



BELDA COLLEGE

(Affiliated to Vidyasagar University)

Re-accredited & Graded 'A+' CGPA 3.49 by NAAC (3rd Cycle)

Belda :: Paschim Medinipur :: 721424 :: WB

MEMO NO: BC / TENDER / 25-26 / 2 / NUTR

Date: 08/07/2025

NOTICE INVITING QUOTATIONS (NIQ) – PRE-TENDER MARKET SURVEY

1. Background & Purpose:

In accordance with Government of West Bengal, Department of Science & Technology and Biotechnology Allotment Letter No. 722/STBT-13020/1/2023-WBSCST SEC dated 02 June 2025, which released ₹ 24,99,918 to the *Department of Nutrition (UG), Belda College* under the **BOOST Programme 2024** for laboratory-infrastructure up-gradation, Belda College invites **sealed quotations** from reputed manufacturers, authorised dealers and suppliers for the **supply, installation and commissioning** of the sanctioned scientific instruments listed in **2. Scope of Supply**.

IMPORTANT: This NIQ is purely for the purpose of identifying compliant models and estimating realistic budgetary costs. It does not constitute a purchase order or a commitment to procure. After evaluation, Belda College will float a separate e-tender (two-bid system) on the Government of West Bengal e-Procurement Portal indicating the model numbers shortlisted through this exercise.

Purpose of NIQ: To identify and shortlist equipment models with suitable accessories and starter consumable packs (refer Annexure I) that demonstrably meet or exceed our technical specifications, operational needs, prioritizing long-term value and performance over mere lowest cost so that only the most suitable options advance to the formal e-tendering stage, ensuring prudent and effective utilization of BOOST funds.

2. Scope of Supply (summary):

Approved BOOST-2024 equipment for the Department of Nutrition, Belda College:

1. Laminar Air Flow – Horizontal (1)
2. Vertical Autoclave, semi-automatic with radial lock (1)
3. Hot Air Oven (1)
4. BOD Shaker Incubator (1)
5. Vortex Shaker (1)
6. Bench-top pH Meter (1)
7. Automatic Nitrogen Digestion System & Automatic Protein Distillation System (combined set, 1)
8. Automatic Fat/Oil Solvent Extraction Unit (1)
9. Automatic Fibre Analysis System (1)
10. Micro-processor Colony Counter (1)
11. Cyclo Mixer (1)
12. Stomacher Microbiology Blender (1)
13. Quadmastest (1)



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14. Bacteriological Incubator (1)
 15. Serological Water Bath (1)
 16. Sonicator Bath (1)
 17. Muffle Furnace (1)
 18. Automatic Karl Fischer Titrator (1)
 19. Portable Water Activity Meter (1)
 20. UV-Visible Spectrophotometer, double-beam (1)
 21. Magnetic Stirrer with Hot Plate (1)
 22. Bottle-top Dispenser with spring-less valve technology (1)
 23. Precision Balance (1)
 24. Fixed-volume Pipettes, assorted sizes – total 57 pieces (1 ml × 27, 200 µl × 10, 50 µl × 10, 10 µl × 10)
 25. Starter Kit with 3 variable-volume Pipettes (3 kits)
 26. Portable pH Meter (1)
 27. Digital Cooking Oil Tester (1)
 28. Electrophoresis Power Supply (1)
 29. Vertical Electrophoresis System (1)
 30. Binocular Microscope (1)
 31. Bench-top Centrifuge with rotors (12 × 15 ml and 24 × 1.5 ml) (1)

3 Eligibility of Suppliers (documentary evidence mandatory):

1. Valid GSTIN, PAN and current Trade Licence.
2. Manufacturer's Authorisation Form (MAF) if quotation is by an authorised dealer.
3. Minimum three (3) years' experience supplying similar laboratory equipment to Central/State Govt. or recognised autonomous research institutes; attach at least three supply orders.
4. Self-declaration of non-blacklisting by any Government organization.
5. Written undertaking for after-sales service availability for minimum three years.

