

# HumaStar 200

Random-Access Automated Bench top Analyzer



Clinical Chemistry Line



Movie



German Quality & Reliability

## Features:

- ✓ Less than 1.6 l/h water consumption
- ✓ 8-step wash station
- ✓ Reagent cooling
- ✓ 30 reagent and 60 sample positions
- ✓ Internal sample barcode reader
- ✓ Capacitive liquid level detector
- ✓ Needle shock detector
- ✓ 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 monitor
- ✓ Multiple work lists

Imported & Marketed By:



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email : diagnostics@stedmanpharma.com



# HumaStar 200

## System Overview



Cat. No.	16895
Analyzer type	Automatic analyzer
Reagent system	Open (Human pre-installed)
Throughput (max. and typical)	200 tests/hr maximum 120-130 tests/hr typical (applies to most parameters)
Operation modes	Random-access with STAT
Barcode reader	Internal sample barcode reader
ISE	None
Reaction / reading System	Reaction cuvettes with multicycle washing station
Languages available	English, French, Spanish
User interface	External PC, touch screen recommended

## Tests

Measuring modes	Routine chemistry, turbidimetry
Analysis modes	Endpoint (bichromatic) with self blank Differential endpoint with self blank Fixed time Kinetic (bichromatic)
Calculation modes	Factor Multi standard Single standard
Calculation algorithms	Linear (factor, linear, linear regression, average) Non linear (cubic spline, poly-linear, logit-log four parameters)
# of programmable tests	50 active methods on instrument
# of programmable profiles	Unlimited
# of standards per test	Up to 8

## Sample / Control Calibrator

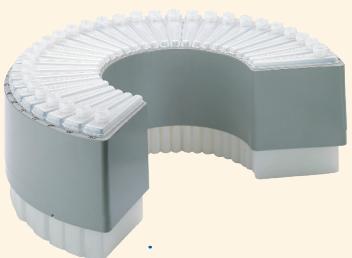
Sample type	Serum, plasma, urine, CSF
Sample vessels	Primary tubes (12.5 x 100 mm), optional tray (16 x 100 mm) Sample cups (10 mm), optional tray (Hitachi 3.5 ml)
Sample positions	Total of 60 positions for samples, optional tray 20 + 20 positions
Sampling volume	2 to 300 µl/test
Loading	Continuous
Pre-Dilution	Automatic (In-needle or reaction cuvette)
Post-Dilution	Automatic (abnormal levels, excessive substrate consumption and/or lack of linearity)

## Reagent

Reagent positions	30 reagent positions (20 ml, 50 ml, adapter for tubes and cups, removable tray)
Reagent cooling	Approx. 9 °C below room temp. at bottom of reagent, independent switch
Reagent 1-2 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	792 sec. max. incubation + reading time



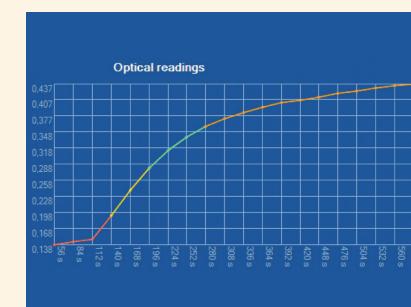
Reagent Bottles Tray (30 pos.)



Sample Tray (60 pos.)



User Interface: Reagents



Absorbance Chart



User Interface: Samples

## Liquid Handling

Liquid transportation	Pipetting arm
Liquid level sensors	Capacitive
Collision detection for probe	Yes (vertical)

## Reading

Optical system	Interference filters
Readings	Mono- or bichromatic
Light source	Halogen lamp
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 (precision)	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, CD-ROM, Memory: 512 Mbytes RAM, Hard disk capacity > 20 GBytes, USB 2.0 ports (min. 3, excl. mouse and keyboard), Operating system: Windows 7 or XP (SP3), latest updates installed,.Net 4.0
Ethernet network adaptor	, min. 900 dots vertical resolution
Recommended:	17 inch touch screen, 1280 x 1024 resolution
Physical dimensions (W x D x H)	Instrument without any components: 69 x 76 x 52 cm

Space required for routine use:	150 x 90 x 100 cm
Packaging:	92 x 86 x 79 cm +
	58 x 38 x 58 cm
Weight:	Gross: 90.0 kg, net: 51.0 kg

Mains fuse	T2 A / 250V, 5 x 20 mm
Electrical requirements	110...120, 220...240 VAC; 50/60 Hz; < 200 VA
Operating environment	Temperature 16...30 °C, Humidity < 80 % rel. non condensing
Wash / waste tank	20 l systemic, 2 l special wash, 20 l waste, level sensors, water quality min. de-ionized < 10 µs

