

# **DRY & WET DISPERSION PARTICLE SIZE ANALYZER**



## **Instruction Manual**



**Model : LPSA-40A**

**Please read this manual carefully before using the instrument**

**Labnics Equipment**

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## CHAPTER 1. INTRODUCTION :

This model is used for both wet and dry dispersion method of particle size measurement and analysis.

**Application:** Measure the particle size distribution of samples that can't be dispersed in liquid but in air, and also can measure the samples that can be dispersed in liquid.

**Principle:** Uses the principle of laser light scattering to determine particle size distribution.

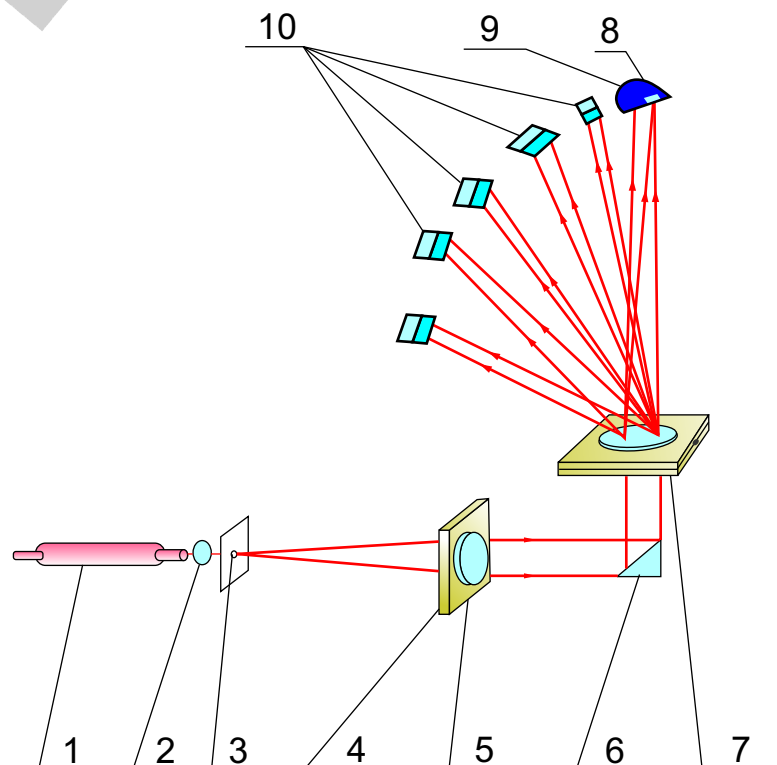
**Patents adopted:** Integrated Laser Emitter, Scattered light detection around a sphere surface (DAS).

**One standard LPSA-40A includes:-**

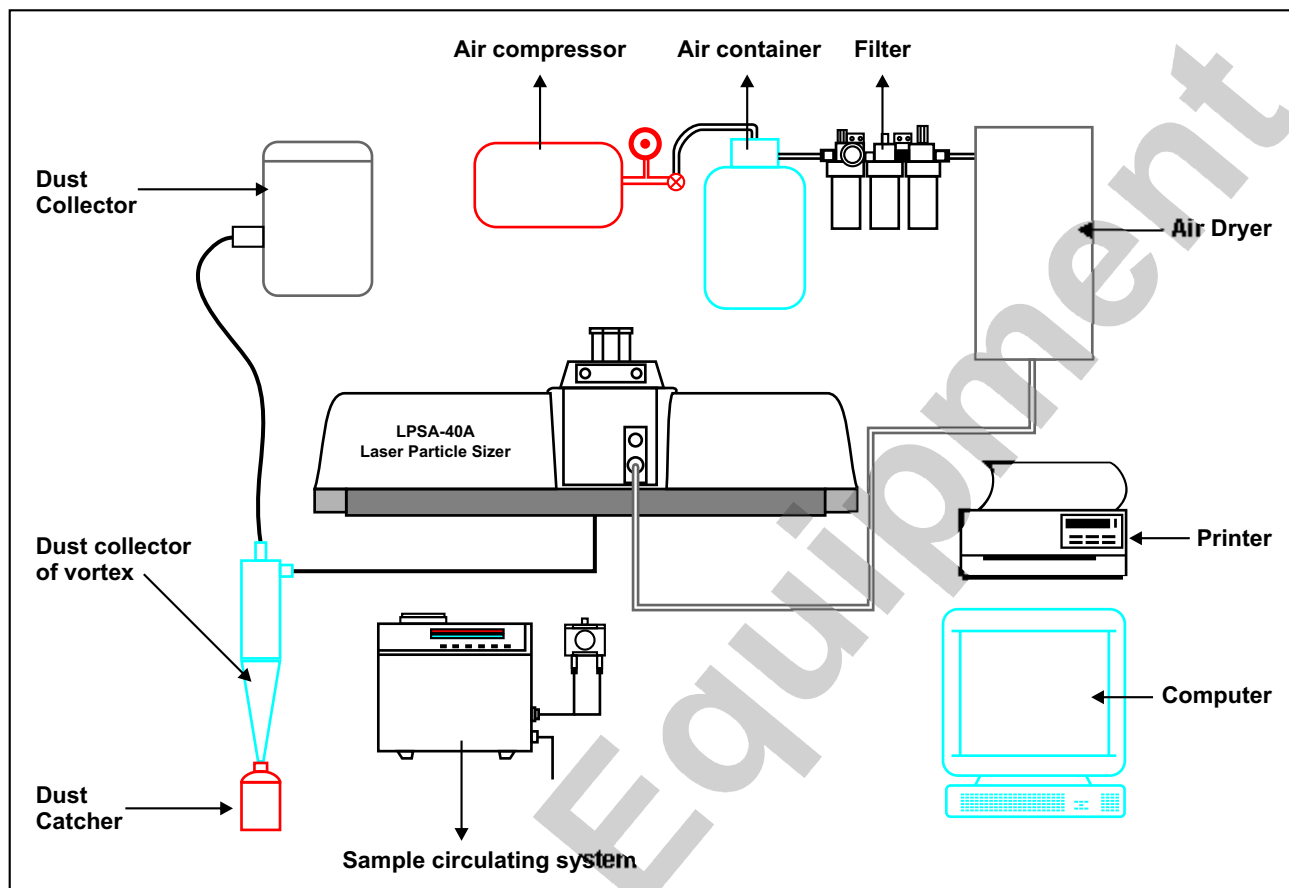
- 1) Measuring unit.
- 2) Sample feeders (dry sample feeder and an attachment for wet sample feeder).
- 3) Air Compressor.
- 4) Air Tank.
- 5) Oil-water filter.
- 6) Air drier.
- 7) Vacuum cleaner.
- 8) Special software.
- 9) Lab tools and other accessories.