4 Submission of Budgetary Quotations:

1. Quotations in sealed envelope superscribed "BOOST-2024 Budgetary Quote" must include:
 - (a) Item-wise price breakup with GST;
 - (b) Point-wise compliance statement to Annexure-I specs; Quoted base price shall INCLUDE all items listed under 'Scope of Standard Supply', 'Inclusive Accessories', and 'Starter Consumable Pack'. 'Optional Accessories / Recommended Spares' must be shown as separate line items.
 - (c) Above eligibility documents of Suppliers.



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2. Last date & time: 15 July 2025, 15:00 hrs IST. Submit by Speed Post/Courier or deposit in Tender Box in Principal's Office.
3. Opening of quotations: 16 July 2025, 12:00 hrs IST.
4. No EMD is required for this market-survey NIQ.

5 Evaluation Criteria

Selection will rest on a composite assessment of:

1. Full technical compliance with Annexure-I specifications.
2. Quality & reliability of the proposed model, including certifications (ISO 9001, CE, BIS, NABL calibration as applicable) & performance features of each proposed model.
3. Warranty terms, post-warranty support terms and availability of onsite service.
4. Past performance of the vendor in similar supplies and credentials of the supplier.
5. Proof of presence of the quoted equipment in functional condition at minimum three (3) reputed Government / Autonomous research institutes / universities in India, supported by installation reports / performance certificates and signed testimonials from end-users.
6. After-sales support commitment (response time, spare parts availability).
7. Documented proof that the *same make-and-model* is in successful operation in at least two recognised national research institutes or universities, accompanied by testimonials / performance certificates from those institutes.
8. Overall cost-effectiveness (life-cycle value, not just purchase price).

6 Key Terms & Conditions for Subsequent E-Tender

1. The formal procurement shall be carried out through an open e-tender on Government of West Bengal e-Procurement Portal following the two-bid system (technical & financial).
2. At e-tender stage, EMD/Performance Security will be applicable as per government Rule .
3. The Project Implementation Committee (PIC), Belda College reserves the right to cancel e-tender without assigning reasons and bears no liability for any costs incurred by bidders.

7 Clarifications


Technical or procedural queries may be addressed to

Dr Devastotra Poddar

Member-Secretary, PIC (BOOST-2024)

E-mail: devastotrapoddar@beldacollege.ac.in




Principal
Belda College

Principal
BELDA COLLEGE
Belda, Paschim Medinipur

Annexure I

Technical Specifications

1. Laminar Air Flow – Horizontal (1)

Technical specifications

1. Inner liner: seamless 304-grade stainless steel with 19 mm radius corners; outer shell mild-steel, epoxy-polyester powder coat (80 μm).
2. **Airflow profile:** ISO 5 (Class 100) laminar down-flow; velocity factory-set 0.45 m s^{-1} (adjustable $0.30 - 0.50 \text{ m s}^{-1}$).
3. HEPA module $\geq 99.97\%$ @ $0.3 \mu\text{m}$; synthetic G4 pre-filter + **additional G4 panel beneath the perforated work surface** to trap large debris and extend HEPA life.
4. Dynamically balanced $\frac{1}{4}$ HP direct-drive blower (1 440 rpm); sound level $\leq 55 \text{ dB(A)}$ at 1 m.
5. **High-quality low-noise fan .**
6. 254 nm UV germicidal lamp with sash-open interlock; white LED task light $\geq 900 \text{ lx}$
7. **Integral universal power outlet (230 V, 6 A, IP 44 splash-proof)** on left sidewall; energised only when blower is ON.
8. Front sash: clear 5 mm acrylic, counter-balanced, alarm if raised above 200 mm.
9. Power: $230 \text{ V} \pm 10\%$, 50 Hz, single-phase, 600 W.
10. Warranty: 1 year comprehensive.

