

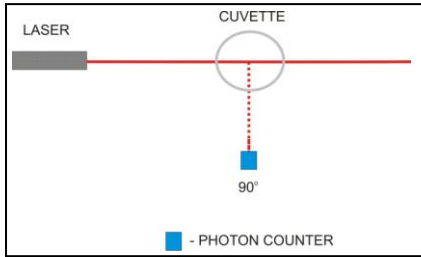
IKOsize CC instruments are based on the dynamic light scattering (photon correlation spectroscopy). This technique is ideal for measurements of nanoparticle size, diffusion coefficient, and molecular weight of polymers in solutions. Additionally possible technologies are static light scattering, non-invasive backscattering and angle-dependent light scattering. Measurement procedure and powerful software are suitable for any level of users. This device fully complies with International standard ISO 22412:2008.

Features

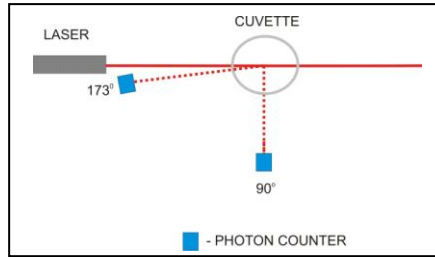
- ▲ Full-featured multi-angle dynamic and static light scattering, fast measurements, real-time size monitoring of nanoparticles
- ▲ Non-Invasive backscattering technology for measuring opaque or high-concentrated samples
- ▲ Angle-dependent light scattering technology
- ▲ New high sensitive photon counters based on APD diode
- ▲ 2 lasers with different wavelengths
- ▲ Temperature stabilizer for Laser and APD diodes
- ▲ Compact design
- ▲ Flexible measuring configurations
- ▲ Upgradeability
- ▲ USB interface provides easy connection to any computer
- ▲ Easy-to-prepare samples, suitable for various commercial sample cells and vials
- ▲ Precise thermostat for samples
- ▲ Unique flex-logic single-board correlator, linear and multiple-tau time scale, upgrade of hardware configurations

