

# TENDER DOCUMENTS

## FOR

### THE PURCHASE OF EQUIPMENTS & KITS

### COLLEGE OF VETERINARY SCIENCES AND ANIMAL HUSBANDRY

### SINGAL STAGE, SINGLE ENVELOPE PROCEDURE

Tender Opening Date (13/10/2020) at 11:00 Hrs



### QUALITY EDUCATION AT DOOR STEP

Check list		
S.no	Attach Documents	✓ / x
1	Tender document are enclosed in technical bid	
2	Tender document are signed and stamped.	
3	Non-black listed certificate has been enclosed in technical bid	
4	An affidavit that CDR has been enclosed in financial bid.	
5	NTN certificate has been enclosed in technical bid	
6	KPRA Registration Certificate has been enclosed (in case of Services)	

**THE PURCHASE OF EQUIPMENTS AND KITS, PSF PROJECT NO. PSF-NSFC LLL AGR/KP/AWKM(20) (DEPARTMENT OF  
CVS&AH), AWKUM  
(Single-Stage, Single Envelope Procedure)**

**1. General**

- a. Any bid without earnest money will not be accepted.
- b. Conditional/incomplete bid will not be accepted.
- c. Any addition/deletion/modification of any clause of these conditions/bidding documents is not acceptable and lead to rejection of the bid.
- d. By submitting the bid, the bidder/vendor/firm declares to abide by and bound by the conditions laid down in the advertisement together with those mentioned in this bidding document.
- e. Any bidder interested in bidding for one or more items separately is allowed to do so. However, preference will be given to bidder offering several items together.
- f. The prices quoted must be valid for at least 120 days from the date of tender opening.
- g. Telephonic/telexed/faxed/telegraphic quotations will not be entertained.
- h. Bid received after closing date/time will not be entertained.
- i. In case of closed/forced holidays, tender opening time/date will be considered as the next working day.
- j. Advance payment is not allowed at any stage and shall not ask for.
- k. The firm/vendor will be liable to provide Tax Invoice in case of imported Goods, if/when Abdul Wali Khan University Mardan demanded to provide.
- l. The University Purchase Committee reserves the right to call demonstration at any stage. (if required)

The bid must accompany the following. Failing which leads to disqualification.

- m. Tender number, tender title, date and time of its opening shall be clearly written at the face of envelop
- n. Quality of quoted items/material/equipment must be according to prescribed specifications.
- o. Firm/Bidder registration certificate with the Federal/Provincial Government.
- p. The firm bidder shall clearly provide the proof of Registration for GST and NTN on their printed letter heads.
- q. Valid NTN/STRN Certificates.
- r. Certificate to the effect that the Firm/Bidder never been blacklisted by any Government/Semi Government Organization/Agency/autonomous body/private sector organization anywhere in Pakistan (submission of undertaking on legal stamp paper).
- s. An affidavit on stamp paper of appropriate value that CDR has been enclosed in financial bid. (please do not mention amount of CDR)

## 2. Scope of Supply

- a. Abdul Wali Khan University, Mardan (hereinafter referred to as AWKUM) invites requests/proposals to purchase Equipments and KITS.
- b. The successful bidder shall supply the items as per prescribed specification approved by University Purchase Committee (hereinafter referred to as UPC)
- c. The items shall be delivered at Store Purchase Section, AWKUM.

## 3. Bid Price

The bidder shall specify, required items as per specification, their unit price, and total bid price in his offer.

The quoted prices shall be:

- a. Best/final/fixed and valid until completion of all obligation under the contract i.e. not subject to variation/escalation etc.
- b. In Pak Rupees
- c. Inclusive of all taxes, duties, levies, insurance, freight, etc.
- d. Include all charges transportation, loading-unloading up to the delivery point at Abdul Wali Khan University, Mardan or as specified by AWKUM in supply order/at the time of delivery.
- e. Where no prices are entered against any item(s), the price of that item shall be deemed be free of cost, and no separate payment shall be made for that item(s).
- f. In case of locally produced goods and services, the price shall include sales and all other taxes (whichever applicable).
- g. In case of contract of imported goods and services, import duties, sales and other taxes (whichever applicable), already paid shall be shown separately (if required by AWKUM).
- h. Taxes levied by the Government (if any), shall be deducted from the bidder as per rules.

