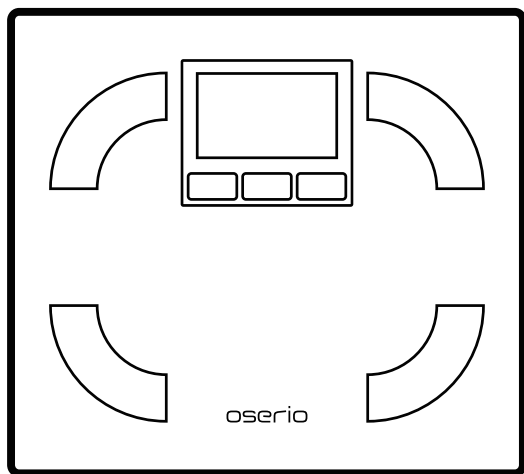


oserio®

Health is Beautiful

User Manual

FFP-330 Body Fat Scale



Please keep the instruction manual at hand all the time for future reference.

Explanation of the Graphic Symbols on Label/Packaging

	Indicates that product conforms to Declaration of Conformity requirements.
	Product should not be disposed of in regular trash, but in accordance with electrical and electronic equipment.
	Product has Type BF applied parts (metal foot electrodes).



Warning

During measurement, this product will send a low level imperceptible electrical current throughout the body. Individuals with implanted medical devices, such as:

1. Pacemakers
2. Electronic lungs and other electronic medical life support equipment
3. ECG products

must not use this product, as the electric current may affect the implanted product.

This product is not a medical device and should not be used for diagnosis or treatment.

Copyright Notice

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1.1 General Information

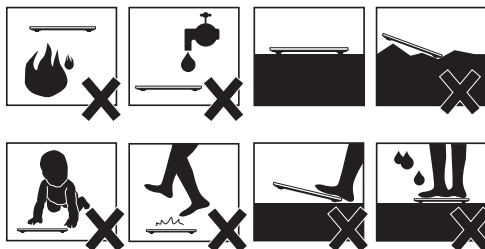
Thank you for choosing this Oserio product. Before use, please read this user manual carefully, and keep it in a safe place for reference. It contains important instructions regarding proper usage.

Intended Use

This product is intended to measure the weight and bioelectrical impedance of children or adults who can stand unassisted, combining it with input data to calculate subject's body composition.

General Handling

- Product should be placed on stable, flat, solid, non-slippery surface.
- Place the product in an area free from direct sunlight, heating equipment, high humidity, or extreme temperature change.
- Never submerge in water.
- Usage on soft surfaces (ex: carpet) may result in inaccurate results.



1.1 General Information

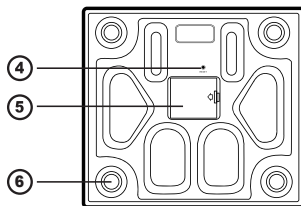
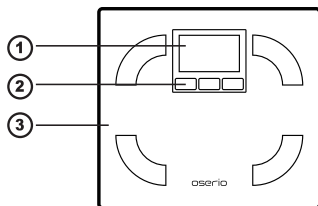
Disposal

- All batteries contain toxic compounds; batteries should be disposed of via designated competent organizations. Batteries should not be incinerated.
- This product is not to be treated as regular household waste, but should be taken to a designated collection points for electronics. Further information should be provided by local waste disposal authorities.

Usage of Results

- BIA results are calculated based on impedance values validated with representative population studies and statistical analysis. As such, the technique is best suited for tracking progress for an individual over a period of time, or for categorizing large groups of people, rather than used as a one-time analysis. Accuracy of results is highly dependent on proper measurement procedure. Please follow instructions carefully for best results.
- Pregnant women should use the weight function only. Body composition calculations may be of limited accuracy.