Scope of standard supply (included in base price)

1. Cabinet with HEPA & pre-filter, UV lamp, LED lamp, $\frac{1}{4}$ HP blower
2. Minihelic differential-pressure gauge
3. 3 m mains cable, MCB & surge suppressor

Inclusive accessories (bundled, non-consumable)

1. Removable 304 SS perforated work tray
2. Peddle Dustbin Round Type Stainless Steel 20 L

Starter consumable pack

1. Spare 20 W UV tube (254 nm)
2. $1 \times$ lint-free micro-fibre wiping cloth

Optional accessories / recommended spares (quote separately)

1. Replacement HEPA cartridge

2. Vertical Autoclave, semi-automatic with radial lock (1)

Technical specifications

1. Pressure vessel: $\varnothing 12 \text{ in} \times \text{H } 20 \text{ in}$ ($\approx 35 \text{ L}$) 304 SS; powder-coated MS jacket
2. Operating set-point 121°C (250°F) @ 15 psi
3. Microprocessor PID controller with cycle timer (1–9 999 min)
4. PT100 class-A temperature sensor; dual LED display (set / actual)
5. Safety: spring-loaded 15 psi relief valve, dial gauge, low-water cut-off, cycle-end buzzer
6. Warranty: 1 year

Scope of standard supply

1. Vessel with radial-locking lid & silicone gasket
2. PID controller, PT100 probe, pressure gauge & safety valve
3. Drain cock, exhaust port, electrical panel & 15 A plug
4. User manual

Inclusive accessories

1. $4 \times$ Autoclavable Test Tube Basket $160 \times 160 \times 160 \text{ mm}$
2. $3 \times$ pair 14-inch Kevlar autoclave gloves

Starter consumable pack

1. $50 \times$ Borosil scientific 25 mL culture tube with screw caps

2. 2 × Autoclavable biohazard disposable bag pack (500pc)
3. 4 × S/S TEST TUBE STAND 12 HOLE X 12 MM

Optional accessories / recommended spares

1. Replacement 15 psi relief-valve cartridge
2. PT100 probe with 3 m PTFE lead

3. Hot Air Oven (1)

Technical specifications

1. Inner chamber: 304 SS, 18 × 18 × 18 in ($\approx 460 \times 460 \times 460$ mm)
2. Exterior: powder-coated MS; 75 mm ceramic-fibre insulation
3. Temperature range: ambient + 5 °C to 200 °C; accuracy ± 1 °C
4. PID controller with dual LED; independent hydraulic over-temp thermostat
5. Magnetic reed switch alarms on door-open
6. Warranty: 1 year

Scope of standard supply

1. Oven body, two adjustable 304 SS shelves
2. Factory-installed silicone door gasket
3. 2 m power cord, maintenance manual

Inclusive accessories

1. 4 x S/S Petridish Container

Starter consumable pack

1. 10 × 90 mm anodised aluminium petri/moisture dishes

Optional accessories / recommended spares

1. Complete 3 kW heater-element set (3 × 1 kW)
2. 5 m replacement silicone gasket strip

4. BOD Shaker Incubator (1)

Technical specifications

1. Capacity 170 L (≈ 6 ft³); inner chamber 304 SS, outer body powder-coated MS
2. Temperature 5 °C – 80 °C; accuracy ± 1 °C; PID controller with dual LED display
3. Orbital shaking 50 – 250 rpm, 25 mm orbit; platform holds 16 × 250 mL flasks
4. Refrigerant R-134a; automatic defrost; noise < 60 dBA (typical)
5. Warranty 1 year

Scope of standard supply (base-price)

1. Refrigerated incubator body, PID temp controller, orbital platform 450 × 450 mm
2. Glass inner door, LED chamber lamp, mains cable, operator & IQ/OQ manuals

Inclusive accessories

1. Universal spring-clamp set (10 × 250 mL + 6 × 500 mL)
2. Chamber sampling port Ø 10 mm with silicone plug

Starter consumable pack

1. 2 MRS Agar (500g), Acetate Agar, 2 MRS Broth (500g), 2 M17 agar, peptone water (500g), Coliform Agar (500g), 100 Culture dishes (size 100 mm × 25 mm, sterile) polystyrene

