

**QUANSYS**  
BIOSCIENCES

Q-View™ Software

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## Setting Up the Imager

- Carefully unpack the Q-View™ Imager and place it on a work area.
- Connect the wall cord to the imager power supply.
- Plug the wall cord into a surge protector.
- Connect the USB cord into a computer that has Q-View™ Software installed.

### **Before Initial Use**

Wipe down the outside of the imager. Suggested cleaners are: rubbing alcohol, ethanol, or window cleaner. Clean imager glass with a lint free cloth and ethanol.

Due to the excessive movement during shipping, the camera in your Imager may have been loosened and or unfocused. Follow the suggestions below to focus your camera. It may be necessary to remove the bottom plate of the imager to help center the lens of your camera.

- Launch the Q-View™ software.
- Create a new Project called “Focus”
- Press the Capture Image button.
- Click on the Enable Live View Feed checkbox.

Note: If the camera is left for an extended amount of time in live view, it will freeze. To reset the camera unplug the unit, wait 10 seconds, then plug it back in.

Place the 96-well focusing plate (included) in the plate holder tray in the imager box. Keep the lid open to visualize the focusing plate.

Use the arrows in the Capture Image window to focus the plate.

Make sure to clearly focus on the words printed on the focusing plate.

Once focused, un-check the Live View Feed checkbox and close the image capture window.

## Setting Up the Software

The Q-View™ Software is a comprehensive package that allows users to take images of microarrays, identify and analyze each assay spot, and process the data from the arrays. This software has been built for use with Quansys Q-Plex™ technology.

### **Minimum Computer Specifications**

For optimum performance, the computer that runs the Quansys Q-View™ Software should meet at least the following specifications:

- Pentium IV processor
- Windows XP, Vista, or 2007
- 1 GB RAM (3GB optimal)
- Resolution: 1028x768
- Adobe Acrobat Reader (version 8 or newer)

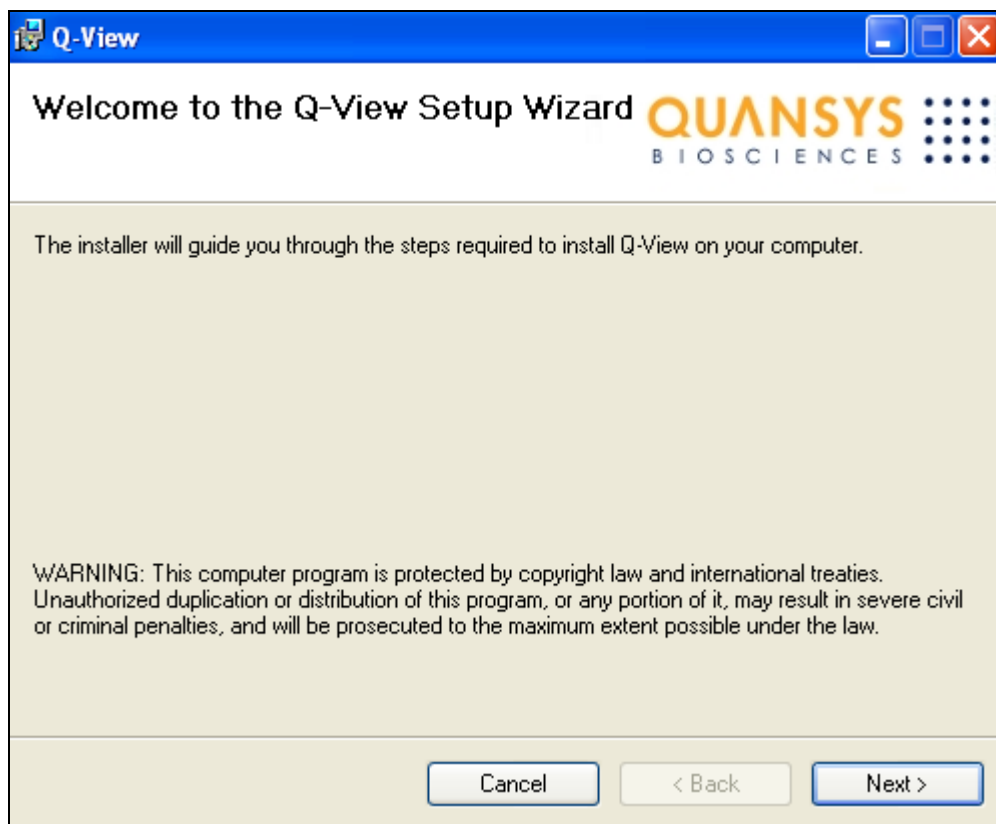
## ***Installing the Software***

Close any open programs, and then install the software by completing the following steps:

