

# LISST-PORTABLE | XR

## Portable Particle Size Analyzer

### • Particle Size Distribution • Particle Volume Concentration

The LISST-PORTABLE|XR is the world's only portable, battery powered laser diffraction based particle size analyzer. Designed for use in the field and the laboratory, it analyzes the sample in a wet state to obtain particle size distribution and particle volume concentration. It has five unique features:

- Pumped and recirculating mixing chamber that keeps large and heavy particles suspended.
- 7" touch panel display for measuring and displaying data with no need for a PC.
- Rechargeable battery allows for a full day of work without external power
- Shock mounted optics that can

- withstand the rigors of field use.
  - A built-in ultrasonic probe for complete sample dispersion.
- All data are immediately processed and stored in an ASCII file on the instrument for subsequent offloading and report generating.



# LISST-PORTABLE | XR Portable Particle Size Analyzer

## FEATURES

- Truly portable - completely self-contained with built-in data logger, processor, rechargeable battery, and 7" touch panel color display.
- Touch panel allows for easy SOP programming, sample analysis and display of data without a PC.
- Shock mounted optics block.
- Multiple Mie models as well as Fraunhofer model available for inversion, selectable from the touch panel.
- All data-processing is performed on board and stored in ASCII-format. No post-processing necessary.
- Outputs: Total volume concentration, mean size, standard deviation, optical transmission,  $D_5$ ,  $D_{10}$ ,  $D_{16}$ ,  $D_{25}$ ,  $D_{50}$  (median grain size),  $D_{60}$ ,  $D_{75}$ ,  $D_{84}$ ,  $D_{90}$ ,  $D_{95}$ ,  $D_{60}/D_{10}$  (Hazen uniformity coefficient), particle surface area, silt fraction, silt volume, size distribution, battery voltage, sample notes.
- Built-in ultrasonic probe for complete particle dispersion.
- Based on the laser diffraction principle. Compliant with ISO-13320-1 standard.

## SPECIFICATIONS (subject to change without notice)

### Size and concentration range

- 0.34-500  $\mu\text{m}$  in 44 log-spaced size classes.
- 30-1,900 mg/l range, depending on particle size (see table). Resolution < 1 mg/l. Accuracy  $\pm 20\%$ .

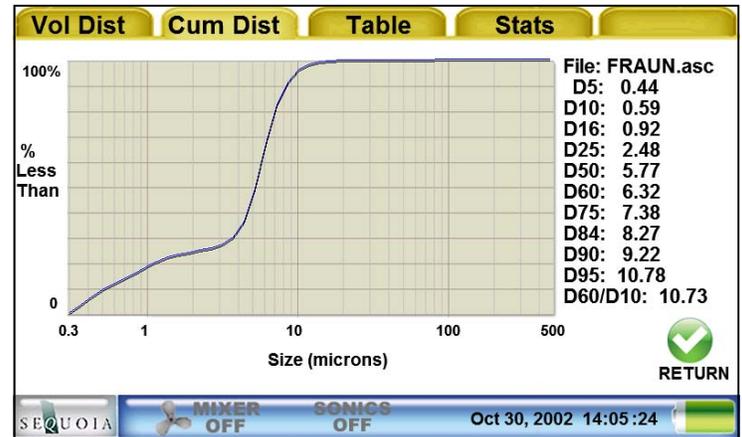
Material	Concentration [mg/l] @ 95% transmission	Concentration [mg/l] @ 75% transmission	D10 [ $\mu\text{m}$ ]	D50 [ $\mu\text{m}$ ]	D90 [ $\mu\text{m}$ ]	SMD [ $\mu\text{m}$ ]
ISO Fine	30	170	1.5	7	41	3
ISO Coarse	95	395	4	38	99	10
20-30 $\mu\text{m}$ glass beads	195	1,075	19	24	34	24
Sieved sand 75-125 $\mu\text{m}$	345	1,925	85	122	175	112

### Mechanical and electrical

- Dimensions and weight of instrument: 17.7 cm (7")  $\times$  29 cm (11.5")  $\times$  44.3 cm (17.5") [HxDxW]; 7.5 kg (17 lbs).
- Dimensions and weight in shipping box: 78 cm (31")  $\times$  53 cm (21")  $\times$  28 cm (11"); 22 kg (49 lbs).
- Data storage: 128 MB flash card, capable of storing at least 40,000 size distributions and associated sample information.
- Rechargeable Lithium-ion battery provides for 6 hours of sample processing.
- 25W, 40kHz ultrasonic probe with controller electronics, managed from the touch panel display.



Touch panel screenshot of Main Menu



Touch panel screenshot of size distribution



LISST-PORTABLE|XR lid and ultrasonic holder detail (all parts included)



LISST-PORTABLE|XR and toolbox in ship case (included)



LISST-PORTABLE|XR power supply, charger and USB offload cable (included)