Optional accessories / recommended spares (quote separately)

1. BOD Incubator Shaker Wire Mesh Tray
2. Condenser-fan motor 230 V, 14 W

5. Vortex Shaker (1)

Technical specifications

1. Variable speed 500 – 3 200 rpm; touch / continuous modes (manufacturer TARSONS)
2. Motor: brushless DC, maintenance-free; cup-head Ø 30 mm
3. Warranty 1 year

Scope of standard supply

1. Mixer base, silicone cup head, 1.8 m mains cord, quick-start guide

Inclusive accessories

1. None (all integral)

Starter consumable pack

1. 1 spare silicone cup head

6. Bench-top pH Meter (1)

Technical specifications

1. Measuring range: pH -2.00 to 16.00; mV $\pm 2\ 000$; -5 °C to 105 °C
2. Resolution: pH 0.01; mV 1; temp 0.1 °C; error ± 0.01 pH / ± 1 mV / ± 0.3 °C
3. Calibration: 5-point; four predefined buffer groups
4. Warranty 1 year

Scope of standard supply

1. pH meter with back-lit LCD, InLab electrode (pH / ATC), electrode stand
2. 100–240 V switch-mode adaptor, USB cable, PC software, user manual

Inclusive accessories

1. Electrode storage bottle pre-filled with 3 M KCl
2. Rubber sleeve for electrode holder

Starter consumable pack

1. Buffer sachets pH 4.00, 7.00, 10.00 (3 each)
2. 250 mL electrode-cleaning solution
3. Wash bottles, LDPE (5pcs)

7. Automatic Nitrogen Digestion System & Automatic Protein Distillation System (combined set, 1)

Technical specifications

1. Four-tube macro block digestion (500 mL) with microprocessor LCD control
2. Fully automatic steam distillation with programmable alkali, water & receiver dosing
3. Conforms to AOAC , EPA , DIN methods; sample mass 0.1 – 5 g
4. Warranty 1 year (each module)

Scope of standard supply

1. Graphite digestion block with auto lift & exhaust scrubber
2. Auto distillation unit with condensers, boric-acid receiver and steam generator
3. Touch HMI, fume duct, flexible water hoses, power leads, user manuals

Inclusive accessories

1. 4 heavy-wall 500 mL Kjeldahl tubes (macro)
2. 1 boric-acid receiver flask 250 mL with PTFE cap
3. 2 kVA Online UPS

Starter consumable pack

1. 30 CuSO₄ + K₂SO₄ catalyst tablets
2. 2 kg NaOH (pellets, AR)
3. 2 L boric-acid indicator solution
4. Chemical spill kit bag

5. 6 pack of Disposable Nitrile Gloves

Optional accessories / recommended spares

1. Additional 4-tube digestion insert
2. Graphite heater element set
3. Complete PTFE gasket & seal kit

8. Automatic Fat/Oil Solvent Extraction Unit (1)

Technical specifications

1. Two-sample Soxhlet system; microprocessor dual-LCD; auto time/temperature control
2. Sample mass 0.25 – 8 g; compatible AOAC & EPA protocols
3. Solvent recovery 60 – 70 %; typical extraction 40 – 60 min
4. Warranty 1 year

Scope of standard supply

1. Two-place extractor with PTFE stop-cocks, condensers, recovery tank, heaters, manuals

Inclusive accessories

1. 2 borosilicate extraction thimbles 33 × 80 mm
2. Stainless-steel sample baskets

Starter consumable pack

1. 4 disposable cellulose thimbles 33 × 80 mm
2. 3 L n-hexane (AR) supplied in safety can
3. 6 pack of Disposable Nitrile Gloves

Optional accessories / recommended spares

1. Acid-hydrolysis pre-treatment module
2. Seal / O-ring replacement kit
3. Spare glass condenser pair

9. Automatic Fibre Analysis System (1)

Technical specifications

1. Two-sample crude fibre analyser; microprocessor LCD; auto reagent sequencing
2. Handles 0.25 – 8 g; heating to 500 °C; repeatability ± 1 %
3. Warranty 1 year