1. Insert the installation CD. The following dialog box appears.



2. If this is an upgrade, uninstall the previous package before installing the upgraded version by selecting **Uninstall**. You can also uninstall the previous package by following the instructions in the “Uninstalling the Software” section on page 26.
3. Select **Install**, and then select **Accept** to accept the terms of the pending license agreement. The system prepares for the installation to take place, then the Q-View™ setup window appears.



4. Select **Next** and follow the prompts on the screen to complete the installation. Once the software is finished installing, close the installation window. The software places a shortcut to the Q-View™ Software on your desktop. After the installation process, select this shortcut to open and use the software.
5. Following Q-View™ Software install, insert the provided USB dongle into the computer. In order to process the software, this dongle has to be plugged into the computer that is using the software. After you insert the USB dongle, the Install New Hardware wizard will run. Follow the prompts on the screen, and select **Close** when the wizard has finished installing the new hardware.
6. If the USB dongle is lost or is not functioning, please contact customer support at 1-888-QUANSYS.

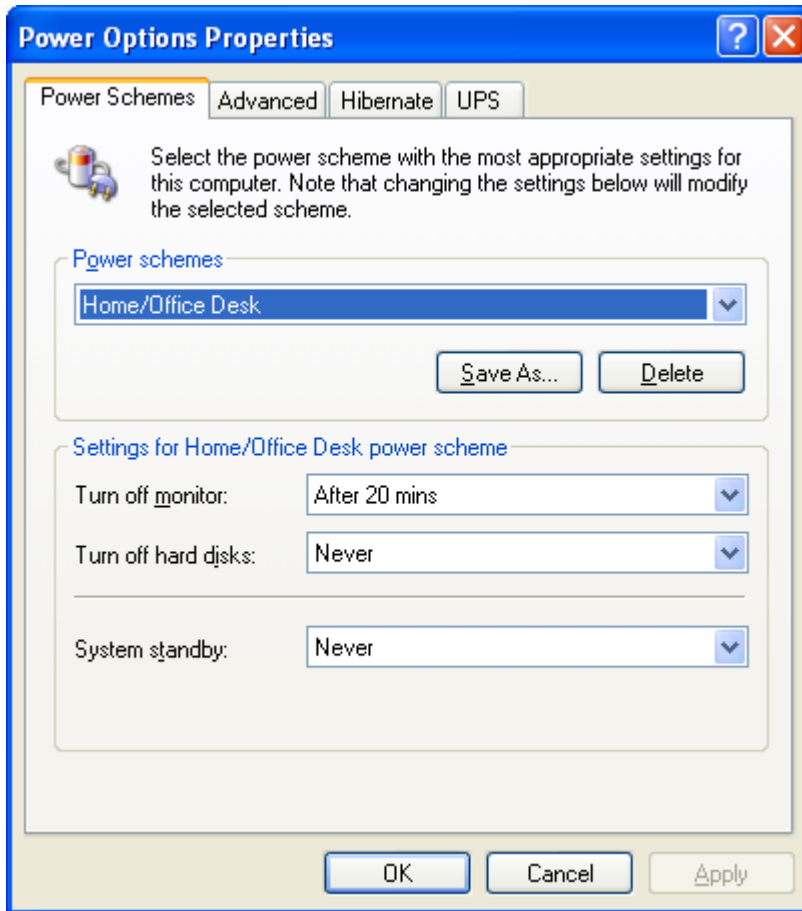
## Computer Power Option Settings

In order to ensure uninterrupted communication between the Q-View Imager and computer it is vital that the following power settings be used in the Power Options Control panel. Failure to use these settings may result in image lost during the image capture process.

Turn off monitor: User may select any time

Turn off hard disks: Never

System Standby: Never



## Software Overview

Q-View™ is built such that multiple images can be stored together as a single file called a project. Thus, a project file (file extension .prj) houses all the images from an experiment as well as the data and reports generated from the analysis of those images. In addition, notes can be kept with each project by going to **Project > View Notebook**. The Q-View™ Software will automatically save projects and any changes made to them as the software is used.

