

System specifications

Samples

Total 115 sample positions includes 50 routine sample positions, 20 STAT positions, 34 calibration positions, 8QC positions, 3 Cleaning fluid positions, 8 QC positions and 17 calibration positions maintain 5° C - 15° C cooling condition; the whole disk can be easily replaced with handle

Supports various tubes and trace sample cup, specification (12 ~16) mm x (25 ~100) mm

Reagents

Double carousel 90 positions, including two detergent positions, 88 single reagent or 44 double reagent cuvettes, each reagent position can load 70 ml or 20 ml universal reagent cuvette

Reagent disk continuous cooling condition secures the quality of reagent. One reagent, two reagent and up to for reagents testing (R1,R2,R3,R4) functions enable multiple testing items to satisfy the future development needs

Sample/Reagent Pipetting Mechanism

3 stand-alone probes, one probe for sample, two probes for reagent. The probe is polished with nano processing technology which reduces the cross contamination effectively

Automatic liquid level detection

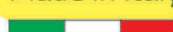
3 stand, alone syringes, one syringe for sample, two syringes for reagent. The syringe is made of long life high-precision ceramic, it ensures high precision of sampling low maintenance cost

3 stand-alone probes contain collision protection function, self-resetting, automatic re-pipetting sample and reagent automatically

Clot detection; Pipetting tube has pressure sensor which can detect the status of clot. The tube contains high pressure rinsing function to clean clot, which ensures the pipetting volume accuracy

Gesan Chem 400 PRO is a floor standing model that is capable of 400 photometric tests per hour, 400 ISE tests per hour.

Made in Italy



Since 1989

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Chem 400
PRO

With 30 years of experience in clinical chemistry reagent production, **Gesan Production** also offers Gesan Chem series of analysers that are suitable for every size of laboratory. Gesan Production offers a comprehensive menu of CE marked system reagents, dedicated to Gesan Chem series instruments that combine the latest technologies with applicability to a wide range of tests, economy and reliability, for convenient and precise analysis of clinical samples.

Gesan Chem 400 is designed to demand of medium sized laboratories.

Discrete, Random Access, fully automated clinical chemistry analyser

Large sample carousel and refrigerated reagent carousel, meeting all laboratory needs

Precise and reliable optical measuring system

Real-time monitoring of the system

Perfect cleaning system, preventing contamination in all-around way

Automatic cuvette washing system

High stability reaction temperature control

User friendly multi-function software, flexibility for daily operation

LIS/HIS interface, supports remote maintenance

- > *Clinical Chemistry Reagents*
- > *Oem and Bulk Reagents*
- > *Veterinary Biochemistry*
- > *Drugs of Abuse and TDM*
- > *Laboratory Instruments*

The Chem Family

Clinical Chemistry Analyzers



Chem 100



CLot 1000



Chem Lyte



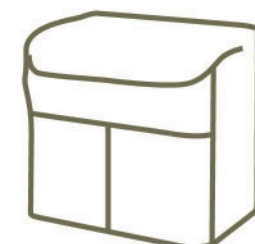
Chem 200
PRO



Piccolo Chem
PRO



Chem 300
PRO



Chem 400
PRO



Piccolo Chem



Chem 200

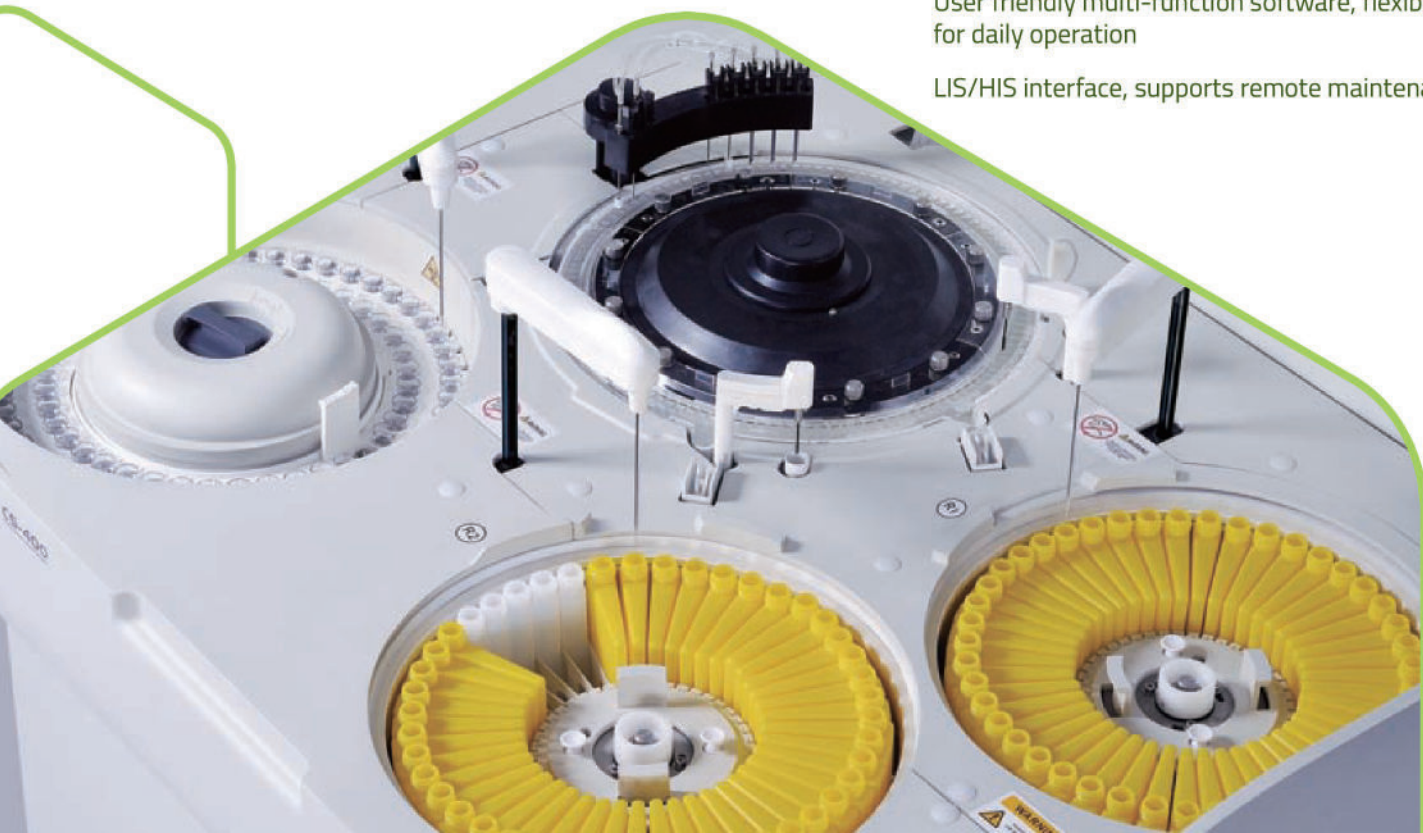


Chem 300 plus



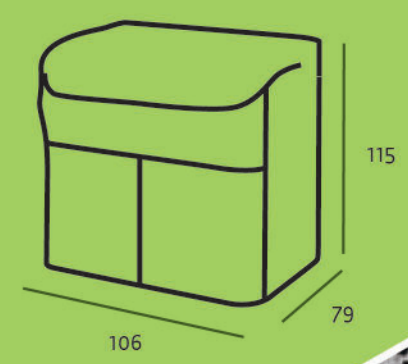
Auto Chemistry Analyzer

Made in Italy





SIZE (cm)
WEIGHT 300 kg



Reaction Mechanism

Rigid plastic reaction cuvette, with good penetrating of UV resistance against acid and alkali and long life span.

2 stand-alone teflon coated, "flat-paddle" style stirrers are designed to have the best cleaning effect and start stirring immediately after reagent is added in the reaction cuvette.

Using recycling water constant temperature device, automatically changing water and adding defoamer.

PID thermostat technology ensures cuvette temperature is 37°C; control variation is +/- 0.1°C.

Vacuum draining liquid, 7 stops 11 steps washing by warm water rinsing ensures complete cuvette cleanness

Photometry System

12 different wavelegths (340, 380, 405, 450, 480, 505, 546, 570, 600, 660, 700, 800 nm)

Monochromator with holographic concave flat field grating, rear spectrophotometric: 12 ways paralel measuring technology, which reduces ambient light intereference lo get accurate result.

Cluster-condensing light (point light source) technology to reach supermicroanalysis, which saves more reagent.

20W/12V long life light source, using containing water cooling method, the best position design, no signal attenuation, strong anti-interference.

12 ways photodiode array detector, 12 ways high dynamic range logarithmic amplifier, the range can be 6Abs without distortion. It ensures high concentration sample testing without data overflow

Cluster - condensing light (point light source) technology to reach super-microanalysis, total reaction volume is as less as 150 uL less reagent consume

ISE Unit optional

400 tests per hour
K, Na, Cl measurement
Automatically rinsing and calibration
37°C pre-heat function for ion reagent
3 syringes for ion reagent sampling, of which are made from long life porcelain to keep high precision and low maintenance cost
15 uL (serum/urine) sample volume

Software specifications

Operation

English version graphical operating software, simple interface and user friendly.

