

TECHNICAL DATA



Laser diode	☒ Wavelength: 658 nm, optical power: 120 mW, adjustable ☐ other wavelengths e.g. 525 nm, 785 nm (optional)
Detector	☒ Photomultiplier tube, dark count rate <300 Hz quantum efficiency 5-7%, count sensitivity 1.5*10 ⁵ Hz/pW ☒ For single photon counting ☒ Scattering angle 142°
Correlator	☒ Multi-tau architecture correlator to cover a wide sample time range ☒ Sample time from 400 ns to ~1 s ☒ Total 208 channels, quasi logarithmic channel spacing
Sensitivity	☒ Sample concentration with standard laser (658 nm) ☒ Minimum 0.05 mg/ml (150 kDa), 0.1 mg/ml (30 kDa), 0.3 mg/ml (14 kDa) proteins (e.g. IgG Ab, Proteinase K, Lysozyme) ☒ Maximum concentration >150 mg/ml
Imaging system	☒ Built-in microscope ☒ 5 magnification steps: 0.63, 1.25, 2.0, 3.2, 6.4 ☒ Field of view (mm): 10.5x7.6, 5.2x2.9, 3.3x2.5, 2.0x1.5, 1.0x0.75 ☒ Optical resolution per pixel: 19.5 µm, 10 µm, 6.3 µm, 3.9 µm, 1.9 µm ☒ CMOS colour camera 2048x1536 pixel
Illumination	☒ Bright light integrated LED ☐ UV by external light source (optional) ☐ Colour light source (optional)
Temperature control	☒ Built-in temperature control ☒ Temperature range 5°C to 40°C (at a fixed value)
Sample properties	☒ Sample volume/well: min. ~20 nl, max. ~30 µl (depending on plate layout) ☒ Particle sizes from 0.7 nm to ~5 µm
Sample container	☒ Plates in SBS format ☒ Sitting drop: e. g. MRC 96 well, Douglas Instruments Vapour Batch Plate ☒ Cryo-EM grids, microfluidic chips, customised containers
Hardware	☒ Table top system (LxWxH) 650 mm x 270 mm x 450 mm ☒ Weight: ~26 kg ☒ Power consumption 115 to 230 V, 100 W ☒ PC based on customer's specifications, monitor (22 inch) ☒ Plate holder, plate capacities (40, 100, 200, 380, 500) temperature regulated ☒ Plate transfer station, temperature regulated ☒ Barcode reader/printer
Software features	☒ Operating software "SpectroCrystal" runs on Linux OpenSUSE 15.6 ☒ Fully automated, drop centering, DLS positioning and plate scanning ☒ Integrated SQL database for storage and retrieval of images and DLS data ☒ Multi user workstation remote data management "Remote LIMS" ☒ Control of light source parameters ☒ Live view of the camera stream ☒ Graphical histogramming software ☒ Radius distribution 2D and 3D ☒ Autopilot for scheduling multiple tasks ☒ Automated laser intensity adjustment ☒ Diffusion interaction parameter (k_D) analysis ☒ Individual DLS scan evaluation and management ☒ Scattered Light, mass and number weighted statistics ☒ Autoscoring and user scoring options for DLS data ☒ User scoring options for image data ☒ Multiple data export functions including customizable reporting options ☒ Combination with a automated plate handling system (plate holder) ☐ Integration into an existing data management environment (optional)