

奈米粒徑分析儀/分子量分析系統

Dynamic Light Scattering System



**Flow-through combined static and dynamic light scattering
for proteins, polymers and nanoparticles**

The PD2000 family of molecular characterization detectors measure absolute values of molecular weights, sizes, and shapes. Typical applications are polymers. Proteins, antibodies, polysaccharides and other macromolecules used in the plastics, biotechnology, pharmaceutical and food industries. These laser light scattering detectors are easily added to any HPLC/GPC/SEC system and are ideal research, quality control and process monitoring tools. The PD2000 Series is available in single angle, dual angle and high temperature versions with or without dynamic light scattering (DLS) capabilities. Each unit can be upgraded to greater capabilities at any time. Also, DLS capability can be added to any manufacturer's light scattering detector for hydrodynamic radius (R_h) measurements.

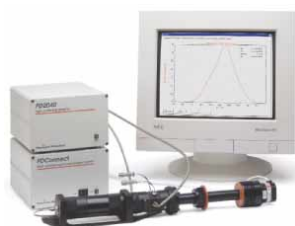
The PD2020+ light scattering detector provides molecular weight and size data from the intensity of the scattered light at 15 and 90 degrees to the incident laser beam from molecules passing through its high sensitivity 10ul flow cell. The high performance cell design provides exceptionally accurate measurements for a broad range of molecules from less than 1000 Daltons, up to 10^6 Daltons typically, even to 10^7 Daltons for many proteins and polymers.

State-of-the-Science Software

PrecisionAcquire³² and Discovery³² are the companion 32 bit software packages running under Windows for controlling the PD2010+ and analyzing the data collected. With the addition of dynamic light scattering (DLS) capability, the hydrodynamic radius (R_h) can be obtained providing a clear picture of the molecular size in solution as the molecules elute from the SEC column. The data can be presented in real time across the chromatogram as the sample elutes and is useful for peak purity observations in research and quality control.

PD2020 Specifications

Sample Cell Volume	10 µl
Light Scattering Volume	0.01µl
Laser Wavelength/Power	680 nm/30 mill watt (Standard) 810 nm/100 mill watt (optional)
Rayleigh scattering angles	90 (standard) and 15 (standard) degrees
Molecular weight range	«10 ³ to above 10 ⁷ Daltons
DLS - Hydrodynamic Radius (Rh) + Plus option Rh	1.0 to 1000 nm
Radius of Gyration (Wavelength 680/800)	10/12 to 180/200 nm
Raw data sample rate	up to 100 per second
Data sample rate	0.1 seconds to 1,000 seconds
Detector output signal	analog
Signal inputs	4 or 8 analog, 1 digital (auto-injector)
Signal preprocessing	selectable particle noise rejection
Signal smoothing	none or operator-selectable, controlled Fast Fourier Transform
Signal storage	raw signal, at data sample rate
Stand-alone size	8" x 17" x 4" - 21cm x 44cm x 11cm
Stand-alone weight	approx. 14 lbs., 6.4 kg
Light scattering platform weight	6.0 lbs., 2.8kg
Power requirement	100/240 V, 50/60 Hz



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