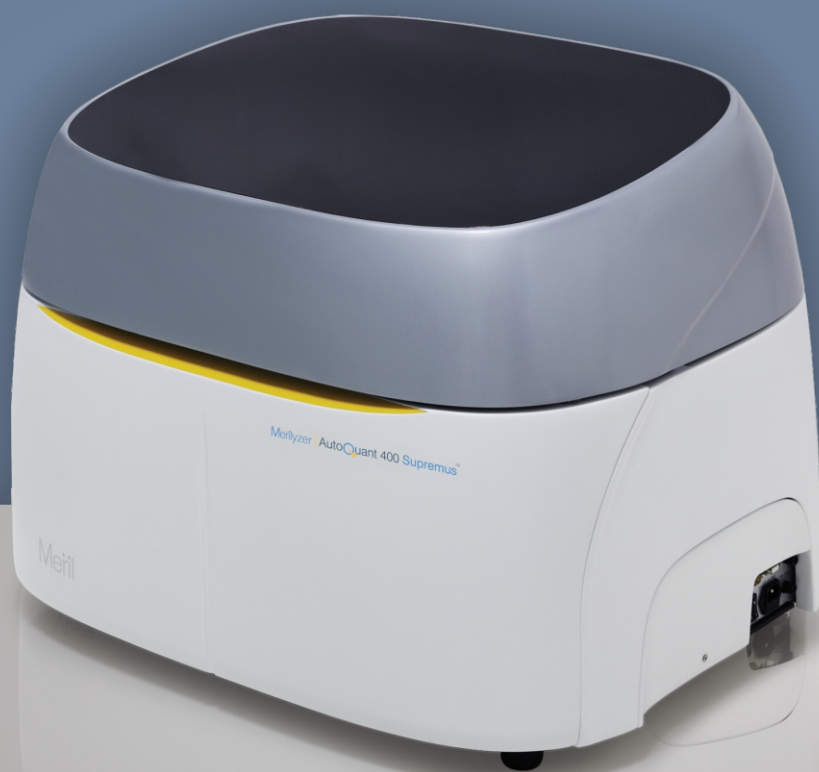


A Stand Alone Biochemistry Analyzer

Merilyzer | AutoQuant 400ⁱ™ / AutoQuant 400 Supremus™



Meril understands that Laboratories now desire end to end solutions like closed system reagents with calibrators and controls, viable software & much more. To meet the demand Meril has introduced next-generation automated biochemistry system to meet the needs of high-end laboratories. It's a proud moment for Meril to launch a random access, Fully automated biochemistry analyzer of 400 tests/hour throughput, a masterpiece in itself. Merilyzer AutoQuant 400i™ / AutoQuant 400 Supremus™ is capable of handling a workload of a medium to high, throughput laboratory with a promise to provide cost-effective solutions for day-to-day as well as specific testing parameters.

Reagent & Sample Tray

- 60 (R1 & R2) refrigerated Reagent positions & 75 sampling position
- Reagent & Sample positions are bar code enabled
- Detachable Reagent Tray
- Peltier based cooling system to maintain temperature between 8 to 12 °C
- 70 ml R1 & 20 ml R2 Reagent bottles with dead volume of 2 ml for R1 & 0.750 ml for R2
- Primary tubes & samples cups can be used
- Continuous loading
- STAT/controls/calibrators can be placed at any position

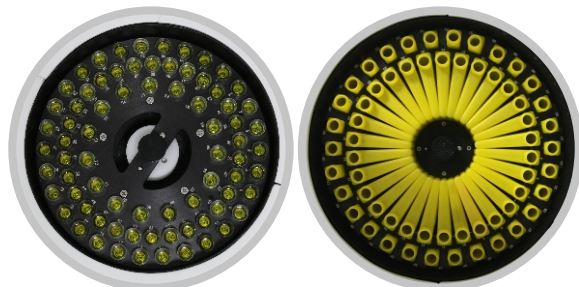


Figure. 1

Sample probe, Reagent probe & Stirrer

- Hydrophobic probes which prevents cross contamination
- Separate probes for R1, R2 & Sample
- Capacitive level detection
- External & Internal washing with de-ionized water
- Vertical and horizontal obstruction detection facility to prevent probe crash
- Long life pipetting system with plunger driven by precised stepper motor