The large angle detectors are placed in a spherical surface to get accurate focus of the large angle scattered light.

1. Laser
2. Beam extender
3. Pinhole
4. Device for center alignment
5. Fourier lens
6. Reflection prism
7. Measurement window
8. Central detector
9. Array of ring-shaped detectors
10. Array of large angle detectors



Scattered light detection around a sphere surface ( DAS )

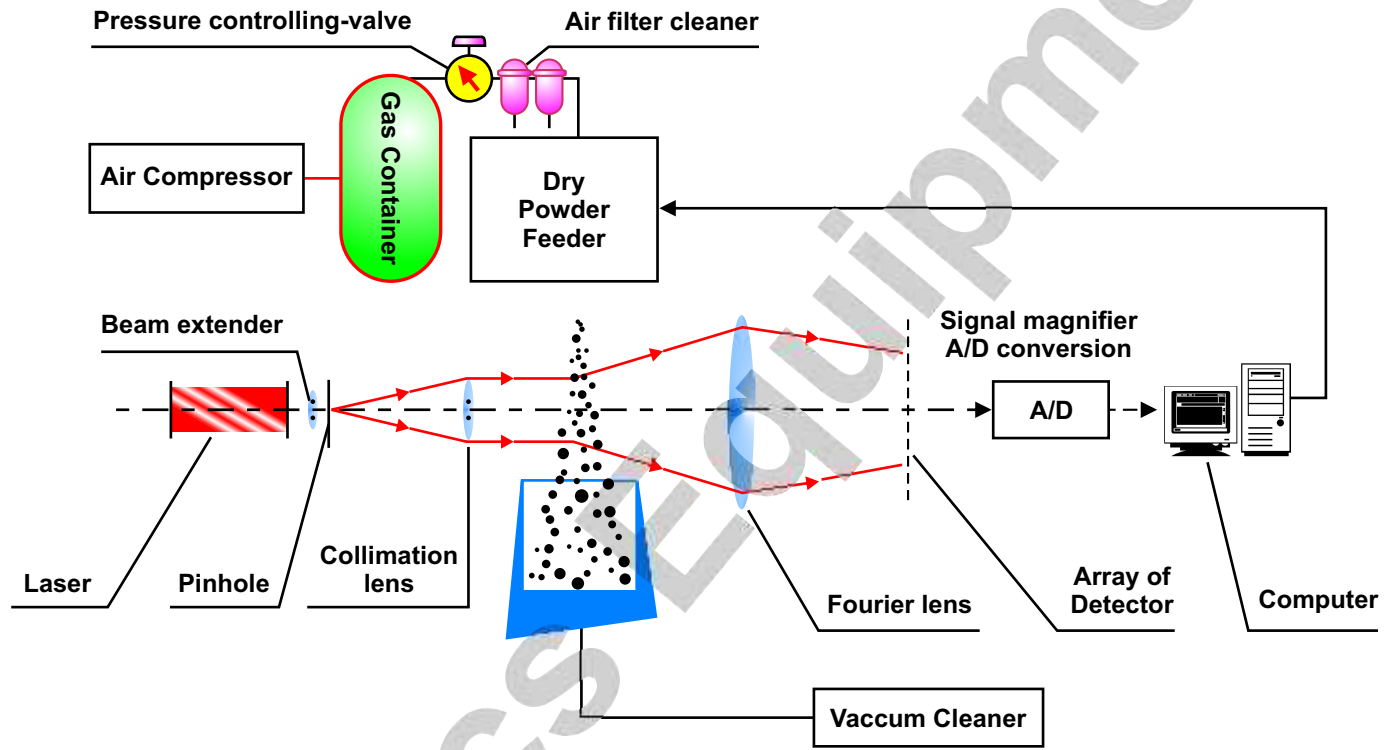


THE STRUCTURE OF LPSA-40A DRY & WET DISPERSION LASER PARTICLE SIZE ANALYZER

## 2. SPECIFICATIONS:-

- |                              |   |                                     |
|------------------------------|---|-------------------------------------|
| 1. Measuring Range           | : | 0.1-800 $\mu$ m                     |
| 2. Sample Feeding            | : | dry and wet dispersion              |
| 3. Repeatability             | : | <3%                                 |
| 4. Measurement Duration      | : | 1-2minutes                          |
| 5. Number of Detectors       | : | 54                                  |
| 6. Light Source              | : | He-Ne laser, 2.0 mW, 0.6328 $\mu$ m |
| 7. Environmental Requirement | : |                                     |
| Temperature                  | : | 5-35 $^{\circ}$ C                   |
| Humidity                     | : | <85%                                |
| 8. Power Consumption         | : |                                     |
| Measuring unit               | : | 30W                                 |
| Circulation sample feeder    | : | 150W                                |
| Air Compressor               | : | 1500W                               |
| Bucket type vacuum cleaner   | : | 1200W                               |
| 9. Dimension                 | : |                                     |

- Measuring Unit : 1000×350×250mm (L×W×H)
- Circulation Sample Feeder : 370×200×300mm
- 10. Sampling Continuous Time : 1-100seconds
- 11. Date output, save and transmission : Video display  
Printer copy  
Computer hard disk save  
Long-distance transmission
- 12. Printer : Any printer that is compatible with the computer.



**3. REPORT ITEMS:-**

Particle size distribution table & graph, median diameter, characteristic diameter, coefficient of breadth, SSA, subsection size percentage, percentage of particles over >80µm (fineness), other indices.

**4. FEATURES:-**

1. Two patents adopted to enable a high accuracy of measurement.
