

# Technical Specifications



**AGAPPE**  
YOUR BEST PARTNER IN DIAGNOSTICS

<b>System Function</b>	
Description	Fully automated, discrete, random access clinical chemistry analyzer
Throughput	Up to 400 tests/hour
Measuring Principles	Spectrophotometry
Methodology	End-point, Fixed-time, Kinetic, Single/Dual reagent chemistries, Mono-chromatic/Bi-chromatic, Linear/Non-Linear multipoint calibration
Photometry System	HCFG rear spectrophotometry
<b>Optical System</b>	
Light Source	12V/20W, Quartz halogen lamp with hydro cooling system
Monochromator	Grating Photometry
Wavelength	340nm, 380nm, 405nm, 450nm, 480nm, 505nm, 546nm, 570nm, 600nm, 660nm, 700nm, 750 or 800nm
OD Linear Range	0-3.3Abs
Detector	Photo-diode LED array
<b>Reagent Handling</b>	
Reagent Probe	2, with liquid level detection and collision protection function
Reagent Volume	20ul-350ul, 0.1ul stepping
Reagent Position	double reagent disk, 45x2, Continuous 5-15° C 24 hrs, 70ml & 20ml bottle
Reagent Barcode	code128
Reagent Probe Carrying Rate	≤0.1%, automatic warm water cleaning
<b>Sample Handling</b>	
Sample Volume	2ul-35ul, 0.1ul stepping
Sample Position	115, including 50 routine sample positions, 20 STAT positions, 34 Calibration positions, 8 QC positions, 3 detergent positions, Continuously cooling to keep 5-15° C 24 hrs
Sample Barcode	12of5, code128, code39, UPC/EAN, code93
Sample Probe Carrying Rate	≤ 0.1%, automatic warm water cleaning
Sample Cuvettes Specification	Standard cup, original blood tube, multi-specification tube available (12-16)mm X (25-100)mm
Sample Dilution	3-170 times, Automatic
Sampling Technology	Liquid level detection, Collision protection, Clot detection and reverse washing
<b>Reaction System</b>	
Reaction Rotar	Rotating tray, containing 120 cuvettes (1 set 20 pieces)
Reaction Cuvette	Optical diameter of 6mm
Reaction Volume	150ul-450ul
Reaction Temperature	37° C, ± 0.1° C
Reaction Disk Constant Temperature	Circulating water
Mixing System	Duo stirrer with triple speed mechanism
Laundry System	Adopting 7 stops, 11 steps with warm water rinsing
Waste Water Treatment	Two diffuence for high & low concentration waste water with concentrated waste liquid level alarming
<b>Calibration and QC</b>	
Calibration Method	Linear (one-point, two-point, multi-point), Non-linear method
Calibration Tracking	Automatic description of calibration K-value trends
QC Method	real time, individual, monthly
Parabola Control Rules	Westgard multi-rule, L-J Chart
<b>Operation Unit</b>	
PC Operating System	Windows XP
PC Configuration	CPU > 2.8 Ghz (dual core processor), Memory ≥ 1 GB; Hard-disk > 160 GB
System Connection	TCP/IP network connection, standard RS-232C and USB interface
<b>Working Conditions</b>	
Power Supply	VAC 220V±22V   50/60 Hz   Power 2KVA
Ambient Temperature	10-25° C
Relative Humidity	40% - 85%
Water Consumption	25L/hour
Dimension	1060x790x1150 mm (LxWxH)
Weight	Approx. 300 Kg

ISO 9001:2015 | EN ISO 13485:2016

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YOUR BEST PARTNER IN DIAGNOSTICS



**MISPA CX4**

Fully Automatic Clinical Chemistry Analyser

YOUR BEST PARTNER IN DIAGNOSTICS

ADL/BR/Clinia+/R00-10/19 Company reserves the right to change any design and technical features of the product at any time, if needed.

# MISPA CX4

Fully Automatic Clinical Chemistry Analyser

PRODUCT DESCRIPTION

Mispa CX4 is a fully automated random access clinical chemistry analyzer with throughput of 400 tests per hour, specially designed to meet uninterrupted workflow offering maximum efficacy, with its epitome of perfection. Mispa CX4 is an ideal choice for medium and big sized laboratories, by offering guaranteed test result accuracy, consolidated opportunities and cost savings with its efficient platform to access wide range of chemistry and protein parameters.

