



HumaStar 200

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System Overview

REF	16895
Analyzer type	Automated clinical chemistry analyzer
Reagent system	HUMAN multipurpose reagents
Throughput (max. and typical)	200 tests/hr maximum 120-130 tests/hr typical (applies to most parameters)
Operation modes	Random access / STAT / Batch
Barcode reader	Internal sample barcode reader
Reaction / reading System	Reaction cuvettes with multicycle washing station
Languages available	 English, French, Spanish Additional languages can be translated by distributor
User interface	External PC, touch screen recommended

 Key specification

Human



Diagnostics Worldwide

HumaStar 200

Random Access Clinical Chemistry Analyzer

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)
	Calculation modes	Factor 1-point and multi-point
	Calculation 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 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, removeable 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

Liquid Handling

Liquid transportation	Pipetting arm
Liquid level sensors	Capacitive
Collision detection for probe	Yes (vertical)
Water consumption	 < 2l/h (8ml/test)
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 (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

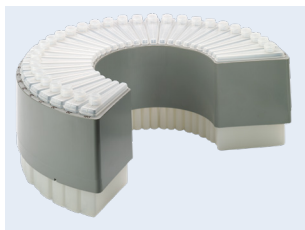
PC min. requirements	Intel Core i3, 100 GB HDD, 4 GB RAM, 1280 x 768 dots resolution, keyboard and mouse, 3 USB 2.0 ports (not including mouse and keyboard), Windows™10, NET framework (version which is automatically installed together with the software), All updates need to be installed. Only English, German, French and Spanish operating systems have been tested. All other languages need to be tested locally. No complex Chinese operating system. English (USA) keyboard and language drivers must be installed in any case.
Recommended PC requirements	Intel Core i5 CPU or higher, 8 GB RAM, touch screen monitor, FULL HD resolution, SSD (Solid-State-Drive) memory instead of HDD highly recommended, no Atom CPU or use dedicated graphic GPU, 6 USB 2.0 ports (instrument, barcode scanner, mouse, keyboard, printer, touch screen) LAN port for LIS host communication, External printer, A4
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
Environmental	Operating: temperature 16...30 °C, humidity < 80 % rel. non condensing Transport: temperature 0...50°C, humidity < 85% rel. non condensing
Wash / waste tank	20 l systemic, 2 l special wash, 20 l waste, level sensors

HumaStar 200

Random Access Clinical Chemistry Analyzer

Scope of Supply

	Unit/Size	REF.
HumaStar 200	1	16895
Packlist		
UPS	1	18961
Sample Tray 60 positions (installed on instrument)	1	16890/10
Accessories Kit HumaStar 200 REF. 16895A1 contains the following items:		
Reagent Bottles Tray 30 positions	1	16890/13
Reagent Bottle 50ml 30 pcs.	1	16890/35
Reagent Bottle 20ml 30 pcs.	1	16890/34
Cap for reagent bottles 30 pcs.	2	16890/36
Bottle Adapter 20 ml 15 pcs.	1	16890/14
Closing Lid for empty reagent bottle positions 15 pcs.	1	16890/41
Reagent Adapter for Cup or Tube	1	16890/15
Reaction Cuvettes Starter Kit 20 pcs.	1	16890/40
Sample Tubes 12 mm, 5 ml 50 pcs.	1	16890/30
Sample Cups 1 ml Adapter (for 16890/10) 10 pcs.	1	16890/12
Sample Cups 1 ml (for 16890/10) 50 pcs.	1	16890/31
Waste Tank	1	16890/55
Tank for Systemic Solution 20 l	1	16890/56
Tank for Special Wash Solution 2 l	1	16890/57
Tanks Tubing Group	1	16890/58
Power Cord	1	16890/146
USB Cable 3 m	1	16890/231
Halogen lamp	1	16890/51
Fuses Kit	1	16890/50
Software and Settings USB Card for HS200	1	16895/24
User Manual	1	16890/1