2.1 Overview



① LCD screen

② □ Set button, < Left and > Right keys

③ Measurement platform

④ Reset button

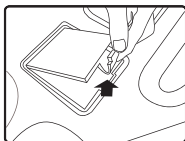
⑤ Battery cover

⑥ Feet

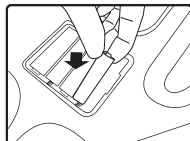
WARNING: pressing and holding **RESET** for 3 seconds will delete all data! Deleted data cannot be recovered.



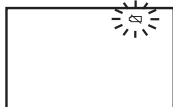
2.2 Inserting Batteries



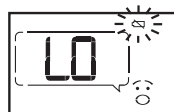
Press tab to lift and open battery housing cover



Insert 4 AA batteries



When battery is low, indicator will blink at top right. Product can still be used



When battery is too low to conduct measurement, "LO" will appear and product will shut off

3.1 Conduct weight measurement only

Press  key to turn on product.



Product will perform self-adjustment. Do not stand on measurement platform during this time.



Stand on measurement platform.



Weight result will be displayed on screen.

3.2 Add new user account

To conduct a body composition measurement, you must create a user account or use guest mode. Begin inputting user data by pressing the

 key



Place product on stable, flat, solid, non-slippery surface (no carpet).

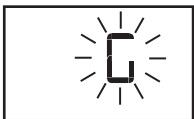
Press  key to turn on product.



Press < > to select user ID (1-5 or guest).



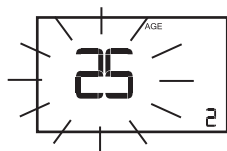
(ID#5)



(Guest)

Press  key to confirm selection.

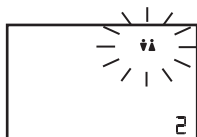
3.2 Add new user account



Input Age

Input age using < > keys. (press and hold keys to advance at a faster speed)

Press  key to confirm.



Select Gender

Toggle between  Male /  Female using < > keys. Press  key to confirm.



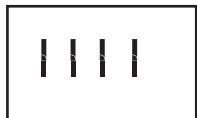
Input height

Input height using < > keys. (press and hold buttons to advance at a faster speed).

Press  key to confirm.



Product will display user data before beginning measurement.



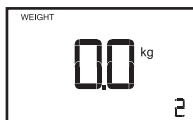
Product will perform self-adjustment. Do not step on measurement platform during this time.



When "0.0" appears on display you can begin measurement.

(product will automatically turn off in 20 seconds if no action is taken)

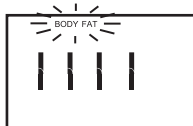
3.3 Conduct body composition measurement



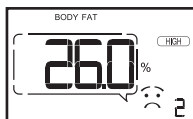
Remove shoes and socks, and ensure soles of feet are clean. Stand on measurement platform.



Weight result will be displayed on screen.

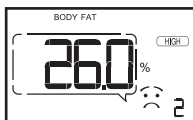


Product will begin body composition analysis. Stand still and do not step off from measurement platform until body composition results are displayed on screen.
(product will beep twice when calculation is complete)

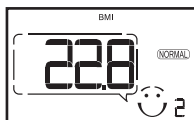
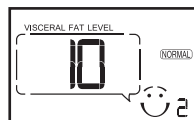


Once calculation is complete, body composition results will be displayed on screen, beginning with Body Fat Percentage.

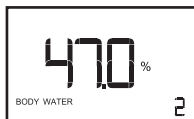
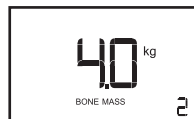
3.4 View results



Body Fat Percentage

Body Mass Index
(BMI)

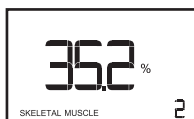
Visceral Fat Level

Basal Metabolic
Rate (BMR)Body Water
Percentage

Bone Mass



Muscle Mass

Skeletal Muscle
Percentage

Health Score



Weight

Each result will be displayed on screen for 5 seconds. The ID of the user will be displayed at the bottom right ("User 2" in this example).

Product will automatically turn off within one minute if no keys are pressed.

Press < > keys to toggle manually.