EMPOWER YOUR LABORATORY

SPEED

400

THROUGHPUT



PERFECTION & RELIABILITY

# MISPA CX4

Fully Automatic Clinical Chemistry Analyser

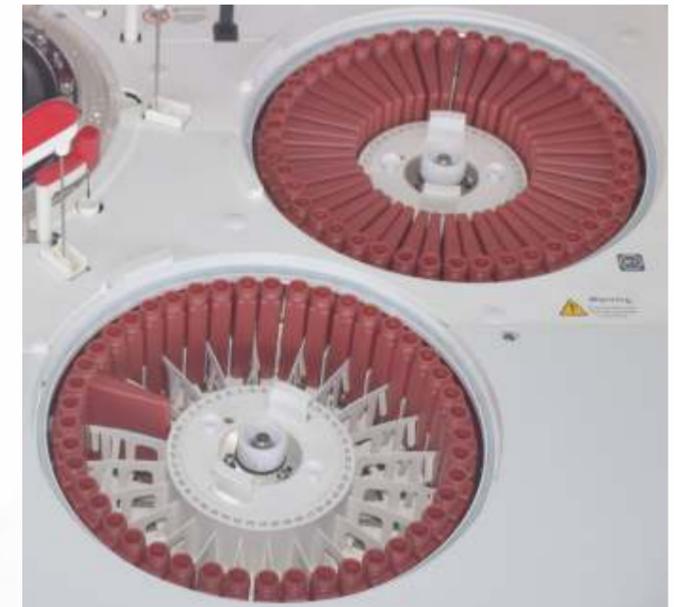
## SAMPLE/REAGENT PIPETTING MECHANISM

- **Trilateral Probe:-** One for sample and two for reagent. The probes are 60nm polished with nano processing technology which effectively reduces cross contamination chances. Probes are crafted with collision protection function, self-resetting, auto re-pipetting sample and reagent
- **Automatic Liquid Level Detection:-** The probes are designed perfectly to detect liquid level automatically, ensuring perfect depth and reduces carryover on probe surface.
- **Stand-alone syringes:-** 3 stand-alone syringes, one for sample and two for reagents. The syringes are made of long life high-precision ceramic piston ensures high precision of sampling.
- **Intelligent CDRW facility:-** Pipetting tube has inbuilt pressure sensor to perfectly detect the clot status. The tube contains high pressure rinsing function to remove and clean the clot, which ensures the pipetting volume accuracy. This process is called CDRW "Clot Detection & Reverse Washing".
- **Water Degassing technology:-** The analyzer has special degassing device to remove the air dissolved in the tube system for perfect pipetting.
- **Probe Washing:-** High pressure rinsing for internal wall and waterfall washing for external wall, thus ensures minimal carryover for sample disk spinning can ensure the safety of inputting sample at any point of time.



## REFRIGERATED DOUBLE REAGENT DISKS

- Double discs with 90 positions (45 positions each), including 2 detergent positions, 88 reagent position. Each reagent position can load/accommodate 70ml or 20 ml reagent bottle
- Reagent quality is secured through continuous cooling condition of the reagent disk
- One reagent, two reagent and up to four reagents testing (R1,R2,R3,R4) functions enable multiple testing items to satisfy the future requirements.



## MULTI-FUNCTION REFRIGERATED SAMPLE DISK

- Total 115 positions including 50 routine sample positions, 20 STAT positions, 34 Calibration positions, 8 QC positions, 3 detergent positions.
- QC & Calibration position maintains 5 to 15° C for 24 hours. The whole disk can be easily replaced with handle.
- Supports various tubes and trace samples cup specification
- The LED indicator for sample disk spinning can ensure the safety of inputting sample at any point of time.

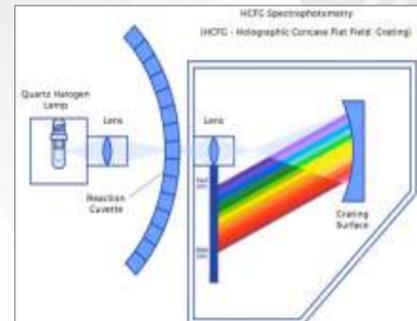


# MISPA CX4

Fully Automatic Clinical Chemistry Analyser

## PROVEN HCFG PHOTOMETRY SYSTEM

- Monochromator with holographic concave flat field grating (HCFG), rear spectrophotometric 12 ways parallel measuring technology, reduces ambient light interferences to get accurate result.
- Photospot technology to reach super micro analysis.
- Hydro cooling method for long lamp life.
- Specially designed lamp placement to reduce signal attenuation and interference.
- 12 ways photodiode array detector, 12 ways high dynamic range logarithmic amplifier with range of 6Abs without distortion, ensures high concentration sample testing without data overflow.

