TECHNICAL DATA

SpectroLight 600

Laser diode
- Wavelength: 658 nm, optical power: 100 mW, adjustable
    Optional: other wavelengths (e.g. 785 nm)

Detector
- Photomultiplier tube, dark count rate < 300 Hz
    quantum efficiency 5-7%, count sensitivity $1.5*10^5$ Hz/pW
- For single photon counting
- Scatteing angle 144°
    Optional: Avalanche photodiode, higher sensitivity for $\lambda > 660$ nm

Correlator
- Multi-tau architecture correlator to cover a wide sample time range
- Sample time from 400 ns - 30 s
- Total 208 channels, quasi logarithmic channel spacing

Sensitivity
- Sample concentration with standard laser (658 nm)
- Minimum 0.1 mg/ml at 0.5 µl for ~50 kDa proteins and 0.3 mg/ml
    for ~14 kDa proteins (e.g. for lysozyme)
- Maximum > 120 mg/ml

Imaging system
- Built-in microscope
    5 magnification steps: 0.63, 1.25, 2.0, 3.2, 6.4
    Filed 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

Camera
- CCD color camera 1600 x 1200 pixels
    Optional: other resolutions

Illumination
- Bright light integrated LED
    Optional: UV by external light source
    Optional: colour light source

Temperature control
- Built-in temperature control
- Range 4 - 40°C (at ambient temperature 20°C)

Sample properties
- Minimum droplet volume about 0.5 µL
- Particle sizes from 1nm to approx. 6 µm

Sample container
- Plates in SBS format
    Sitting drop: e. g. MRC 96 well, Maxiplate 48 well,
    Hanging drop: Cellstar
    Others: Costar 3590, LCP plate
- Terasaki microbatch plates (with adapter)
    Optional: customized sample holder

Hardware
- Table top system 650 mm x 270 mm x 450 mm (LxWxH)
- Weight: approx. 20 kg
- Power consumption: 115 to 230 V, 100 W
- Mini PC attached to monitor (22 inch)

Software features
- SpectroLight 600 software runs on Linux
- Fully automated plates scanning with unique drop finding algorithm
    for DLS
- Integrated LIMS database for storage and retrieval of images
    and DLS data
- Control of light source parameters
- Live display of camera image
  graphical histogramming software
-Radius distribution 2D and 3D
- Autopilot for scheduling of your individual measurement program
    Optional: connection to external data base
    Optional: connection to plate handling system