IKOsize CC is available in 9 models

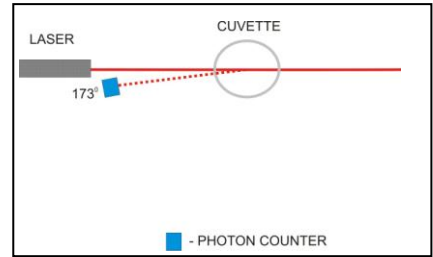
CC-1 and CC-1z



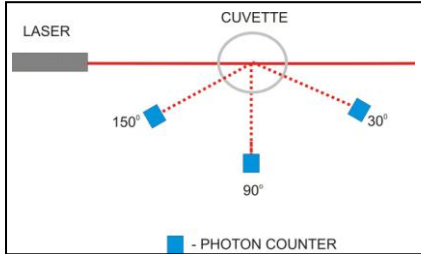
CC-2 and CC-2z



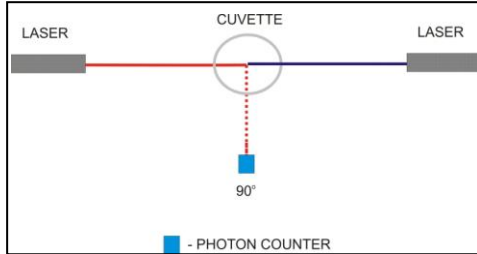
CC-3z



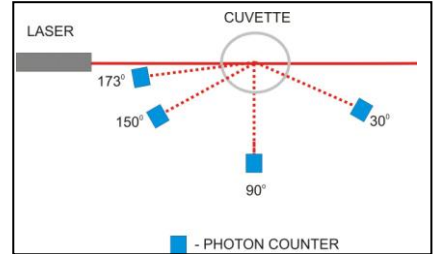
CC-4



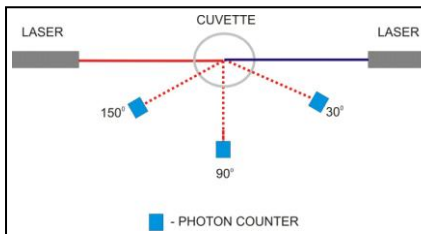
CC-5



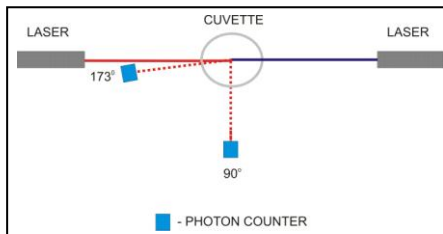
CC-6



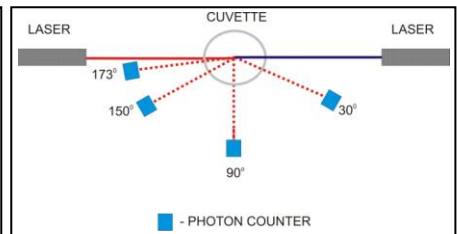
CC-7



CC-8



CC-9



Specifications

Measurement range		CC-1 CC-1z	CC-2 CC-2z	CC-3z	CC-4	CC-5	CC-6	CC-7	CC-8	CC-9
Size*	0.3 ... 10000 nm	●	●	●	●	●	●	●	●	●
Accuracy	0.8%	●	●	●	●	●	●	●	●	●
Diffusion coefficient	$10^{-5} \dots 10^{-10} \text{ cm}^2/\text{s}$	●	●	-	●	●	●	●	●	●
Molecular weight	$10^3 \dots 10^{12} \text{ g/mol}$	●	●	-	●	●	●	●	●	●
Sample concentration*	0.0001 ... 5%	●	-	-	●	●	-	●	-	-
Sample concentration*	0.0001 ... 40%	-	●	●	-	-	●	-	●	●
Scattering angle	30°	-	-	-	●	-	●	●	-	●
Scattering angle	90°	●	●	-	●	●	●	●	●	●
Scattering angle	150°	-	-	-	●	-	●	●	-	●
Scattering angle	173°	-	●	●	-	-	●	-	●	●
Laser	650 nm, 50 mw	●	●	●	●	●	●	●	●	●
Laser	405 nm, 50 mw	-	-	-	-	●	-	●	●	●
Static light scattering		-	-	-	●	-	●	●	-	●
Angle-dependent light scattering		-	-	-	●	-	●	●	-	●
Non-Invasive backscattering		-	●	●	-	-	●	-	●	●
Ready for Zeta upgrade		CC-1z	CC-2z	●	-	-	-	-	-	-

General specifications

Sample volume	1 μL ... 10 mL
Laser	Available diode lasers: 650 nm, 405 nm, 635 nm, 780 nm with power up to 100 mw)
Thermostat	5° - 100°C , accuracy 0.1°C
Dimensions /Weight /Power	290 x 258 x108 mm / 3.2 kg /198-240V 50 Hz 90W

*Sample and application dependent

Software

IKOsize instruments come standard with the original user-friendly software package. Instruments work with software that includes an easy-to-use set of programs to control a measurement process and to perform data fitting and analysis. This software package provides support to various experimental procedures - from elementary to most sophisticated. If one needs to develop his/her own environment to control measurements and perform data analysis, the code of the library containing all low-level correlator control functions and procedures is also available.

To simplify measurement control and data analysis, the software has its own built-in command Interpreter to develop and use various sets of commands that together accomplish an assigned task. The Interpreter includes all possible commands that may be accessed via menu or dialog windows. It can be used fruitfully as a part of a larger arrangement due to the possibility of dynamic data exchange with other applications. A user can install his/her own routines of raw data interpretation directly to the Interpreter. A complete on-line context-sensitive help that can be used without interrupting the work in the Interpreter is provided. The help on the keyboard as well as on selected commands, open dialog windows, or messages is available, or can be browsed through as a general reference.