# Reagents & Quality Control



Substrates		REF	Enzymes		REF
Albumin liquicolor	4 x 100 ml 1,000 ml	156004 10560	Acid Phosphatase	16 x 2 ml	12660
<b>auto-Bilirubin -D liquicolor</b>	375 ml	10741	Prostatic Acid Phosphatase	6 x 15 ml	10660
<b>auto-Bilirubin -T liquicolor</b>	375 ml	10742	Alkaline Phosphatase liquicolor	10 x 10 ml	12117
Bilirubin liquicolor	200 ml	10012	Alkaline Phosphatase <b>opt.</b> liquicolor	10 x 10 ml	12017
Bilirubin Direct/Total liquicolor	2 x 100 ml	10740		8 x 50 ml	12027
Cholesterol liquicolor	4 x 30 ml 4 x 100 ml	10017 10028	<b>alpha</b> -Amylase liquicolor	12 x 10 ml 8 x 50 ml	12018 12028
<b>auto-Creatinine liquicolor</b>	250 ml	10052	<b>CK-MB liquiUV</b>	10 x 10 ml	12118
Creatinine liquicolor	200 ml	10051	<b>CK-MB (NAC-activated)</b>	20 x 3 ml	12008
Creatinine ( <b>enzym.</b> )liquicolor	2 x 40 ml	10053	<b>CK NAC activated</b> liquiUV	10 x 10 ml	12015
Glucose liquicolor	4 x 100 ml 1,000 ml	10260 10121	<b>CK NAC activated</b>	20 x 3 ml	12005
Glucose liquiUV <b>mono</b>	1,000 ml	10786	<b>gamma</b> -GTliquicolor	10 x 10 ml 8 x 50 ml	12013 12023
Glycohemoglobin <b>HbA<sub>1</sub></b>	20 tests	10657	<b>GOT (ASAT) IFCC mod.</b> liquiUV	10 x 10 ml 8 x 50 ml	12011 12021
<b>HbA1c</b> liquidirect	40 ml	10770	<b>GPT (ALAT) IFCC mod.</b> liquiUV	10 x 10 ml 8 x 50 ml	12012 12022
Control Blood (normal/abnormal)	4 x 0.5 ml	10775	Lipase liquicolor	50 ml	12006
Calibrator Set	4 x 0.5 ml	10776		6 x 20 ml	12026
HDL Cholesterol liquicolor	80 ml	10084	<b>LDH SCE mod.</b> liquiUV	16 x 5 ml 10 x 10 ml 8 x 50 ml	12214 12014 12024
<b>HDL</b> Cholesterol	4 x 80 ml	10018	Pancreas-Amylase liquicolor	4 x 10 ml 6 x 20 ml	12009 12029
Hemoglobin liquicolor	10 x 500 ml	10751			
Homocysteine liquiUV	1 x 34 ml	11140			
Iron liquicolor	2 x 30 ml	10229			
Iron TPTZ liquicolor <b>NEW</b>	2 x 100 ml	12291			
LDL Cholesterol liquicolor	80 ml	10094			
<b>TIBC</b>	100 tests	10670			
Total Protein liquicolor	4 x 100 ml 1,000 ml	157004 10570	<b>Electrolytes</b>		
Triglycerides liquicolor <b>mono</b>	9 x 15 ml 4 x 100 ml	10720P 10724	Calcium liquicolor	200 ml	10011
Urea liquicolor	Complete kit	10505	Chloride liquicolor	2 x 100 ml	10115
	Reagent 1	1,000 ml	Magnesium liquicolor	200 ml	10010
	Reagent 2	1,000 ml	Phosphorus liquirapid	200 ml	10027
Urea liquiUV		10521	Potassium liquirapid	100 ml	10118
Uric Acid liquicolor <b>plus</b>	3 x 100 ml	10694	Potassium liquiUV	40 ml	10120
Uric Acid liquicolor	4 x 30 ml	10690	Sodium Rapid	60 ml	573351
	4 x 100 ml	10691	Sodium liquicolor	40 ml	10113
<b>Lipoproteins</b>					
Apolipoprotein <b>A1 (APO A1)</b>	2 x 30 ml	11101	<b>Immunoturbidimetry Products</b>		
Apolipoprotein <b>B (APO B)</b>	2 x 30 ml	11102	<b>Plasmaproteins</b>		
Lipoprotein <b>(a), Lp(a)</b>	2 x 25 ml	11105	Complement C3	2 x 20 ml	11110
Microalbumin	2 x 25 ml	11120	Complement C4	2 x 20 ml	11113
<b>Inflammatory and Rheumatoid Tests</b>					
<b>anti</b> -Streptolysin-O (ASO)	2 x 50 ml	11251P	Cystatin-C liquidirect	1 x 40 ml	11150
CRP-hs	3 x 115 ml	11541	Transferrin	2 x 30 ml	11115
CRP	1 x 10 ml	11241	Ferritin Latex	1 x 25 ml	11610
Rheumatoid Factors (RF)	2 x 50 ml	11261P	Immunoglobulins <b>direct</b>	IgG IgA IgM	2 x 10 ml 2 x 10 ml 2 x 10 ml
<b>Quality Control &amp; Calibrator</b>					
Serodos® /Serodos® plus			Serodos® /Serodos® plus		13951/13151
Control sera from human donors			Control sera from human donors		
Autocal			Autocal		13160

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