Real-time online help system, multiple self-monitoring functions.

Simple and easy software operating, perfect function, consistent with the use of clinical testing requirement.

Multiple report formats, user-defined function.

Monitoring and Calculating Function.

Automatic monitoring super linear limit, super reference limit, substrate depletion, antigen surplus, no reaction equilibrium point checking program.

Serum checking fuction removes interference from hemolysis, blood lipid, jaundice.

Against cross contamination program, avoid interference from different reagent.

Instrument analysis alarm hierarchical handling to arrange the job sequence by priorities.

User authority hierarchical management to enhance system security.

Calibration and QC function

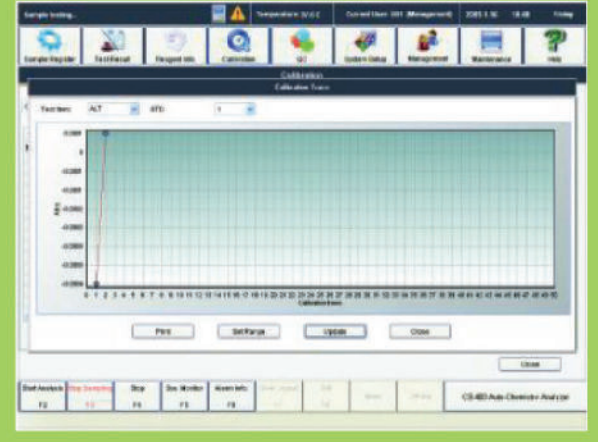
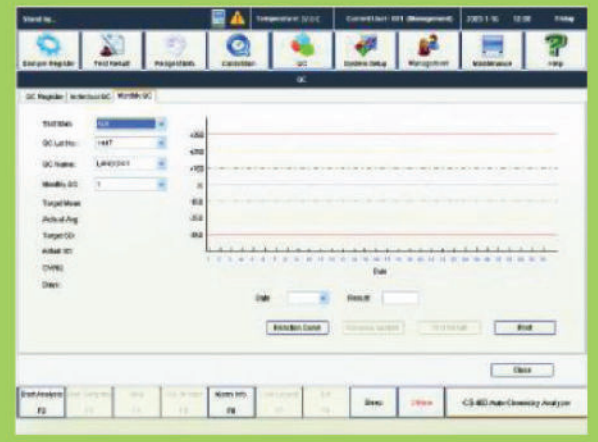
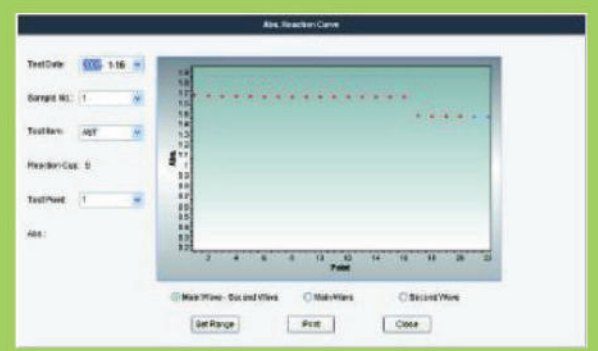
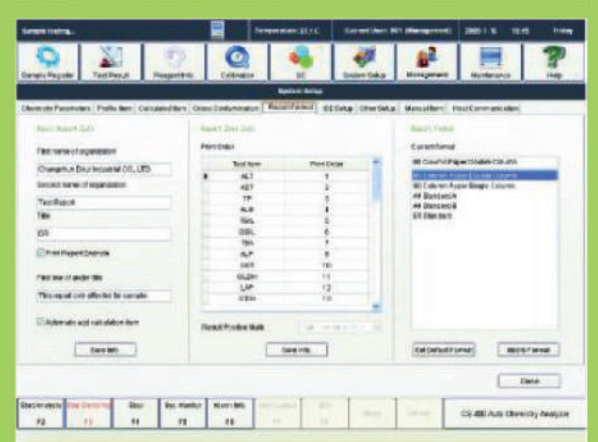
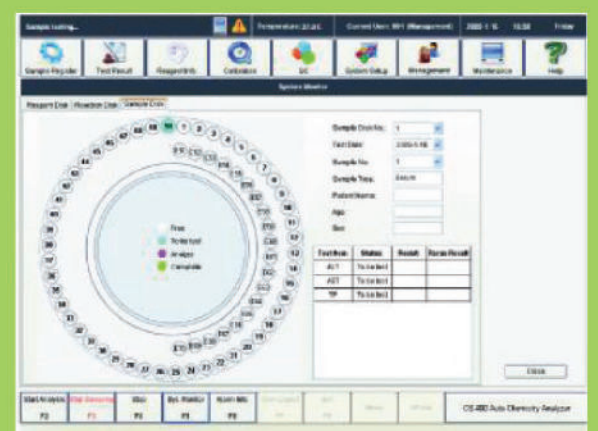
Linear and non linear calibration, which can be set manual calibration and automatic calibration.

