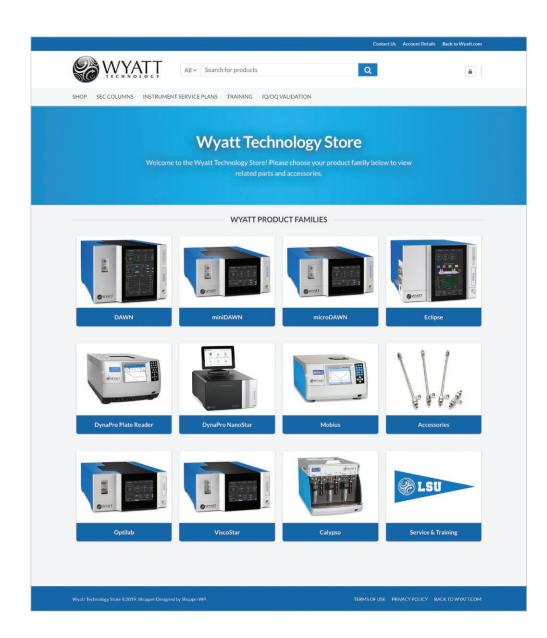
Accessories & Services

System Options for Peak Performance





Visit **store.wyatt.com** for easy ordering.

Accessories & Services

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Options for the Entire Range of Wyatt Instruments

Wyatt offers a selection of helpful accessories, maintenance tools, service plans, training and validation standards that will enhance the use of your instruments. The NEON and Classic product lines of online detectors for SEC-MALS, FFF-MALS and CG-MALS utilize the same accessories and kits except where noted.



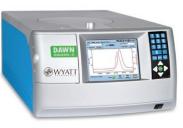
NEON

MALS Detectors DAWN® miniDAWN® microDAWN® ultraDAWN® RI Detectors Optilab®

microOptilab®

Differential Viscometers

ViscoStar[®] microViscoStar[™]





MALS Detectors DAWN HELEOS® II miniDAWN TREOS® I / II µDAWN®

RI Detectors

Optilab T-rEX[™] Optilab UT-rEX

Differential Viscometers ViscoStar II / III microViscoStar





Extended Characterization

DLS / SLS / Zeta Potential Detectors

DynaPro[®] Plate Reader I / II / III DynaPro NanoStar[®] I / II Mobius[™]

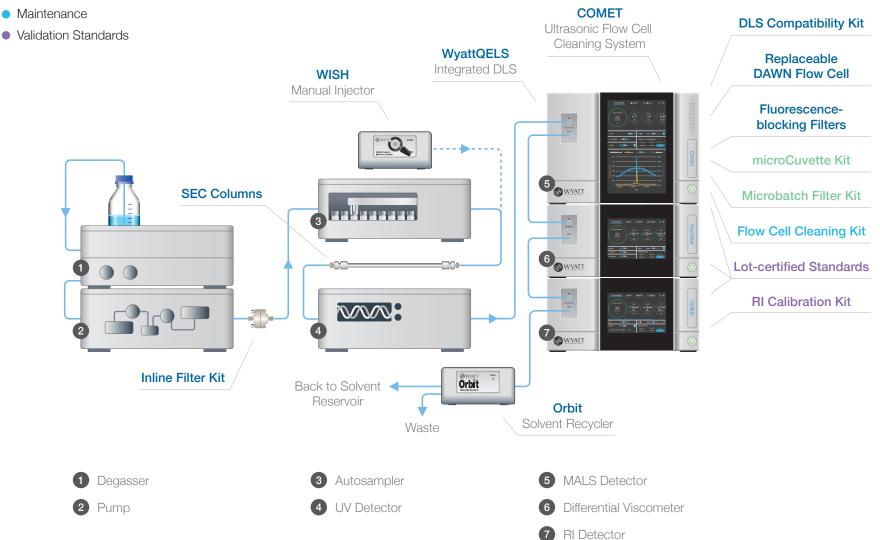
FFF Separation Systems Eclipse™ NEON Eclipse DualTec™ Eclipse AF4 Eclipse 3+ Composition-Gradient System