3.5 View past results

After a user has conducted measurement, these results are stored within product and can be viewed later by pressing the  key after measurement. Press  key to toggle between 7 most recent results.

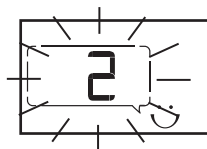
3.6 User quick select

After user account has been created, future measurements can be conducted using the following methods:

1) Auto-identify user

Tap the product to turn it on.

Product will conduct measurement before identifying user.



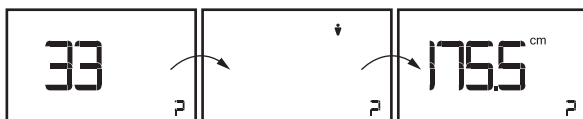
After measurement, product will identify the user automatically.
("User 2" in this example)



Product will display user data before displaying measurement results.



If product cannot determine who the user is, it will display similar possibilities. Use the   keys to select the correct user.
("User 2" and "User 4" used in this example)



Product will display user data before displaying measurement results.

3.6 User quick select

2) Manually select existing user and view history results

Press  key to turn on product.



Press < > to select user ID (1-5).



Press  key to confirm selection.



Product will display user data before displaying measurement results.



Product will perform self-adjustment. Do not step on measurement platform during this time.



When "0.0" appears on display, product is ready for body composition calculation.

(product will automatically turn off in 20 seconds if no action is taken)

To conduct measurement, step onto product.

To view history results, press  key to confirm selection.

3.7 Measurement Results Explained

Results for Body Fat Percentage, BMI, and Visceral Fat Level will be given a score:



Low



Normal



Over



High

Body Fat Percentage

Normal body fat is lower for men and higher for women. Keeping track of body fat is more important than weight, as total body weight does not distinguish between fat and muscle.

Body Mass Index (BMI)

BMI is a commonly used index by the World Health Organization (WHO), utilizing height and weight to classify underweight, normal, over, and obesity in adults.

Category	BMI (kg/m ²)	Risk of obesity-related disease
Under	< 18.5	Low
Normal	18.5-24.9	Average
Over	24.9-29.9	Slightly Increased
Obese I	30.0-34.9	Increased
Obese II	35.0-39.9	High
Obese III	> 40	Very High

(World Health Organization adult BMI standards)

3.7 Measurement Results Explained

Visceral Fat Level

Fat in the abdominal area can be divided into visceral fat (surrounding your organs) and subcutaneous fat (under the skin). It's possible to have too much visceral fat even if your weight or BMI is within normal standards! Visceral fat level should be controlled within normal range, to reduce risk of obesity-related diseases.

Basal Metabolic Rate (BMR)

This is the minimum number of calories your body burns over a 24-hour period to sustain vital functions, including breathing, blood circulation, regulation of body temperature, cell growth, brain function, and nerve function. Increasing muscle mass will increase BMR, making it easier to avoid weight gain, as your body burns more calories during its normal resting status.

Body Water

Typically, children have a higher percentage of body water than adults. Body water tends to decrease as part of the aging process¹. Due to larger overall size and muscle mass (on average), men tend to have more body water than women². Note that a roughly 5% fluctuation in body water daily is normal, influenced by physiological activity and consumption of food and drink³. Results should be tracked long-term for noticeable changes. For example, increasing muscle mass generally also increases body water.

Related Research

- 1 Cameron CW, Guo SS, Zeller CM, Reo NV, Siervogel RM. Total body water for white adults 18 to 64 years of age: The Fels Longitudinal Study. 1999. *Kidney International* Vol.56 Issue 1, p.244-252
- 2 Lesser GT, Markofsky J. Body water compartments with human aging using fat-free mass as the reference standard. 1979. *Am J Physiol*, 236, p.R215-R220.
- 3 Askew EW Present Knowledge in Nutrition (7th ed) 1996, p.98-107

3.8 About Bioelectrical Impedance Measurement

The product uses Bioelectrical Impedance Analysis (BIA) to calculate body composition. At its core, BIA operates by treating the human body as an electrical conductor within an alternating current circuit, from which the alternating current resistance and impedance is measured.