## 4. Earnest Money/Bid Security

The bidder firm/vendor shall furnish the bid security (Earnest Money) as under:

- a. 02% (Two Percent) of the total bid price.
- b. No bid will be accepted without earnest money.
- c. Denominated in Pakistani Rupees.
- d. Must be attached with financial proposal, failing which will cause rejection of bid.
- e. In the form of Call Deposit Receipt (CDR) in the name of "Treasurer Abdul Wali Khan University Mardan".
- f. The earnest money will be released after 03 (Three) months of supply subject to the satisfactory report.
- g. The Earnest Money will be returned on written request to the unsuccessful bidders.

The bid security shall be forfeited by AWKUM, on the occurrence of any/all of following conditions.

- a. If the bidding firm/vendor withdraws the bid during the period of tender/bid validity.
- b. If the bidding firm/vendor does not accept the corrections of his total tender/bidding price.

- c. If the bidding firm/vendor, having been notified of the acceptance of the tender by AWKUM during the period of bid/tender validity, fails or refuses to furnish the Performance Guarantee (if Required), in accordance with the tender document.

## 5. Bid/Tender Validity

The bid shall have a minimum validity period of One Hundred and Twenty (120) days from the date of opening of bids. The AWKUM may solicit the bidding firm/vendor's consent to an extension of the validity period of the bid. The request and the response thereto shall be made in writing. If the bidding firm/vendor agrees to permit extension for validity period of the tender, the validity period of the bid security shall also be suitable extended. The bidding firm/vendor may refuse extension of validity period of the bid validity, without forfeiting the bid security.

## 6. Signing of Bids

The bidding firm/vendor must sign and stamp all pages of the tender documents.

## 7. Rejection/Acceptance of the Bids

The AWKUM shall have the right to reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The authority shall upon request communicate to any bidder, the grounds for its rejection of all bids or proposals, but shall not be required to justify those grounds.

The tender/bids shall be rejected if:

- a. The offered items/services do not meet the technical specification of required items/services.
- b. The bidder submits incomplete/partial/conditional/alternative/late documents.
- c. Bid is not submitted completely for all the items required to be purchased.
- d. Bid security/Earnest Money is not submitted.
- e. It is subjected to interlineations/cuttings/corrections/erasures/overwriting.
- f. The bidding firm/vendor refuses to accept corrected Total Tender Price.
- g. The bidding firm/vendor tries to influence the tender evaluation/contract award by unsolicited advice/clarifications and any personal approach at any stage of the tender.
- h. The bidding firm/vendor engages in corrupt or fraudulent practices in competing for the contract award.
- i. The bidding firm/vendor fails to meet all the requirement of tender eligibility/qualification criteria.
- j. The bidding firm/vendor has been blacklisted by any public or private sector organization.
- k. The bidding firm/vendor has been served any legal notices or displeasure letters by any public sector organization on serious failures to provide satisfactory services.
- l. The bidding firm/vendor has mentioned any financial implications in the financial proposal that is in contradiction to this document and Government rules and regulations.
- m. There is any discrepancy between bidding documents and bidder's proposal i.e. any non-conformity or inconsistency or informality or irregularity in the submitted bid.

- n. The bidding firm/vendor submit any financial conditions as part of its bid which are not in conformity with tender document.
- o. Non-submission of verifiable proofs against the mandatory as well as general documentary, qualification and eligibility related requirements.
- p. If the rates quoted by vendor are not workable or on higher side etc.
- q. Not providing Sample (if required/mentioned in tender documents).
- r. Not performing demonstration (if required/mentioned in tender documents).

**8. Award Criteria**

- a. Technically qualified and successful bidding firm/vendor will be evaluated in the light of all pre-conditions, necessary requisites and shall be selected on lowest cost quoted as per rules and fulfilling all codal formalities.

**9. Variation in scope of Work**

AWKUM shall have the right, at his exclusive discretion, to increase/decrease the quantity/quality/form of any or all item(s) without any change in unit prices or other terms and conditions, at the time of order placement. AWKUM reserves the right to remove any item or service executed which is not accordance with the tender/item specification or to order contractor to provide according to tender/item specification. In case of non-compliance by the contractor, AWKUM shall remove such items/services and will be re-executed through other arrangements at the sole risk, cost, and responsibility of the contractor.

