



The NEXT STEP in Dispersion Analysis  
& Materials Testing

The LUMiSpoc is a highly advanced single particle scattered light photometer that measures particle size distribution and particle concentration of nano- and microparticles in suspensions and emulsions with an unparalleled resolution and dynamic range.

Particles are separated by hydrodynamic focusing in the measuring cell and pass one after another the focus of a violet laser beam. The forward and side-ward scattered light from each particle is detected and processed simultaneously by powerful optics and electronics (*SPLS-Technology*).

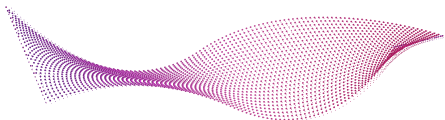
The LUMiSpoc analyses multimodal and very broad dispersed real world particles in suspensions and emulsions and determines smallest size differences down to the nanometer range. Volume calibrated sample flow allows for accurate measurement of particle concentration.



Single Particle Optical Counter

# LUMiSpoc

## Count'n'Size @Nanoscale



Number concentration | Size Distribution | Classification

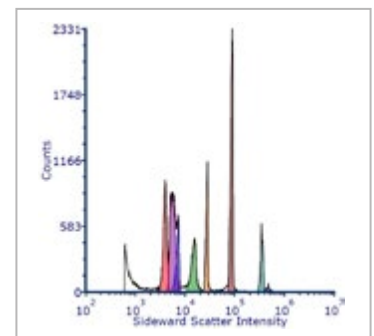
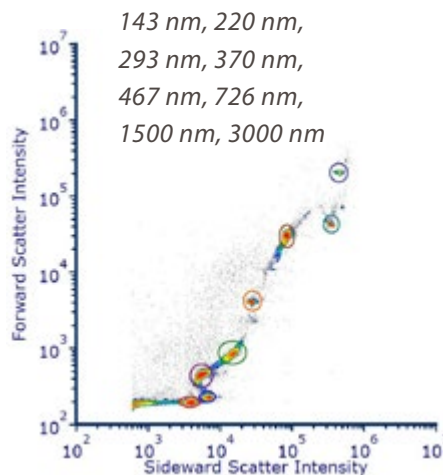
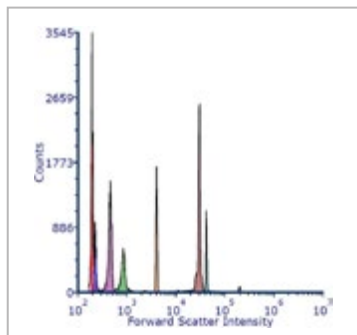
## Benefits

- Accurate & high precision characterisation of individual particles
- Nano particle concentration by counting with precision better than 2%
- Analysis of dispersions in particle concentration range from  $10^6$  to  $10^9$  ml<sup>-1</sup> at rates up to  $10^4$  s<sup>-1</sup>
- Large dynamic measurement range for sizing and counting (50 nm to 8  $\mu$ m)
- Multimodal & polydisperse size distributions with high resolution
- Sample amount as small as 250  $\mu$ l
- Compact benchtop instrument, minimal amounts of consumables, easy to clean
- Sophisticated instrument software and intuitive user interface with 15.6" touch display and real-time views for particle number and scatter intensity
- Server based data storage and comprehensive data evaluation tools by SEPView® platform

## Key words & capabilities

- Nanoparticle design
- Number concentration determinations
- Number-based size distribution
- Classification of nanomaterials (2011/696/EU)
- Agglomeration & flocculation kinetics
- Protein aggregation
- Coalescence
- Ostwald ripening
- Coarse grain fractions
- Membrane testing / cut off
- Homogenization
- Dispersion materials such as: *functionalized particles, reference particles, CMP slurries, biological objects*

### Multimodal Polystyrene-Mix



## Specifications

Particle size range	50 nm to 8000 nm (depending on material)
Min. size resolution ( $x < 1 \mu$ m)	15 nm
Particle concentration range	$1 \times 10^6$ ml <sup>-1</sup> to $1 \times 10^9$ ml <sup>-1</sup>
Maximum counting rate	10 000 sec <sup>-1</sup>
Typical measurement time	5 min
Light source	Diode laser, 405 nm, 40 - 100 mW (adjustable)
Precision of particle number	< 2 %
Sample volume	250 $\mu$ l
Dimensions (W x H x D)	60 x 52 x 59 cm <sup>3</sup>
Weight	25 kg
Power supply	24 V DC, 220W