

Clinical Chemistry Line

More than 40 Years of Experience Make the Difference

- › Intelligent solutions for small to large laboratories
- › Broad product range from one source
- › Validated applications for HUMAN reagents

CLINICAL CHEMISTRY



Human

Diagnostics Worldwide

Clinical Chemistry Line

Perfect Matching of all Components for Quality and Efficiency

Reagents

- > Multipurpose and system reagents
- > Ready to use
- > Multiple kit sizes
- > Excellent stability

Calibrators

- > Multi-parameter and kit specific
- > Traceable to international reference materials or standards

Support / Service

- > Worldwide support and supply network
- > Well and constantly trained local staff of our partners
- > HUMAN support competence center in Germany and six regional sites guarantee worldwide service quality

Automated Analyzers

- > Open and closed automated analyzers
- > For entry level to high throughput demands

Photometers

- > Semi-automatic photometers
- > For small laboratories and as backup solution



Range of Photometers and Automated Analyzers

Suitable solutions for every kind of laboratory

Controls

- > Internal quality control
- > Accuracy and precision testing

HumEQAS

- > External quality assessment service (EQA)
- > Compliance to quality requirements
- > Web-based

Settings

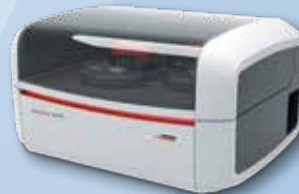
- > Validated settings
- > Preprogrammed on HUMAN analyzers and photometers
- > Plug & run

HumaStar 600



1000 to 2500 tests / day

HumaStar 300SR



500 to 1100 tests / day

HumaStar 200



200 to 600 tests / day

HumaStar 100



100 to 300 tests / day

HumaStar 80



50 to 200 tests / day

Humalyzer 4000
Humalyzer 3000
Humalyzer 2000
Humalyzer Primus



Up to 50 tests / day

Analyzers

Photometers

Clinical Chemistry Assay Panel

Multipurpose and System Reagents from A-Z



Multipurpose Reagents

- > For manual procedures in combination with photometers and use on open analyzers
- > Multiple kit sizes



System Reagents

HumaStar 300SR + HumaStar 600

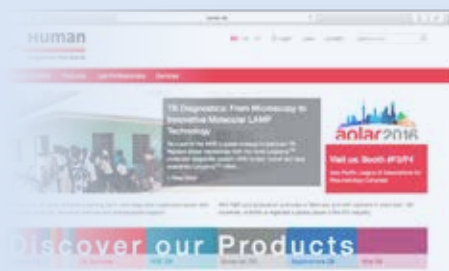
- > Ready to use in barcoded reagent containers
- > Validated assay settings for highest quality
- > Onboard and calibration stability monitoring

	Multipurpose Reagents	System Reagents
Acid Phosphatase (ACP)	■	■
Albumin (ALB)	■	■
Alkaline Phosphatase (ALP, AP)	■	■
alpha-Amylase (AMY, AMS)	■	■
anti-Streptolysin-O (ASL, ASO)	■	■
Apolipoprotein A1 (Apo A1)	■	■
Apolipoprotein B (Apo B)	■	■
Bilirubin direct (DBIL)	■	■
Bilirubin total (TBIL)	■	■
Calcium (Ca)	■	■
Chloride (Cl)	■	
Cholesterol (CHOL)	■	■
CK-MB (CK-MB)	■	■
Complement C3 (C3)	■	■
Complement C4 (C4)	■	■
C-reactive Protein (CRP)	■	■
Creatin Kinase (CK)	■	■
Creatinine (CREA)	■	■
Cystatin-C (CYSTC)	■	■
Ferritin (FER)	■	■
gamma-GT	■	■
Glucose (GLUC)	■	■
GOT/ASAT (AST, SGOT)	■	■
GPT/ALAT (ALT, SGPT)	■	■

Multipurpose Reagents	System Reagents	
■	■	HbA1c (HbA1c, HbA1)
■	■	HDL Cholesterol (HDL-C)
■	■	Hemoglobin (Hb)
■	■	Homocysteine (HCY)
■	■	Immunoglobins IgA/IgG/IgM
■	■	Iron (Fe)
■	■	LDH (LDP-P)
■		LDL Cholesterol (LDL-C)
■	■	Lipase (LIP, LPS)
■	■	Lipoprotein (a) (Lp(a))
■	■	Lithium (Li)
■	■	Magnesium (Mg)
■	■	Microalbumin (MALB)
■	■	Pancreatic Amylase (PAMY)
■	■	Phosphorus (PO ₃ , PHOS)
■	■	Potassium (K)
■	■	Rheumatoid Factor (RF)
■	■	Sodium (Na)
■	■	Total Iron Binding Capacity (TIBC)
■	■	Total Protein (TP)
■	■	Transferrin (TRF)
■	■	Triglycerides (TG)
■	■	Urea (UREA, BUN)
■	■	Uric Acid (UA)



