

SpectroLight 600

In Plate Dynamic
Light Scattering and
Imaging System



SpectroLight 600



SpectroLight 600 provides insights into key properties of a sample. As a non-invasive method DLS collects size distribution data directly and provides a quantitative output. The system allows fully automated plate scanning in standard SBS plates. Moreover, SpectroLight 600 is a fully fledged imaging system with its built-in microscope and optional UV-light illumination.

UNIQUE FEATURES

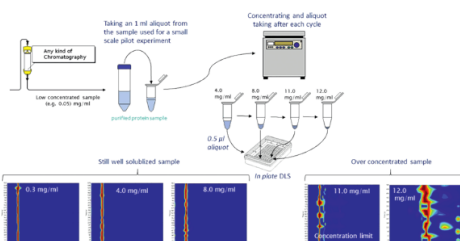
- Fully automated DLS data collection for easy condition screening and long term studies
- 3D positioning in the droplet to avoid disturbances like dust particles
- Unmatched small sample volumes of 20 - 800 nl/well
- Combined with fully automated bright light imaging and optional UV imaging
- Standard plates as sample containers

APPLICATIONS

- DLS for different applications like:
- Stability/aging
 - Screening/formulation
 - Storing/quality check
 - Fully automated imaging
 - UV imaging for crystal identification

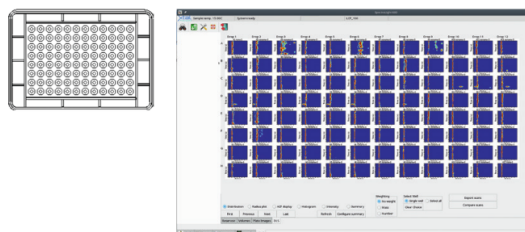
UNIQUE FEATURES FOR DAILY DLS (FLEXIBILITY)

- Quick access to sample quality information – before and after storage
- Easy check to avoid over-concentration
- Quick comparison with previously collected data
- Easy handling of full plates and single samples
- Qualitative and quantitative output (+/- 2% size accuracy)



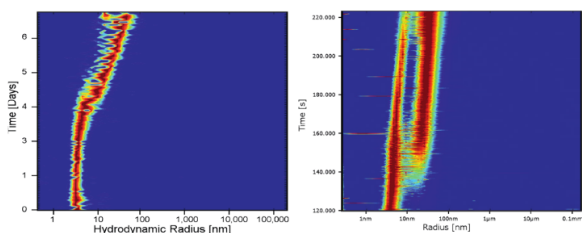
FORMULATION AND SCREENING

- 96 well format with 100 nl/well
- Fully automated DLS plate scanning
- Unbiased results enabled by immediate sealing
- Highly intuitive software for data collection, data display and result scoring



STORAGE AND AGING

- Long term stability analysis – repeated data collection up to 30 days or longer in the same droplet by storing measurement positions for each plate
- Various comparison tools for examination of changes



DATA MANAGEMENT

- Data Acquisition, evaluation and comparison via SQL database and integrated LIMS system
- Comprehensive export functions in various data formats: png, pdf, csv, docx



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TECHNICAL DATA

Laser diode	<ul style="list-style-type: none">✓ Wavelength: 660 nm, optical power: 100 nW, adjustable[] other wavelengths (e.g. 785 nm)
Detector	<ul style="list-style-type: none">✓ Photomultiplier tube, dark count rate < 300 Hz quantum efficiency 5-7%, count sensitivity 1.5*10⁵ Hz/pW For single photon counting✓ Scattering angle 144°
Correlator range	<ul style="list-style-type: none">✓ Multi-tau architecture correlator to cover a wide sample time range✓ Sample time from 400 ns to 30 s✓ Total 208 channels, quasi logarithmic channel spacing
Sensitivity	<ul style="list-style-type: none">✓ Sample concentration with standard laser (660 nm) Minimum 0.2 mg/ml for ~50 kDa proteins and 0.5 mg/ml for ~14 kDa proteins (e.g. for lysozyme)✓ Maximum > 100 - 150 mg/ml
Accuracy (DLS)	<ul style="list-style-type: none">✓ Hydrodynamic radius determination accuracy of +/- 2%
Imaging system 6.4	<ul style="list-style-type: none">✓ Built-in microscope 5 magnification steps: 0.63, 1.25, 2.0, 3.2, 6.4 field of view: 10.5x7.6, 5.2x2.9, 3.3x2.5, 2.0x1.5, 1.0x0.75 mm Resolution: 25 µm, 13 µm, 8 µm, 5 µm, 2.5 µm per pixel✓ CCD colour camera 1600 x 1200 pixels✓ Image focus stacking feature
Illumination	<ul style="list-style-type: none">✓ Bright light integrated LED[] UV by external light source (optional)[] Colour light source (optional)
Temperature control	<ul style="list-style-type: none">✓ Built-in temperature control✓ Range 5 to 45°C (at ambient temperature 20°C)
Sample properties	<ul style="list-style-type: none">✓ Minimum droplet volume about 0.08 µL (8 µL well capacity)✓ Particle sizes from 1 nm to approx. 6 µm
Sample container	<ul style="list-style-type: none">✓ Various plates in SBS format for imaging including LCP-plates MRC microbatch under oil plate well for DLS✓ Douglas Instruments microbatch under oil crystallization plates for DLS✓ LCP-plates for DLS✓ Terasaki microbatch plates for DLS[] Customized sample holder (optional)
Hardware	<ul style="list-style-type: none">✓ Table top system 650 mm x 270 mm x 450 mm (LxWxH)✓ Weight: approx. 24 kg✓ Power consumption: 115 to 230 V, 100 W✓ Mini PC attached to monitor (23.8 inch, 1920 x 1080 pixels) to reduce footprint[] Optional barcode reader/printer
Software features	<ul style="list-style-type: none">✓ SpectroLight 600/610 software runs on Linux (OpenSUSE leap 15.x)✓ Fully automated DLS and imaging plate scanning modes combined with a unique drop finding algorithm✓ Integrated LIMS database for storage and retrieval of images and DLS data✓ Control of light source parameters✓ Live display of camera image✓ Various graphical output features✓ Data comparison functions✓ Versatile data export features✓ Autopilot for scheduling of your individual measurement program[] Browser based remote data base access (optional)[] Optional setup for later upgrade with a plate hotel