**10. Delivery of Goods/items**

The contractor shall make delivery of the items within 90 days from the date of issuance of supply order. A penalty of 0.5% of total cost of order can be imposed per day up to 10 days for delay on the part of contractor. A penalty of 1.0% of total cost will be imposed for delay beyond 10 days. The delivery of items shall be made at store purchase section, procurement office, AWKUM or as specified by AWKUM at the time of delivery. No separate payment shall be made in this regard.

**11. Guarantee/Warranty**

- a. The contractor shall warrant to AWKUM that the goods supplied, under the contract are genuine, brand new, non-refurbished, un-altered in any way, of the most recent or current model, imported through proper channel, and incorporate all recent improvements in design and materials, unless provided otherwise in the contract.
- b. The contractor shall further warrant that the goods/services supplied, under the contract shall have no defect, arising from design, materials, and workmanship or from any act or omission of the bidder that may develop under normal use of the supplied goods/services.
- c. The contractor shall provide manufacturer's warranty (as per manufacturer's policy) or as described with item specification after the issue of taking-over certificate.

- d. The contractor shall provide warranty for free/on site repair/replacement of defective/damaged parts, after intimation by AWKUM.
- e. The contractor shall clearly mention Terms and Conditions of service agreement for the goods supplied. In case of international warranties, the local authorized dealers shall mention their service and warranty setup.
- f. The warranty period shall start from the date of installation/configuration/delivery of the good at AWKUM.
- g. The AWKUM shall, by written notice served on the contractor, indicate any claim(s) arising under the warranty.
- h. The contractor shall, within the prescribed time period, after receipt of such notice, repair or replace the defective/damaged goods or parts on site, without any cost to the purchaser.

## **12. Taxes**

- a. The contractor shall be entirely responsible for all taxes, duties and other such levies imposed make inquiries on income tax/sales tax to the concerned authorities of income tax and sales tax department, Government of Pakistan.
- b. All government taxes shall be deducted at source (if applicable) according to the relevant rules.

## **13. Inspection and Testing**

- a. The AWKUM shall inspect and test the goods supplied, the services provided under the contract, to verify their conformity to the technical specifications.
- b. The inspection and tests shall be conducted at the premises of the contractor or at the AWKUM/at the final destination. In case of conducted at the premises of the contractor, the contractor shall provide all-reasonable facilities and assistance, including production data and online verification from official web site of the manufacturer, to the inspectors, at no charge to the AWKUM.
- c. The AWKUM may reject the goods/services if the committee/inspector/investigator fails to confirm to the technical specification, in any test(s) or inspection(s) and the contractor shall either replace the rejected goods/services or make all alterations necessary to meet the technical specifications, within prescribed time/duration, free of cost to the AWKUM.
- d. The AWKUM's post-delivery right to inspect, test and, where necessary, reject the goods shall in no way be limited or waived by reason of pre-delivery inspection, testing or passing of the goods.
- e. Nothing contained in this document shall, in any way, release the contractor from any warranty or other obligations under the contract.

## **14. Responsibility Against Damages/Ownership of Goods**

- a. The contractor shall be responsible for whole/any damage caused to the item(s)/goods by accident/improper handling/loading un-loading, before handed over to/taking charge by AWKUM. The contractor shall replace the same.
- b. The contractor shall, by written notice served to AWKUM, apply for Taking-over certificate.

- c. The AWKUM shall, after the receipt of contractor's application, either issue the Taking-over Certificate to the contractor or reject the application giving the reasons and specifying the work required to be done by the contractor to enable the Taking-Over Certificate to be issued.
- d. Nothing contained in this document shall, in any way, release the contractor from any warranty or other obligations under the contract.