9 types of calibration curves fitting formula to satisfy different item analysis demand.

It has calibration tracing function, depicting calibration K value variation trends, helps to reduce system error.

Qc interval and monthly QC ensure that the instrument is working at the best analysis condition.

Westgard multi rules, automatic depict and print relevant QC Plot. L-J, Cumulative, Twin Plot.



Auto Chemistry Analyzer

Overall performance

Equipment type	Fully automatic discrete, STAT priority
Analysis rate	Constant speed 4000T/H or 800T/H with ISE
Test principle	Colorimetry, turbidimetry, ISE
Analysis method	End-point, kinetics, fixed-time, etc. support single /double wavelength and 1-4 multiple reagent item, linear and non linear calibration
Simultaneous analysis item	88 colorimetric items and 3 ISE items (K, Na Cl optional)

Sample unit

Sample position	115 sample positions, including 50 routine sample positions, 20 stat positions, 34 calibration positions, 8 QC positions, 3 wash soltion positions. Continuously cooling at calibration and QC positions to keep 5-15°C within 24 hours.
Sample cuvettes specification	Standard cup, originalblood tube, multi-specification tube available (Ø 12-16 mm x (25-10) mm
Sample barcode	12of5, code 128, code 39, UPC/EAN, code 93
Sample volume	2 µl - 35 µl, 0,1µlstepping
Sampling technology	Liquid level detection clot detection and collision detection
Sample probe carrying rate	Automatic warm water cleaning, Carrying rates ≤ 0,1%
Automatic sample dilution	3-170 items

Reagent unit

Reagent probe	2, with the function of liquid level detection and collision detection
Reagent volume	20 µl - 350 µl, 1 µl stepping
Reagent position	Double reagent disk, 45x2, continuous 5-15°C cooling within 24 hours, loading 70 ml and 20 ml standard reagent kit
Reagent barcode	Code 128
Reagent probe carrying rate	Automatic warm water cleaning, Carrying rates ≤ 0,1%

Reaction unit

Reaction cuvette	120 positions opticalplasti cup, optical diameter is 6 mm
Total volume of reaction liquid	150 µl - 450 µl
Reaction time	Random setting within 3-15 minutes
Reaction temperature	37°C. ± 0,1°C
Reactant disk costant temperature	Circulating water
Mixing needle	2, after joining reagent, blending immediately
Reaction cuvette cleaning	7 stops, 11 steps by warm water rinsing
Wastewater treatment	Two diffulence for high and low concentration waste water. With the function of concentrated waste liquid level alarming

Optical system

Light source	20W / 12V halogen lamps. Life is 2000 hours
Monochromator	Grating photometry
Photoelectron road	After spectrophotometry
Wavelength	340 nm, 380 nm, 405 nm, 450 nm, 480 nm, 505 nm, 546 nm, 570 nm, 600 nm, 660 nm, 700 nm, 800 nm,
Detector	Photodiode led array
OD linear range	0 - 3,3 Abs

Calibration and QC

Calibration method	1 point linear method, 2 point linear method, multiple point linear method, non-linear method
Calibration tracking	Automatic description calibration K-value trends
QC metod	Real time QC, days QC and day QC
Out of control processing	Alarming for out of control sample, record lost control reason

Operating system

Pc operating system	Windows XP
Analysis control software	English version graphical operating software
Main function of software	Automatic calibration, automatic barcode scanning, item compounding test, reagent info management, serum index, whole reaction process monitoring, dirty cup memory evading, prevent cross-contamination procedure, patient information memory and association input, automatic report audit, data multiple parameter query, report format statistic and printing, reference range classification, alarming information classification, user operating right classification, automatic dormancy and wake, real-time online help.

Report printing

Report format support the user-defined mode, QC and state information etc.

PC configuration

CPU ≥ 2.2 GHz (dual core processor); Memory ≥ 1 G; Hard Disk ≥ 160 G; 17 inch LCD display; stylus, inkjet or laser printer (optional)

System connection

TCP/IP network connection, standard RS-232C

Others

Power supply	Voltage AC 220V ± 22V, 50 Hz ± 1Hz, power 2KVA
Peak water consumption	≤ 25 L/H