Scope of standard supply

1. Two-position reflux heaters, vacuum pump, detergent/acid dosing pumps, manuals

Inclusive accessories

1. 2 reusable high-temp PTFE-lined fibre crucibles
2. Stainless-steel crucible tongs

Starter consumable pack

1. 2 L neutral detergent solution
2. 2 L acid detergent solution
3. 2 L acid wash reagent
4. 6 pack of Disposable Nitrile Gloves

10. Micro-processor Colony Counter (1)

Technical specifications

1. 6-digit bright LED read-out; pressure-sensitive plate; audible beep per count
2. Magnifier lens 3× with LED ring illumination; warranty 1 year

Scope of standard supply

1. Counter base, LED ring, magnifier, 230 V adaptor, user guide

Inclusive accessories

1. 5 Solvent-resistant glass marker pen
2. Clear acrylic dust cover

Starter consumable pack

1. 100 self-adhesive felt-tip counter tags

11. Cyclo Mixer (1)

Technical specifications

1. Circular reciprocating motion with electronic speed regulator (0 – 75 rpm)
2. Soft rubber platform pad; brushless DC drive; warranty 1 year

Scope of standard supply

1. Mixer base, pre-installed rubber pad, 1.5 m power cord, quick-start guide

12. Stomacher Microbiology Blender (1)

Technical specifications

1. LCD touch display for time, speed, temperature; speed adjustable 3 – 12 strokes s⁻¹; volume 3 – 400 mL; RPM 180 – 720
2. Toughened-glass security door; stainless-steel slap box; warranty 1 year

Scope of standard supply

1. Paddle blender, stainless bag frame, toughened-glass door, mains cable, operator manual

Inclusive accessories

1. Stainless-steel bag-rack insert

Starter consumable pack

1. 1000 sterile 400 mL blender bags

13. Quadmastest (1)

Technical specifications

1. Sensitivity: detects $\geq 200\,000$ cells mL⁻¹; accuracy 98.6 %; result < 10 s; battery-operated, reagent-free
2. Warranty 1 year

Scope of standard supply

1. Hand-held SCC meter, rechargeable battery, micro-USB charger, user guide

Inclusive accessories

1. Carrying Case

Starter consumable pack

1. Preventive, Identification and Cure Reagents for Mastitis Disease (Sample)

Optional accessories / recommended spares

1. Spare lithium-ion battery pack

14. Bacteriological Incubator (1)

Technical specifications

1. Inner chamber 4.5 ft³ (\approx 125 L) 304 SS; outer body powder-coated MS; PID control; temp ambient + 5 °C – 60 °C; accuracy \pm 1 °C; warranty 1 year

Scope of standard supply

1. Incubator cabinet, PID controller, three adjustable SS shelves, mains cable, manual

Inclusive accessories

1. 2 Autoclavable Incubation Tray

Starter consumable pack

1. 100 Petridish 80 X 15 Mm, S Line Make: Borosil
2. Parafilm M Sealing Film (2 pack)

Optional accessories / recommended spares

1. USB data-logger module
2. Heater element cartridge
3. Circulation fan motor

15. Serological Water Bath (1)

Technical specifications

1. Tank dimensions 12 in \times 10 in \times 8 in (\approx 15 L) fabricated from 304-grade stainless steel; leak-proof tig-welded seams.
2. Temperature range ambient + 5 °C to 99 °C, microprocessor PID with dual LED display; accuracy \pm 0.1 °C; stability \pm 0.2 °C.
3. Heating power 1.5 kW sheathed immersion element with PT100 sensor and over-temperature cutoff.
4. Shaking mechanism reciprocating tray, stroke length 25 mm; speed 20 – 200 oscillations min⁻¹ digitally settable; soft-start to prevent sample splash.
5. Built-in drain valve for quick water replacement; perforated diffuser plate ensures uniform temperature circulation.
6. Inner lid double-walled stainless steel with lift handle; external housing powder-coated CRCA steel.
7. Safety features : over-temperature alarm, dry-run protection, splash-proof keypad, fuse/mains isolator.
8. Warranty : 1 year comprehensive on heater, motor, and electronics.