#### **15. Payment**

- a. Payment shall not be made in advance and against partial deliveries.
- b. The contractor shall provide all necessary and supporting documents along with invoice.
- c. The contractor shall submit an application for payment, to the AWKUM. The application for payment shall be: accompanied by such invoices, receipts or other documentary evidence as the AWKUM may require; state the amount claimed; and set forth in detail, in the order of price schedule, particulars of the goods supplied/services provided up to the date of application for payment.
- d. The AWKUM shall get verified the details of goods/services delivered. Payment shall be made on complete delivery of goods/services after issuance of satisfactory certificate by concerned technical committee/Head of Department/Project Investigator.
- e. The AWKUM shall pay the ninety percent (90%) amount verified and ten percent (10%) amount of the total contract will be kept as performance guarantee for one year.
- f. AWKUM shall make payment for the goods supplied and services provided to the contractor as per Government policy, in Pak Rupees through crossed cheque.
- g. All payments shall be subject to any and all taxes, duties and levies applicable under the laws of Pakistan for the whole period starting from issuance of Supply Order till delivery of the goods/services.

#### **16. Supply Period**

- a. The AWKUM shall purchase the items or shall avail the services within valid period of the tender.
- b. The successful bidding firm/vendor shall be responsible to deliver goods/services within due time as given in Supply Order/Tender Document.

**17. Dispute resolution**

The Purchaser and the Contractor shall make every effort to amicably resolve, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the Contract. The contractor shall in writing report to the competent authority who shall refer it to Tender Redressed Grievance Committee (TRGC) for further process as per AWKUM financial rules.

**18. Force Majeure**

“Force Majeure” means an event which is beyond the reasonable control of a party and which makes a party’s performance of its obligations under the Purchase Order/ Work Order/ Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, lockouts or other industrial issues are within the power of the party invoking Force Majeure), confiscation or any other action by Government agencies. In all disputes between the parties as to matters arising pursuant to this Purchase Order/ Work Order/ Contract, the dispute will be dealt as per section 35 of the KPPRA Act 2012.

**19. Agreement Deed**

After receiving work order/supply order the firm has to sign a formal agreement deed on a stamp paper of appropriate value as per attached sample (annex-1)



**AGREEMENT DEED SAMPLE (ANNEX-1)**

**Agreement Deed**

1. We Abdul Wali Khan University Mardan (Party –I) and Firm Name M/s (Party – II) \_\_\_\_\_ hereby agreed as under:
2. Party II will supply the items against supply Order No. \_\_\_\_\_ Dated \_\_\_\_\_ as per quoted specifications.
3. Party II will be responsible for guarantee /warranty of supplied items up to \_\_\_\_\_. In case of defect in any item the supplier shall repair/replace it free of cost within four weeks, otherwise the supplier will return the entire paid amount to Abdul Wali khan University Mardan.
4. If any over pricing or low specification is found at any stage, the party – II will be responsible for recovery/rectification.
5. Party II will be responsible for transportation charges of supply on their own expenses.
6. 90 % percent payment will be made to supplier after inspection of supplied items by committee of expert constituted by the University if found in all respects after the successful and complete supply of items while the remaining ten percent will be kept as performance guarantee for \_\_\_\_\_.
7. All taxes will be deducted as per University/FBR rules.
8. All payments will be in Pak rupees (through cross cheque).
9. No partial payment will be made.
10. If the firm failed in supply of items in response of supply order issued the call Deposit of the firm of said tender will be forfeited.
11. Bidding documents shall serve as essence of contract.

