

HumaStar 600

Random Access Clinical Chemistry System

- > High throughput
- > Reliable performance
- > Workflow-optimized handling

Clinical Chemistry

CoreLab DX



Movie

Human

Diagnostics Worldwide

HumaStar 600

High throughput random access clinical chemistry system

Efficient operation

- › Less than 5l water consumption
- › Ready to use HUMAN System Reagents
- › Up to 600 results/hour w/o ISE
- › Up to three reagents/method
- › 160 reusable reaction cuvettes
- › Two independent reaction carousels
- › 24 hours onboard reagent storage
- › Random access for reagents and samples
- › Minimal reagent consumption
- › Automated pre/post-dilution

Workflow-optimized handling

- › Easy to use software
- › 48 cooled reagents onboard
- › Barcode recognition of reagents, samples and racks
- › Convenient loading of reagents, samples and consumables
- › 95 samples (5 racks x 19)
- › Stat rack for immediate measurement
- › Liquid level sensor



HumaStar 600 is compact and versatile

Reliable performance

- › Clot detection
- › Validated HUMAN assay applications
- › Internal and external probe washing
- › Two independent pipettors



Convenient loading of reagents



Convenient loading of samples



Sample racks for a variety of primary tubes and samples cups

Versatility

Made for cost-saving workflow integration

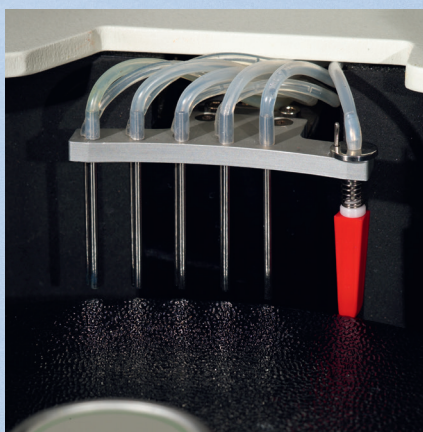


Two independent pipettor arms for a fast and constant workflow

Clinical chemistry and immunoturbidimetry –

Quality Made in Germany

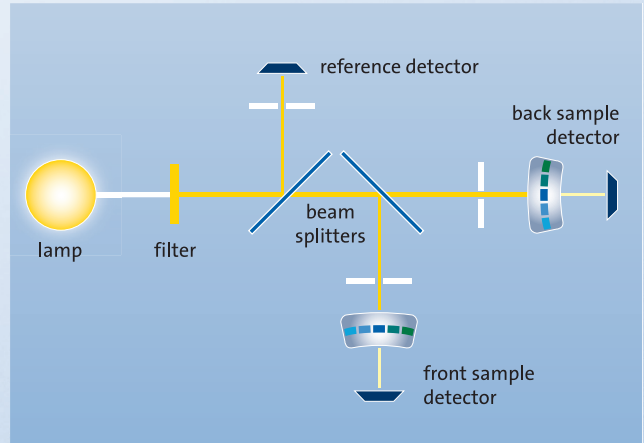
- › More than 45 HUMAN high quality system reagents:
 - Ready-to-use and barcoded
 - Long onboard and calibration stability (up to 60 days)
- › Validated and optimized applications:
 - Minimal reagent consumption
 - High sensitivity and wide linearity range
- › Up to 5 open channels for user defined methods



Cuvette-washing units in each reaction tray



Reusable cuvettes



Single-lamp, triple-channel photometer for minimum maintenance and reliable performance

ISE (optional)

- › Serum / plasma or urine samples
- › Up to 240 tests / hour
- › 6 to 12 months onboard stability of electrodes
- › ISE unit retrofittable

State-of-the-art optical system

- › High precision – small filter bandwidth
- › High resolution
- › Large measuring range
- › Suitable for most tests between 340 and 800 nm (12 filters onboard)



ISE-Module

Logical and Flexible

A user interface and features that simplify operation and quality assurance

Flexible cycle time

- > Individual optimization of each assay run
- > Faster run

Calibration validity check

- > Highest quality of results

Cuvette quality monitor

- > Ensuring reliability of results
- > Optional manually initiated cuvette washing

Easy graphics

- > Color coding
- > Immediate access to problem solution
- > Minimizing operator error

