

W130i
SABRe optics



W130i

dynamic light
scattering system

Avid  **Nano**
advancing dynamic light scattering

◆ Performance

The W130i from Avid Nano is a high performance dynamic light scattering (DLS) system for measuring the hydrodynamic size, size distribution, aggregation state and molecular weight of macro-molecules and particles such as proteins, peptides, micelles, lipids, colloidal dispersions and nano-materials.

By any standard the W130i is an impressive performer. Nothing in the industry can beat its ultimate sensitivity in terms of both minimum concentration and minimum size measurement capability*. Couple this supreme performance to its unique versatility and convenience and you have a compact, powerful device with unbeatable measurement performance and easy day-to-day usability.

* The W130i can easily measure Lysozyme at 0.1mg/ml concentration and 192Da (MW) caffeine molecules in solution.

i-Size software, offers an impressive suite of features to make any measurement quick and simple while yielding the maximum information obtainable by DLS. Features include...

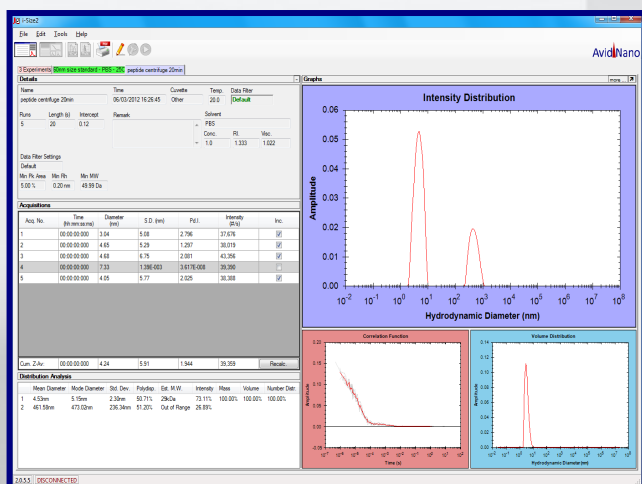
- ◆ Hydrodynamic size and polydispersity index (Pdl)
- ◆ Multi-peak intensity, mass, volume and number distributions
- ◆ Aggregate quantification and estimated molecular weight
- ◆ Automatic data collection to investigate thermal denaturing
- ◆ Online capability for chromatography applications
- ◆ Single page experiment setup with one-click re-runs
- ◆ Networkable for remote file storage and analysis
- ◆ Colourful and clear tabbed user interface



Ultimate Versatility : The W130i is compatible with low volume BladeCells, quartz fluorescence cuvettes or flow cells.



BladeCell Cuvette : Just 5µl dispensed into the liquid trap. No cross-contamination and the sample is fully recoverable.

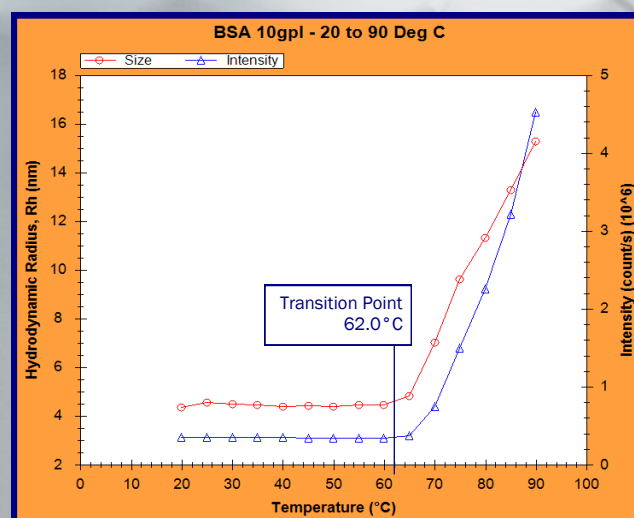


i-Size Software : The W130i is complemented perfectly by the user friendly and informative i-Size software interface.

◆ Convenience

Every W130i comes with our unique 5µl BladeCell sample cuvettes as standard, providing you with the ultimate convenience of a low volume, low cost, sterile, dust free sample holder with all the measurement performance you would expect of traditional cuvettes. Convenient and easy to use, BladeCells are made from rigid black polycarbonate material which is fully recyclable.

For the most dilute or low molecular weight samples or when thermal cycling effects are being investigated, standard quartz glass cuvettes can be used too. Just 2µl is all you need in an off-the-shelf low volume quartz cuvette.