\_\_\_\_\_  
Firm Owner /authorized  
Representative Signature & Stamp

\_\_\_\_\_  
Procurement officer  
Abdul Wali Khan University, Mardan

\_\_\_\_\_  
Countersigned by Registrar  
Abdul Wali Khan University, Mardan

**Witness 1**

Name -----  
F/N -----  
CNIC -----

Signature-----

**Witness 2**

Name -----  
F/N -----  
CNIC -----

Signature -----

**COMPLETE LIST OF EQUIPMENTS AND KITS ALONG WITH SPECIFICATIONS**

**01 HIGH PERFORMANCE TOUCH SCREEN SUPERCYCLER™ GRADIENT 1 No**

**TECHNICAL SPECIFICATIONS:**

<b>Thermal Cycling Technology:</b>	High performance active heating and cooling using 6 quality peltier elements arranged as 3 independent control zones
<b>Temperature Range:</b>	4°C – 99°C
<b>Temperature Accuracy:</b>	±0.5°C over full range, typically < ±0.1°C at 60°C
<b>Temperature Uniformity:</b>	±0.3°C, 30 seconds after target (range 40°C - 90°C) Typically < ±0.1°C at 60°C
<b>Temperature Resolution:</b>	0.1°C increments
<b>Heating / Cooling Rate:</b>	5°C/sec typical heat & cool between denat&aneal (block). 7°C/sec Peak (block).
<b>Well Configuration:</b>	96-well block supporting: 0.2 mL tubes or strip tubes with flat or domed caps; 96-well high-or low skirt plates with strip caps, adhesive cover, or oil overlay
<b>Recommended Reaction Vol:</b>	5-60 µl
<b>Linear Thermal Gradient:</b>	Programmable 0–24°C across block width (12 wells)
<b>Condensation Control:</b>	Automatic utilizing applied pressure heated lid.
<b>Heated Lid Temperature Range:</b>	Controllable 60°C – 115°C
<b>Dimensions:</b>	<b>Width:</b> 180mm (7") <b>Depth:</b> 285mm (11.2"); 350mm (13.8") including cables <b>Height:</b> 190mm (7.5") lid closed; 340mm (13.4") lid open
<b>Weight:</b>	5.5kg (11 lbs)
<b>Color:</b>	Pewter on black.
<b>Electrical:</b>	100–240 VAC @ 4 Amp (50/60 Hz) Automatic voltage sense, standard IEC Inlet plug
<b>External Connectivity Interface:</b>	USB interface to Windows based PC USB host port - file transfer to and from USB memory stick - mouse/keyboard connection - printer
<b>Internal Interface (Optional):</b>	Embedded graphical controller with 7" widescreen touch sensitive colour backlit display.
<b>Software:</b>	Supplied with unlimited user license. Free upgrades available via web download.
<b>Internal memory:</b>	256 MB, enough for 10,000+saved profiles
<b>Functionality:</b>	Multiple thermal zones, Touch Down/Up, Long Range, Thermal Gradient*, Program Pauses, Temperature Graphing, On-screen Help, User Accounts, Profile Load and Saving, Manual Mode, USB File Transfer, Post run reporting, Auto restart and more.

**Made:** Japan, Korea, USA, EU, Australia

02

**microDOCGEL DOCUMENTATION SYSTEM**

**1 No**

**FEATURES:**

- ❖ 24.1 Megapixel built-in WiFi digital camera with improved high-sensitivity CMOS sensor and processor
- ❖ Image visualised on a large 8" TFT colour monitor
- ❖ Light weight compact hood with easy access door and built-in inner lights
- ❖ Safety switches disconnect the UV source when the easy access door is opened
- ❖ Computer-free operation
- ❖ Available on its own with camera and darkroom, or as a complete gel documentation system with transilluminator, either with or without software
- ❖ Transilluminators supplied in single and dual wavelength formats
- ❖ Optional TotalLab™ 1D analysis software

**TECHNICAL SPECIFICATIONS:**

**CAMERA:**

Type:	1/1.7 type CMOS sensor with digi4+ processor
Lens Type:	EF-S 18-55mm
Effective Pixels:	24.1 megapixels
Max. Aperture:	F/3.5 (w) - F/5.6 (h)
Shutter Speed:	30 - 1/4000s. (Total Range)
Filters:	+3 Close Up and ETBR; optional SYBR green
Storage Media:	8GB Memory Card

**DARKROOM:**

Multi-Power Source:	For Camera, Inner White LED, TFT Screen
Inner White Light:	2x3W LED
Safety Device:	Safety door switch when door is opened
Weight:	7.7kg
Dimensions, with camera:	29x32.5x51.5cm
Dimensions, without camera:	29x32.5x49.6cm
Voltage Rating:	110~220V

**SCREEN:**

Type:	8" TFT
Resolution:	1924x768 pixels
Brightness:	300 cd/mm <sup>2</sup>
Constant ratio:	450 : 1 (typical)
Display mode:	NTSC / PAL mode, switchable

**Made:** Japan, Korea, USA, EU, Australia

**03****REFRIGERATED MICRO CENTRIFUGE 24-PLACES****01 No****KEY FEATURES:****Powerful cooling system for precise temperature control:**

