

# ELECTRONIC DENSIMETER EW-300SG

For measuring solid density; Density resolution: 0.01g/cm<sup>3</sup>

It takes only 10 seconds to measure.

The most suitable instrument to use for specific gravity inspection on the production line.

## ■ FEATURES

- General – purpose type with density resolution of 0.01g/cm<sup>3</sup>, measurable weight 0.01~300g.
- Very simple measuring procedure allows anyone to use easily.
- Capable of measuring instantaneously (measurement time: about 10 seconds), this is the most suitable for the users, who have a number of samples to be measured, to use.
- Capable of measuring specific gravity of floating samples, such as urethane rubber, plastics, sponge, and wood, in the water.
- Result judgments with Comparator Mode is available.
- Easy connection to PC with standard equipped Interface (RS232C: 9 pins, male connector).
- Ethanol can be used as a liquid medium with improved Styrol Water Tank.
- Measuring the change rate of density.



■ Indication: Weight in the air; Value of specific gravity; Volume.

## ■ OPTIONAL PARTS

- Printer AD-8121B: Dot impact type .
- Airtight windshield: EW-300SG is not equipped with an airtight windshield, which is necessary, in case measurement may be difficult due to effect of wind.
- ISO-related documents: Traceability; Calibration Certificate; Report on of Inspection Results.

## ■ SPECIFICATIONS

<b>Product Name</b>	Electronic Densimeter EW-300SG
Density resolution	0.01g/cm <sup>3</sup>
Scale capacity	0.01~300g
Measuring Method	Conform to Pycnometer and Hydrostatic Method
Standards	JIS K6268A, former JIS K6350 (Rubber), JIS K7112 (Plastic) etc ASTM D297-93-16 (Rubber), ASTM D792-00 (Plastic) etc
Power source	AC115~240V
Dimensions	(D)218 × (W)190 × (H)170mm / 1.54kg

## ELECTRONIC DENSIMETER MD-300S

For measuring solid and liquid specific gravity; Density resolution:  $0.001\text{g/cm}^3$

A general – purpose new model with high accuracy debuts with additional functions equipped.

### ■ FEATURES

- Highly precise general-purpose model with density resolution of  $0.001\text{g/cm}^3$ , measurable weight  $0.01\sim 300\text{g}$ .
- Capable of measuring specific gravity of liquid (other than those with high viscosity, which need optional parts).
- Capable of setting the actual water temperature and specific gravity of the solution with front keys and automatically compensating the measured specific gravity.
- Capable of measuring plastic pellets.
- Capable of measuring readily floating samples, such as urethane rubber, plastics, sponge, and wood.
- Result judgments with Comparator Mode is available.
- Optional Setting Mode is available for distinction of uncertain sample or development of new material.
- Easy connection to PC with standard equipped interface (RS232C: 9 pins, male connector).
- Capable to measure the compensated liquid density by setting compensated liquid temperature and compensating temperature rate.



■ Indication: Weight in the air; Weight in the water; Value of specific gravity; Volume

### ■ OPTIONAL PARTS

- Printer AD-8121B: Dot impact type
- Liquid gravity kit, which is need for measurement of liquid.
- ISO-related documents: Traceability; Calibration Certificate; Report on of Inspection Results.

### ■ SPECIFICATIONS

Product Name	Electronic Densimeter MD-300S
Density resolution	$0.001\text{g/cm}^3$
Scale capacity	$0.01\sim 300\text{g}$
Measuring Method	Conform to Pycnometer and Hydrostatic Method
Standards	JIS K6268A, former JIS K6350 (Rubber), JIS K7112 (Plastic) etc ASTM D297 – 93 – 16 (Rubber), ASTM D792 – 00 (Plastic) etc
Power source	AC115~240V
Dimensions	(D)218 × (W)190 × (H)170mm / 1.54kg
Accessories	Airtight windshield

# Electronic Densimeter SD-200L

For measuring solid and liquid specific gravity; Density resolution: 0.0001g/cm<sup>3</sup>  
 Capable of measuring solid specific gravity and volume, and its variations down to the fourth decimal place.