Made in Germany



More Information at

> www.human.de



Reagents

Quality Control

External Quality Assessment Service

HumEQAS

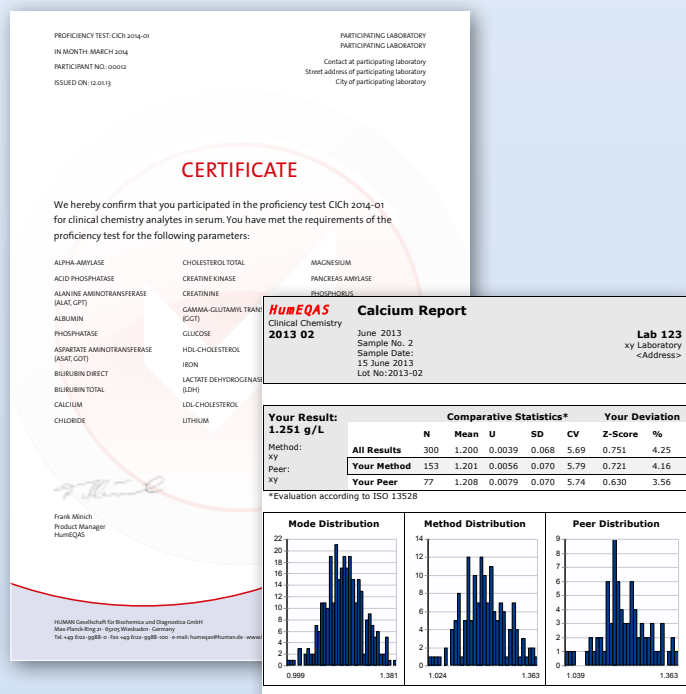
HUMAN External Quality Assessment Service

HumEQAS provides proficiency testing to medical laboratories all over the world. Thanks to the close collaboration with our distribution partners in more than 160 countries, even small laboratories in rural areas have the possibility to participate in this EQA service and improve their testing accuracy and reliability.

A service for external quality assessment (EQA) - also referred to as proficiency testing (PT) - allows laboratories to regularly evaluate their performance by measuring blinded samples of control sera as if they were patient samples. Testing results are compared to peer laboratories worldwide that have measured the same blinded samples.

Clinical chemistry parameters:

- > alpha-Amylase
- > Acid Phosphatase
- > ALAT, GPT
- > Albumin
- > Phosphatase
- > ASAT, GOT
- > Bilirubin direct
- > Bilirubin total
- > Calcium
- > Chloride
- > Cholesterol total
- > Creatine Kinase
- > Creatinine
- > gamma-GT (GGT)
- > Glucose
- > HDL-Cholesterol
- > Iron
- > Lactate Dehydrogenase (LDH)
- > LDL-Cholesterol
- > Lithium
- > Magnesium
- > Pancreas Amylase
- > Phosphorus
- > Potassium
- > Protein total
- > Sodium
- > Triglycerides
- > Urea
- > Uric Acid
- > Zinc



HumEQAS



Movie



Website

SIGN UP NOW



www.humeqas.de

Internal Quality Control

Control Sera

Taking control of your laboratory results.

Multi-parameter and kit specific controls for accuracy and precision testing.

- > **HumaTrol N / HumaTrol P**, lyophilized bovine serum.
Applicable for enzymes, substrates/metabolites, electrolytes and trace elements.
- > **SERODOS®/ SERODOS®plus**, lyophilized human serum.
Applicable for enzymes, substrates/metabolites, electrolytes and trace elements.
- > **TURBIDOS 2-level**, liquid human serum.
Applicable for most of the protein assays.

Kit specific controls:

- > CK-MB control, 2-level
- > Cystatin-C control, 2-level
- > HbA1c control blood, 2-level
- > Homocysteine control, 2-level



Calibrators / Standards

Prerequisite for accurate testing

HUMAN offers multi- and kit specific calibrators or standards for clinical chemistry reagents.

Autocal, multi-calibrator, lyophilized human serum.

Applicable for HUMAN clinical chemistry reagents.

