
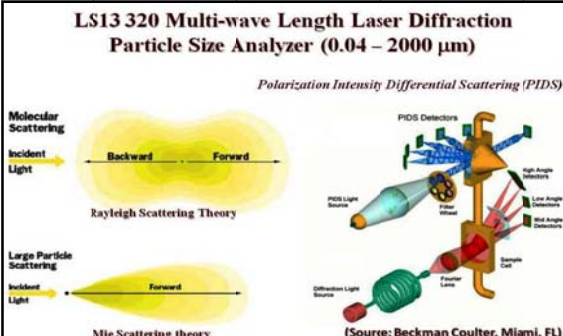


Name of Machine	Laser Diffraction Particle Size Analyzer (LPSA)		
Make	Beckman Coulter	Model	LS™ 13 320 (Fig. 1)
		 <p style="text-align: right;">(Source: Beckman Coulter, Miami, FL)</p>	
Specification			
<p>This is a Laser Diffraction instrument for dry/wet samples with PIDS or Tornado technologies.</p> <ul style="list-style-type: none"> Using the Fraunhofer and Mie theories of light scattering, the LS™ 13 320 offers the highest resolution, reproducibility and unsurpassed accuracy. Its state-of-the-art, laser-based technology permits analysis of particles without the risk of missing either the largest or the smallest particles in a sample. The aqueous liquid module (ALM) is capable of suspending samples in the size range of 0.04 μm to 2000 μm. The Polarization Intensity Differential Scattering (PIDS) assembly provides the primary size information for particles in the 0.04 μm to 0.4 μm range. The PIDS assembly also enhances the resolution of the particle size distributions up to 0.8 μm. This additional measurement is necessary as it is very difficult to distinguish particles of different sizes by diffraction patterns alone when the particles are smaller than 0.4 μm in diameter. Repeatability is 1% about mean size. 			
Working principle:			
<p>Sediment samples are disaggregated, sieved to < 2 mm size, and transferred to sample tubes. Samples are pretreated with hydrogen peroxide and acetic acid to remove organic matter. The addition of sodium-hexametaphosphate enhances separation and dispersion of aggregates before sonification. The samples are loaded into the auto-prep station (APS) after pretreatment. The sample is recirculated in a closed-loop system while it is delivered to the sample cell in the optical bench. Diffraction scattering patterns from 0.4 μm to 2000 μm are measured by 119 of the 126 photodetectors. The remaining seven detectors are associated with the PIDS assembly and measure particle size in the 0.4 μm to 0.4 μm range. Then the detector array records the composite diffraction scattering pattern of the sample. The size distribution is computed by straightening the set of numbers for each size classification which are represented by each channel detector.</p>			
Application			
<p>The application of this instrument can hold wide variety of samples (water and soil) from different materials and environment. The sediment textural parameters are measured on soil/sediment samples of different environmental settings (marine/estuarine/lake/river/soil/etc.,).</p>			

User Instruction

- About 2-5g of homogenized samples should be submitted for analysis.
- Type of sample matrix (marine/estuarine/lake/river/soil/etc..) should be provided.
- Provide details of any prior treatment of the sample, such as cleaning, drying, and treatment with solvents or preservatives.
- Please contact us to ensure your samples are in a suitable format for processing.
- Send samples in labelled plastic vials/covers.
- Explosive, poisonous and any hazardous sample giving rise to toxic gases/fumes cannot be undertaken for analysis.
- If available, the carbonate and organic matter concentration data may be provided.

Contact Person

In-Charge	Dr.Anupam Sharma (0522-2742974); <i>Email anupam110367@gmail.com; anupam.sharma@bsip.res.in</i>
Staff:	<i>Dr. Manoj M C (0522-2742946)</i> <i>Email:manoj.mcm@gmail.com</i>

charges

Sl. No.	Instrument/ Analysis	Govt. Organization (University/Research Institutes)	Student charges	Private sector/ Industry	Remarks (if any) (Rates quoted = Rs.)
1.	Particle size analysis	1200.00	900.00	2500.00	

Guideline

- 1.The analytical data/spectra provided cannot be used as certificates in legal disputes.
- 2.Service charges (including GST) will be payable in advance (Draft/RTGS/NEFT) in favour of “The Director, BSIP, Lucknow”. Payable at Lucknow
- 3.Separate samples should be sent for different analysis. Samples will not be analysed until payment is received.
- 4.In case of prepared samples, the user must specify the procedure that how the sample was prepared (complete methodology).
- 5.In all correspondence related to analysis, our reference number must be mentioned.
- 6.Individual Scientists and Research fellows should send their application and samples through their project head. Discount in analysis charges for research fellows of universities/institutes will be decided by the Director in consultation with respective lab.
- 7.Interpretation of data/spectra will NOT be done.
- 8.It is mandatory for user to acknowledge the facility in their research work and communicate the same to the respective laboratory and the Director, BSIP, Lucknow for onward communication to DST, New Delhi.
- 9.For Lab visit, it is mandatory to take prior appointment from Director, BSIP before your visit. The application should be send through department/Senior official of institution/Company. No deviation will be allowed for the timings.

To be filled in by the user while submitting the form
Analyzer CF

Job No as in Particle Size

Date of submission:

REQUISITION FORM

BIRBAL SAHNI INSTITUTE OF PALAEOSCIENCES, LUCKNOW

53, University Road, Lucknow, Ph. 0522-2740008, 2740399

(Particle Size Analyzer Central Facility)

Geochemistry Lab

(Information to be filled in by the user)

Name: _____

Address: _____

Email and Mobile No.: _____

Category (Inhouse/inhouse sponsored/Govt. organization/private): _____

Number of samples: _____

Sl. No.	Sample ID	Type/Nature of Sample	Quantity	Year of collection	Lat./Long.	Remarks, if any
1						
2						
3						
4						
5						

To be filled in by the user while submitting the form
Analyzer CF

Job No as in Particle Size

Date of submission:

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BIRBAL SAHNI INSTITUTE OF PALAEOSCIENCES, LUCKNOW

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Geochemistry Lab

(Information to be filled in by the user)

Name: _____

Address: _____

Email and Mobile No.: _____

Category (Inhouse/inhouse sponsored/Govt. organization/private): _____

Number of samples: _____

Nature of samples (with details): _____

Scientific Objective of this study: _____

Additional information, if any: _____

Location (Lat & Long): _____

Exposed Section/Trench/Core/Others: _____

Sample pretreatment method used: _____

(For office use only)

Lab Reference No.:

R.P.C.C./ Registrar : Kindly raise the bill for the above

Total Charges:

Taxes:

Grand Total: