

Standard Operating Procedure of Delsa Nano C (DLS)

Powering on the equipment

1. Turn the power switch to the on position. The switch is located on the left rear of the Delsa Nano.

(Note: Turn the power on at least 30 min prior to starting the measurements. It takes ~30 min for the laser to stabilize before taking measurements.)

2. Startup is complete when the LED turns green. (LED is located on the top panel of the DelsaNano.



To start the software

1. From Windows, double-click the DelsaNano icon on the desktop, or select the program from your program list.

When the software is ready for use, the DelsaNano main screen appears (Figure 1.3). It contains several panels with functions that allow you to prepare for measurements

Figure 1.3 DelsaNano Main Screen

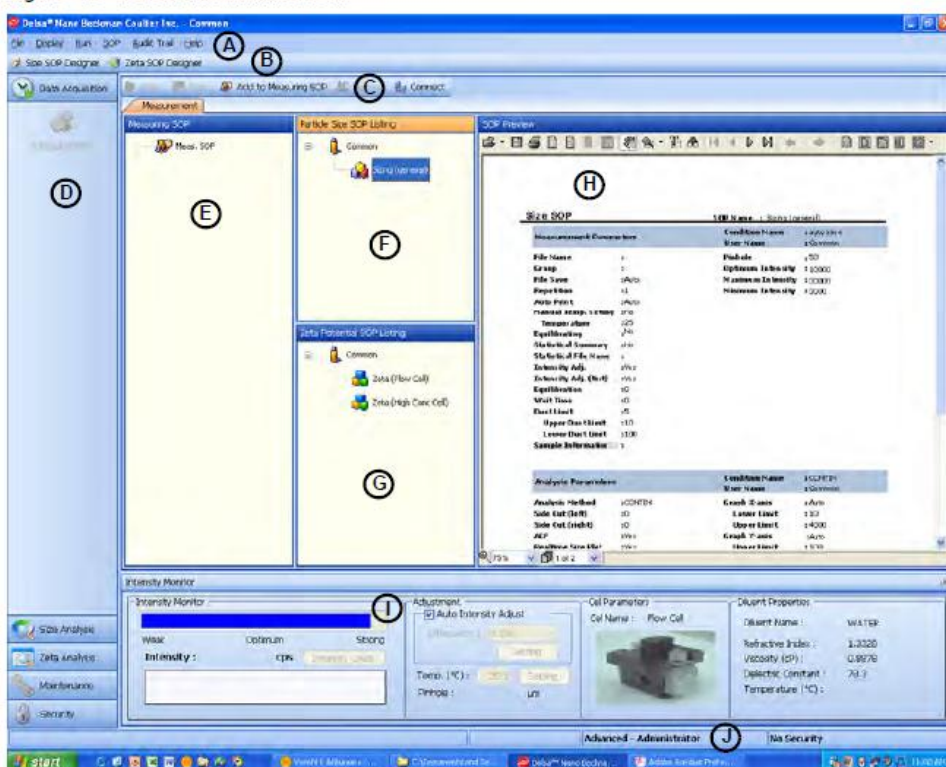


Table 1.1 DelsaNano Main Screen Elements

	Screen Element	Description
A	Main Menu Bar	For information on the menus on the menu bar, see Using the Main Menu Bar .
B	SOP Designer Toolbar	Contains two buttons: <ul style="list-style-type: none"> Size SOP Designer is used to create and view SOPs for size measurement. Zeta SOP Designer is used to create and view SOPs for zeta potential measurement.