Calypso[®] II

SEC-MALS

Accessories:

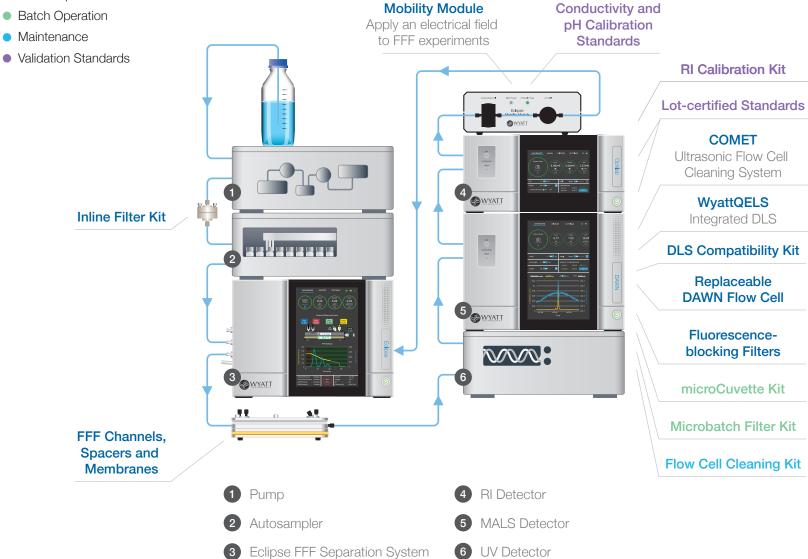
- Online Operation
- Batch Operation



FFF-MALS

Accessories:

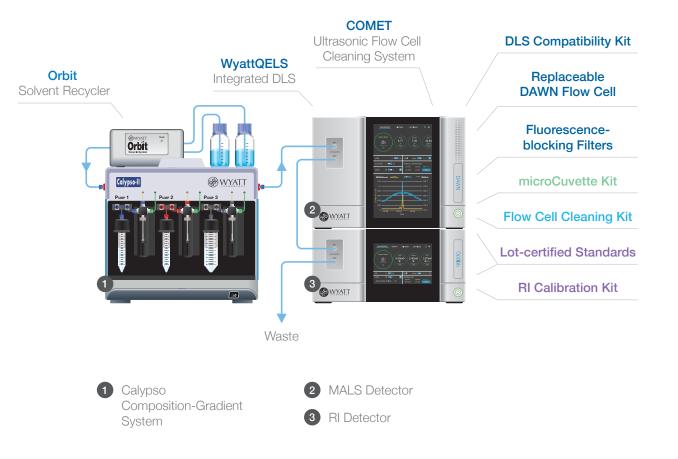
- Online Operation



CG-MALS

Accessories:

- Online Operation
- Batch Operation
- Maintenance
- Validation Standards



DLS & Zeta Potential

Accessories:

- Automated Batch Operation
- Manual Batch Operation
- Validation Standards
- Online Operation with MALS



DynaPro NanoStar DLS / SLS Detector

Accessories





Atlas™

By coupling the Atlas to a Mobius, zeta potential measurements can be made on aqueous samples with hundreds of mM NaCl in the buffer, even for proteins and other nanometer-sized particles.

Gas bubbles that form as a result of redox reactions in the course of electrophoretic mobility measurements cause erratic electrophoretic currents, resulting in noisy signals. It is especially difficult to measure electrophoretic mobility on aqueous samples having conductivities near or above physiological saline conditions. The Atlas eliminates bubbles by pressurizing the Mobius cell, forcing evolved gases back into the solution and enabling robust zeta potential analysis.