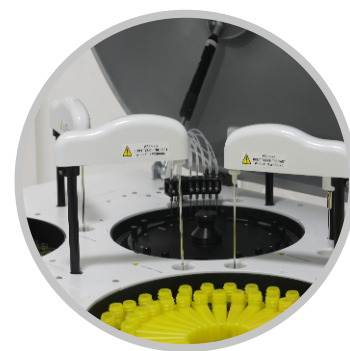


Figure. 2

Reaction & Optical System Unit

- 80 discrete, dismountable, easily replaceable and reusable cuvettes with 6 mm optical path
- Cuvette material which ensures high transmittance with long life of 18 months
- 7-step on board washing, carry over < 1%
- Continuous cuvette blank checking, if blank exceeds the limit, cuvette is skipped automatically by system
- Water consumption of 9 litres/hour

Software

- User friendly software
- Online curve for all types of chemistries
- User defined reflex action ensures time management
- Pre-dilution & Auto-dilution facility
- Real Time online monitoring for running status of
 - Sample tray
 - Reagent tray
 - Reaction cuvette
 - Reagent inventory

Cooling System for Peltier

- Water based cooling system for peltier
- Prolongs the life of peltier
- Reduces the internal heat dissipation of instrument
- Ensures high onboard stability of Reagents
- Reduce the electronic breakdown

A Stand Alone Biochemistry Analyzer



- **Accuracy:**
On board cooling and On board laundry system
Option of three different wash for forbidden pairs to minimize the carry over
- **High Precision:**
Merit cutting edge technology for volume measurement by ceramic block piston
- **Flexibility:**
Processing of emergency samples can be dealt on priority with STAT function
- **Efficiency:**
Separate probes for Reagent 1, Reagent 2 & Sample to optimize the total TAT for testing
- **Smart Management:**
2 stirrers for mixing, probes with Liquid level sensor, Obstruction detection/Auto-dilution facility for range over samples
- **Ease of Operation:**
Windows based software, compact design

Biochemistry Reagents

| Mat Code | Material Description | Pack Size(ml) |
|-----------|--------------------------|----------------------|
| ALBAQ4-01 | ALBUMIN | 6 x 50 |
| AMYAQ4-01 | AMYLASE | 6 x 20 |
| ALPAQ4-01 | ALKALINE PHOSPHATASE | 6 x 20 |
| GPTAQ4-01 | ALAT (GPT) | 4 x 60 / 4 x 15 |
| GOTAQ4-01 | ASAT(GOT) | 4 x 60 / 4 x 15 |
| BITAQ4-01 | BILIRUBIN TOTAL | 4 x 45 / 4 x 15 |
| BIDAQ4-01 | BILIRUBIN DIRECT | 4 x 45 / 4 x 15 |
| CAAAQ4-01 | CALCIUM (A) | 4 x 20 |
| CREAQ4-01 | CREATININE | 4 x 60 / 4 x 15 |
| CKNAQ4-01 | CREATINE KINASE NAC | 4 x 60 / 4 x 15 |
| CKMAQ4-01 | CREATINE KINASE MB | 4 x 60 / 4 x 15 |
| CHOAQ4-01 | CHOLESTEROL | 6 x 70 |
| HDLAQ4-01 | HDL CHOLESTEROL (Direct) | 4 x 45 / 4 x 15 |
| LDLAQ4-01 | LDL CHOLESTEROL (Direct) | 4 x 45 / 4 x 15 |
| CHDAQ4-01 | CHLORIDE | 6 x 20 |
| GGTAQ4-01 | g-GLUTAMYL TRANSFERASE | 2 x 60 / 2 x 15 |
| GLUAQ4-01 | GLUCOSE | 6 x 70 |
| LDHAQ4-01 | LACTATEDEHYDROGENASE | 2 x 60 / 2 x 15 |
| MAGAQ4-01 | MAGNESIUM | 4 x 20 |
| PHOAQ4-01 | PHOSPHORUS | 6 x 20 |
| TPRAQ4-01 | TOTAL PROTEIN | 6 x 20 |
| MTPAQ4-01 | MICROPROTEIN | 6 x 20 |
| TRGAQ4-01 | TRIGLYCERIDE | 6 x 70 |
| URCAQ4-01 | URIC ACID | 4 x 50 |
| UREAQ4-01 | UREA | 4 x 60 / 4 x 15 |
| MALAQ4-01 | MICRO ALBUMIN | 2 x 40 / 2 x 10 |
| CRPAQ4-01 | CRP | 2 x 40 / 2 x 10 |
| LIPAQ4-01 | LIPASE | 2 x 20 / 2 x 12 |
| HBAAQ4-01 | HbA1c | 2x33/2x14/2x80/4x0.5 |