Kit specific calibrators / standards:

- > anti-Streptolysin-O standard
- > Apolipoprotein A1/B standard
- > CK-MB calibrator
- > Complement C3/C4 & Transferrin standard
- > C-reactive protein standard
- > Cystatin-C calibrator set
- > Ferritin calibrator set
- > HbA1c calibrator set
- > Homocysteine calibrator set
- > Immunoglobulins A/G/M calibrator set
- > Lipoprotein (a) standard
- > Microalbumin standard
- > Potassium standard
- > Rheumatoid factor standard
- > Sodium standard



Semi-automatic HumaLyzer Photometers

Perfectly Suited for Small Laboratories or as a Backup Solution

- > HUMAN methods preinstalled
- > Programming of additional methods
- > Flow cell or direct cuvette reading mode
- > Multiple reading modes incl. multipoint calibration
- > Built-in thermal printer



REF

HumaLyzer Primus

18200

The compact allrounder

User interface	20 foil keys
Display	Large LCD display with 240 x 64 pixels
Wavelengths	5 installed, 3 optional
Linearity	2.5 OD
Photometric range	340–700 nm
Number of methods	60
Storage	Up to 2,200 results
Software	English, Spanish, Russian and French
Incubator	Optional HumaCube
Quality control	QC statistics



HumaLyzer PRIMUS

Accessories

HumaCube 220 VAC (incubator)	17050
HumaCube 110 VAC (incubator)	17070



Available soon

REF

HumaLyzer 4000*

18250

Top-class semi-automatic photometer

Reference channel optics

User interface	Touchscreen
Display	Large color display with 800 x 480 pixels
Wavelengths	7 installed, 1 optional
Linearity	2.5 OD
Photometric range	340–750 nm
Number of methods	144
Storage	More than 10,000 results
Software	English, Spanish and French
Incubator	10 round and 2 square positions
Quality control	QC statistics, Levey-Jennings

- > Optimized for low energy consumption
- > Can be used with HumaPower battery pack
- > User replaceable lamp and pump
- > LIS (ethernet, uni-directional)
- > Update of methods and software via USB-stick
- > Backup on USB-stick
- > Optimized workflow using a worklist for sample input
- > Reaction curve shown and stored for every test
- > Remote access for support and assistance

**Specifications are subject to change before launch*



REF

Humalyzer 2000

18300

Proven and robust technology

User interface	29 foil keys
Display	2 lines, alphanumeric
Wavelengths	6 installed, 2 optional
Linearity	3.5 OD
Photometric range	330–700 nm
Number of methods	59
Storage	Up to 255 results
Software	English or optional Spanish, Russian
Incubator	12 round positions

- Instrument especially recommended if you need direct reading of cuvettes



REF

Humalyzer 3000

16700

Proven and robust technology

Advanced features

User interface	18 foil keys, PS/2 for external keyboard
Display	Large LCD display with 240 x 128 pixels
Wavelengths	6 installed, 2 optional
Linearity	3.5 OD
Photometric range	330–670 nm
Number of methods	120
Storage	Up to 512 results
Software	English or optional Spanish
Incubator	18 round positions included
Quality control	QC statistics, Levey-Jennings

- Large built-in thermal printer (40 columns)
- Instrument especially recommended in case you need direct reading of cuvettes

Automated HumaStar Analyzers

For Small to Medium Size Laboratories

- > Open analyzers
- > Robust technology
- > HUMAN methods preinstalled

First Step into Lab Automation



REF

HumaStar 80

16880

- > Up to 80 tests per hour maximum throughput
- > 40 tests per hour typical mix throughput

Proven Technology

- > Optimized batch analyzer
- > 20 positions for reagents
- > 54 positions for samples
- > Flow cell measurement
- > Needle shock detector
- > No wash station
- > Capacity to load 144 reaction cuvettes
- > Programmable washing cycles between samples & tests minimizes carry-over
- > Auto-rerun with predilution
- > Level sensor for wash and waste bottles
- > LIS: Bi-directional
- > Multi-language software (English, French, Italian, Spanish)
- > PC included in standard delivery



HumaStar 80

Experience Out of the Ordinary



REF

HumaStar 100

16890

- > 100 tests per hour throughput

One Concept – Two Instruments

- > Random access analyzer
- > 30 cooled positions for reagents and solutions
- > 60 positions for samples
- > Direct cuvette measurement
- > Needle shock detector
- > Multi-step cuvette wash station (8 steps)
- > Internal sample barcode reader
- > Reagent cooling independent from main power switch
- > Primary tubes up to 16 x 100 mm and sample cups
- > LIS: Bi-directional, via ethernet, ASTM
- > Multi-language software (English, French, Italian, Spanish)