P/N: WATLAS

Compatible with Mobius

COMET™

The COMET (Cell Operation and Maintenance Enhancing Technology) is an ultrasonic transducer that agitates the flow cell and loosens particles adhering to the cell walls or windows. This device may be integrated with the flow cell manifold of a DAWN, ultraDAWN, miniDAWN or microDAWN detector. This accessory, included with all MALS detectors since 2018, is available for installation in previouslyshipped instruments.

The COMET is directly controlled by Wyatt's software packages for MALS—ASTRA,[®] OBSERVER[™] and CALYPSO[™]—and can be programmed to automatically clean your flow cell after or even between measurements. Moreover, the device operates *in situ* while the mobile phase is flowing through the cell. There is no need to disconnect any fluid fittings, change solvents or disassemble any of your setup—the solvent flushes out the particles.

P/N: WIC

Compatible with all DAWN, miniDAWN and microDAWN instruments



Disposable Cuvettes

DynaPro NanoStar – 4 µL cyclic olefin copolymer (COC) cuvettes for the DynaPro NanoStar provide excellent optical quality and solvent compatibility, may be loaded with as much as 700 µL. A novel solvent reservoir prevents evaporation during temperature ramps and extended measurements. These cuvettes are compatible with a temperature range of -15 °C to 80 °C. Alternatively, 1 x 1 cm (4 mL total) plastic cuvettes may be used with an adapter provided with the NanoStar II over a temperature range up to 70 °C.

P/N: WNDMC – 30 Qty. 4 µL COC cuvettes P/N: 900341 – 100 Qty. 4 mL plastic cuvettes P/N: 900343 – Generic Cuvette Adapter Kit for plastic or quartz cuvettes

Mobius – 100 μ L polystyrene cuvettes for use in the Mobius, with an adapter. Suitable for DLS but not zeta potential measurements. These cuvettes are compatible with the Mobius' full temperature range of 4 °C to 70 °C.

P/N: 900206-00 – 100 Qty. 100 μL cuvettes with Adapter Kit P/N: 900014 – 100 Qty. 100 μL cuvettes



DLS Compatibility Kit

The DLS Compatibility Kit is designed to be used with the DynaPro NanoStar and Mobius such that the DLS correlator within each detector can be connected externally to a MALS instrument. This allows for simultaneous collection of MALS and DLS data during normal SEC-MALS or FFF-MALS experiments.

DLS determines size down to a radius of 0.5 nm and is essential for characterizing the size of biomolecules smaller than the 10 nm MALS limit. To further characterize the conformation of larger particles, online DLS is invaluable for determining the hydrodynamic radius, R_h in order to calculate conformation and the shape factor $\rho = R_g/R_h$. DLS can also determine the size of metallic nanoparticles and other samples that may not be amenable to MALS measurement due to a complex refractive index.

P/N: WDPC

Compatible with DynaPro NanoStar and Mobius, for use with a DAWN, miniDAWN or microDAWN. The MALS instrument must be specified at the time of order.



Eclipse Channels

There are five channel types and with two designs, which accommodate different requirements for sample load, analysis time, resolution and work flow. Channels with interchangeable spacers of variable heights serve the most versatile applications for research and method development. For routine and QC applications, a novel channel design with a fixed-height top plate eliminates the need for a spacer, resulting in the highest reproducibility while offering easy assembly and maintenance.

- Short Channel and Long Channel options offer optimal trade-offs between sample load, sensitivity and resolution.
- Dispersion Inlet Channel eliminates the focusing step to alleviate potential aggregation or fouling.
- Semi-Preparative Channel can be coupled with a fraction collector to separate, isolate and purify sample loads ~100x larger than typical analytical FFF.
- Mobility Channel to be operated with Mobility Module. Includes set of membranes, spacers and other accessories.

Eclipse Channel Accessories

Pre-cut membranes – Available in several molecular weight cut-offs (based on a linear polymer):

- Regenerated cellulose (RC): 10 and 30 kDa
- Polyether sulfone (PES): 5, 10 and 30 kDa

Spacers – Several spacer heights are available for the various channels.

