



## 13. TECHNICAL DATA

### 13.1 General technical data

General technical data	
Measurements	
• Depth	828 mm
• Width	976 mm
• Height	1251 mm
Net weight	approx. 36 kg
Ambient conditions, operation	
• Temperature	+10 °C to +40 °C (50 °F to 104 °F)
• Air pressure	700 hPa - 1060 hPa
• Humidity	30 % - 80 %, no condensation
Ambient conditions, storage	
• Temperature	-10 °C to +65 °C (14 °F to 149 °F)
• Air pressure	700 hPa - 1060 hPa
• Humidity	0 % - 95 %, no condensation
Ambient conditions, transport	
• Temperature	-10 °C to +65 °C (14 °F to 149 °F)
• Air pressure	700 hPa - 1060 hPa
• Humidity	0 % - 95 %, no condensation
Setup location, maximum altitude above mean sea level	3000 m
Display type	8.4" touchscreen display, can be swiveled 180° to the left and right
Power supply	Power pack
Mains voltage	100 V - 240 V
Mains frequency	50 Hz - 60 Hz
Power consumption	
• Standby (touchscreen display off, on/off button green)	< 2.7 W
• In operation (no bioimpedance measurement, on/off button white)	< 6.6 W
• In operation (bioimpedance measurement in progress, on/off button white)	< 15 W
Medical device in accordance with Directive 93/42/EEC	Class IIa
EN 60601-1:	
• Insulated device, protection class II	
• Medical electrical device, type BF	
<b>seca 360°</b> wireless network:	
• frequency band	2.433 GHz - 2.480 GHz
• transmission power	< 10 mW
Interfaces:	
• touchscreen display	USB 2.0
• weighing platform	Ethernet (10/100 Base-T)
USB memory stick requirements:	
• Minimum disk space requirements	2 GB
• File system	FAT 16
Compatible printer	Microsoft® Windows®-compatible printer via <b>seca 115</b> PC software

## 13.2 Technical data, bioimpedance analysis

Technical data, bioimpedance analysis	
Measuring method	8-point bioimpedance analysis
Electrode type	Stainless steel, 2 x 3 pairs of hand electrodes, 2 pairs of foot electrodes
Measuring frequencies	1; 1.5; 2; 3; 5; 7.5; 10; 15; 20; 30; 50; 75; 100; 150; 200; 300; 500; 750; 1000 kHz
Measured values	Impedance (Z), resistance (R), reactance (X <sub>C</sub> ), phase angle (φ)
Phase angle measuring range	0° to 20°
Impedance measuring range	10 Ω to 1000 Ω
Measuring segments	Right arm, left arm, right leg, left leg, right side of body, left side of body, torso
Measuring current	100 μ (+20 %, -50 %)
Measurement duration: frequencies 5 kHz and 50 kHz all frequencies (only if <b>Raw data for impedance</b> module active)	max. 20 s max. 90 s
Accuracy at frequencies 5 kHz and 50 kHz Segments: right side of body, left side of body • Impedance (at phase angle 0°) • Phase angle (at phase angle 0°, impedance 200 Ω to 1000 Ω)	±5 Ω 0.5°
Evaluation parameters	See "Evaluation parameters" from page 47

Measure of certainty (R <sup>2</sup> ) and standard deviation (SEE) for predictive formulas in this device <sup>a</sup>										
	Ethnicity: Caucasian		Ethnicity: African-American		Ethnicity: Asian		Ethnicity: South/Central American		Ethnicity: other	
Parameter	R <sup>2</sup>	SEE	R <sup>2</sup>	SEE	R <sup>2</sup>	SEE	R <sup>2</sup>	SEE	R <sup>2</sup>	SEE
FFM	0.96	2.17 kg	0.95	2.41 kg	0.95	1.92 kg	0.95	1.85 kg	0.96	2.07 kg
TBW	0.95	1.8 l	0.97	1.4 l	0.96	1.3 l	0.95	1.3 l	0.96	1.4 l
ECW	0.84	1.1 l	0.90	0.8 l	0.91	0.7 l	0.90	0.7 l	0.90	0.8 l
SMM left arm	0.88	0.18 kg	0.81	0.27 kg	0.82	0.19 kg	0.89	0.14 kg	0.86	0.2 kg
SMM right arm	0.85	0.21 kg	0.80	0.26 kg	0.83	0.18 kg	0.90	0.13 g	0.86	0.20 kg
SMM left leg	0.55	0.78 kg	0.73	0.70 kg	0.37	0.75 kg	0.25	0.74 kg	0.64	0.74 kg
SMM right leg	0.70	0.66 kg	0.80	0.6 kg	0.60	0.63 kg	0.50	0.63 kg	0.75	0.63 kg
SMM total	0.89	2.0 kg	0.90	2.2 kg	0.85	2.0 kg	0.88	1.8 kg	0.90	2.0 kg
VAT	0.89	0.5 l	0.61	0.7 l	0.71	0.6 l	0.54	1.2 l	0.75	0.8 l

a. In the USA, a study was conducted with 130 healthy adults of different ethnicities. The aim of the study was to validate the parameters determined using seca formulas against clinically established reference methods. The results of this comparative study are shown in the table above. The table shows the degree of certainty (R<sup>2</sup>) and standard deviation (SEE) for the parameters determined using seca's formulas by ethnicity.

