

# HumaStar 300SR

Random-Access Clinical Chemistry Analyzer



## Features:

- ✓ Less than 3 l/h water consumption
- ✓ 8-step wash station
- ✓ Reagent cooling
- ✓ 40 reagent and 60 sample positions
- ✓ Internal sample and external reagent barcode reader
- ✓ Capacitive liquid level detector
- ✓ Needle Shock detector
- ✓ System reagent methods preinstalled and validated
- ✓ Open channels with barcoded bottles
- ✓ Large liquid containers with level sensors
- ✓ Automatic pre- and post-dilution
- ✓ Programmable automatic start up routine
- ✓ Removable sample tray
- ✓ Removable reagent tray
- ✓ Continuous loading of samples
- ✓ Extensive QC module
- ✓ Multiple work lists
- ✓ Internal-, external- and method specific wash procedures
- ✓ Separate containers for normal and high contaminated waste



German Quality & Reliability



Eco-friendly  
ProClean 2.0  
Technology

Imported & Marketed By:



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Diagnostics Worldwide  
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# HumaStar 300SR

Random Access Clinical Chemistry System



## System Overview

REF	16930
Analyzer type	Automated clinical chemistry system
Reagent system	Barcoded system reagents and 3 open channels
Throughput (max.)	290 tests/hour
Operation modes	Random access Batch STAT
Barcode reader	Internal sample and external reagent barcode reader
Reaction / reading system	Reaction cuvettes with multicycle washing station
Languages	English, French, Spanish Additional languages can be translated by distributor
User interface	External PC, touchscreen recommended

## Tests

Measuring modes	Photometry (colorimetry, UV-tests, turbidimetry)
Analysis modes	Endpoint (bichromatic) with sample/reagent blank Differential endpoint with sample/reagent blank Fixed time Kinetic (bichromatic)
Calibration modes	Factor 1-point and multi-point
Calibration algorithms	Linear (factor, linear, linear regression, average), Non linear (cubic spline, poly-linear, four parameters (sigmoidal), five parameters (sigmoidal), multi-parameters (logit-log))
# of programmable profiles	Unlimited
# of standards per test	Up to 8

## Sample / Control / Calibrator

Sample type	Serum, plasma, urine, CSF, whole blood, others
Sample vessels	Primary tubes (12.5 x 100 mm), optional tray (16 x 100 mm) Sample cups (10 mm), optional tray (Hitachi 2 ml)
Sample positions	Total of 60 positions for samples and solutions, optional tray 20 + 20 positions
Sampling volume	2 to 300 µl/test
Loading	Continuous
Predilution	Automatic
Post-Dilution	Automatic (abnormal levels, excessive substrate consumption and/or lack of linearity)

## Reagent

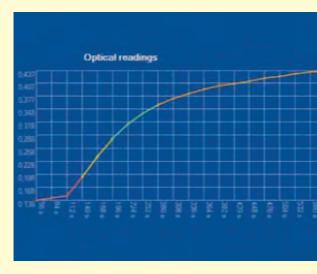
Reagent positions	40 positions for reagents and solutions (25 ml, 70 ml, removable tray)
Reagent cooling	Approx. 13°C below room temp. at bottom of reagent, I Independent switch
Reagent 1-3 volume range	5 to 350 µl

## Reaction unit

Reaction wells / positions for incubation	80 washable Bionex® cuvettes
Reaction volume (minimum)	210 µl
Reaction volume (maximum)	350 µl
Cuvette washing system	8-step wash station, 8 needles 2 bottles: systemic- and special wash solution
Incubation temperature	37°C ± 0.2°C heat transfer by air
Incubation time	612 sec. max. incubation + reading time



Two reagent trays with improved cooling



Absorbance Chart



User Interface: Samples

## Liquid Handling

Liquid transportation	2 pipetting arms
Liquid level sensors	Capacitive
Shock detection for probe	Yes (vertical)
Water consumption	< 3 l/hour
Water quality	< 10 µS filtered, distilled or de-ionized

## Reading

Optical system	Interference filters
Readings	Mono- or bichromatic
Light source	Halogen lamp (Phillips, 6 V, 10 W)
Spectral range	340 to 900 nm
Wavelengths pre-installed	340, 405, 505, 546, 578, 600, 650, 700 nm
Max. # of wavelengths installed	9
Wavelength error (accuracy)	± 2 nm on peak wavelength
Wavelength bandwidth	Half bandwidth 10 nm
Detector	Silicon photodiode
Absorbance range (linearity)	0 to 2.5 OD
Resolution	0.0001 OD

## Data Processing

Memory for	Sample results, calibration, patient data, QC data, error-log, absorbance curves
Memory capacity	Unlimited (HDD)
Reports for	Patient, single test, complete sample, work sheet, method and QC's, calibration curves, kinetics, continuous printing
Quality control module	Levey-Jennings, Westgard multirules, SD, CV%
Max. number of control levels	Up to 3 levels per test
Test statistics	Number executed, SD, CV%, Mean
Warnings	Analytical limits, reagent and reaction integrity check (blank, linearity, substrate depletion, reaction OD etc.),
Printer	Printer connected to external PC
LIS	ASTM Bi-directional , ethernet of external PC, polling mode on LAN