Visit wyatt.com/FFFaccessories for details and P/Ns.





Flow Cell Cleaning Kits

Standard – The Standard Flow Cell Cleaning Kit is used for cleaning a DAWN, ultraDAWN or miniDAWN flow cell. Packaged together with everything you need to achieve a clean flow cell, the kit includes 4 mm and 6 mm O-rings (9 mm for Heated/Cooled and Ultra-High Temperature (UHT) Kits), lens tissue, floss, 10 mL syringes, 0.02 µm syringe tip filters, tweezers, half wave plate and disposable wrist strap.

P/N: 900001-21 – Ambient Kit P/N: 900001-22 – Heated/Cooled and UHT Kits

microDAWN – The microDAWN Flow Cell Cleaning Kit includes the bottom manifold seal, flow distributor, flow cell spring, lens tissue, floss, 3 mL syringes, 0.02 µm syringe tip filters, tweezers, plastic forceps and disposable wrist strap.

P/N: 900001-23

Compatible with all DAWN, miniDAWN and microDAWN instruments

Fluorescence-blocking Filters

MALS – These filters are placed in front of the photodiodes to block fluorescence induced in the sample, which otherwise artificially increases the apparent molar mass. Required when characterizing samples that fluoresce under excitation by the DAWN's laser. Typically placed on half of the MALS detection angles, filters are available for the standard 658 nm laser or 785 nm IR laser. The filters transmit a band of \pm 10 nm around the specified central wavelength.

P/N: 900020 – Interference Filter Accessories Kit P/N: 900020-66420 – 664 nm Interference Filter Kit P/N: 900020-78520 – 785 nm Interference Filter Kit

Mobius – The filter is placed inline with the optical collection fiber to prevent fluorescence from reaching the avalanche photodiode, preventing saturation and inability to perform DLS measurements. P/N: WFFK-532 – DLS 532 nm Fluorescence Filter Kit

Compatible with all DAWN and Mobius instruments



Inline Filter Kits

Inline filters are critical to ensuring particle-free mobile phase and optimal light scattering measurements in SEC-MALS and FFF-MALS. By catching any particles in the mobile phase or shed by an HPLC pump, inline filters protect your system and prolong the lifetime of your HPLC columns.

Aqueous – PEEK filter housing and titanium frit for use with aqueous solvents. Typical filter membranes are hydrophilic PVDF.

P/N: 900002-1

Organic – Stainless steel filter housing and stainless steel filter support screen for use with organic solvents. Typical filter membranes are hydrophobic PVDF (useful for most organic solvents but not acetone, DMAc, DMF or DMSO) or PTFE (useful for most organic solvents but not benzene, chloroform, methylene chloride, toluene or xylene).

P/N: 900002-2 – PVDF filters P/N: 900002-3 – PTFE filters

Compatible with all DAWN, miniDAWN, Optilab, ViscoStar, Eclipse and Mobius instruments



Lot-certified Standards

BSA Solutions – Molar mass validation and normalization for DAWN, miniDAWN, microDAWN (aqueous mobile phase); molar mass and size validation for DynaPro NanoStar, DynaPro Plate Reader and Mobius.
P/N: 900113 – 1 mL BSA Ampule, Lot Certified; 2 mg/mL

Dextran Standards – Molar mass calibration and A_2 validation for DynaPro Plate Reader; intrinsic viscosity validation for ViscoStar (aqueous mobile phase); molar mass and A_2 validation for Calypso. P/N: 900114 – 2 g of 40 kDa dextran

Polystyrene Standards – Molar mass and size validation for DAWN, miniDAWN, microDAWN; intrinsic viscosity validation for ViscoStar (organic mobile phase).