Impedance

The measurement current flows from one lower limb through the lower abdomen and then into the other lower limb, and the bioelectrical impedance is measured. For reference, the impedance measurement methods for the legs are shown in the diagram.



Using a combination of existing population data and in-house research, body composition analysis formulas can calculate results based on the Impedance, Height, Gender, Age, and Weight of the subject. These algorithms are formulated with reference to "gold standard" measurements such as Dual-Energy X-ray Absorptiometry (DXA) to confirm viability and accuracy.

Measurement Rules

For best results, body composition analysis via BIA should be conducted under specific conditions. Inconsistent measuring conditions will affect the accuracy and validity of BIA results, and interpretation of body composition. The information below regarding the effect of various factors on measurement results is largely sourced from related research by Kushner et al⁴.

Related Research

4 Kushner RF, *Clinical characteristics influencing bioelectrical impedance analysis measurements*, 1996

3.8 About Bioelectrical Impedance Measurement

Before measurement, please take note of the following:

1. Do not exercise or perform strenuous physical tasks before measurement

Strenuous physical tasks and exercise can result in a temporary change in body composition measurements. As BIA analyzes electrical impedance in the body, activities that might affect impedance (e.g. increased perspiration, dehydration, blood circulation) may affect measurement accuracy.

2. Affect of food and drink on measurement results

Ingestion of food and drink can affect impedance and weight, and thus analysis results. This change generally lasts 2-5 hours after each meal. For most accurate results, BIA measurements should ideally be conducted in a fasting state (e.g. before breakfast)⁵.

3. Do not shower or bathe directly before measurement

Perspiration can result in a temporary change in body composition measurements, as the accuracy of BIA depends largely upon interpretation of measured impedance values, which are affected greatly by hydration levels.

4. Perform the measurement under normal temperature conditions (24-28°C)

Extreme temperatures (both hot and cold) can result in temporary physiological changes. For example, excessive sweating due to heat can cause increased impedance measurements, resulting in a higher fat calculation. For best results, measurements should be conducted in an environment between 24-28°C.

Related Research

5 R Gallagher, M & Walker, Karen & O'Dea, K. The influence of a breakfast meal on the assessment of body composition using bioelectrical impedance. *European journal of clinical nutrition*. 52. 94-7.

3.8 About Bioelectrical Impedance Measurement

5. Remove shoes and socks before measurement

Shoes and socks will interfere with the electric current, making measurement inaccurate or in some cases, impossible.

6. Avoid physical contact with other people during measurement

Because BIA measures the impedance encountered as the electric current travels through the subject's body, if another individual is touching the subject, the electric current may pass through the other individual, causing inaccuracy in measurement results.

7. Measure height accurately

Inaccurate height input will affect estimation of body composition.

8. Perform the measurement in the morning

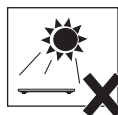
As a general rule, BIA measurements should be performed in the morning to minimize the influence of activity throughout the day on measurements⁶.

Related Research

6 Oshima Y & Shiga T. Within-day variability of whole-body and segmental bioelectrical impedance in a standing position, *European Journal of Clinical Nutrition* 2006, 60, 938-941.

4.1 Caring for your product

- Product should be stored in clean, cool, dry location when not in use, away from direct sunlight and extreme temperatures.
- This product is not a toy. Children should not be allowed to play with it.
- Avoid corrosive liquids and materials. Do not use detergents or cleaners to clean the product. This may damage the coating protecting the electrodes used for body composition measurement.
- Wipe the platform and display using clean soft cloth. Avoid rough, sticky cloth, to prevent scratching the measurement platform and screen panels.