HumaStar 100/200



Movie



HumaStar 200 REF 16895

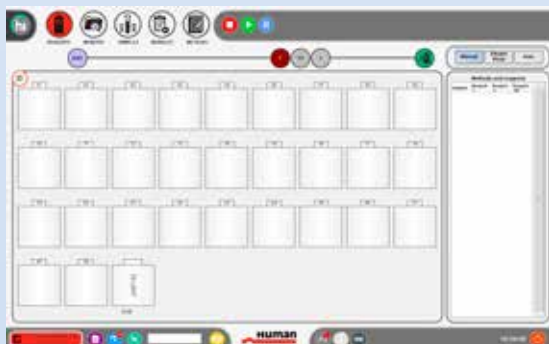
- > Up to 200 tests per hour maximum throughput
- > 127 tests per hour typical mix throughput

Safety First

- > Routine check and blank for each individual cuvette
- > Validity limits for methods and reactions
- > Reagent integrity check
- > UPS 230V included in standard delivery

Easy and Efficient

- > Automatic pre- and post dilution
- > Continuous loading of samples and reagents
- > Software designed for touchscreen
- > Capacitive liquid level detector
- > Large liquid containers with level sensors
- > Less than 1 l/h (HS 100) and 2 l/h (HS 200) water consumption



Intuitive User Interface

Accessories

Personal Computer with Windows® 7	18992P
TFT Screen	17901M
LCD Touchscreen Monitor	18991MT
Laser Printer	18993L

Closed HumaStar Systems

Your Choice for System Solutions



Available soon

HumaStar 300SR*

REF

16930

Medium throughput random access
clinical chemistry system

- > Up to 290 tests per hour maximum throughput
- > Up to 230 tests per hour typical mix throughput
- > HUMAN methods preinstalled and validated
- > 3 semi-open channels for user defined method
- > Internal sample and external reagent barcode reader
- > 60 positions for samples and solutions
- > 40 cooled positions for reagents and solutions
- > Continuous programming and loading
- > LIS: Bi-directional
- > Multi-language software (English, French, Spanish)
- > UPS 230V included in standard delivery



HumaStar 300



ProClean 2.0
Technology

Unique in its class

Eco-friendly

- > Integrated system and special wash solutions
- > Low water consumption (< 3 l/h)
- > Segregation and reduction of biohazard waste

Rock-solid and Reliable

- > Proven hardware and software quality
of HumaStar 100/200

Efficient Operation

- > Multi-step cuvette wash station
- > Up to 56 days reagent onboard stability
- > Less than 3 l/h water consumption
- > Intuitive software designed for touchscreen
- > Huge variety of primary and secondary
sample tubes usable

New Software Features

- > Results are traceable to method and calibration
- > Searchable result database
- > Automatic outlier detection and unit conversion
- > Method specific wash options

Accessories

REF

Personal Computer with Windows® 7	18992P
TFT Screen	17901M
LCD Touchscreen Monitor	18991MT
Laser Printer	18993L



REF

HumaStar 600

16660

**High throughput random access
clinical chemistry system**

- > Up to 600 tests per hour maximum throughput
- > Up to 450 tests per hour typical mix throughput
- > Up to 720 tests per hour with ISE (Na, K, Cl, Li)
- > HUMAN methods preinstalled and validated
- > 5 open channels for user defined methods
- > Internal barcode reader for samples and reagents
- > 95 positions for samples
- > 48 cooled positions for reagents
- > Continuous programming and loading
- > LIS: Bi-directional, host query
- > Multi-language software (English, Spanish)
- > UPS 230V included in standard delivery



HumaStar 600



Movie



Convenient Loading of Reagents

Workflow-optimized Handling

- > Easy-to-use software
- > Convenient loading of reagents, samples & consumables
- > Stat rack for immediate measurement
- > Liquid level sensor

Efficient Operation

- > Two independent reaction carousels
- > Up to 60 days reagent onboard stability
- > Clot detection
- > Optional ISE module (Na, K, Cl, Li)
- > Less than 4 l/h water consumption

