

SALD-3101

Shimadzu
Laser Diffraction Particle Size Analyzer



Designed for Measurement of Coarse



Features

The SALD-3101 is useful wherever there is a need to measure coarse or dense particles, in such fields as metals, minerals, pharmaceuticals, chemicals, environment, river conservation, disaster prevention, civil engineering, construction, agriculture, and soil.

Seamless Coverage over a Wide Measuring Range from 0.05 to 3000 μ m (3mm)

Seamlessly covers an extremely wide range of particle diameters from 0.05 to 3000 μ m using a single measurement principle, a single optical system, and a single light source. Always achieves accurate particle size distribution measurements across the entire measuring range using a single standard, without data discontinuities from a multiple optical system combination.

Powerful Particle Circulation Mechanism

The sampler incorporates a powerful vertical radial pump with a flow rate of 5000 cm³/minute to reliably circulate coarse or dense particles from several hundred microns to several millimeters in size. This powerful particle circulation is the key technology behind the 3000 μ m (3mm) upper measuring limit.

Handles Many Sample Types and Measurement Purposes

Select from an extensive range of options to suit the sample type and the measurement purpose.

Description	Model	Method
Standard sampler & flow cell	SALD-MS30	Wet measurement
Batch cell (with stirrer)	SALD-BC30	Wet measurement
Non-circulating sampler	SALD-AC30	Wet measurement
Injection type Dry Measurement Unit	SALD-DS21	Dry measurement
Free-fall type Dry Measurement Unit	SALD-DS3	Dry measurement



SALD-3101 (Measuring Unit) + SALD-MS (Standard Sampler)



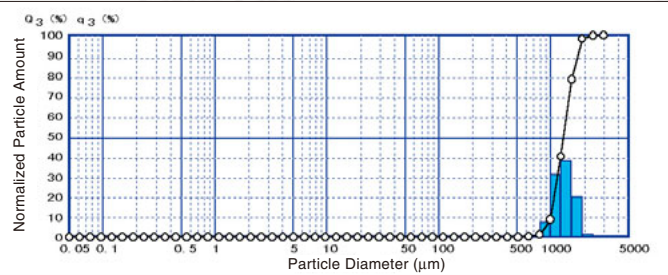
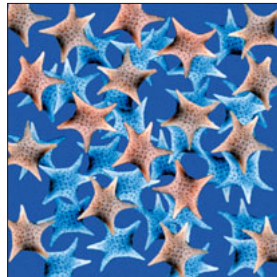
SALD-3101 (Measuring Unit) + SALD-DS21 (Injection Type Dry Measurement Unit)

or Dense Particles

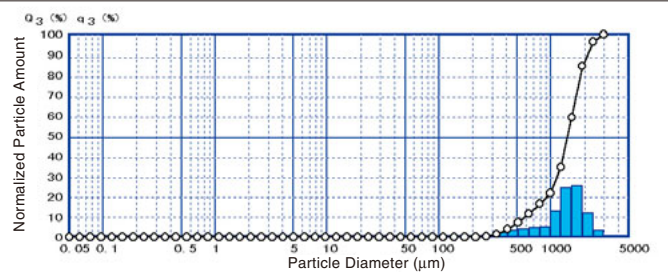
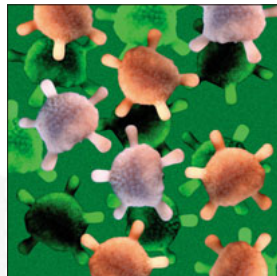
Applications

TWO types of fossil Foraminifer recovered from Iriomote-jima Island in Yaeyama archipelago located south west of Japan are known as "Sun Sand" and "Star Sand". Sun Sand is coarser than Star Sand. The Shimadzu SALD-3101 Laser Diffraction Particle Size Analyzer accurately determined the small difference in the particle sizes between Sun Sand and Star Sand.