### 13.3 Weighing data (verified model)

seca 515	
Accuracy class in accordance with Directive 2009/23/EC	III
Measuring method	4 load cells
Maximum load	
• Partial weighing range 1	150 kg
• Partial weighing range 2	300 kg
Minimum load	
• Partial weighing range 1	1 kg
• Partial weighing range 2	2 kg
Increments	
• Partial weighing range 1	50 g
• Partial weighing range 2	100 g
Tare range	to 300 kg
Accuracy on initial verification	
• Weighing range 1: 0 to 25 kg	±25 g
• Weighing range 1: 25 kg to 100 kg	±50 g
• Weighing range 1: 100 kg to 150 kg	±75 g
• Weighing range 2: 0 to 50 kg	±50 g
• Weighing range 2: 50 kg to 200 kg	±100 g
• Weighing range 2: 200 kg to 300 kg	±150 g

### 13.4 Weighing data (unverified model)

seca 514	
Measuring method	4 load cells
Maximum load	
• Partial weighing range 1	150 kg / 330 lbs / 24 sts
• Partial weighing range 2	300 kg / 660 lbs / 47 sts
Minimum load	
• Partial weighing range 1	1.0 kg
• Partial weighing range 2	2.0 kg
Increments	
• Partial weighing range 1	50 g / 0.1 lbs
• Partial weighing range 2	100 g / 0.2 lbs
Tare range	300 kg
Accuracy	
• 0 to 35 kg	±100 g
• 35 kg to maximum load	±0.3%
• 0 to 75 lbs	±0.2 lbs
• 75 lbs to maximum load	±0.3%
• 0 to 5.5 sts	±0.2 lbs
• 5.5 sts to maximum load	±0.3%

## 13.5 Technical modifications

Combination seca 515/514 (SW version 1.1) seca 115 (SW version 1.4)	
Downward-compatible:	no
New:	<ul style="list-style-type: none"> <li>regional settings: drop-down menus <b>Name format</b>, <b>Name hyphen</b></li> <li>enter waist circumference with <b>Health risk</b> evaluation module activated</li> <li>visceral adipose fat (VAT) parameter in the <b>Health risk</b> evaluation module</li> <li>skeletal muscle mass (SMM) parameter in the <b>Function/rehabilitation</b> evaluation module</li> <li>send individual seca patient file from the <b>seca 115</b> PC software to mBCA</li> <li>start printing out results reports directly on device (<b>seca 515/514</b>)</li> </ul>
Modified:	graphical representation: phase angle ( $\phi$ ), bioimpedance vector analysis (BIVA), body composition chart (BCC), total body water (TBW)
No longer applicable:	lean soft tissue (LST) parameter in <b>Function/rehabilitation</b> evaluation module

## 14. OPTIONAL ACCESSORIES

Accessory	Article number
Measuring stations <ul style="list-style-type: none"> <li><b>seca 285</b></li> <li><b>seca 284</b></li> </ul> Length measuring rods <ul style="list-style-type: none"> <li><b>seca 274</b></li> <li><b>seca 264</b></li> </ul>	Country-specific versions Country-specific versions  Country-specific versions Country-specific versions
PC software <ul style="list-style-type: none"> <li><b>seca analytics 115</b></li> </ul>	Application-specific license packages
<b>seca 360° wireless USB adapter 456</b> USB wireless adapter	456-00-00-009

## 15. SPARE PARTS

Spare parts	Article number
Power pack, Euro: 100-240 V~ / 50-60 Hz / 12 V= / 1.2 A	68-32-10-268
<b>seca 201</b> circumference measuring tape	201-17-17-009
DVD with <b>seca analytics 115</b> PC software and license for a permanent workplace	Country-specific versions
<b>seca 360° wireless USB adapter 456</b>	456-00-00-009
Ethernet cable (1.5 m)	08-06-16-467

## 16. DISPOSAL



Do not dispose of the device with your household waste. It has to be properly disposed of as electronic waste. Follow your respective national regulations. For more information, please contact our service representatives at:

**service@seca.com**