Scope of standard supply (included in base price)

1. shaking water-bath unit complete with PID controller, digital RPM/temperature display, and factory-installed heater–circulator.
2. Stainless-steel reciprocating platform (250 mm \times 200 mm) mounted on Teflon-coated guide rods.
3. Mains cable (2 m, 15 A, 3-pin) with earthing lead.
4. Operator's manual, calibration certificate, and IQ/OQ templates.

Inclusive accessories (bundled, non-consumable)

1. Set of spring clamps to secure 12 \times 100 mL Erlenmeyer flasks on the platform.
2. Stainless-steel test-tube carrier (20 positions \times 16 mm Ø) interchangeable with flask tray.

Starter consumable pack (bundled, expendable)

1. Two stainless test-tube racks

16. Sonicator Bath (1)

Technical specifications

1. Table-top ultrasonic bath (Labtronics make) supplied for routine laboratory cleaning and cell-disruption work.
2. Warranty 1 year

Scope of standard supply

1. Stainless-steel tank (\approx 6 L) with 35 kHz transducers, digital timer (1–99 min) and heater to 80 °C,

lift-off lid, mains cable, user manual.

Inclusive accessories (bundled, non-consumable)

1. Stainless-steel mesh basket sized to the tank.
2. Wire Drying Rack
3. Four-way microtube rack (5pcs)

Starter consumable pack

1. Ten single-dose alkaline ultrasonic-cleaning powder sachets (100 g each).

17. Muffle Furnace

Technical specifications

1. Chamber $5 \times 5 \times 10$ in; outer body powder-coated MS with high-density ceramic-fibre insulation.
2. Kanthal A-1 heating elements; micro-PID controller; temperature ambient + 10 °C → 900 °C, accuracy ± 1 °C .
3. Warranty 1 year.

Scope of standard supply

1. Furnace, programmable controller, K-type thermocouple, power cord and operation manual.

Inclusive accessories

1. S/S Crucible Tongs 24" Victor for Muffle Furnace;
1. Pair of heat-proof gloves.

Starter consumable pack

1. 10 porcelain crucibles (30 mL).
2. 3 borosilicate glass vacuum desiccators with ceramic plates.

18. Automatic Karl Fischer Titrator (1)

Technical specifications

1. Microprocessor-controlled volumetric KF titrator with magnetic stirring; 5-port reaction vessel .
2. Supplied electrode: 2-pin Pt (QR 411X); syringe drive 10 mL; moisture filter and stand included.
3. Warranty 1 year.

Scope of standard supply

1. Titration unit, 10 mL syringe set, Pt electrode, three 5-port reaction vessels (KS 161201), moisture filter, mounting stand, cables, manuals.

Inclusive accessories

1. Three glass dispensing tips; PTFE stir bar.

Starter consumable pack

1. 500 mL methanol-based KF solvent.
2. 500 mL 5 mg H₂O mL⁻¹ KF reagent.

19. Portable Water Activity Meter (1)

Technical specifications

1. Measurement range 0.00 – 0.97 aw; accuracy ± 0.008 aw @ 23 °C; sensor HygroMer WA-1 / Pt-100 .
2. USB-powered probe with 3 m lead; RH accuracy ± 0.8 %RH; temp accuracy ± 0.1 K.
3. Warranty 1 year.