## ■ FEATURES

- Densimeter with super-accuracy of density resolution of 0.0001g/cm<sup>3</sup>.
- Very simple measuring procedure allows anyone to use easily.
- Solid volume and specific gravity of solid and liquid can be measured with one unit.

## ■ SOLID MODE

- Capable of measuring volume variation factor.
- Capable of indicating errors for the measured value.
- Capable of setting measurement time at will.
- Capable of compensating water temperature at will: capable of compensating water temperature, which is required for the measurement of the specific gravity.
- Capable of measuring plastic pellets.
- Capable of measuring readily floating samples, such as urethane rubber, plastics, sponge, and wood.

## ■ LIQUID MODE

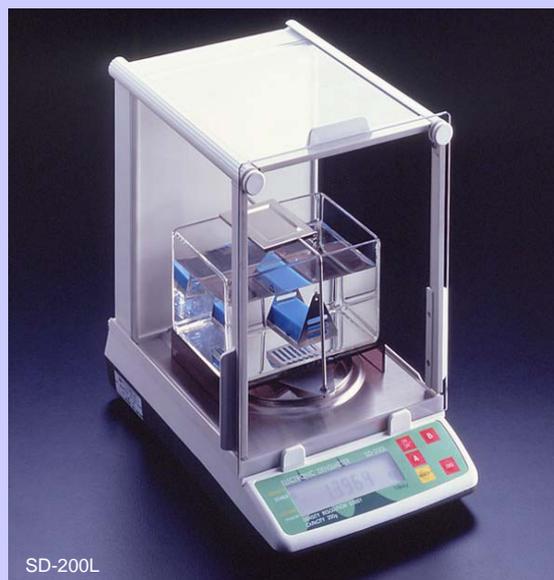
- Measurement time needed is about 20 seconds.
- Volume of sample needed for measurement is about 50cc.
- To measure different samples successively, just simply replace the beaker.
- A measurement result represents only value obtained through measurement at room temperature.

■ Indication: Weight in the air; Weight in the water; Value of specific gravity; Volume

■ Sales volume: about 1,000 units

## ■ OPTIONAL PARTS

- Printer AD-8121: Dot impact type
- Handy printer BS-80TS: Thermal printer
- Liquid gravity kit, which is need for measurement of liquid.
- RS-232C Interface, which is indispensable in case of connection with a printer or a PC.
- Cylinder type glass water tank, which is necessary, in case liquid other than water is used as a medium for measurement.
- AC adapter, which is used overseas: AC adapter, which allows only the unit to be used in the world, is available.
- Manual instructions in English.
- ISO-related documents: Traceability; Calibration Certificate; Report on of Inspection Results.



## ■ SPECIFICATIONS

Product Name	Electronic Densimeter SD-200L
Density resolution	0.0001g/cm <sup>3</sup>
Scale capacity	0.0001–200g
Measuring principle	Archimedean principle
Standards	Rubber, plastics, etc. are in conformity with JIS Standards and UL Standards
Power source	AC100V ±10% 50/60Hz
Dimensions	213 (W)X 319 (D)X 301 (H); Weight: 5.8kg

## ELECTRIC DENSIMETER 200 SERIES:FAQ(1)

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### ■ SAMPLES

Customers tell us about samples (eg. material, name etc.) when they enquire but we do not understand exactly what the samples are like. From this reason, we find out the following information.

<For pellet samples>

- A sample must be able to be tested in water or other liquid medium  
→ If not, the sample can't be tested by 200 series.
- How many digits the customers need for measuring density (management)  
→ Customers can choose from 3 model types. It depends on their industry standard or their usage.

eg.)For plastic industry, we recommend the model SD-200L in Japan because the standard requires 4 digits. For rubber factory, the model EW-200SG or the model MD-200S is recommendable in Japan.