## General

PC min. requirements	External PC, Pentium IV 2GHz (Hyper-threading), Memory: 512 Mbytes RAM, Hard disk capacity > 20 GBytes, USB 2.0 ports (min. 3, excl. mouse and keyboard) Operating system: Windows 10, 8, 7, latest updates installed, English, French, Spanish , no complex Chinese, .Net latest update Ethernet network adaptor , min. 900 dots vertical resolution Recommended: 17 inch touchscreen, 1280 x 1024 resolution, 6 USB ports, Core i3, 4GB RAM
Physical dimensions (W x D x H)	Instrument without any components: 93 x 74 x 60 cm Space required for routine use:170 x 100 x 110 cm Packaging: 117 x 85 x 78 cm +58 x 38 x 58 cm Weight: Gross: 115 kg, net: 70 kg
Mains fuse	T3.15 A / 250V, 5 x 20 mm
Electrical requirements	110...120, 220...240 VAC; 50/60 Hz; < 300 VA, avg. ~170VA
Environmental	Operating: temperature 16...30 °C, humidity < 80 % rel. non condensing Transport: temperature 0...50°C, humidity < 85% rel. non condensing

## Wash / waste tank

Wash / waste tank	20 l systemic, 2 l special wash, 20 l normal waste, 5 l special waste, level sensors
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# HumaStar 300SR

## System Reagents

Description	Tests /Kit	REF
Acid Phosphatase	3 x 50 tests	10660600
Albumin liquicolor	4 x 60 tests	10560300
Alkaline Phosphatase liquicolor (IFCC)	2 x 150 tests	12117300
Alkaline Phosphatase opt. liquicolor	2 x 150 tests	12027300
alpha-Amylase liquicolor	2 x 100 tests	12028300
anti-Streptolysin-O (ASO)	1 x 100 tests	11251300
Apolipoprotein A1 (APO A1)	1 x 70 tests	11101600
Apolipoprotein B (APO B)	1 x 70 tests	11102600
auto-Bilirubin-D liquicolor	2 x 100 tests	10741300
auto-Bilirubin-T liquicolor	2 x 150 tests	10742300
Calcium liquicolor	3 x 100 tests	10011300
Cholesterol liquicolor	2 x 100 tests	10028300
Chloride liquicolor	2 x 50 tests	10115300
CK-MB liquiUV	2 x 100 tests	12118600
CK NAC activated liquiUV	2 x 180 tests	12015600
Complement C3	1 x 70 tests	11110600
Complement C4	1 x 70 tests	11113600
auto-Creatinine liquicolor	2 x 150 tests	10052300
Creatinine (enzym) liquicolor	1 x 95 tests	10053300
CRP	1 x 100 tests	11241300
Cystatin-C liquidirect	2 x 100 tests	11150600
Ferritin	1 x 90 tests	11610600
gamma-GT liquicolor	2 x 100 tests	12023300
Glucose liquicolor	2 x 150 tests	10260300
GOT (ASAT) IFCC mod. liquiUV	2 x 200 tests	12021300
GPT (ALAT) IFCC mod. liquiUV	2 x 200 tests	12022300
HbA1c liquidirect	1 x 135 tests	10770600
HDL Cholesterol liquicolor	2 x 100 tests	10084300
Homocysteine liquiUV	1 x 250 tests	11140600
Immunoglobulin direct IgA	1 x 100 tests	11501300
Immunoglobulin direct IgG	1 x 100 tests	11502300
Immunoglobulin direct IgM	1 x 100 tests	11503300
Iron TPTZ liquicolor	2 x 100 tests	12290300
LDH SCE mod. liquiUV	2 x 100 tests	12014300
LDL Cholesterol liquicolor	2 x 90 tests	10094600
Lipase liquicolor	2 x 100 tests	12006600
Lipoprotein (a), Lp(a)	1 x 90 tests	11105600
Magnesium liquicolor	4 x 30 tests	10010300
Microalbumin	1 x 90 tests	11120600
Pancreas-Amylase liquicolor	2 x 100 tests	12009600
Phosphorus liquirapid	4 x 30 tests	10027300
Potassium liquiUV	1 x 120 tests	10120300
Rheumatoid Factors (RF)	1 x 100 tests	11261300
Sodium liquicolor	1 x 120 tests	10113300
Total Protein liquicolor	2 x 150 tests	10570300
Triglycerides liquicolor <sup>mono</sup>	3 x 60 tests	10724300
Transferrin	1 x 70 tests	11115600
Urea liquiUV	2 x 150 tests	10521300
Uric Acid liquicolor <sup>plus</sup>	2 x 100 tests	10694300

## Calibrators / Standards and Controls

Calibrators / Standards	Unit / Size	REF
AutoCal, multi calibrator	4 x 5 ml	13160
anti-Streptolysin O (ASO) Standard	2 x 1 ml	11351
APO A1/B Standard	2 x 1 ml	11104
CK-MB Calibrator	2 x 1 ml	13612
C3/C4/TRF Standard	2 x 1 ml	11117
CRP Standard	2 x 1 ml	11341
Cystatin-C Calibrator Set	5 x 1 ml	11155
Ferritin Calibrator 500	4 x 0.5 ml	13020600
HbA1c Calibrator Set	4 x 0.5 ml	10776
Homocysteine Calibrator Set	2 x 3 ml	11145
IgG, IgA, IgM Standard	5 x 2 ml	11504
Lp(a) Standard	2 x 0.5 ml	11107
Microalbumin Standard	2 x 1 ml	11124
Potassium Standard	2 x 3 ml	10126
RF Standard	2 x 3 ml	11361
Sodium Standard	2 x 3 ml	10114
Controls	Unit / Size	REF
Serodos®, multi control	6 x 5 ml	13951
Serodos®plus, multi control	6 x 5 ml	13151



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