P/N: P8402-03001 – 0.5 g of 30 kDa polystyrene P/N: P8402-20001 – 0.5 g of 200 kDa polystyrene

Electrophoretic Mobility Standards – Aqueous suspension of polystyrene latex spheres for Mobius validation. P/N: 900115 – 15 mL polystyrene latex spheres



Microbatch Filter Kit

The Microbatch Filter Kit is used to inject samples directly into the flow cell of a DAWN or miniDAWN MALS detector in stop-flow mode. The kit includes finger-tight, 10-32 coned PEEK fittings; PEEK tubing 0.01" (0.25 mm) i.d.; a coned 10-32/Luer Adapter; disposable 10 mL syringes; 0.02 µm filters and 0.2 µm filters.

This technique requires a minimum volume of 300 μ L with standard MALS detectors. The Microbatch Filter Kit can be used for Zimm plots.

P/N: 900003

Compatible with all DAWN, miniDAWN and Mobius instruments



microCuvette[™] Kit

The microCuvette Kit for the DAWN makes it possible to perform 90° static and dynamic light scattering measurements with sample volumes as small as 30 µL. Study time-dependent characteristics of an aggregation-prone protein, measure samples that might foul the flow cell or solutions too viscous to flow through the instrument. Precious samples can be recovered, yet the quartz microCuvette is easily cleaned.

P/N: WMCW DAWN (NEON) Kit P/N: WMCW DAWN HELEOS II Kit P/N: WMCW miniDAWN TREOS I Kit

Compatible with DAWN (NEON), DAWN HELEOS II and miniDAWN TREOS I



Mobility

Electrical/Asymmetric-Flow FFF (EAF4) option for separation according to size and charge, used in conjunction with Eclipse. Mobility[™] includes the Mobility Module, which controls the electrical field in the channel and measures conductivity, pH, and electrical current, and the Mobility Channel, where EAF4 separation takes place. VISION 3 software is required to perform EAF4 measurements and analyze electrophoretic mobility and zeta potential.

P/N: WMBL – Mobility Module and Mobility Channel

P/N: WMBLM – Mobility Module

P/N: WMBLC – Mobility Channel

Compatible with Eclipse



Mobius Dip Cell

The Mobius Dip Cell is a convenient alternative to the Mobius flow cell for manual measurements. As with the flow cell, the dip cell affords simultaneous mobility and size measurements in order to determine zeta potential or charge while monitoring potential degradation of the sample under an applied electric field. The dip cell requires only $65 \ \mu$ L of solution under typical conditions.

The Mobius Dip Cell is optimal for PALS measurements of nanoparticles, proteins and other macromolecules. It should be used for low-conductivity samples not requiring the Atlas pressurization module and is useful for quick testing before setting up automated, multi-sample methods. It cannot be used for DLS measurements if $R_{\rm h} > 200$ nm.

P/N: WMDC-00

Compatible with Mobius



Orbit™

The Orbit integrates with any Wyatt MALS detector, Optilab RI detector or ViscoStar differential viscometer and even certain third party instruments, to direct the eluent from your flowing system to a waste bottle or back to the solvent reservoir. Program the Orbit to place your system in "recycle" mode at the end of a sample set and your flowing system will be equilibrated and ready upon your return without wasting large quantities of your mobile phase. This automated recycling functionality is critical for chromatography systems whose mobile phases may be costly to purchase/prepare/dispose of and whose column equilibrations could take hours.

The unit may be controlled manually via a Wyatt instrument front panel interface or it may be automated within an ASTRA sample set. Also used with Calypso CG-MALS setups to automate switching between wash solvents when cleaning and flushing the system.

P/N: WORB

Compatible with all DAWN, miniDAWN, microDAWN, Optilab, ViscoStar, Eclipse and Calypso instruments



Quartz Cuvettes

Specially-designed, high-quality quartz microcuvettes are available for batch measurements of static and dynamic light scattering.