- ❖ Pre-cooling program ensures optimal protection of the sample before warming
- ❖ Guaranteed 7°C cooling within only 7 minutes of both chamber and samples even at maximum speed and capacity utilization
- ❖ Sound-alert allows your undivided attention on other tasks warming
- ❖ Lid lock facility allows for internal temperature maintenance even after centrifugation
- ❖ Intermittent temperature control mode, CFC-free refrigerant and low carbon life rotor capacity
- ❖ Three-layer sealed rotor accidental leakage during centrifugal process allowing risk-free microbial contamination
- ❖ High strength aluminum alloy rotor can be fully autoclaved for unlimited service life
- ❖ Four rotors are optional complete with 24 place 1.5/2.0mL tubes, bigger 5.0mL, smaller 0.2mL and 0.5mL tubes with the use of adapters
- ❖ Quiet running, noise level  $\leq 54$ dB

**TECHNICAL SPECIFICATIONS:**

<b>Max. Speed:</b>	15000rpm(200-15000rpm), increment:10rpm
<b>Max. RCF:</b>	21380×g, increment:10×g
<b>Speed Accuracy:</b>	±20 rpm
<b>Temperature Range:</b>	-20oC-40oC
<b>Rotor Capacity:</b>	5mL×18, 5mL culture tubex12 0.2mL/0.5mL/1.5mL/ 2mL×24, 0.5mL×36, PCR8×4
<b>Run Time:</b>	30sec-99min/Continuous
<b>Motor:</b>	Brushless DC moto
<b>Safety Devices:</b>	Dual door interlock, Over-speed detection, Over-temperature detection Automatic internal diagnosis
<b>Power:</b>	Single-phase, AC220V-240V, 50Hz/60Hz, 10A, AC110V-120V, 50Hz/60Hz, 10A 400W
<b>Acceleration/Braking time [Sec]:</b>	25s↑25s↓
<b>Dimension [D×W×H]:</b>	338×580×324mm
<b>Weight:</b>	30kg
<b>Certification:</b>	CE cTUVus FCC MCA
<b>Advanced Features:</b>	Speed/RCF switch; Short-time run function; sound-alert function
<b>Noise Level:</b>	$\leq 56$ dB

**Made:** Japan, Korea, USA, EU, Australia

**04      Deep Freezer**

**1 No**

**Features**

- ❖ Super fast cooling
- ❖ Super cooling retention (upto 30 hours after power failure)
- ❖ Comfortable door hinges
- ❖ Dual condenser for excellent freezing performance
- ❖ Freezer temperature (upto -18 degrees)
- ❖ 1 inner light

**TECHNICAL SPECIFICATIONS:**

<b>Weight</b>	<b>162 kg</b>
<b>Capacity</b>	285 Liters
<b>Dimension H/W/D</b>	845/920/745 mm
<b>Power</b>	170W
<b>Freezer Type</b>	Single Door Freezer

**05 Milk Analyzer EKOMILK ULTRA PRO**

**1 No**

**FEATURE**

- ❖ To test & display fat, protein, lactose, SNF, temperature, salts, pH & added water in milk electronically.

**Type:**

- ❖ Ultrasonic milk analyzer for testing fat, protein, lactose, SNF, temperature, salts, pH & added water in milk

**Speed:**

- ❖ 30 Seconds per Sample
- ❖ Milk temperature : 5 to 35 Degree C
- ❖ Power consumption: 30Watts on AC

**Loose Accessories:**

- ❖ RS 232 Serial Cable : 1 NO
- ❖ A C Power cable with plug top : 1 NO
- ❖ Battery power cable :1 NO
- ❖ 200 ml bottle of Daily Cleaning Solution : 1 NO
- ❖ 200 ml bottle of Weekly Cleaning Solution: 1 NO
- ❖ 200 ml bottle of Power Cleaning Solution for emergency : 1 NO
- ❖ Measuring mug : 2 NOs
- ❖ 120 Samples per hour

**Measuring Parameters**

- ❖ Fat: from 0.5% to 12% with accuracy +/- 0.1 %
- ❖ SNF : From 6% to 12% with accuracy +/- 0.2%
- ❖ Added water to milk : From 0% to 60% with accuracy +/-5%
- ❖ Measuring cycle : 30 Sec per sample
- ❖ Average speed : 120 samples/hr
- ❖ Resolution : 0.01%
- ❖ Repeatability : +/-0.03% for Fat, +/-0.05% for SNF, +/- 0.75% for added water
- ❖ Display:
- ❖ 2 line, 12 character, LCD Display
- ❖ Operation facilities:
- ❖ Mode selection for type of milk (cow, buffalo, mixed), cleaning, calibration, system, Error list etc.

