :0 - 100 mV (temperatire, C02 level)
C02 supply joint : Inside dia. 4 - 6 mm tube connection
Sample gas collecting joint : Inside dia. 4 - 6 mm tube connection
Power consumption : 285 W, 230 / 240 V, 50 Hz, 1 Phase ø, Net weight : 108 Kg

UPS 5KW backup and CO_2 filled gas cylinder

6. Deep freezer

Specification Deep Freezer, –86°C

Patented V.I.P.™ technology + rigid Polyurethane foamed-in-place, maximizes storage capacity
Wall thickness: 7cm (2.7 inch)
2 independent & insulated Inner doors ABS resin panel with SS frame, easily removable for cleaning & defrosting
Enhanced security and Improved accessibility having quiet operation with Improved energy consumption
Temperature sensor: Pt 1000 ohm, with LED display
Can hold up to 216 pcs of 2" boxes or 144 pcs of 3" boxes
Temperature range : –50°C to –86°C (1°C increments)
Maximum cooling performance : –86°C (Ambient temp. 30°C)
Exterior dimensions (W x D x H) : 670 x 867 x 1860mm
Interior dimensions (W x D x H) : 490 x 600 x 1140mm
Net weight : Approx. 255kg
Effective capacity : 333L
Shelves : Stainless steel, 3 shelves
Access port : 17mm diameter, 3 locations (back, bottom left/right corner)
Compressor : Hermetic type, Output: 450 W (high stage side), 750 W (low stage side)
Evaporator: High stage side: cascade condenser, Low stage side: tube on sheet type
CFC-HCFC free Refrigerants, high stage side: R-4-4A, Low stage side: R-508
Safe operation with Status Alert continuous condition monitoring: High/low temperature, Power failure,
Filter check, Self diagnostics, Door check, Remote alarm contact, Part replacement notification
Remote alarm contact : Allowable contact capacity: DC 30V, 2A
Exterior & Interior: Painted steel
Noise Level: 47dB
Rugged,one handed outer latch has a hole to allow a padlock to securely protect valuable samples
Accessories : 1 set of keys, 1 scraper
Optional : UPS 5KVA

7. HPLC

SPECIFICATION FOR HPLC

PUMP

- **Complete integrated system**
- Flow rate :0.001 to 5ml/min
- Accuracy : +/- 1% or +/- 2ul /min whichever is larger (at 1ml/min)
- Pulse less Solvent Delivery
- Automatic Inlet Valve for flow rate stability and gradient performance
- Unique Auto purge functions
- Automatic Drain
- Automatic Seal wash
- Flow rate precision: ±0.075% RSD.
- **5 Channel on-line vacuum membrane degasser**
- Reservoir tray, which accommodates six 1 liter bottles and small storage space to keep tools and documents comes as standard.

HIGH THROUGHPUT AUTO SAMPLER

- Ultra fast analysis – 15 seconds for 10µl injections from start to finish-unheard of high-speed sample injections.
- Carry over 0.01%
- Can handle up to 350, 1ml vials.
- Automatic Rack status recognition.
- Full volume injection – no sample loss.
- Auto Sampler is with cooler having temperature range from 4 deg C to 40 deg C

UV-VIS DETECTOR

- Baseline Noise: $\pm 0.25 \times 10^{-5}$ au
- Unique automatic temperature control cell in three modes for stable baseline and better resolution.
- Built-in mercury lamp for wavelength accuracy.
- Automatic cell recognition.
- Simultaneous dual wavelength measurement.
- Detector linearity through innovative development of highly reliable optical system.

COLUMN OVEN

- Advanced Column management device for providing number of injections, eluant volume and information on previously used mobile phase etc.
- Holds two 25cm columns.
- Column Oven can also work from Ambient – 15 to 60 deg C. It means that Our Column Oven is also covering lower temperatures

INTELLIGENT HPLC FUNCTIONS

- Automatic system preparation.
- Automatic start-up, setting method parameters (auto conditioning), auto shut down.
- With one touch automatically purges each flow line and rinse liquid line for the auto sampler.
- Automatically recognizes sample rack type, detects vials, flow cell type, solvent leak, lamp cover status, oven status etc.
- Automatic check of baseline stability.

- Auto log – maintenance log, operation log, error log, as well as column history automatically recorded.
- Auto system check and performance check.
- QC check functions for quality control.
- Software alteration checks functions.

AUTO VALIDATION

- Auto validation tests important parameters such as wavelength accuracy, lamp energy, solvent delivery pulsation, column temperature, absorbance, baseline drift, baseline noise, pressure limit, gradient accuracy is done automatically in approximately 3 hours in gradient mode, to comply with regulations such as GLP, GMP and ISO.
- Installation qualifications and operational qualifications.
- Performance check functions can be used for validation of each unit is to be performed independently.
- System stability tests can be performed on daily basis.
- Automated sequence control based on the results of system stability tests.
- Independent audit trial functions for inspection of audits.

LC Solution WORKSTATION SOFTWARE

- Graphical user interfaces an ease of use.
- Unique wizard functions.
- Robust data processing functions such as over laying, chromatograms are easily performed.
- Easy search of data files with long file names.
- Confirmation of run conditions of LC with status blocks,
- WORD like report layout function.
- Summary report function.
- Multi level security check.
- 21 CFR Part 11 Compliant.
- UPS of suitable backup of about 30 minutes