Accessories

REF

ISE Module Field Installation Kit for Na,K, Cl 16663-03

Personal Computer with Windows® 7 18992P

TFT Screen 17901M

Laser Printer 18993L

HumaLyte ISE Systems

Direct Ion-Selective Electrolyte Analyzer



Cl⁻ K⁺ Na⁺

REF

HumaLyte Plus³

17470/10

Direct ISE for 3 parameters



iCa⁺⁺ pH⁻ Cl⁻ K⁺ Na⁺

REF

HumaLyte Plus⁵

17470/20

Direct ISE for 5 parameters

One Concept – Two Instruments

- > Analysis time < 60 sec per sample
- > For testing serum, whole blood (heparin), plasma (heparin) or diluted urine
- > Closed system
- > Refillable electrodes
- > Optional autosampler for 20 samples and STAT
- > LCD touchscreen
- > Internal thermal printer
- > Memory for 200 samples, QC
- > Quality control database

Reagents

Reagent Pack HumaLyte Plus³ 17470/82

Reagent Pack HumaLyte Plus⁵ 17470/83



Accessories

HumaLyte Autosampler 17470/30

- > Walk-away-capability on demand
- > Easy add-on
- > 20 sample cup positions + 2 STAT



HumaLyte Plus

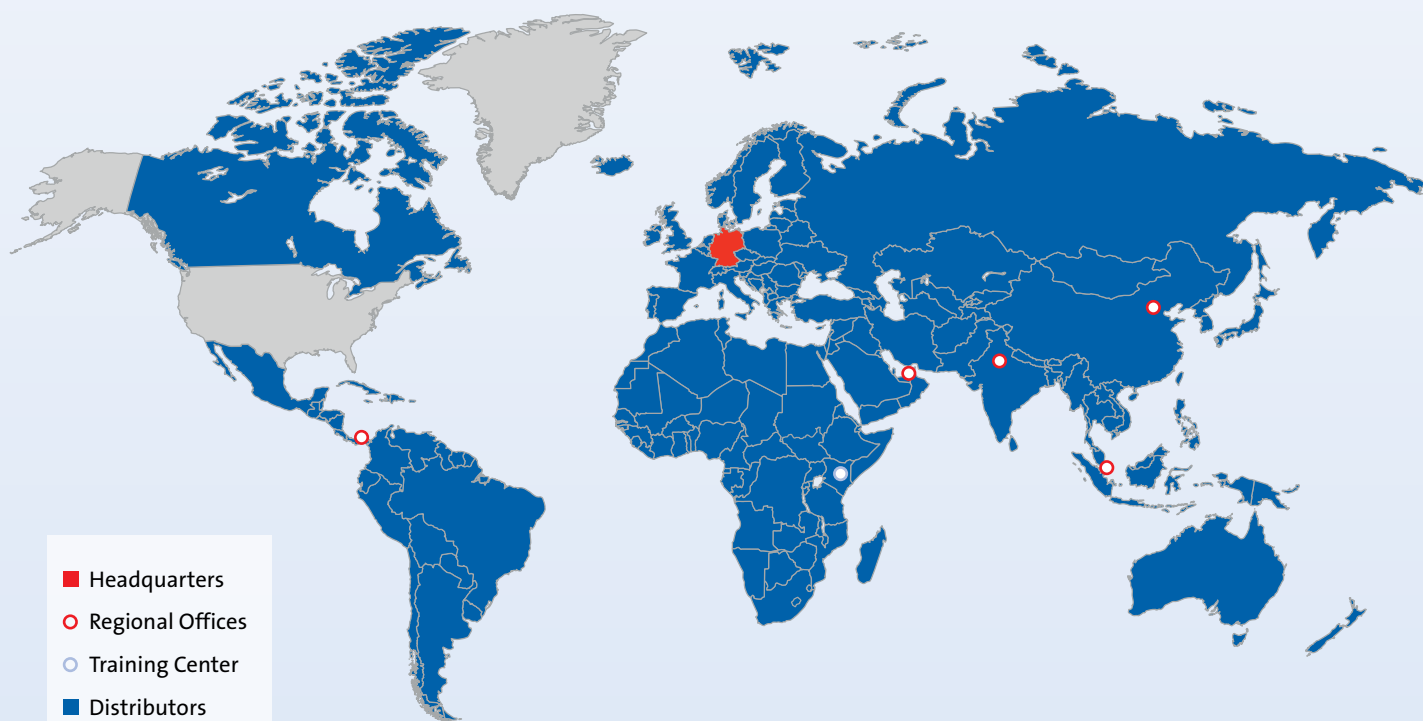


Movie

* Used for correction of iCa results only!

Service & Support

Impressive Global Availability, Reliability and Service Quality



HUMAN carefully selects and supports local distributors.

Local engineers are constantly trained and in close contact with our six regional sites and our competence center in Wiesbaden.

Together we will assure that you are not only getting great products, but also great support.

Your local distributor will take care of all requests regarding service and support.