Adaptive settings

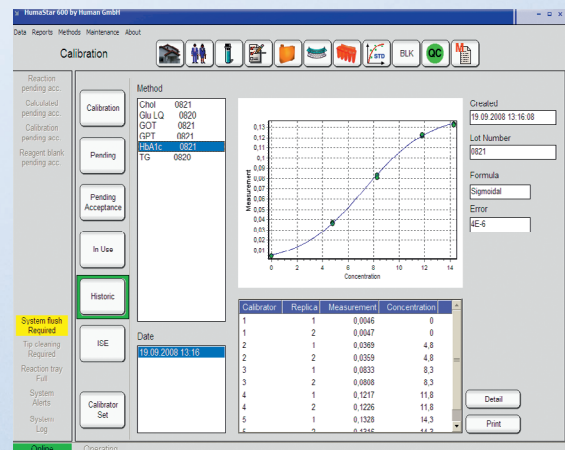
- > Flexible operations through user-defined panels
- > Simplified distribution of workflow
- > Enhanced reliability of results due to separation of critical assay combinations

Reagent and waste minimization

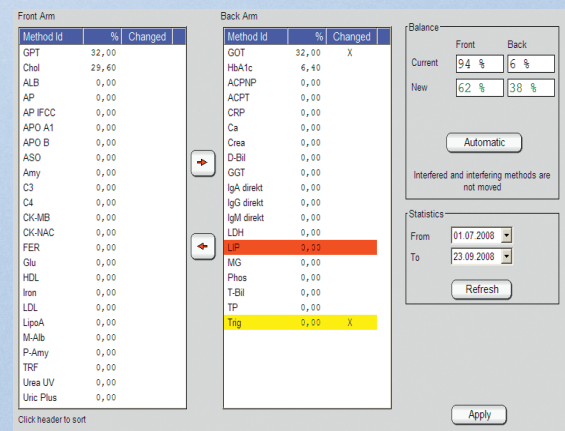
- > Reagent consumption monitor alerts before run

Variable result output

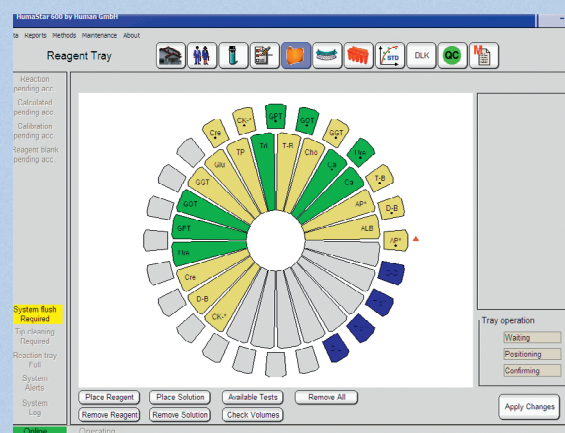
- > LIS-capable
- > Multiple printing options



Calibration details



Optimization of throughput



Reagent tray monitor

Software

Easy to operate and versatile in use

Intuitive user software

- › Intelligent inventory management
- › Multi reagent placement for any given method
- › LOT specific calibration
- › Multiple password-protected access levels
- › Automatic maintenance information
- › Built-in QC modules
- › Automatic daily back-up

QC

- › Levey-Jennings and Youden-plot
- › Westgard rules

Calibration

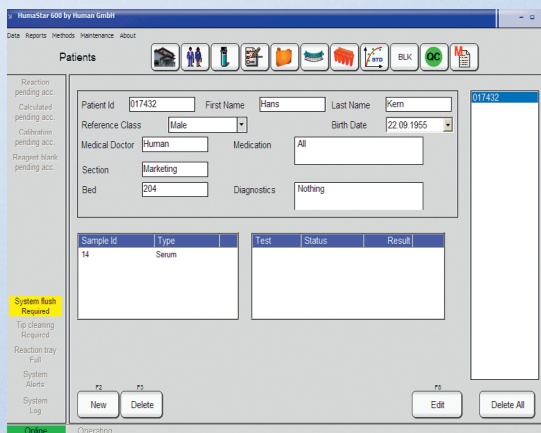
- › Single- and multi-calibrators available
- › Automatic dilution for multipoint calibration