Reagent Bottles Tray (30 pos.)
REF. 16890/13



Reagent Bottles 20 ml
Reagent Bottles 50 ml
REFs. 16890/34, 16890/35

Obligatory Items

Service Kits

	Unit/Size	REF
Need to be ordered with the first instrument:		
Starter Spare Part Kit for HS 100 200 (Sufficient for up to 5 instruments)	1	16890/253
Need to be ordered with each instrument:		
Maintenance Kit 12 month for HS 100 200 (Sufficient for 1 year)	1	16890/250-1
Maintenance Kit 24 month for HS 100 200 (to be used 1 year after yearly maintenance)	1	16890/250-2
HC-Acute 50ml (4 pieces sufficient per maintenance kit) DG	1	17400/56



Obligatory Items

Consumables

Wash Additive 4 x 25 ml

REF

18971



Special Wash Solution 12 x 30 ml **DG**

18974

Cuvette Clean (necessary for turbidimetry) 4 x 100 ml **DG**

18973

Accessories

Personal Computer with monitor (printer) is necessary for the operation of this instrument.

HUMAN offers them as optional items below.

Optional Items

Service Kit

REF

Maintenance Kit 12 month for HS 100|200 (Sufficient for 1 year)

16890/250-1

Maintenance Kit 24 month for HS 100|200 (to be used 1 year after yearly maintenance)

16890/250-2

HC-Acute 50ml (4 pieces sufficient per maintenance kit) **DG**

17400/56

Accessories

REF

Personal Computer with Windows incl. Keyboard and Mouse

18992P

Monitor LCD 19 inch

17901M

Touch Screen Monitor

18995MT

HP Laser Printer (USB + Parallel)

18993L

Desktop Barcode Reader

16890/19

Sample Tray 60 Positions (12 x 75 mm – 12.5 x 100 mm or 1 ml (10 mm) cups with adapter)

16890/10

Sample Tray 20 Positions (12 – 16 x 100 mm + 20 positions of 2 ml cups)

16890/11

Sample Tray 60 Positions (12 – 12.65 x 75 mm or 1 ml (10 mm) cups with adapter)

16890/26

Matched Interference Filter 420 nm

16890/300

Matched Interference Filter 492 nm

16890/301

Matched Interference Filter 520 nm

16890/302

Matched Interference Filter 620 nm

16890/303

Matched Interference Filter 630 nm

16890/304

Matched Interference Filter 670 nm

16890/305

Matched Interference Filter 880 nm

16890/306

Consumables

REF

Sample Tubes 5 ml (12 x 85 mm) 1000 pcs.

16890/30

Sample Cups 1 ml (10 mm) (for Sample Tray 16890/10 with 16890/12) 1000 pcs.

16890/31

Sample Cups 2 ml (for Sample Tray 16890/11) 500 pcs.

17470/59

Reaction Cuvettes 200 pcs. (up to 75.000 tests)

16890/33

Reagent Bottle 20 ml 30 pcs.

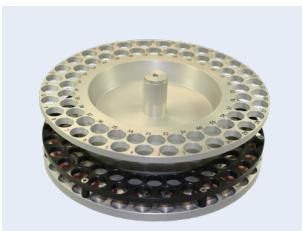
16890/34

Reagent Bottle 50 ml 30 pcs.

16890/35

Cap for Reagent Bottles 30 pcs.

16890/36



Sample Tray (60 pos.)

REF. 16890/10



Sample Tubes 5 ml

Sample Cups 1 ml

REFs. 16890/30, 16890/31

Legal statement

While Human is making every effort to include accurate and up-to-date information, we make no representations or warranties, express or implied, as to the accuracy or completeness of the information provided in this document and disclaim any liability for the use of it.



= parts of this item are classified as dangerous goods but are classified as „Limited and Excepted quantities (EQ) of dangerous goods“ and therefore do not fall under restrictions that apply to dangerous goods.