Troubleshooting

5.1 Troubleshooting



Overload

Total load exceeds maximum capacity



Unstable weight

Stand as still as possible during measurement



Measurement error (body fat)

Calculated body fat exceeds maximum capacity; measurement cannot be completed

Measurement error (visceral fat)

Calculated visceral fat exceeds maximum capacity; measurement cannot be completed



Measurement error

Program error. If problem persists, please contact manufacturer

6.1 Product Information

Model	FFP-330 Body Fat Scale		
Battery	4 AA batteries	Product Weight	1.3 kg
Product Dimensions	285(W) x 315(D) x 45(H) mm 11.2(W) x 12.4(D) x 1.8(H) inch		
Screen Dimensions	86(W) x 52(D) mm 3.4(W) x 2.0(D) inch		
Capacity / Graduation	5~150 kg x 0.1 kg 11~330 lb x 0.2 lb		
Measurement Output	Weight Body Mass Index (BMI) Body Fat Percentage Visceral Fat Level Basal Metabolic Rate Body Water Percentage Bone Mass Muscle Mass Skeletal Muscle Percentage Health Score		
Measurement Sensors	4 weight sensors 4 foot electrodes (Bioelectrical Impedance Analysis)		
Operation Environment	Temperature: 5°C~35°C Relative Humidity: 30%~85%		
Storage Environment	Temperature: -20°C~60°C Relative Humidity: 10%~95%		

Model Variants: FFP-330W, FFP-330S

6.2 EMC Guidance and Manufacturer's Declaration

Guidance and manufacturer's declaration-electromagnetic emissions			
The FFP-330 Body Fat Scale is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that it is used in such an environment.			
Emission test	Compliance	Electromagnetic environment-guidance	
RF emissions CISPR 11	Group 1	The product uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.	
RF emissions CISPR 11	Class B	The product is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.	
Harmonic emissions IEC 61000-3-2	Class A		
Voltage fluctuations/flicker emissions IEC 61000-3-3	Compliance		
Guidance and manufacturer's declaration-electromagnetic immunity			
The FFP-330 Body Fat Scale is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge(ESD) IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%

6.2 EMC Guidance and Manufacturer's Declaration

Electrical fast transient/burst IEC 61000-4-4	$\pm 2\text{ kV}$ for power supply lines + 1kV for input/output lines	+ 2kV for power supply lines + 1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	$\pm 1\text{ kV}$ line(s) to line(s) $\pm 2\text{ kV}$ line(s) to earth	$\pm 1\text{ kV}$ line(s) to line(s) $\pm 2\text{ kV}$ line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25 cycles 0% UT for 5 s	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25 cycles 0% UT for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product be powered from an uninterruptible power supply or a battery.
Power frequency(50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	The product power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE UT is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration-electromagnetic emissions

The FFP-330 Body Fat Scale is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that is used in such an environment.

Immunity test

**IEC 60601
test level**

**Compliance
level**

**Electromagnetic
environment-guidance**

6.2 EMC Guidance and Manufacturer's Declaration

Conducted RF IEC 61000-4-6	3 Vrms 150 KHz to 80 MHz	3 Vrms 150 KHz to 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the product including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P}$ 80MHz to 800 MHz $d = 2,3 \sqrt{P}$ 800MHz to 2,5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz 3 V/m 80MHz to 2,7 GHz	6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz 3 V/m 80MHz to 2,7 GHz	

NOTE1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

6.2 EMC Guidance and Manufacturer's Declaration

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the product is used exceeds the applicable RF compliance level above, the product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the product. b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distance between portable and mobile RF communications equipment and the FFP-330 Body Fat Scale

The product is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product as recommended below, according to the maximum output power of the communications equipment.

<i>Rated maximum output power of transmitter</i> <i>W</i>	<i>Separation distance according to frequency of transmitter m</i>		
	<i>150 kHz to 80 MHz</i> d=1,2√P	<i>80 MHz to 800 MHz</i> d=1,2√P	<i>800 MHz to 2,5 GHz</i> d=2,3√P
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



Manufacturer:

Charder Electronic Co., Ltd.
No.103, Guozhong Rd., Dali Dist.,
Taichung City, 41262, Taiwan (R.O.C.)