2 μL Quartz Cuvette – For the smallest possible sample volume and largest range of solvents and temperatures, yet maintaining exquisite sensitivity. One cuvette is included with each new DynaPro NanoStar.

P/N: WNQC02-00

4 mL Quartz Cuvette – Inexpensive, suitable for most solvents, may be used in the DynaPro NanoStar II with an adapter.

P/N: 900342 – 4 mL Quartz Cuvette Kit for NanoStar II P/N: 900343 – Generic Cuvette Adapter Kit for plastic or quartz cuvettes

45 μL Quartz Cuvette – For an optimal trade-off between sample volume and convenience in cuvette filling and cleaning. Compatible with both the DynaPro NanoStar and Mobius. Use with a Mobius requires the cuvette adapter.

P/N: WNQC45-00 – 45 μ L Cuvette Kit for NanoStar and Mobius P/N: WMQC-00 – 45 μ L Cuvette and Adapter Kit for Mobius



Replaceable DAWN Flow Cell

The heart of the DAWN (NEON) is its flow cell—a highly polished, precision-manufactured glass and metal assembly designed to eliminate stray light for maximum light scattering sensitivity. Our exclusive, one-of-a-kind design allows the flow cell to be changed without the need for additional laser or optical alignment.

For mission-critical applications, keep a clean flow cell assembly on hand. If the cell in use requires cleaning, simply drop in the clean spare and keep working.

P/N: WRFC Standard 1.2 mm ID, Ambient P/N: WRFC Standard 1.2 mm ID, Heated/Cooled P/N: WRFC Wide-Bore 3.0 mm ID, Ambient P/N: WRFC Wide-Bore 3.0 mm ID, Heated/Cooled

Compatible with DAWN (NEON) and ultraDAWN



RI Calibration Kit

Speed up your Optilab calibration with our pre-made refractive index standards. Our single-use RI Calibration Kit contains the exact set of pre-mixed, validated NaCl solutions required to calibrate any Wyatt Optilab differential RI detector. Simply snap open the ampules and inject the standards into your instrument. Using ASTRA software for data collection allows you to determine the RI calibration constant.

This RI Calibration Kit is optimal for Optilab IQ/OQ procedures and can be used easily by trained technicians to complete yearly OQ/PQ validation.

P/N: 900080

Compatible with all Optilab instruments



SEC Columns

Wyatt Technology offers a family of silica-based columns specifically designed for SEC-MALS protein applications. These columns are made of the highest quality silica with well-controlled pore size and highly reproducible surface chemistry. As a result, Wyatt protein SEC columns provide high resolution, an extended lifetime, excellent lot-to-lot reproducibility and a full range of pore size selections. Moreover, these columns have exceptionally low light scattering baseline noise and better pressure shock resistance than any comparable columns on the market.

Visit store.wyatt.com/columns for details and P/Ns.

Compatible with all DAWN and miniDAWN instruments

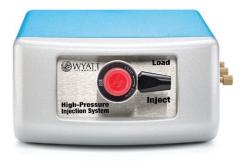
Well Plates

We offer a variety of industry standard well plates in either 96, 384 or 1536 format for use with your DynaPro Plate Reader for unparalleled level of automation in dynamic and static light scattering. High measurement sensitivity can be achieved with sample volumes as low as 5 μ L per well. While glass bottom plates are generally recommended, the Plate Reader is compatible with a wide variety of off-the-shelf well plates to meet your needs.

To learn more about well plates tested and verified with the Plate Reader and details on insert and minimum sample volume requirements, view our compatibility guide or contact Wyatt Support for more information.

Visit wyatt.com/plates for details and P/Ns.

Compatible with DynaPro Plate Reader instruments



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WISH™

The Wyatt Injection System High-Pressure (WISH) is a speciallydesigned injector module ideal for SEC-MALS without an autosampler. Upon injection, the WISH generates an autoinject contact closure signal, which is sent to the DAWN or miniDAWN MALS detector and read by ASTRA to trigger data collection. Connect your syringe or HPLC pump to the injector inlet for simple flowing batch measurements.

