**MALLS Quick Start Guide**

**LC Startup**

* Change the in-line filter upon changing buffers or change after ~90 days of use
* Filter mobile phase using a 0.1 micron filter for aqueous buffers and a 0.02 micron filter for organic solvents
* Wyatt recommends using 200 ppm Sodium Azide (NaN3) for aqueous buffers
* Adjust the flow rate in 0.2 ml/min increments, allowing pressure to stabilize after each increase
* Upon storing LC for more than 2 days, change to filtered water containing ≥ 20 % EtOH

\*\*Be careful to flush LC with miscible solvents ie. Toluene - 100% EtOH - 100% H2O\*\*

**DAWN HELEOS/TREOS**

* Turn on Laser using the main LCD display
* Run the COMET (if applicable) while the instrument is warming up (~10 min)
* Upon starting, the 90° angle should be ~ 0.02 V (in aqueous systems)
* Turn off the COMET before starting run (COMET running time can be set in System window)

\*Check the following instrument parameters in Astra Configuration

* Make sure to find the physical instrument when starting a new template
* Normalize the detector for any new mobile phase (NIST BSA <https://srmors.nist.gov/view_detail.cfm?srm=927d>)
* Set calibration constant for MALS detector (calibrate detector with filtered Toluene about every 6 months)
* Set solvent refractive index (can be determined from the Optilab rEX)
* Set DNDC of sample ([www.ampolymer.com](http://www.ampolymer.com)) - protein DNDC is ~0.185

**Optilab rEX** (This instrument should not have backpressure so make sure outlet tubing is 0.030” ID or greater)

* Adjust temp to desired setting and allow instrument to warm up for ~30 min
* set the purge button to ON on the main LCD display during any change in buffer
* Adjust the LED intensity under the System Tab so that it is ~7.6 volts (adjust max power % manually)
* Turn off purge and zero instrument using the main LCD display
* Re-purge and re-zero the instrument until the drift is less than ­­­­­­­­­­­­­­­­­­­5.0 E-8 RIU/min

\*Check the following instrument parameters in Astra Configuration

* If using the RI detector for your concentration, make sure that you select the RI detector in Astra V
* Make sure to find the physical instrument when starting a new template
* Set volume delays (alignment) for each new concentration detector

**QELS (only for internal QELS)**

* Calculate the solvent viscosity to the MALS temp on the front LCD display using SEDNTERP ([www.cauma.uthscsa.edu/software](http://www.cauma.uthscsa.edu/software))
* Turn on the QELS using the front LCD panel, under the QELS tab
* Make sure that the Dither is in the on position

\*Check the following instrument parameters in Astra Configuration

* Set the correct viscosity for your solvent (correct for the changes due to run temp using SEDNTERP)

**UV Detector**

* Turn on the lamps and allow them to warm up for ~30 minutes

\*Check the following instrument parameters in Astra Configuration

* If using the UV detector for your concentration, make sure that you select the UV detector in Astra V
* Set the appropriate wavelength for your analysis
* Set the correct AU/Volt, Path Length and **ε** (careful of the units)
* Set volume delays (alignment) for each new AUX detector

**Viscostar**

* DO NOT START THE LC WITHOUT THE VISCOSTAR BEING POWERED UP
* When running the system, both the IP and DP purges must be off
* Increase the LC flow rate slowly so that the DP pressure remains on scale (± 0.73 psi)
* Set the flow rate to desired value, allow the instrument to stabilize, and zero the DP (Viscostar total volume is ~28mL)
* Each week, purge the IP and DP separately with ~10 mls of solvent and re-zero the DP

\*\*When changing solvents, activate the DP purge from the main LCD display and flush instrument for 15 minutes at a flow rate of 0.2 ml/min. After 15 minutes, activate the IP purge and flush both for another 15 minutes. Set the flow rate to 0.1 ml/min and disable the IP and DP purge. Follow the startup procedure.