**Operating Voltage:**

- ❖ 220 Volts +/- 10% - 15% , AC, 50 Hz 12 Volts DC
- ❖ Interface:
- ❖ RS 232
- ❖ Environmental Conditions:
- ❖ Ambient air temperature : 15 to 35 Degree C
- ❖ Relative Humidity : 30 to 80%
- ❖ Operating Manual (English): 1 NO

**Consumables**

No	ITEM	QTY
01	PCR Green Master Mix (USA, Europe, Japan, Korea)	5000 reactions
02	Agarose gel (USA, Europe, Japan, Korea)	100gm
03	GeneRuler 1 kb DNA Ladder, ready-to-use (USA, Europe, Japan, Korea)	(5 x 50ug)
04	GeneRuler 100 bp Plus DNA Ladder, ready-to-use (USA, Europe, Japan, Korea)	50ug
05	GeneRuler 50 bp DNA Ladder, ready-to-use (USA, Europe, Japan, Korea)	50ug
06	Columbia Blood Agar (Merck, Oxide, Segma)	500gm
07	Baird Parker Agar (Merck, Oxide, Segma)	500gm
08	Manitol salt agar (Merck, Oxide, Segma)	500gm
09	Brain heart infusion broth (Merck, Oxide, Segma)	500gm
10	3% H <sub>2</sub> O <sub>2</sub>	500ml
11	Ethidium Bromide (USA, Europe, Japan, Korea)	200ml
12	Ethanol (absolute)	5 lit
13	Chloroform (absolute)	5 lit
14	Phenol (absolute)	5 lit
15	TAE buffer	5 lit
16	TBE buffer	5 lit
17	Triss (USA, Europe, Japan, Korea)	500gm
18	Gramstaining kit (USA, Europe, Japan, Korea)	1 lit
19	Inoculation loop	10 no
20	Glass slides	20 packs (500/pack)
21	Petridishes	90 no (30 each small, medium, large)
22	Conical Flask	30 no (10 each small, medium, large)
23	graduated cylinder	30 no (10 each small, medium, large)
24	Test tubes	40 (20 each, 10 ml and 50 ml)
25	Nutrient broth (USA, Europe, Japan, Korea)	500 gm
26	Glycerol	500 ml
27	Alumenium Foil	20 rolls
28	2ml Eppendrof Tubes DNase,Rnase & Pyrogen free (USA, Europe, Japan)	10 packs
29	10ul white tips racks DNase,Rnase & Pyrogen free (USA, Europe, Japan)	10 packs
30	1000ul Blue tips racks DNase,Rnase & Pyrogen free (USA, Europe, Japan)	10 packs
31	100wells freezer Box for 1.5 & 2 ml Tubes with lid (USA, Europe, Japan)	10 packs
32	0.2ml PCR Tubes rack (USA, Europe, Japan)	10 packs
33	10 ul white tips, (USA, Europe, Japan)	10 packs
34	200 ul white tips, (USA, Europe, Japan)	10 packs
35	1000 ul white tips, (USA, Europe, Japan)	10 packs
36	0.2ml PCR Tubes Dnase,Ranase & Pyrogen free (USA, Europe, Japan)	10 packs
37	DNA extraction kits	2000 reactions
38	Falcon Tubes (USA, Europe, Japan)	1000 pcs
39	Falcon Tubes rack	10 no
40	EDTA tubes for blood extraction	1000 pcs
41	Gel & Clot activator tubes	1000 pcs
42	Syringes (10ml)	1000 pcs
43	Pippet rack	03 no

**\* All the above consumables must be molecular/microbiological standard grid.**