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# TESTING TECHNOLOGIES

## Electronic Densimeter

Samples	EW-300SG	MD-300S	MDS-300	SD-200L	MDS-3000
Solid	○	○	○	○	○
Floating	○	○	○	○	○
Absorbents	○	○	○	○	○
Pellets	○	○	○	○	○
Films	○	○	○	○	○
Liquid *1	×	▲	▲	▲	▲
Powders*2	×	×	▲	×	▲

\*1 Liquid viscosity less than 100 cP can be measured. \*2 Powder density can be measured by original substituted method.

Features	EW-300SG	MD-300S	MDS-300	SD-200L	MDS-3000
Solid Density Mode	○	○	○	○	○
Density Variation	○	○	○	○	○
Volume Variation	×	○	○	○	○
Comparator Mode	○	○	○	×	○
Optional Measuring Mode	×	×	○	×	○
Compensation of Water Temperature	○	○	○	○	○
Other Medium Adaptable	○	○	○	○	○
Auto-weighing Function	×	×	○	×	○
New Sensor	○	○	○	×	○
Reference Value	×	×	○	×	○
Error Tolerance	×	×	○	○	○
Measuring Time	10sec.	Selectable	Selectable	Selectable	Selectable
<b>Liquid Density Mode</b>					
Room Temperature Mode	—	○	○	○	○
Compensate Temperature Mode	—	×	○	×	○
Repeat Measurement	—	×	○	×	○
Measuring Time	—	20sec.	Selectable	20sec.	Selectable



Electronic Densimeter MDS series consist of 2 models, MDS-300 upgraded from previous model MD-300S, and MDS-3000 with maximum capacity up to 3kg. New features 1.Accuracy increased 5 times than previous model 2.High stability weighing sensor 3.Auto-weighing function 4.Powder Density, which improves working efficiency and accuracy. They inherit the easy operation "Sample on the container, then into the water". Highly developed Densimeter to industrial standard.

### Types of Industry & Typical Users

- Main Industry  
Automobile, Aircraft, Electric, Electron, Rubber, Plastic, Sinter, Nonferrous Metals, Glass, Paper, Foods, Woods, Laboratories, University, Medical, Oil, etc...

Functions	EW-300SG	MD-300S	MDS-300	SD-200L	MDS-3000
Density Resolution (g/cm³)	0.01	0.001	0.001 (0.0001)	0.0001	0.01 (0.001)
Volume Display (cm³)	0.01	0.001	0.001	0.0001	0.001
Scale Capacity (g)	0.01~300	0.01~300	0.001 (0.0001)~300	0.0001~200	0.01 (0.001)~3000
Repeatability (g/cm³)	±0.01	±0.001	±0.001	±0.0001	±0.01
	* Necessary weight against density				
Measurable Density (g/cm³)	0.01~	0.001~	0.001~	0.0001~	0.01~
Measurable Maximum Size (mm)	(D) 100X(W) 70X(H) 25	(D) 120X(W) 70X(H) 30	(D) 100X(W) 70X(H) 25	(D) 120X(W) 70X(H) 30	(D) 120X(W) 100X(H) 35
Necessary Amount of Liquid (cc)	—	50	50	50	50
Measuring Method	Conform to Pycnometer and Hydrostatic Method				
Adaptable Standards	JIS K6268A, JIS K6350 (rubber), JIS K7112 (plastic) etc./USA ASTM D297-93-16 (rubber), D797-00 (plastic) etc./JIS, UL, ISO standard etc				
ISO	○	○	○	○	○
CE	○	○	○	○	○
Power Source (International)	AC100 ~ AC240V				
Dimensions (kg/mm)	1.6/ (D) 218X (W) 190X (H) 170	1.54/ (D) 218X (W) 190X (H) 170	2.8/ (D) 260X (W) 190X (H) 200	5.8/ (D) 319X (W) 213X (H) 301	4.2/ (D) 260 X (W) 240X (H) 240

### Optional Parts



Printer



Compact Printer



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Optional Parts	EW-300SG	MD-300S	MDS-300	SD-200L	MDS-3000
Terminal Printer AD-8121B	.	.	.	.	.
Compact Printer AL2-58	.	.	.	.	.
Interface RS232C	Equipped	Equipped	Equipped	.	Equipped
Liquid Density Kit	-	.	.	.	.
Airtight Windshield	.	Equipped	Equipped	Equipped	.
Calibration 2kg weight	-	-	-	-	.
ISO Document	.	.	.	.	.



Liquid Density Kit



Airtight Windshield

## EW-300SG

### Features

Only 10 seconds to measure density and volume, just putting the sample into the water.  
Ideal machine for the interval testing of production line.

### Functions

Solid Mode

- Minimum density and volume resolution 0.01 g/cm<sup>3</sup>
- Maximum measuring range up to 300g.
- Result judgments with Comparator Mode is available.
- Easy connection to PC with standard equipped Interface RS232C.
- Ethanol can be used as a liquid medium with improved Styrol Water Tank.
- Floating objects can be measured.
- Measuring the change rate of density.



### Specification

Model	EW-300SG
Resolution	0.01g /cm <sup>3</sup>
Capacity	0.01 ~300g
Feature	Solid
Weight	1.6kg
Dimensions	(D)218× (W) 190× (H) 170mm
Accessories	Tweezers, Thermometer, 200g Calibration Weight Steel Angle, AC Adapter, Interface RS232C



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## MD-300S

### Features

Popular model with resolution 0.001g/cm<sup>3</sup> which upgraded from previous model MD-200S. Compact body and accurate density measurement for solid and liquid sample.

