

# A Stand Alone Biochemistry Analyzer

Merilyzer

AutoQuant 400*i*<sup>TM</sup>  
VET



IVD

# Merilyzer | AutoQuant 400i<sup>TM</sup> VET

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. AutoQuant 400i<sup>TM</sup> 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 & 750  $\mu$ l for R2
- Primary tubes & samples cups can be used
- Continuous loading
- STAT/Controls/Calibrators can be placed at any position

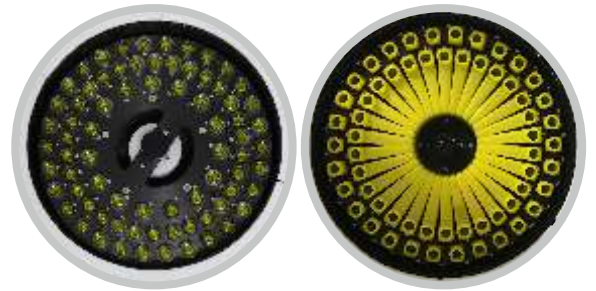


Figure. 1

## Sample, 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
- Two Micro coated stand alone stirrer



Figure. 2

## Reaction & Optical System Unit

- 80 discrete, dismountable, easily replaceable and reusable cuvettes with 6 mm optical path
- COP material which ensures high transmittance with long life of 18 months
- 7-step on board washing with detergent wash
- Alkali & hot water wash of cuvettes, carry over < 1%
- Continuous cuvette blank checking, if blank exceeds the limit, cuvette is skipped automatically by system
- Low water consumption of 8-10 litres/hour
- Cycle time: 9 secs

- Halogen Tungsten lamp, with fibre optics
- Silicon photo-diode detector
- Linearity is 3.0
- Photometric system of static filters with total 9 filters (340, 405, 450, 510, 546, 578, 620, 670, 700 nm)



Figure. 3

## 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
- 10-12° below ambient temperature



Figure. 4

## 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



Figure. 5

## A Stand Alone Biochemistry Analyzer



- Throughput: Up to 400 Tests / hour for double reagents & Up to 530 Tests / hour with ISE (Optional)
- Up to 427 Tests / hour for single reagents
- Analysis Modes: End Point, Fixed Time (2-point), Kinetic Rate-A, Kinetic Rate-B
- Measurement Principles: Colorimetric (Rate & End point), Turbidimetry Immunoassay, Ion Selective Electrode (Optional)
- Facility of STAT function from any free position
- 75 Sample Positions with barcode identification
- 60 Reagent position for R1:R2(30 position for 70ml bottle and 30 position for 20ml bottle)
- Two Reagent Probes and 1 Sample Probe
- 80 Semi Disposable Cuvettes
- 9 Static Filters (340, 405, 450, 510, 546, 578, 620, 670, 700 nm)
- User defined Reflex Testing
- 7-step Laundry System
- Low water consumption of 8-10 litres per hour
- Detachable reagent and sample tray
- Long Life maintenance free syringe

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

<b>Throughput</b>	Double Reagent : 400 Tests / hour Single Reagent : 427 Tests / hour With ISE (Optional) : Max 530 Test / hour
<b>Sampling Unit</b>	Turn table type tray 75 positions At any free position Sample volume: 2-50 $\mu$ l ( 0.1 $\mu$ l step); Sample replication is possible for same test Micro-pipette with level sensor; External & Internal washing with de-ionized water Equipped with vertical & horizontal obstruction detection facility Re-run Execution by repeat run list or auto execution Sample dilution Dilution ratio: 2 to 40
<b>Reagent Unit</b>	Turn table type tray 60 positions for R1 & R2 16°C below ambient temperature by peltier 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 $\mu$ l (adjustable in 1 $\mu$ l step); Reagent 2: 0, or 10 – 200 $\mu$ l (adjustable in 1 $\mu$ l step) Mixing Micro Coated Stirrer Reagent identification Position ID; Bar code Identification for reagents Carry over actions Wash with system water/reagent/wash solution
<b>Reaction Unit</b>	Turn table 80 reaction cuvettes 37 $\pm$ 0.2 °C 30 – 600 seconds 80 Semi Disposable Cuvettes; Optical path length: 6.0 mm; Reaction volume: 180 $\mu$ l to 550 $\mu$ l
<b>Optical System</b>	Photometry Halogen Tungsten lamp Total 9 filters (340, 405, 450, 510, 546, 578, 620, 670, 700 nm), Grating (Optional) 0 - 3.0 Abs 0.0001 Abs
<b>Calibration &amp; Quality Control</b>	K-Factor, Linear (one, two and multi point), Logit-log, Spline, Exponential, Polynomial (second, third and fourth order) Multipoint curves for up to 6 points execution by repeat run list or auto execution Auto execution according to abnormal marking or range over 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
<b>Process Management</b>	Reflex pair can be programmed by defining panic ranges Offline / Online reaction curve, calibration curve and operation status display real time operation status Test results: Unlimited 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 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 Approximately 8-10 litres / hour ( De-ionized water)
<b>Working Condition</b>	110/220 VAC, 50/60 Hz ( Max. Power 250W) 15 - 30°C variation during operation 40 - 80% free from water dew formation 770 (W) x 640 (D) x 600 (H) Approximately 75 kg
<b>Mat Code</b>	FAAAQ4-01 (Without ISE), FAAAQ4-05 (With ISE)



 **Meril Veterinary**

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