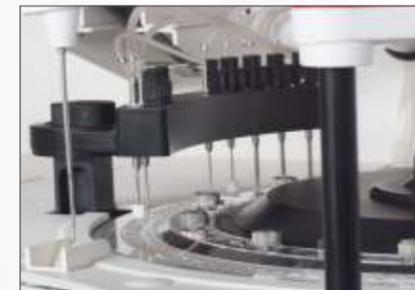


## DUO STIRRER WITH TRIPLE SPEED MECHANISM

- Dedicated 2 stirrer system confirms perfect mixing
- Triple speed mixing mechanism is highly efficient for latex based assays
- Stirrers are Teflon coated, to avoid liquid suspension and reduce cross contamination
- Flat paddle stirrer design with swirl rinsing offers homogeneous mixing
- Enhanced durability due to minimal maintenance

## CONSTANT TEMPERATURE REACTION CUVETTES

- Adopts a recycling water constant temperature device
- Automatically changing water and adding de-foamer
- Reaction cuvette is immersed into warm circulating water which heats the cup evenly and condenses ambient temperature stimulus
- PID thermostat technology to ensure temperature of  $37 \pm 0.1^\circ \text{C}$



## EFFICIENT LAUNDRY SYSTEM

- Laundry system adopting 7 stops, 11 steps
- Twin dryers offer best reproducibility with minimal carryover
- Vacuum draining liquid, detergent and warm water rinsing ensures guaranteed accuracy
- Water consumption of 25 L/hour

**TIMING BEATS SPEED... PRECISION BEATS POWER...**

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Fully Automatic Clinical Chemistry Analyser

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Trilateral Probe System



Duo Stirrer with triple speed mechanism



Hydro cooling method



Efficient laundry system with twin dryers



Dual Switch operation



Waterfall washing

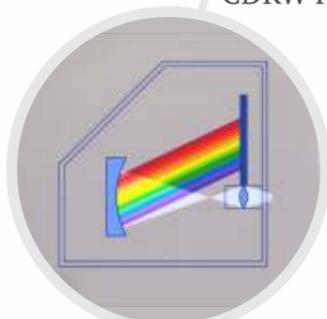


Robust Software with multiple self monitoring function



Intelligent CDRW Facility

**400**  
Throughput



Proven HCFG System

**Grating**  
Photometry

**EPITOME OF PERFECTION**



**REAGENT**  
90 Positions  
Bi-Lateral Probe  
Volume 20~350 U1

**SAMPLE**  
115 Positions  
3~170 Times Dilution  
Volume 2~35 U1

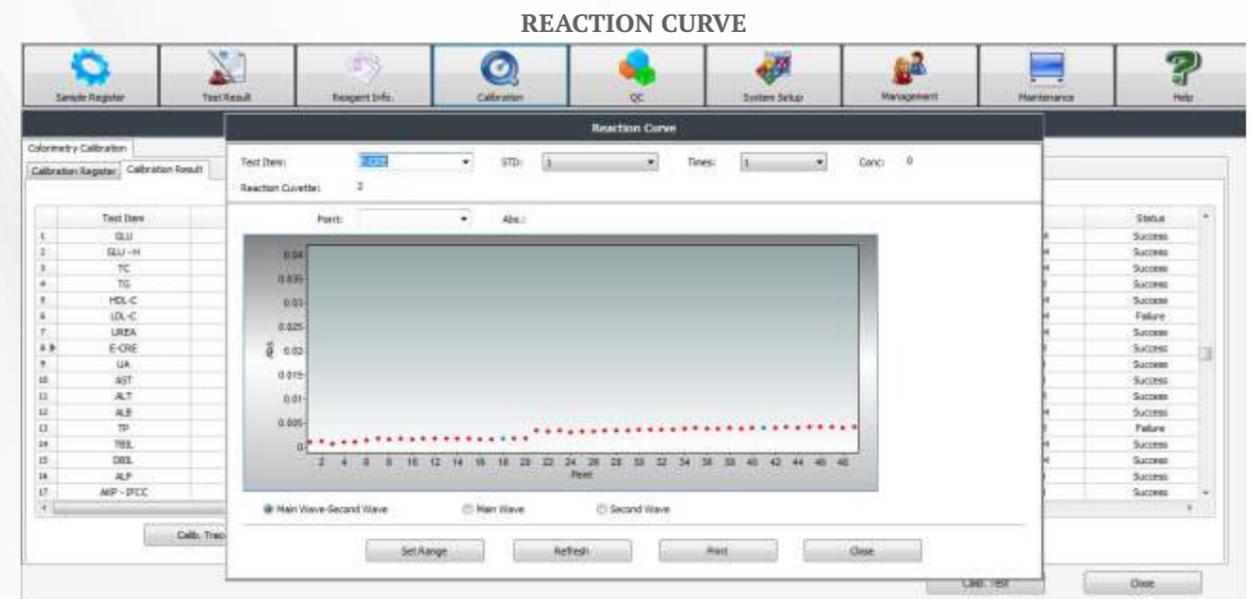
**PERFECT INSTRUMENT FOR PRECISE RESULTS**