Technical Specifications

Throughput 400 test / hour Photometry With ISE 520 / test hour (Optional)

Sampling Unit

| | |
|------------------------|--|
| System Type: | Turn Table type tray |
| Sample positions: | 75 positions |
| STAT samples: | Any free position |
| Sampling: | Sample volume: 2-75 μl (0.1 μl steps); Sample replication possible for same test |
| Sampling probe: | Micro-pipette with level sensor; External & Internal washing with de-ionized water Equipped with Vertical & Horizontal obstruction detection facility |
| Rerun: | Execution by repeat run list or auto execution |
| Sample dilution: | Dilution ratio: 2X to 40X |
| Sample identification: | Barcoded for sample details and position |

Reagent Unit

| | |
|-------------------------|--|
| Type: | Turn table type tray |
| Reagent tray: | 60 positions for R ₁ & R ₂ |
| Reagent cooling: | 16°C below ambient (cooled with refrigeration unit) |
| Reagent probe: | Micro-pipette with level sensor; Washing solution: external & internal washing with de-ionized water Equipped with Vertical & Horizontal obstruction detection facility |
| Reagent volume: | Reagent 1: 180 – 350 μl (adjustable in 1 μl steps); Reagent 2: 0, or 10 – 200 μl (adjustable in 1 μl step) |
| Mixing: | Electro polished Stirrer |
| Reagent identification: | Position ID; Barcode Identification for reagents |
| Carry over actions: | Wash with System Water/ Select Reagent/ Wash Solution |

Reaction Unit:

| | |
|-----------------------|---|
| Type: | Turn Table |
| Reaction tray: | 80 Reaction Cuvettes |
| Reaction temperature: | 37 \pm 0.2°C |
| Reaction Time: | 30-600 seconds |
| Cuvettes: | 80 Semi Disposable Cuvettes; Optical path length: 6.0 mm; Reaction volume: 180 μl to 550 μl |

Optical System:

| | |
|----------------------|---|
| System: | Multiple wavelength, Post Spectrometer with Fiber optics cable & sealed filters, maintenance free |
| Light source: | Halogen Tungsten lamp |
| Linearity: | 0 to 3.0 |
| Diffraction Grating: | 12 Wavelengths |

Calibration & Quality Control:

| | |
|--------------------|---|
| Calibration: | Maximum 20 calibrators; 6 calibrators maximum per Chemistry One point to multipoint calibration possible with serial dilution for concentrated calibrator |
| Calibration curve: | K-Factor, Linear (one, two point and multipoint), Logit-log, Spline, Exponential, Polynomial Multipoint curves for up to 6 points |
| Quality control: | Within day as well as day-to-day X and X-R control diagram (L-J Graphs) Real time quality control based on Multi-rule method Mean, SD, %CV, R calculated for all parameters for sample replicates |

Process Management:

| | |
|------------------------|--|
| Reflex: | Reflex pair can be programmed by defining panic ranges |
| Monitor function | Offline / Online Reaction curve, Calibration curve and Operation status display Real Time Operation Status |
| Data storage capacity: | Test results: 1,000,000; Reaction curve: 40,000 tests |
| Report / list format: | Unique Alphanumeric patient id; Report generation: Patient wise, Test wise, Date wise, Doctor / Hospital wise Financial statistics to know reagent consumption based on tests and also price for each test |
| Alarms: | Sample / Reagent depleted, low DI water level and Waste container full Detergent level low and bio-hazard container full; Prompts on display with audible alarm |
| Water Supply: | Approximately 6-8 litres / hour (De-ionized water) |

Working Condition:

| | |
|--------------------|--|
| Power supply: | 110/220 VAC, 50/60 Hz (Max. Power 250 W) |
| Temperature: | 15 – 30 °C variation during operation: less than \pm 2 °C per hour |
| Relative humidity: | 40 – 80% free from water dew formation |
| Dimensions: | 770 (W) x 640 (D) x 600 (H) |
| Weight: | Approximately 75 kg |

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