Data management and transfer

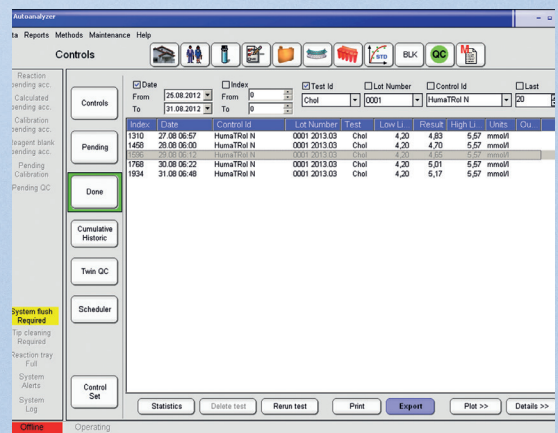
- › ASTM E 1394-87 standard
- › Real-time LIS interface
- › Bi-directional RS232C
- › Windows™ based software
- › Export and import of data

Maintenance

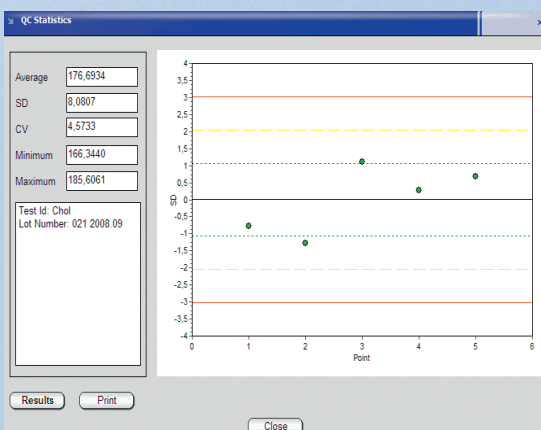
- › Remote access option – error log facilitating diagnosis
- › Only 5 minutes/daily preventive maintenance



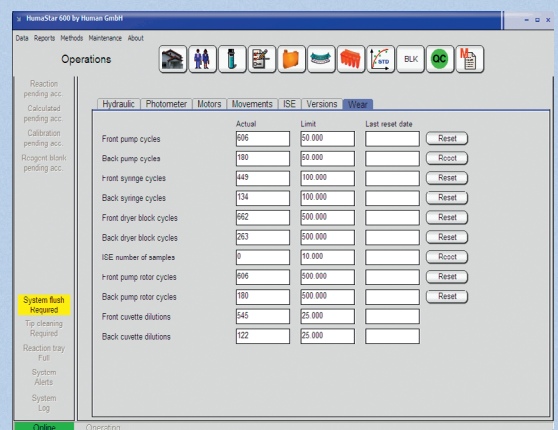
Patient demographics



Export function



Levey-Jennings plot



Maintenance menu

HumaStar System Reagents

Comprehensive parameter menu with exceptional performance

Assays	Tests / Kit	Tests / Kit
Proteins		
Albumin	4 x 60	6 x 150
anti-Streptolysin-O	1 x 100	1 x 210
Apolipoprotein A1	1 x 70	
Apolipoprotein B	1 x 70	
Complement C3	1 x 70	
Complement C4	1 x 70	
C-reactive Protein	1 x 100	1 x 250
Cystatin-C	2 x 100	
Ferritin	1 x 90	
HbA1c	1 x 135	
Homocysteine	1 x 250	
Immunoglobulin A (IgA)	1 x 100	1 x 250
Immunoglobulin G (IgG)	1 x 100	1 x 250
Immunoglobulin M (IgM)	1 x 100	1 x 250
Lipoprotein (a)	1 x 90	
Microalbumin	1 x 90	
Rheumatoid Factors	1 x 100	1 x 210
Transferrin	1 x 70	
Urinary Total Protein	3 x 50	

Assays	Tests / Kit	Tests / Kit
Substrates and Metabolites		
Bilirubin direct	2 x 100	5 x 210
Bilirubin total	2 x 150	5 x 210
Cholesterol	2 x 100	3 x 150
Creatinine (Jaffé)	2 x 150	5 x 250
Creatinine (enzyme)	1 x 95	1 x 275
Glucose	2 x 150	6 x 210
HDL Cholesterol	2 x 100	2 x 180
Inorganic Phosphorus	4 x 30	4 x 60
LDL Cholesterol	2 x 90	
Total Protein	2 x 150	6 x 210
Triglycerides	3 x 60	3 x 210
Urea / BUN	2 x 150	5 x 250
Uric Acid	2 x 100	5 x 250