	Screen Element	Description
C	Button Bar	<p>This button bar is not present in all screens. When it is present, the buttons that appear on the bar apply to the selected function or screen. For example, when you select the Measurement function icon in the Data Acquisition function panel, the following buttons appear:</p> <ul style="list-style-type: none"> • Start turns green when the instrument is connected. • Stop turns red when the instrument is measuring. • Add to Measuring SOP is used to add either particle or zeta SOP to measuring SOP. • Remove is used to remove the size or zeta SOP used for measurement from the measuring SOP. • Connect is used to initialize the instrument, which must be turned on. <p>When you select the Security function panel, the following buttons appear:</p> <ul style="list-style-type: none"> • Add New User is used to add a new user. • Edit User Profile is used to edit an existing user's profile. • Delete User is used to delete a user. This button is replaced by the following when 21 CFR Part 11 security is enabled: <ul style="list-style-type: none"> — Disable User is used to disable a user's login. — Enable User is used to enable a user to log into the DelsaNano software. <p>Other buttons appear in the function panel as appropriate.</p> <p>When you are working in an SOP Designer, this button bar is not available. Instead, a different button bar appears inside each panel in the SOP Designer.</p>
D	Function Icons Panel	<p>This panel contains the main software functions. Select a function name to open the corresponding set of task icons:</p> <ul style="list-style-type: none"> • Data Acquisition function icon: Measurement • Size Analysis function icons: Analysis, QC • Zeta Analysis function icons: Analysis, QC, pH Analysis • pH Maintenance function icons: Configuration, pH Calibration, Priming, Consumable Check, Sample Circulation, pH Monitor • Maintenance function icon: System Configuration • Security function icons: User Management, Security Settings, and Data Mirroring
E	Measuring SOP Listing	This panel displays the SOP that will be used in the measurement.
F	Particle Size SOP Listing	This panel displays the registered particle size measurement SOPs.
G	Zeta Potential SOP Listing	This panel displays the registered zeta potential SOPs and the zeta potential measurement SOPs.

Table 1.1 DelsaNano Main Screen Elements (*Continued*)

	Screen Element	Description
H	SOP Preview	<p>This panel displays the parameters within a selected SOP. To display the parameters of an SOP, select the SOP in the SOP Listing.</p> <p>You can print and preview an SOP and save it as a PDF using the available toolbar.</p>
I	Intensity Monitor	<p>This form at the bottom of the screen displays the parameters that must be checked prior to starting a measurement, such as the sample's intensity (scattering strength), Auto Intensity adjustment, pinhole size, temperature, the appropriate cell used for measurement, and diluent properties within the SOP conditions that have been registered for the selected SOP.</p> <p>The intensity of the sample appears in cps (photon counts per second), and the message box provides instant feedback on whether or not to proceed with measurement. Appropriate action must be taken based on the feedback.</p> <p>The software adjusts the scattering intensity from the sample automatically. If the scattered intensity is very high, it is attenuated appropriately by the neutral density filters.</p> <p>The Intensity Check displays the number of scattering elements based on their scattering intensity levels. You can select the minimum and divisions. The mean SD of the scattering appears at the end of measurement.</p>
J	Status Panel	<p>The Status panel at the bottom of the window indicates connection status, the mode (Normal or Advanced), the permission level of the currently logged-in user, and the Security setting (for example, 21 CFR Part 11).</p>

Working With SOPs

Do not delete SOPs. If you want to create your own SOPs, see the manual for details, or ask Jiong/Gyu Seong for help.

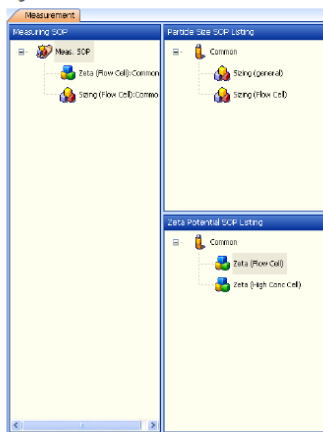
Selecting the Measurement SOP

1. In the Measurement screen, select the desired SOP from the SOP listing.
2. Select SOP > Add to Measuring SOP on the Main menu bar, or click (Add to Measuring SOP) . (You can also drag and drop the SOP into the Measuring SOP.) This registers the selected SOP.

One-By-One Analysis of Size and Zeta Potential

The instrument can measure particle size/zeta potential (or vice versa) one after the other when the same cell type and diluent are used to measure both size and zeta potential of the sample. The instrument uses the first SOP to measure either size or zeta potential, then moves to the next SOP, and so on.

Figure 1.31 Measurement SOP



Checking the Cell Type, Intensity (Scattering Strength), and Diluent Properties

1. Check the SOP parameters in the SOP Preview screen.
2. Perform the minimum checks in the Intensity Monitor at the bottom of the window

Figure 1.32 Intensity Monitor



Starting the Measurement

1. Select the Measurement icon from the Data Acquisition function panel.
2. Click (Start) in the upper left of the Measurement screen, or select Run > Start on the Main menu bar.

During the measurement, the screens that are selected in the Analysis Condition in the SOP are displayed. To display a graph (or graphs), click the name of the graph you want at the top of the screen. You can do this during a measurement. Additionally, a summary of the measurement parameters and conditions appears in the Results panel above the graphs.

Stopping the Measurement

To stop the measurement, click (Stop) in the upper left of the Measurement screen, or select Run > Stop on the Main menu bar.

Turn off the instrument