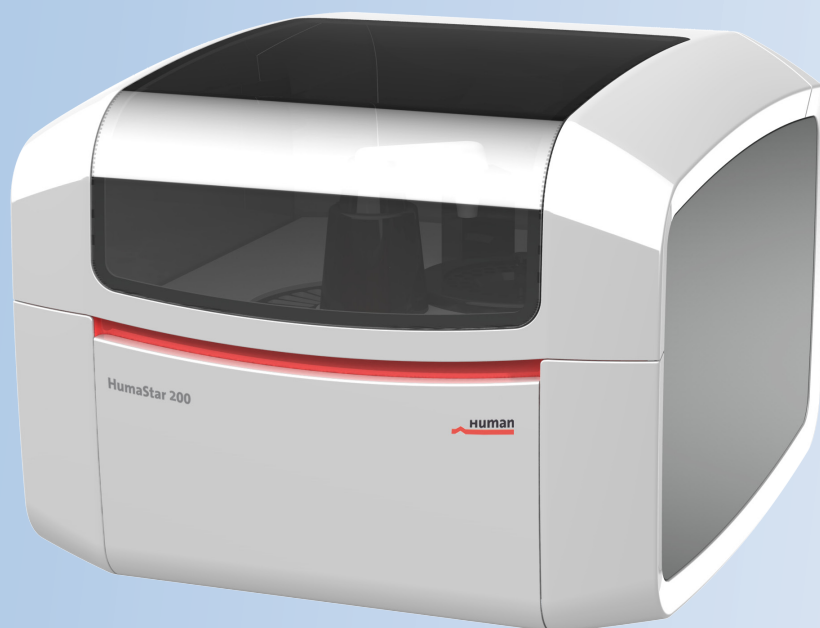


# HumaStar 200

- > System Specifications
- > Scope of Supply
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- > Optional Items



### 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

# HumaStar 200

## Random-Access Clinical Chemistry Analyzer

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 washstation, 8 needles
	2 bottles: systemic- and special wash solution
Incubation temperature	38°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
Collusion detection for probe	Yes (vertical)

## Reading

<b>Optical system</b>	Interference filters
<b>Readings</b>	Mono- or bichromatic
<b>Light source</b>	Halogen lamp (Phillips, 6 V, 10 W)
<b>Spectral range</b>	340 to 900 nm
<b>Wavelengths pre-installed</b>	340, 405, 505, 546, 578, 600, 650, 700 nm
<b>Max. # of wavelengths installed</b>	9
<b>Wavelength error (accuracy)</b>	± 2 nm on peak wavelength
<b>Wavelength bandwidth (precision)</b>	Half bandwidth 10 nm
<b>Detector</b>	Silicon photodiode
<b>Absorbance range (linearity)</b>	0.25 to 2.5 OD

## Data Processing

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

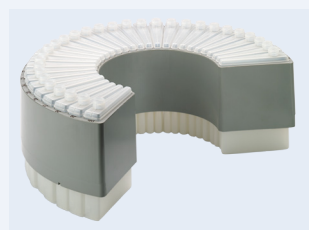
## General

<b>PC min. requirements</b>	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	
<b>Physical dimensions (W x D x H)</b>	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 + 50 x 50 x 50 cm
	Weight:	Gross: 90.0 kg, net: 51.0 kg
<b>Mains fuse</b>	T2 A / 250V, 5 x 20 mm	
<b>Electrical requirements</b>	110...120, 220...240 VAC; 50/60 Hz; < 200 VA	
<b>Environmental</b>	Operating: temperature 16...30 °C, humidity < 80 % rel. non condensing	
	Transport: temperature 0...50°C, humidity < 85% rel. non condensing	
<b>Wash / waste tank</b>	20 l systemic, 2 l special wash, 20 l waste, level sensors, water quality min. de-ionized < 10 µs	

# HumaStar 200

## Random-Access Clinical Chemistry Analyzer

### Scope of Supply



Reagent Bottles Tray (30 pos.)  
Cat.No. 16890/13



Reagent Bottles 20 ml  
Reagent Bottles 50 ml  
Cat.Nos. 16890/34, 16890/35

	Unit/Size	Cat.No.
HumaStar 200	1	16895
<b>Packlist</b>		
UPS 1KVA (230 V or 110 V)	1	18961 or /110
Sample Tray 60 positions (installed on instrument)	1	16890/10
Accessories Kit HumaStar 200 Cat.no. <b>16895AI</b> 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
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
HumaStar 100/200 Software Installer CD	1	16890/20
HumaStar 100 Setting CD	1	16895/24
User Manual	1	16890/1

### Obligatory Items

#### Service Kits

Cat.No

Need to be ordered with the first instrument:

**Starter Spare Part Kit HumaStar 100 and 200** (Sufficient for up to 5 instruments) **16890/253**

Need to be ordered with each instrument:

**Yearly Maintenance Kit HumaStar 100 and 200** (Sufficient for one year) **16890/250**



## Obligatory Items

### Consumables



Wash Additive 4 x 25 ml

Special Wash Solution 12 x 30 ml

Cuvette Clean (necessary for turbidimetry) 4 x 100 ml

Cat.No

18971

18974

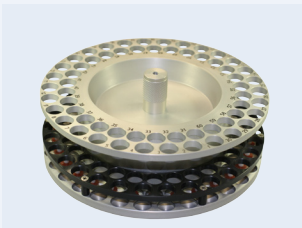
18973

### Accessories

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

HUMAN offers them as optional items below.

## Optional Items



Sample Tray (60 pos.)

Cat.No. 16890/10

### Accessories

Personal Computer with Windows 7 (32Bit) incl. Keyboard and Mouse

Monitor LCD 19 inch

LCD Touch Screen Monitor

HP Laser Printer (USB + Parallel)

Desktop Barcode Reader

Sample Tray 60 positions (10 mm Cups or 12 - 12.5 x 100 mm Primary Tubes)

Sample Tray 20 positions (20: 3.5 ml Hitachi Cups + 20: 12 - 16 x 100 mm Primary Tubes)

Cat.No

18992P

17901M

18991MT

18993L

16890/19

16890/10

16890/11

### Consumables

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

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

Sample Cups 3.5 ml (for Sample Tray 16890/11) 1000 pcs.

Reaction Cuvettes 200 pcs. (up to 75.000 tests)

Reagent Bottle 20 ml 30 pcs.

Reagent Bottle 50 ml 30 pcs.

Cap for Reagent Bottles 30 pcs.

Cat.No

16890/30

16890/31

16890/32

16890/33

16890/34

16890/35

16890/36



Sample Tubes 5 ml

Sample Cups 1 ml

Cat.Nos. 16890/30, 16890/31

## Legal statement

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