### Functions

Solid Mode

- Minimum density and volume resolution 0.001 g/cm<sup>3</sup>
- Maximum measuring range up to 300g.
- More smooth and easy operation with redesigned Container and chemical resistant Styrol Water Tank.
- Only 10 seconds to measure.
- Measuring the change rate of density and volume are possible.
- 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.

Liquid Mode      ※ Optional kit required

- MD-300S can measure the compensated liquid density by setting compensated liquid temperature and compensating temperature rate.



### Specification

Model	MD-300S
Resolution	0.001 g/cm <sup>3</sup>
Capacity	0.01 ~300 g
Feature	Solid, Liquid
Weight	1.6 kg
Dimensions	(D)218× (W)190× (H)170 mm
Accessories	Tweezers, Thermometer, 200g Calibration Weight Steel Angle, AC Adapter, Interface RS232C, Airtight windshield



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## MDS-300

### Features

Easy density measurement of not only solid, and liquid sample density, but also new function of powder density measurement added with resolution of  $0.0001\text{g/cm}^3$  and reference value of  $0.0001\text{g/cm}^3$ . New designed Sensor and Auto-weighing function improve accuracy and working efficiency.

### Functions

#### Solid Mode

- Higher accuracy with resolution of  $0.001\text{g/cm}^3$ , and reference value of  $0.0001\text{g/cm}^3$  can be displayed.
- No need to open and close the lid with new designed Sensor.
- Smaller size lid brings less error value, and less operation time.
- Improves working efficiency and repeatability with Auto-weighing function. (Semiautomatic measurement)
- New function of powder density substituted measurement.
- Floating objects and pellets can be measured easily.
- Density variation of absorbent sample can be measured.
- Selectable measuring time from 5 kinds.

#### Liquid Mode ※ Optional kit required

- Density resolution  $0.001\text{g/cm}^3$  and reference value  $0.0001\text{g/cm}^3$
- Liquid density temperature compensation by setting liquid coefficient value depending on temperature.
- Selectable measuring time.

### Specification

Model	MDS-300
Resolution	$0.001\text{ g/cm}^3$ ( $0.0001\text{ g/cm}^3$ )
Capacity	$0.001 \sim 300\text{ g}$ ( $0.0001 \sim 300\text{ g}$ )
Feature	Solid, Liquid, Powder
Weight	2.8k g
Dimensions	(D)260x (W)190x (H)200 mm
Accessories	Tweezers, Thermometer, 200 g Calibration Weight Steel Angle, AC Adapter, Interface RS232C, Airtight Windshield



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## SD-200L

### Features

Top precision model with density resolution at 4 decimal places for both Solid and Liquid. Easy operation, as same as the other models. Suitable for Plastic Pellets, Films, Rubbers, Fabric, advanced materials, and Liquid density in the field of Medical, Food and Chemical that need to be measured to avoid the error on the third decimal.

### Functions

#### Solid Mode

- Minimum density and volume resolution 0.0001g/cm<sup>3</sup>
- Selectable measuring time from 4 kinds.
- Error tolerance can be shown.
- Measuring the change rate of density and volume are possible.
- Floating objects and pellets can be measured easily.

#### Liquid Mode ※ Optional kit required

- One push operation to change Solid and Liquid Mode.
- Minimum density resolution 0.0001g/cm<sup>3</sup>
- Only 20 seconds is needed to test.
- Only 50cc of liquid sample is needed.
- Changing liquid sample by replacing the beaker only.

### Specification

Model	SD-200L
Resolution	0.0001g /cm <sup>3</sup>
Capacity	0.0001 ~ 200g
Feature	Solid, Liquid
Weight	5.8kg
Dimensions	(D)319x (W)213x (H)301 mm
Accessories	Tweezers, Thermometer, 200g Calibration Weight Steel Angle, AC Adapter



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## MDS-3000

### Features

MDS-3000 can measure maximum capacity up to 3kg. Wide measuring capacity enables to measure the samples without cutting, and it gives the whole sample average density. Sensor & Water tank size can be customized depending on the sample size. Easy and convenient “Auto-weighing Function” is a standard feature.

### Functions

#### Solid Mode

- Bigger sample which could not fit in previous models, with weight up to 3kg can be measured.
- Minimum resolution of 0.01g/cm<sup>3</sup> and reference value of 0.001g/cm<sup>3</sup> be displayed.
- Improves working efficiency and repeatability with Auto-weighing function. Semiautomatic measurement
- New function of powder density substituted measurement.
- Floating objects and pellets can be measured easily.

#### Liquid Mode ※Optional kit required

- Density resolution 0.01g/cm<sup>3</sup> and reference value 0.001g/m<sup>3</sup>
- Liquid density temperature compensation by setting liquid coefficient value depends on temperature.
- Selectable measuring time.



Model	MDS-3000
Resolution	0.01g / cm <sup>3</sup> 0.001g / cm <sup>3</sup>
Capacity	0.01 ~3000g (0.001 ~3000g )
Feature	Solid, Liquid, Powder
Weight	4.2k g
Dimensions	(D)260× (W)240× (H)240 mm
Accessories	Tweezers, Thermometer, Steel Angle AC Adapter, Interface RS232C



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