The WISH operates at pressures up to 7000 psi (480 bar) and is compatible with common organic and aqueous solvents.

P/N: WISH

Compatible with all DAWN, miniDAWN, ViscoStar and Optilab instruments

WyattQELS[™]

The WyattQELS embedded dynamic light scattering (DLS) module integrates inside a DAWN, miniDAWN or microDAWN multi-angle light scattering (MALS) detector to provide simultaneous DLS measurements in the scattering volume viewed by the MALS detectors. DLS is used to determine the sizes of macromolecules and nanoparticles as *R*_h, the hydrodynamic radius, from 0.5 nm and up.

In a DAWN (NEON), the DLS optical fiber may be installed at scattering angles of 50.5°, 90°, 130° or 150°. In a DAWN HELEOS, the optical fiber replaces any one MALS detector, typically at scattering angles of 100° or 135°. The miniDAWN has a fiber mount at scattering angle 135° and the microDAWN has a fiber mount at 130°.

Contact Wyatt for configuration and installation options.

Compatible with all DAWN, miniDAWN and microDAWN instruments

Service, Training and Validation





Service & Support Plans

The Silver Service plans includes:

- Full calibration and quality control testing with priority service
- Loaner instruments based on availability
- Comprehensive, first-priority technical and application support by phone, email and screen sharing sessions
- 50% discount on Wyatt training and events

The Gold Service Plan includes these additions:

- Annual on-site preventative maintenance visit with consumables
- Field calibration and quality control performance checks
- Priority on-site service including free parts and labor
- Dedicated loaner units should an instrument require factory repair

The Platinum Service Plan includes this addition to the Gold Plan:

• Two on-site preventive maintenance visits/year with consumables

Software Support Plans include:

- All software upgrades released during plan term, with proactive notification
- Priority software support by phone, e-mail and screen sharing



AAV Method Implementation & Training

Sensitive SEC-MALS instrumentation combined with ASTRA's powerful Viral Vector Analysis procedure are key for characterizing key gene therapy attributes, but they are not the whole story. You need a proven method to utilize these tools to their fullest, one that is transferrable from development throughout the product life cycle.

Wyatt Technology offers a special AAV Method Implementation & Training service to get you up and running with a method that has been optimized and verified for all AAV serotypes. As part of this service, an application specialist will come onsite to train staff on our turnkey SEC method and standard operating procedure.

Completion of the AAV Method Implementation & Training service will ensure that you are successfully quantifying AAV CQAs with confidence. It may be combined with an onsite PM or IQ/OQ to ensure robust analyses, with a fully optimized and validated system, ASAP.

Contact Wyatt for details.





IQ/OQ Validation

Wyatt Technology offers a complete compliance program including documentation and on-site validation for all of its instruments and software. Validation takes place in the form of IQ (Installation Qualification) and OQ (Operational Qualification). IQ tests that all the different parts of the instrument perform according to specification (e.g., the photodiodes, the laser, etc.). OQ tests that the instrument as a unit performs to specification.

Make an appointment today for one of our GMP-trained applications scientists or field service engineers to come on-site and run a complete IQ/OQ validation. Software validation can be performed remotely for your scheduling convenience.

Contact Wyatt for validation options.

Light Scattering University® (LSU)

The gold standard of education from our experienced LSU faculty gives everyone in the lab the right starting point and sets them up with the best foundation possible.

LSU students discover advanced data processing methods and alternative analytical tools that they may not have been aware of and learn how their MALS and DLS data complements information from other techniques they are using in the lab.

You'll have the opportunity to meet and work with the scientists and support team behind the products as well as other users from around the world. While you are here, we work you hard but feed you well at a variety of Santa Barbara restaurants!

Contact Wyatt for available LSU classes.

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