Benefits:

- Universal high-end analyser for science, R & D, quality control
- Direct, fast and objective characterization of any demixing phenomena
- Information within minutes and hours instead of months and years
- Reliable stability information up to 5000 times faster than by other methods
- Particle size information without material properties
- For concentrated and diluted suspensions and emulsions
- For a large sample viscosity range
- Minimal sample volume required
- Various versions, accessories and customizing options to fit your application
- Easy operation, comprehensive database solution

Applications:

1. Characterization of:

- Very slow separation processes (months till years).
- Very stable, very high viscous dispersions with very high concentrations.
- Very small particles and droplets.

2. Determination of separation stability, velocity and particle size distribution or consolidation in one measuring step.

3. Measurement of carbon black, ink, food, fine chemicals, abrasives, polymers, color pastes, sludges, slurries, cosmetics, pharmaceutical dispersions, biocells and much more materials.

4. Tasks requiring high sample throughput.

5. Determination of particle size distribution according to ISO 13318-1 and ISO 13318-2.

Specifications:

- 12 samples measured at once
- RCF: 6 - 2300 xg
- Advanced optics, very variable light intensity
- Customized light sources
- Temperature control from 4 °C - 60 °C, ± 1 K
- Measuring time up to 42 h, depending on task and objective
- Customizing of measuring time and interval
- Sample volume 0.1 ml - 2.0 ml (depending on cell type)
- Sample concentration 0.1 Vol% - 90 Vol%
- Sample viscosity: 0.8 mPas - 10^8 mPas
- Particle size: 40 nm - 1000 µm
- PSD Range 40 nm - 300 µm
- Different cell types available for optimal conditions
- PC controlled operation (Win2000 / XP)
- Device and SEPView-Software comply with CFR 21 Part 11 regulations.

Versions	Temperature control	Compressed air connection
LS 610	4 °C - 40 °C	Yes
LS 611	4 °C - 60 °C	Yes

L.U.M. GmbH, Berlin, Germany
Phone: +49-(0)30-6780 6030
E-Mail: info@lum-gmbh.de
Web: www.lum-gmbh.com
www.LUMiSizer.com

Distributed by:

LUM - The next STEP® in Dispersion Analysis

Dispersion Analyser LUMiSizer®

The complete Dispersion Lab in one Instrument

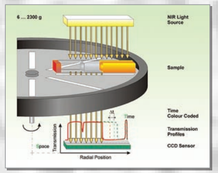
Stability
Demixing
Consolidation
Particle Sizing

LUMiSizer®

using STEP®-Technology

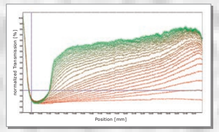
The High-End Dispersion Analyser LUMiSizer®, a microprocessor controlled analytical photocentrifuge, is your complete dispersion lab, all in one instrument. The quick characterization of any demixing phenomena, like sedimentation, flotation or consolidation and the calculation of the velocity distribution in the centrifugal field as well as of particle size distribution makes the LUMiSizer® the instrument of choice for research, development and QA/QC.

The patented cutting-edge STEP®-Technology permits to obtain **S**pace- and **T**ime-resolved **E**xtinction **P**rofiles over the entire range of up to 12 different samples simultaneously. Parallel near infrared or blue light illuminates the entire sample cell and the transmitted light is detected by the 2087 detectors of the CCD-line. Transmission is converted into extinction and particle concentration may be calculated.



Principle of the STEP®-Technology.

The multisample analytical photocentrifuge is ideally suited for characterization and optimization of dispersion properties. Particle-particle-interactions, the compressibility of particles & flocs, the structural stability and the elastic behaviour of sediments and gels are determined.

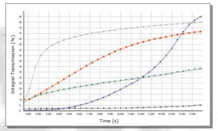


Analysis of Cosmetic Emulsions.

Demixing phenomena are quantified regarding clarification velocity, sedimentation and flotation velocity of particles, residual turbidity, separated phase volume (liquid or solid), sediment consolidation or dewaterability.

SEPView®

a database driven Software



Stability Analysis of Agrochemicals by Integral Transmission Mode.

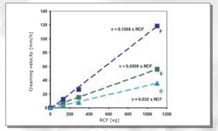
Online monitoring of instrument parameters for each channel.

SEPView® is a comprehensive database driven software solution. It controls the instrument and provides functions for data management, visualisation, analysis and result documentation. Transmission profiles are recorded at different time intervals, displayed as a sequence on the screen and automatically stored in a special designed database, together with all instrument settings and actual calibration data.

The evolution of the transmission profiles contains the complete information on the kinetics of any concentration changes due to creaming, sedimentation, flocculation, coalescence or phase separation.

Stability

Shelf Life and Consolidation

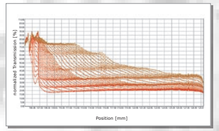


Shelf life of alcoholic milk beverages (cream liquors).

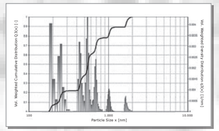
Stability tests are up to 5000x faster than performed in a test tube under earth gravity by naked eye. Fast stability ranking and shelf-life determinations of dispersions in original concentration are done in minutes/hours instead of months/years. The obtained results correlate well with the sample behaviour at normal gravity.

Particle Sizing

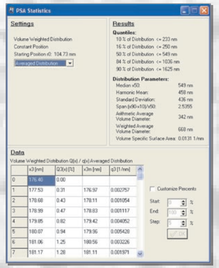
and Particle Size Distributions



Transmission profiles of a 7-modal Silica suspension.



Volume weighted particle size distribution of a 7-modal Silica suspension.



Comprehensive PSA Statistics.

Comprehensive information is provided with respect to the multimodality or polydispersity of dispersed particles.
The software animation tool displays the recorded measurement data with programmable playback parameters for easy recognition & identification of complex separation phenomena.
The modular and object oriented design of the software provides easy extension and customizing opportunities on customer's request, i.e. for special R&D or QC tasks.

On the basis of the two analysis modi "Constant Position"-Concentration detection over time at one position and the unique "Constant Time"-Concentration detection over the entire sample length at least for one time, different distribution types are calculated.

Velocity Distribution Qv(v), qv(v)

- Direct measurement no calibration / no material properties
- Always available - fast information for quality control
- Qualitative information about particle size and polydispersity

Intensity Weighted Particle Size Distribution QInt(x), qInt(x)

- Quantitative information about particle size distribution

Volume Weighted Particle Size Distribution Q3(x), q3(x)

- Quantitative information about particle size and volume fraction of each class
- Conversion into mass or number distribution