Scope of standard supply

1. Hand-held probe, USB cable, HW4 software licence, factory calibration certificate, user guide.

Inclusive accessories

1. Redox Filter.

Starter consumable pack

1. Five sample dishes (Ø 53 mm).

20. UV-Visible Spectrophotometer, double-beam (1)

Technical specifications

1. Wavelength range 190 – 1100 nm; fixed 2 nm bandwidth; wavelength accuracy ± 0.5 nm; stray light ≤ 0.05 %T .
2. Double-beam optics with deuterium & tungsten lamps; sealed holographic 1200 lines mm⁻¹ grating; micro-controller with standard software.
3. Warranty 1 year.

Scope of standard supply

1. Spectrophotometer, power cord, standard software, USB cable, manuals.

Inclusive accessories

1. Four 10 mm quartz cuvettes; fitted dust cover.
2. 2 kVA Online UPS

Starter consumable pack

1. Wash bottles, LDPE (5pcs)

21. Magnetic Stirrer with Hot Plate (1)

Technical specifications

1. Ceramic-coated top plate 180 × 180 mm; chemical-resistant finish.
2. Stirring capacity 5 L (H₂O); speed range 100 – 1500 rpm (stepless).
3. Heating range ambient + 5 °C → 340 °C; integrated PID feedback loop.
4. Brushless DC drive for silent, maintenance-free operation.
5. Warranty 1 year

Scope of standard supply

1. Stirrer-hot-plate base unit, PT100 temperature probe with 1.5 m silicone lead, 2 m mains cable and operator manual.

Inclusive accessories (bundled, non-consumable)

1. One 30 mm PTFE-coated magnetic stir bar.

Starter consumable pack

1. Ten assorted PTFE stir bars (20, 25, 30 mm).

22. Bottle-top Dispenser with Spring-Less Valve Technology (1)

Technical specifications

1. Volume range 1 – 10 mL with 0.2 mL increments.
2. Accuracy ≤ 0.5 % at full stroke; CV ≤ 0.1 % (full) .
3. Chemically inert PTFE piston, borosilicate barrel; 360° swivel.
4. Warranty 1 year

Scope of standard supply

1. Dispenser body, spring-less valve, threaded adapters (28, 32, 38, 45 mm), calibration certificate, user guide.

Inclusive accessories

1. Recirculation valve and inlet tube (factory-fitted).

Starter consumable pack

1. None supplied.

Optional accessories / recommended spares

1. Piston-seal replacement kit.
2. In-line PTFE filter module.
3. Amber light-shield sleeve for light-sensitive reagents.

23. Precision Balance (1)

Technical specifications

1. Maximum capacity 220 g; readability 0.1 mg; repeatability 0.1 mg.
2. Linearity ± 0.2 mg; pan \varnothing 90 mm; fully automatic internal calibration.
3. RS-232 output; back-lit LCD; overload protection; warranty 1 year .

Scope of standard supply

1. Balance with glass draft-shield, AC adaptor, RS-232 cable, user manual.

Inclusive accessories

1. Anti-static brush; dust cover.

Starter consumable pack

1. 500 HDPE square weighing boats (70 \times 70 mm) .
2. Micro spoon and spatula weighing set (pack of 5)

24. Fixed-volume Pipettes, assorted sizes – total 57 pieces (1 ml \times 27, 200 μ l \times 10, 50 μ l \times 10, 10 μ l \times 10)

Technical specifications

1. Fixed volumes supplied: 5 μ L, 10 μ L, 50 μ L, 200 μ L, 1 000 μ L .

Scope of standard supply

1. Pipettes

Inclusive accessories

1. Colour-coded shelf clips for quick identification.

Starter consumable pack

1. One tip box and tips pack for each size

25. Starter Kit with 3 variable-volume Pipettes (3 kits)

Technical specifications

1. Volumes supplied: 0.5 – 10 μ L, 10 – 100 μ L, 100 – 1 000 μ L (fully autoclavable upper body).
2. Warranty 2 years (manufacturer's standard for complete kit).

Scope of standard supply

1. Three variable-volume pipettes, universal bench-top stand, individual QC/calibration certificates, operating manuals.

Inclusive accessories

1. Colour-coded plungers and identification rings pre-installed.

Starter consumable pack

1. Three tip boxes (racked & sterile) plus three refill tip packets.

Optional accessories / recommended spares

1. Seal-and-piston maintenance kits (three sizes).
2. Additional universal pipette stand (5-place).
3. Calibration test weights 0.5 mg \rightarrow 1 g set.

26. Portable pH Meter (1)

Technical specifications

1. Measuring range pH 2-12

Scope of standard supply

1. Hand-held pHmeter,

27. Digital Cooking Oil Tester (1)

Technical specifications

1. Measurement range: Total Polar Materials (TPM) 0 – 40 %; accuracy ± 2 %.
2. Simultaneous temperature display 40 °C → 200 °C; automatic temperature compensation.
3. Food-grade 316 SS probe, IP 65 housing; Bluetooth® data export.
4. Warranty 1 year.

Scope of standard supply

1. Hand-held probe device, silicone protective sleeve, Li-ion battery, USB charger, quick guide.

28. Electrophoresis Power Supply (1)

Technical specifications

1. Output range 10 – 300 V DC; 1 – 400 mA; 120 W max.
2. Safety: no-load detection, overload & short-circuit protection, auto ground-leak shutdown.
3. Warranty 1 year.

Scope of standard supply

1. Power supply unit, detachable red/black output leads (1 m), 2 m mains cord, user manual.

29 Vertical Electrophoresis System (1)

Technical specifications

1. Gel size 10 × 10 cm; twin plate; buffer volume < 700 mL.
2. Leak-proof silicone gasket; casting in stand-up mode; run up to two gels simultaneously.
3. Warranty 1 year.

Scope of standard supply

1. Buffer tank, safety-lid with leads, casting stand, 2 × glass plate sets (plain & notched), 2 combs (10-well & 15-well), spacer set, user guide.

30 Binocular Microscope (1)

Technical specifications

1. Optical system: Infinity-corrected achromat objectives 4× / 10× / 40× / 100× (oil); widefield 10×/18 mm eyepieces.
2. Coaxial coarse/fine focus (fine pitch 2 µm); mechanical stage 140 × 132 mm; travel 76 × 30 mm.
3. Illumination: 3 W LED, 20 000 h life, variable intensity; Abbe condenser N.A. 1.25 with iris.
4. Warranty 1 year.

Scope of standard supply

1. Microscope body with objectives and eyepieces installed, power adaptor, immersion-oil vial, user manual.

Inclusive accessories

1. Vinyl dust cover; pair of stage clip guards.

Starter consumable pack

1. Lens-clean tissue booklet (100 sheets).
2. Gram staining kit
3. Slidebox

31. Bench-top Centrifuge with rotors (12 × 15 ml and 24 × 1.5 ml) (1)

Technical specifications

1. Maximum speed 17 300 rpm ($\approx 29\,000 \times g$ RCF) with brushless induction drive
2. Digital TFT controller, 1–99-min timer, 99 program memory, imbalance & overspeed detection
3. Noise level < 60 dB (A) at max speed; automatic lid-lock; stainless-steel guard bowl
4. Supplied rotors: fixed-angle 12×15 mL (15 mm \times 120 mm) and fixed-angle 24×1.5 mL (11 mm \times 38 mm)
5. Electrical 230 V \pm 10 %, 50 Hz, single phase; power \leq 750 W
6. Warranty 1 year

Scope of standard supply (base-price)

1. Centrifuge base unit with digital controller and refrigeration-grade brushless motor
2. Two fixed-angle rotors (12×15 mL & 24×1.5 mL) complete with anodised-aluminium buckets and screw caps
3. Tool-free rotor key, 2 m mains cable, printed operator manual and IQ/OQ documents

Inclusive accessories (bundled, non-consumable)

1. Set of anti-vibration rubber mounting feet (factory-fitted)
2. Rotor lid O-rings installed on both rotors

Starter consumable pack

1. 1 000 polypropylene micro-centrifuge tubes 1.5 mL,
2. 1 000 conical centrifuge tubes 15 mL, screw-cap