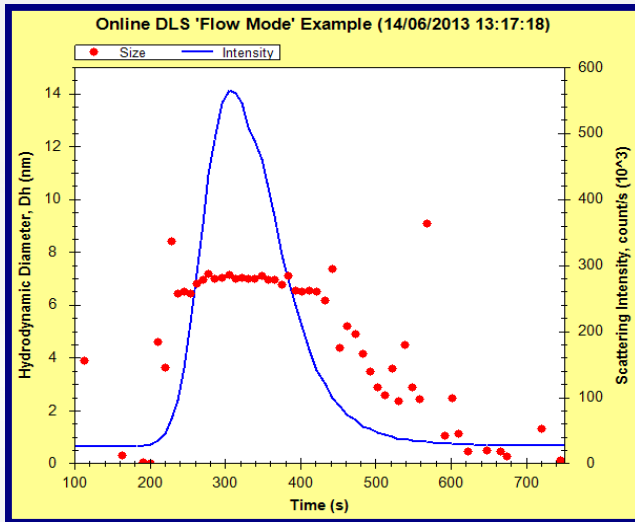


Thermal Denaturing : i-Size automatically collects data at a range of temperatures. Graphing results is easy and informative.

◆ Versatility

Avid Nano have made the *W130i* so easy and convenient to use, it has become the choice of both academia and industry for its easily maintained, 'walk-up' functionality and with cuvette cleaning a thing of the past, it is always ready for the next user.

The versatility of the *W130i* is further extended by the capability to use the system online as an additional detector in almost any chromatography system. By using a standard flow cell of just 8µl measurement volume, any *W130i* can be put online without modification. In 'flow mode' *i-Size* automatically produces graphical outputs of hydrodynamic size/scattering intensity v. Time.



Online DLS : Chromatograms of size/intensity v. time from a series of short DLS acquisitions are easily plotted directly within *i-Size*.

◆ Speed

Traditional DLS systems use non-disposable, quartz glass cuvettes or built-in flow cells which require cleaning after every use. The cleaning process is at least a three-stage procedure which includes a non-productive reference measurement to confirm the cuvette has been properly cleansed of trace contamination. It must then be completely dried to prevent dilution of the next sample.

BladeCell cuvettes alleviate the time consuming chore of cuvette cleaning, making reference measurements and drying. Every measurement made with the *W130i* is a useful measurement which makes the entire experience of DLS far more productive and relevant to your everyday activities.

The *W130i*, BladeCells and *i-Size* are so easy and quick to use, the system is up to 8x faster* in overall measurement time than traditional DLS systems.

* avidnano.com/8x_faster

◆ Information

Call us or email for further information:

 +44 (0)1494 614 659

 info@avidnano.com



W130i DLS : Sensitive, convenient, versatile and fast. Everything you need in one compact and reliable package.

◆ W130i Technical Specification

INSIDE

light source	30mW, 660nm fibre coupled laser diode module
optics	diamond geometry beam delivery and single mode fibre detection incorporating Stabilized Anti-Back Reflection (S.A.B.Re) design
photon detector	silicon avalanche photo diode module
correlator	256 channel multi-tau (channel 1 @ 480ns)
attenuation control	digital motorized neutral density filter design
temperature control	thermo-electric with pwm controller module

OUTSIDE

power supply	80W (12V, 6.67A) external with 2.5mm jack
dimensions	130(w) x 210(h) x 340(d) mm
weight	6.5kg
temperature	10 - 40°C ambient operating range
humidity	10 – 90% RH non-condensing
humidity control	4mm dry gas inlet
laser product classification	Class 1. EN 60825-1: 2001 and CDRH
software	<i>i-Size™</i> software, Windows® 7, Vista or XP ¹
computer communication	1 x USB port

PERFORMANCE

minimum sample concentration	0.1mg/ml 14kDa protein monomer
minimum sample volume ²	2µl in partially filled quartz cuvette 5µl BladeCell™ disposable cuvette ³ 8µl flow cell for online applications
size measurement range	0.25nm – 1000nm hydrodynamic diameter
molecular weight range	~192Da to ~25MDa
size distribution method	non-negative singular value decomposition
temperature control range	0 to 90°C, resolution 0.1°C
temperature control accuracy	±0.2°C throughout range

MEASUREMENT

standard method (ISO13321, ISO22412)	hydrodynamic size (nm), polydispersity index (Pd I)
size distributions	multi-peak area analysis by intensity, mass, volume and number
molecular weight	estimated by modelling or measured by Debye plot method
additional	scattering intensity, correlation function parameters, sample temperature

¹Windows is a registered trademark of Microsoft Corporation in the United States and other countries. ² 5µl BladeCell™ disposable cuvette supplied as standard. 8µl flow cell, 12µl quartz glass cuvette, 45µl quartz glass cuvette, 1.5ml disposable macro-cuvette all available by request. ³ Patent applied for. Our policy of continuous improvement makes specifications subject to change.