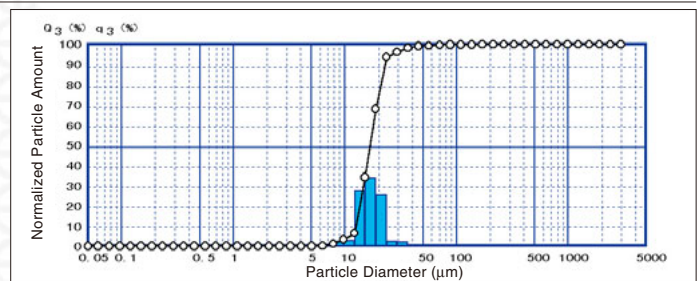
Particle Size Distribution of Star Sand (Wet Measurement)



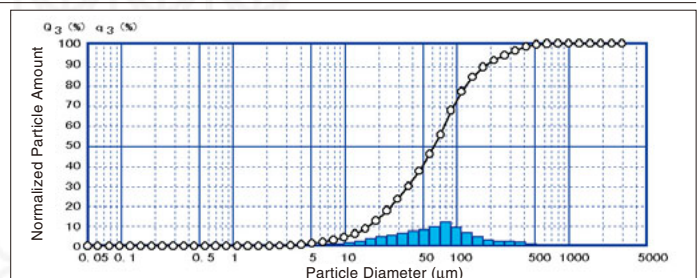
Particle Size Distribution of Sun Sand (Wet Measurement)



Particle Size Distribution of Cornstarch (Dry Measurement)



Particle Size Distribution of Wheat Flour (Dry Measurement)



Specifications

Measurement method	Laser diffraction method
Measuring range	0.05-3000 μ m

Measuring unit : SALD-3101 (P/N 347-60000-20)

Light source	Semiconductor laser (690nm wave length)
Photo sensor	81 element (76 elements for forward area and 1 element for side area and 4 elements for back area)
Power requirement	AC 100 to 120V 1A/AC 200 to 240V 0.5A 50/60Hz
Dimension and weight	95cm wide, 32cm deep, 41cm high, and 58kg weight

Batch cell : SALD-BC30 (P/N 321-48338-02)

Material	Made of quartz glass
Inner volume	12cm ³
Stirrer	Vertical movement blade type, with adjustable speed

PC System Requirements

Processor	133MHz or higher Pentium-compatible CPU
Ram	32 megabytes (MB) of RAM recommended
Operating System	Microsoft Windows 95/98/NT4.0/2000/XP
Monitor	Super VGA or higher resolution monitor

Sampler unit : SALD-MS30 (P/N 346-63701-20)

Dispersing bath	Made of polyacetal and SUS316, with about 400cm ³ inner volume
Stirrer	Blade type, with adjustable rotation speed
Sonicator	42kHz frequency, 40W output power
Liquid pump	Adjustable radial pump, with delivery speed up to 5000 cm ³ /min
Material of wetted parts	Stainless steel (SUS304, SUS316)
Power requirement	AC 100 to 120V 1.5A/AC 200 to 240V 0.8A 50/60Hz
Dimension and weight	43cm wide, 41cm deep, 40cm high, 29kg weight
Flow cell	Made of quartz glass

Option

Dry Measurement Units

These units measure the particle size distribution of a sample powder dispersed in the air. Use these units for particle size distribution measurements of powders with no suitable dispersion medium and powders that dissolve in liquids.

Two unit types are available to suit the sample state and measurement aim.

•SALD-DS21 Injection type Dry Measurement Unit (measuring range: approx. 0.8 to 1000 μ m)(P/N 347-60100-20)

Sample powder is dispersed for measurement by injecting in the air from a nozzle.

The unit offers three types of sample suction mechanisms and three types of nozzles, which allow setting of the optimal dispersion force and sample volume conditions to match the sample state and aim of measurement aim.

•SALD-DS3 Free-fall type Dry Measurement Unit (measuring range: approx. 10 to 3000 μ m)(P/N 346-612060-20)

The Sample is measured during free fall.

Even easily damaged particles can be directly measured.

A separate dry-measurement detector case (P/N 347-60010-20), compressor (SALD-DS21 only) and dust collector are required to use the dry measurement units.

SALD-AC30 Acyclic Monitor Sampler (P/N 346-83746-02)

Completes one measurement cycle including washing, in 30 seconds. Automatically detects infused sample to start measurement and data storage.

The rapid measurement time saves effort and makes this the optimal unit for measuring a sample with a rapidly changing particle size distribution, such as powder undergoing a grinding process.

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