- How big the sample is  
→ The sample size should be within the size of testing plate.
- Weight, density value  
→ Weight should be within 200g.  
→ A minimum weight for each model is required for testing. If the weight of the sample is less than the minimum weight for a model, the testing result will include an error.
- In case the sample doesn't meet the minimum weight for testing, plural samples can be prepared for the test.  
→ Plural samples will bring accurate test result in such a case.  
→ If not, an error will occur.
- Floating, soluble, or absorbable in the water or not  
eg.)For testing a floating sample like a sponge or a film, you can measure it by using STEAL ANGLE or a lighter liquid medium like ethanol. There are various testing methods for our densimeters and it depends on the kind of samples.

\*STEAL ANGLE is a standard accessory for our densimeter 200 series.

<For pellet samples>

- Basically, ask the same questions as above
- Can be tested in ethanol or not  
→ In case where the density of the sample is lower than water and higher than ethanol, it is easier to test by using ethanol as a liquid medium instead of water.

<For solid samples> (Mixture)

- Is it mixed equally? Has it been precipitated gradually as time passes?  
→ If YES, the measured density value would be based on the liquid samples around the glass sample. (therefore not an average of the liquid sample) The value should be used as a standard only.
- Is it viscous liquid or not?  
→ A glass sample which weighs about over 20g should be sunk in the liquid without pressure. The test will be impossible if viscosity is too high and the G.S. doesn't sink into the liquid. (eg. mayonnaise can't be tested.)

## ELECTRIC DENSIMETER 200 SERIES:FAQ(2)

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### ■ For testing

#### <For solid samples>

Q: How do you remove the air bubble cling to the sample?

A: 

- Shake in water or a liquid medium when you soak the sample.
- Drop some surfactant. (eg. detergent)
- Soak the sample in ethanol before testing.

Q: In the case where the sample absorbs water, how do you test it?

A: 

- There are two ways how to set a standard for such absorbing sample as below.
- Set the standard density soon after the stable mark appears on the display.
- Test the sample continuously with Printer or PC and set the standard based on the results.

Q: If the samples includes "air bubbles which can't escaped", how do you test it?

A: The water does not sink into this kind of sample. This means we can not get actual density value. The value should be used as a standard only.

#### <For pellet samples>

Q: If the samples float in water, how do you test it?

A: If the pellets spread in water easily, it would be impossible to test. In this case, please try to test the samples by using the ethanol as a liquid medium. If the samples still float in ethanol, please use a small netlike basket with a lid, which is made of wire. You put the samples in it and sink in the water for testing.

#### <For liquid samples>

Q: What is the maximum viscosity of liquid sample can you test?

A: GLASS SAMPLE which weigh about 20g should be sunk in the liquid without pressure. The test will be impossible if viscosity is too high and the G.S. doesn't sink into the liquid. (eg. mayonnaise can't be tested.)

### ■ Others

Q: I often test the sample in a day. I sometimes use ethanol for preventing the air bubble in water. In these cases, the water would become muddy. Does this cause any problem on the result of test?

A: It depends on the muddiness but may cause an error on the result. We recommend you to change the water if it becomes muddy. (eg. once in a day)

Q: Is there any solution for decreasing a value of error?

A: If you use a sample, which has a minimum weight for testing, you can decrease a value of error. (See the table on the instruction manual of SD-200L)

Q: How often do you do the calibration?

A: If you always use the densimeter at the same place, we recommend doing calibration at least once a month. (once a week is desirable) If you move the densimeter to other place, please do calibration surely.

Q: Is there any notice when we use the densimeters?

A: Please be careful not to drop water on densimeters in order to avoid troubles. The wind by air conditioner causes "Error" on the display. Please be careful of direct hit by the wind, vibration, and shock by some reasons.