**CALIBRATION**



**QUALITY CONTROL**



**REACTION CURVE**

**SEMI PERMANENT REACTION CUVETTE**

- Rigid semi permanent reaction cuvette, with good penetrating of Ultraviolet (UV), to resist against acid – alkali solution.
- Reaction cuvettes ensures cost savings with enhanced durability of 9 to 12 months.
- 1 Set 20 Pieces | 6 Sets 120 Pieces
- Cuvette optical path of 6mm.
- On-board washing with <0.1% carry over.

**CALIBRATION & QUALITY CONTROL PROGRAM**

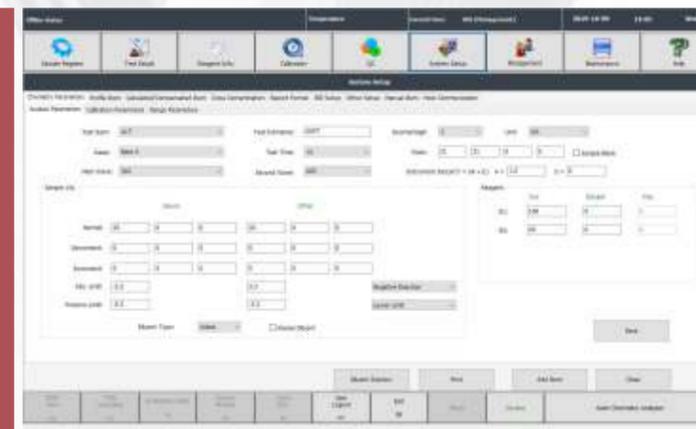
- Linear and non-linear calibration which can be set with time, lot number etc, with flexible calibration methods.
- 9 types of calibration curve to meet the item wise analysis demands.
- 6 different levels of calibration for each item can be programmed.
- Calibration tracing possibility depicting calibration K value variation trends, help reduce system errors.
- QC with Westgard multi rules.
- QC plot with L-J and cumulative statistics.
- Automatic error reporting complaint with lab QC management.