2. Without changing the lens, through the measurement provides great convenience in operation.
3. Auto alignment of detectors, shock-proof pinhole.
4. Two sample feeding systems, the dry sample feeder being integrated with the main measuring unit and the wet sample circulating feeder standing alone with built-in ultrasonic probe, realize a conveniently optional shift between dry & wet dispersions.
5. A manual pre-setting on the scope of beam obscuration eliminates the size distributions of samples whose obscurations are not within the scope and hence enables a higher accuracy of measurement.
6. The application of large angle scattered light detectors, in addition to the dominating and assistant detectors, extends the lowest measurement range down to 0.1µm.

## 5. SOFTWARE FUNCTION:-

1. Two distribution models : Rosin-Ramler, multi wave crest.
2. Two report models : General purpose, statistics.
3. Two accumulative directions : small to large, large to small.
5. Data input function.
6. Reports can be exported as Excel format or other text format files.
7. Multiple reports can be opened at the same time to enable comparisons among reports.
8. Report items can be set according to customer's requirements.
9. Adjustment and control on every single step of measurement.
10. Adjustment and control on the sample feeders.
11. Password function.

Labnics Equipment

## SERVICE REPORT

Customer's Address : \_\_\_\_\_

Tel.No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_  
Weekly Off.: \_\_\_\_\_

Contact Person / Designation : \_\_\_\_\_ Dept.: \_\_\_\_\_

Date	Time		System Configuration	Model	Serial No.	Date :	SR. No.
	From	To					
						Status : OK <input type="checkbox"/>	Not OK <input type="checkbox"/>
						Installation <input type="checkbox"/>	Warranty <input type="checkbox"/>
						Demonstration <input type="checkbox"/>	
						Maintenance <input type="checkbox"/>	Contract <input type="checkbox"/>
						Repairs <input type="checkbox"/>	
						Application <input type="checkbox"/>	Billable <input type="checkbox"/>
						Calibration <input type="checkbox"/>	
						Validation <input type="checkbox"/>	Courtesy <input type="checkbox"/>

Nature of Problem : \_\_\_\_\_

Observation & Action Taken : \_\_\_\_\_

Customer's Remarks : \_\_\_\_\_

Parts Replaced : \_\_\_\_\_

Parts Recommended / Action Required : Yes  No  Requisition Number : \_\_\_\_\_

Service Engineer's Name & Signature	Customer's Name, Signature, Date & Stamp