Electrolytes		
Calcium	3 x 100	3 x 430
Chloride*	2 x 50	
Potassium	1 x 120	1 x 250
Sodium	1 x 120	1 x 250

Electrolytes (ISE direct)	
Kalium, Lithium, Potassium, Sodium	ISE Reagent Pack

* under development

Assays	Tests / Kit	Tests / Kit
Enzymes		
Acid Phosphatase	3 x 50	
Alkaline Phosphatase	2 x 150	3 x 250
alpha-Amylase	2 x 100	3 x 260
Cholinesterase	2 x 100	
CK-NAC	2 x 180	
CK-MB	2 x 100	
gamma-GT	2 x 100	3 x 250
GOT/ASAT	2 x 200	5 x 310
GPT/ALAT	2 x 200	5 x 310
LDH (SCE)	2 x 100	2 x 180
Lipase	2 x 100	
Pancreatic Amylase	2 x 100	

Trace Elements		
Iron	2 x 100	2 x 180
Magnesium	4 x 30	4 x 60
TIBC	1 x 100	



Accurate and reliable results

- > Extensive validation on HumaStar systems
- > Onboard and calibration stability monitoring

Plug and run

- > Ready to use
- > Filled in barcoded reagent containers

Comprehensive and economic

- > More than 45 parameters available
- > Offered in two kit sizes – tailored to your needs

Made in Germany

HUMAN's production site in Magdeburg



HumaStar 600 System

Technical data

Technical data	HumaStar 600 incl. barcode reader, ISE prepared ISE Module Na, K, Cl, Li	REF 16660 16663-03
Mode	Validated system with 5 open channels Random access or batch mode STAT functionality by sample STAT functionality in batch mode by reagent Automatic sample dilution for abnormal Automatic sample pre/post-dilution Auto-rerun at self-specified limits Special work mode for immunoturbidimetric tests	
Throughput	Up to 600 tests/h Up to 780 tests/h with ISE	
Analysis	Endpoint with sample or reagent blank Kinetic and fixed time measurement Mono- and bi-chromatic Sample blank compensation	
Calibration	Single and multi-point calibration or factor Up to 10 calibrators for multi-point calibration	
Quality control	Levey-Jennings and Youden-plot Westgard multi rules	
Backup	Automatic backup procedure	
Samples	Sample volume: 2 to 100 µl per test (in 1 µl steps) Sample tray: 95 positions (5 racks x 19 positions) Sample barcode for all positions Primary tubes up to 13 x 100 mm possible Adjustable for pediatric and small sample cups	
Reagents	48 single reagents and 4 with ISE unit Up to 3 reagents per method 5 to 500 µl/test (in 1 µl steps) Permanent reagent cooling at 9° C +/- 2° C for room temperature between 15 and 30 °C Substrates, Enzymatic, Turbidimetric	
Reaction	2 x 80 reusable plastic cuvettes (6 mm) Reaction volume: 180 to 500 µl Reaction temperature: 37 ± 0.1 °C Reaction time: 0 to 10 min.	
Pipetting	Needle shock detector Liquid level detector Clot detector	
Wash station	6 stage washing unit Water consumption: < 5 l/hour	
Optical system	Double beam with reference beam 12 discrete wavelengths (340, 380, 405, 450, 490, 505, 550, 590, 620, 650, 700, 750 nm) Photometric range: -0.1 to 3.6 OD Single or double wavelength reading	
ISE unit (optional)	Na+, K+, Cl- and Li+ optional Direct ISE measurement of 240 tests/h Sample material: serum/plasma and urine	
Data-management	Windows™ based software Data export and import functionality LIS: ASTM E1394-97 standard, real-time, bi-directional	
Printouts	Customer definable reports, optimized printouts of results, work lists, serum list, calibration, quality control etc.	
Environment	Temperature max. 30°C, Humidity max. 80% non-condensing	
Power	110...240 VAC, 50/60 Hz, maximum 1.400 VA UPS included	
Dimensions	100 (W) x 74 (D) x 113 (H) cm	
Weight	180 kg	

Human

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