Prep Steps before you begin Particle Tracking/Analysis:

* Having a series of Serial Dilutions (4) prepped ranging from 1:100 to 1:100,000x concentration in a ten-fold stepwise order will save you a lot of time before you begin.
* It is highly recommended you bring your own pipettes if you plan to create your dilutions when you arrive in the lab.

Getting Started:

1. Power on Machine. Power switch is on the back below power cable
2. Power on Computer
3. Log in with HawkID and Password
4. Launch the App titled VU-3000 Measure

The Software:

1. Select the Mode of data collection for your needs
2. Select the Method of acquisition
3. Click Sample Information to fill out as much about your sample as possible for the generated report.
4. Click Start Streaming to activate the camera, a real-time video window should appear
5. Optimize focus of the camera so your particles are without blur and halo affects
6. Optimize master Gain to bring your particles into an appropriate intensity
7. Optimize Exposure to control pulse timing of lasers hitting your sample
8. Optimize Laser settings based on particle size you expect to image

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| --- | --- | --- |
| Default Laser Settings: |  |  |
| Blue | 70mW | Small Particles: 40 – 445nm |
| Green | 12mW | Medium Particles: 300 – 520nm |
| Red | 8mW | Large Particles: 475 – 650nm |

1. Use the Detection Preview to get an idea of how well the camera ”views” your individual particles
   * + This can be tricky. Ask for assistance if you need help
2. Click Dispersant under cuvette and choose your solvent type.
3. Stir time = length of homogenization in between video capture
4. Wait time = time between stir time and video capture
5. Temperature = range from 10 to 50 Celsius
6. Frames per Second, Frames per Video and # of Videos can be left alone for initial acquisition
7. Click Start Acquisition once you are ready to begin collecting

When acquisition is done the system automatically processes the data in the video processing panel then displays the results in the Size Data Analysis panel.

In the Size Data Analysis Panel X-axis min and max ranges can be suited and changed to your needs as well as limits of integration by changing [nm] Min and [nm] Max accordingly.

File>export will save the PDF report as you modified it on the desktop Data Folder

Navigate the Data Folder and export the reports you would like to save onto your OneDrive account

If you get stuck or are unsure about anything or would like a more technical protocol, reach out to an investigator and they will be happy to help.