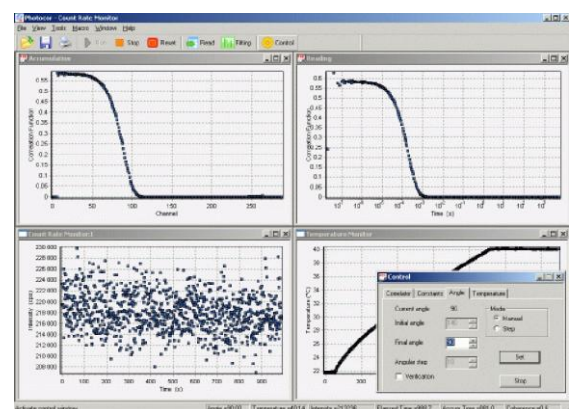
Applications

Industry	Manufacturing of nanostructured and nanocomposite materials
Physics and Chemistry	Colloids, polymers, latex, micelles, micro emulsions, vesicles, gels, soles, liquid crystals, nucleation and aggregation processes, chemical reaction kinetics, phase transitions...
Chemical Engineering	Pigments, dyes, glues, powders, abrasives, lubricants, petroleum and fuels, mud fluids, membrane filters and ultra filtration testing...
Biochemistry and Biotechnology	Cells, viruses, proteins, liposomes, membranes, DNA, immunology reactions...
Environmental Technology	Disperse pollution, water and food quality testing...
Education and Training	Novel labs for physical, chemical, biological, medical and engineering education...

Features

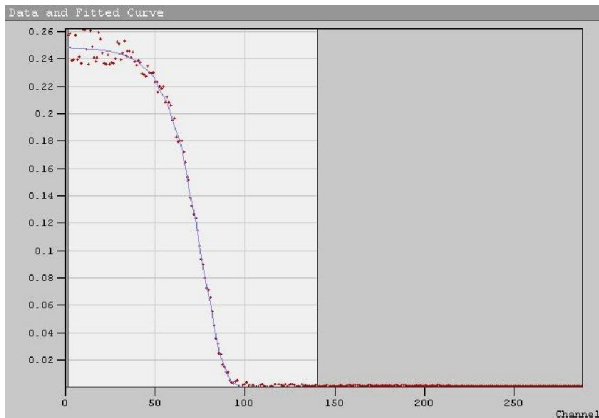
Various programs of polydisperse analysis (regularization method - Dynals, cumulant method, direct approximation using nonlinear-least-squares method)

- ▲ Determination of average particle size and size distribution
- ▲ Determination of molecular weight using Debye and Mark-Houwink methods
- ▲ Ability to fully automate measurements using built-in macro language
- ▲ Different methods of presenting the results

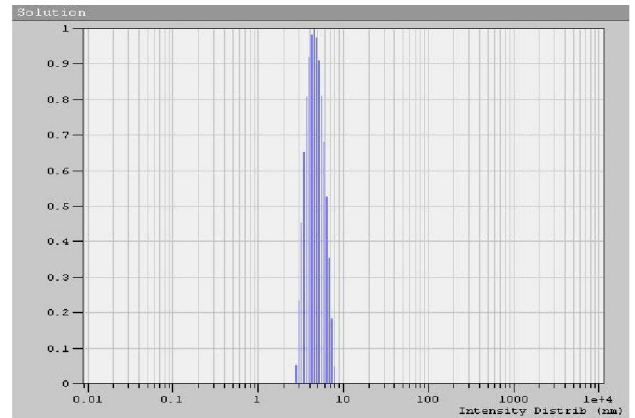


Typical measurements

Albumin particle size measurement. The average albumin particle size is $R_{BSA} = 4.52$ nm.



The correlation function of scattered light



Particle size distribution