Product Code	Assay Method	No.of Tests	Pack Size	Product Code	Assay Method	No.of Tests	Pack Size
Glucose	1 Point End	1385	5x65mL	Magnesium	1 Point End	192	2x30mL
Glucose Hexokinase	2 Point End	981	3x63/3x20mL	CK-NAC	Rate A	176	2x20/2x7mL
Cholesterol	1 Point End	1385	5x65mL	ASO	2 Point End	160	2x20/2x8mL
Triglycerides	1 Point End	1385	5x65mL	CRP	2 Point End	230	1x50/1x20mL
HDL-C Direct	2 Point End	639	3x53/3x20mL	RF	2 Point End	160	2x20/2x9mL
LDL-C Direct	2 Point End	336	3x30/3x11mL	HbA1c Direct	2 Point End	230	1x50/1x20/2X63mL
LDH - P	Rate A	338	1x65/1x20mL	Microalbumin	2 Point End	144	2x20/2x6mL
Urea U.V	2 Point Rate	1014	3x65/3x20mL	CRP Ultra	2 Point End	188	2x20/2x11mL
Enzymatic creatinine	2 Point End	720	3x52/3x20mL	IgA	2 Point End	160	2x20/2x8mL
Uric Acid	1 Point End	1016	4x60mL	IgE	2 Point Rate	160	2x20/2x6mL
SGOT	Rate A	981	3x63/3x20mL	IgG	2 Point End	128	2x15/2x15mL
SGPT	Rate A	981	3x63/3x20mL	IgM	2 Point End	160	2x20/2x9mL
Albumin	1 Point End	1108	4x65mL	Lp (a)	2 Point Rate	144	2x20/2x6mL
Total Protein	1 Point End	418	2x50mL	C3	2 Point End	136	2x19/2x5mL
Bilirubin Total TAB	2 Point End	552	3x63/3x8mL	C4	2 Point End	136	2x19/2x5mL
Bilirubin Driect	2 Point End	552	3x63/3x8mL	Apo A1	2 Point End	150	2x20/2x5mL
Alkaline Phosphatase	Rate A	981	3x63/3x20mL	Apo B	2 Point End	150	2x20/2x5mL
Amylase	Rate A	376	2x55mL	Ceruloplasmin	2 Point End	120	2x20/2x5mL
Gamma GT	Rate A	338	1x65/1x20mL	Cystatin C	2 Point End	188	2x20/2x6mL
Calcium (Arsenazo )	1 Point End	326	2x40mL	Ferritin	Rate A	160	2x20/2x8mL
Inorganic Phosphorus	1 Point End	554	2x65mL	Prealbumin	2 Point End	132	2x20/2x4mL

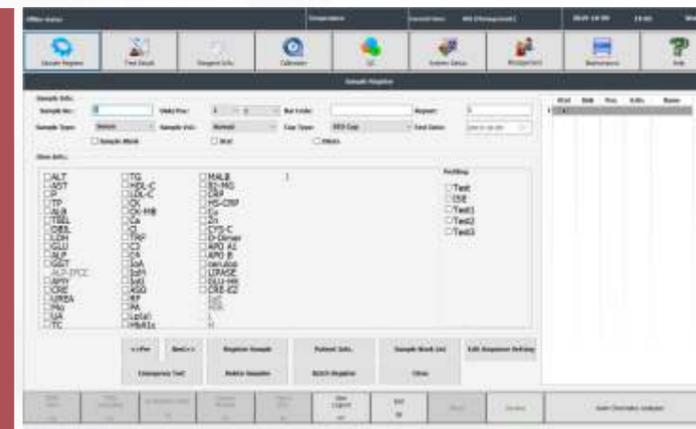
*Wide Range Of Biochemistry Parameters  
In One Efficient Platform  
Offering Consolidation & Cost Savings*



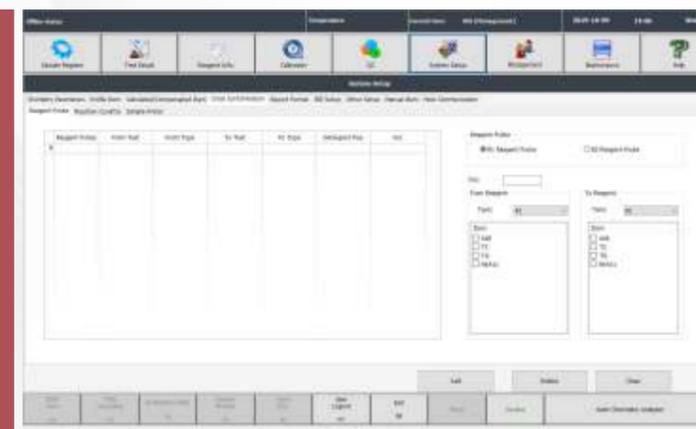
SYSTEM SETUP



SAMPLE REGISTER



CROSS CONTAMINATION PROGRAM



**ROBUST SOFTWARE**

- Simple, efficient and user-friendly software
- Real time online help system
- Multiple self-monitoring to ensure high data efficiency
- Multiple report formats with automatic print function
- Auto re-run facility

**MONITORING AND CALCULATING FUNCTION**

- Automatic monitoring linear limit over, reference limit over, substrate depletion etc
- Serum index checking function, avoid interference from hemolytic, lipemic, icteric samples
- Cross contamination program, avoids interference from different reagent
- Instrument analysis alarm hierarchical handling for optimal job sequence priority
- System security is ensured through user authority hierarchical management



**STEP UP TO SUPERIORITY**