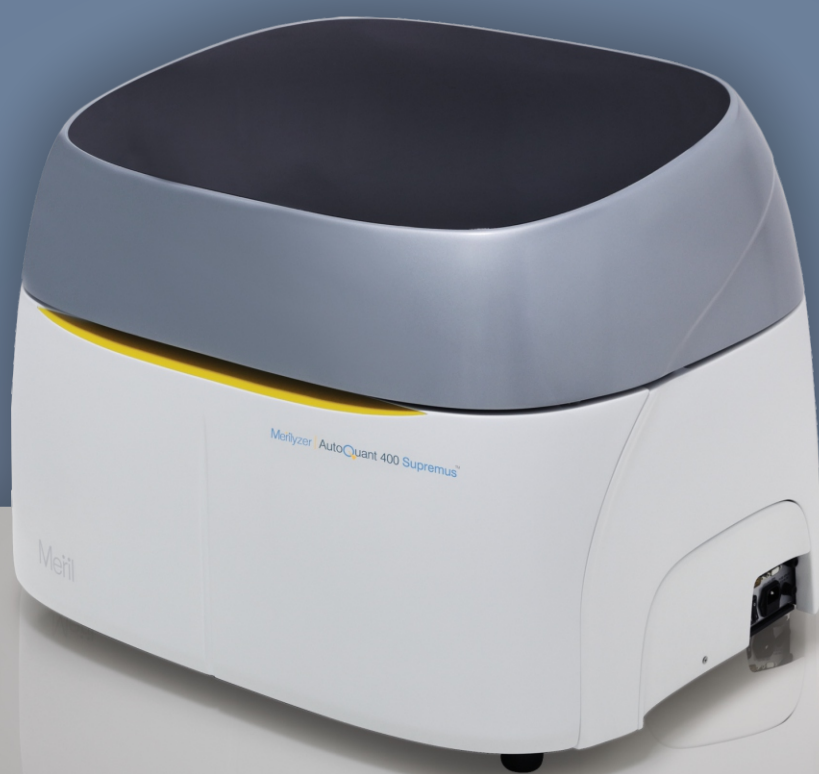


A Stand Alone Biochemistry Analyzer

Merilyzer | AutoQuant 400ⁱ™ / AutoQuant 400 Supremus[™]



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

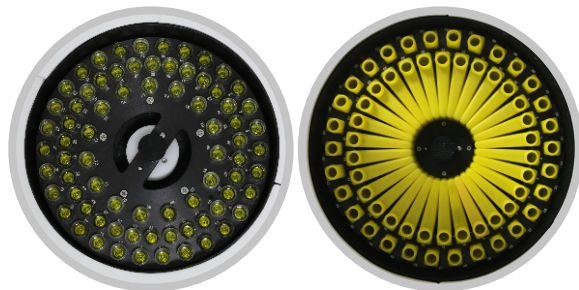


Figure. 1

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

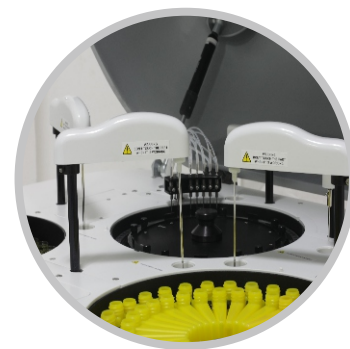


Figure. 2

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:

Meril 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 μ l (0.1 μ l 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 μ l (adjustable in 1 μ l steps); Reagent 2: 0, or 10 – 200 μ l (adjustable in 1 μ l 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 μ l to 550 μ l

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
Diffracting 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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