To begin using the software, first open or create a project as explained in the following subsection. Tabs on left side of the screen allow the user to access the four major functions of the Q-View™ Software:

- **Image Acquisition:** Once you have specified the project you want to work on, you can start acquiring images for that project, whether via the Q-View™ Imager or by importing an image file captured on another imager.
- **Image Analysis:** After an image has been obtained, you can place an “overlay” on the image to assist the auto-spot finding feature of the Q-View™ Software.
- **Well Assignment:** Following overlay placement, you can assign wells to be samples, controls, standards, or negatives, then specify the dilution factor of these wells.
- **Data Analysis:** Once the previous steps are complete, you can chose a data output option and the software will automatically process the data to compile tables, graphs, statistical information, and reports for pixel intensities and calculated concentrations.



As you perform each step, an auto-save feature stores the information within the project. Each of these steps is explained in more detail in the following subsections of this manual.

### ***Creating or opening a project***

From the **File** menu or the buttons on the Q-View™ main screen, select **New Project** to create a new project, or **Open Project** to open an existing project. Selecting either option will enable you to begin using the software.

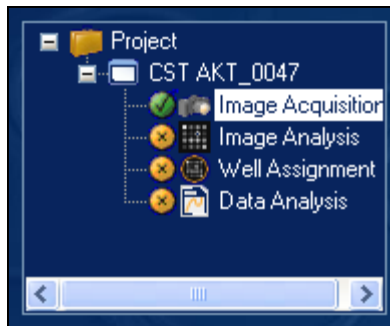
- If you select **New Project**, a Save As dialog box will appear. Type a file name, navigate to where you want it saved, and select **Save**.
- If you select **Open Project**, an Open dialog box will appear. Navigate to the file you want and select **Open**.

### ***Closing a project***

To close a project without exiting Q-View™, select **File > Close Project** or the **Close Project** button on the Q-View™ main screen.

### ***Viewing the status of your projects***

Select the **Navigate** tab on the Navigation Bar, and a schematic of each project and image appears.



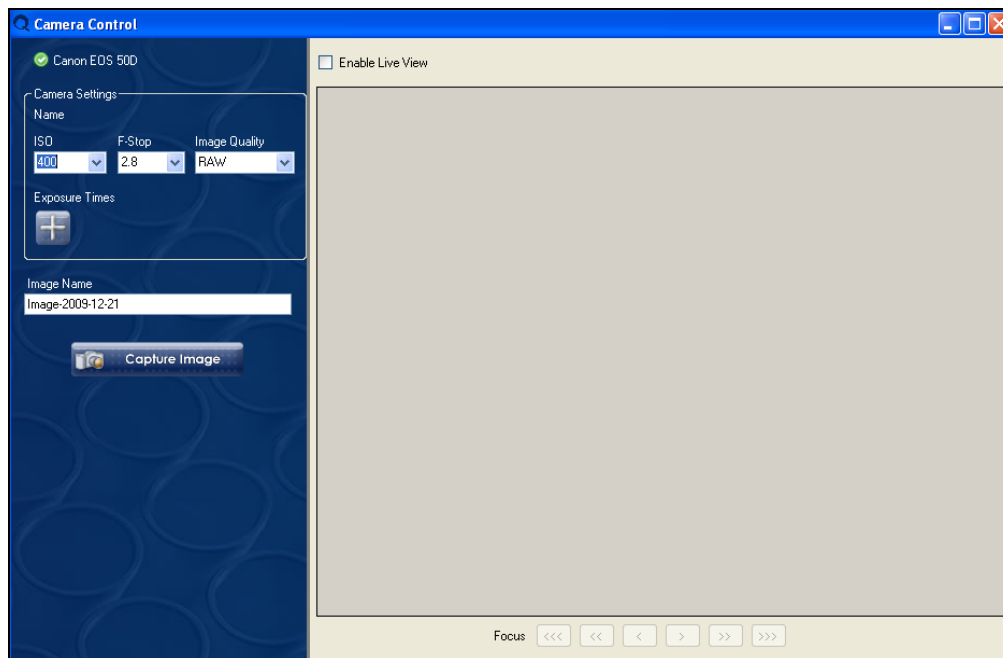
Below each image name is a list of the four steps needed to analyze it: Image Acquisition, Image Analysis, Well Assignment, and Data Analysis. If work has been completed on one of the steps, a green check mark will appear beside it; if not, a yellow X will be present.

## Acquiring an Image

Q-View™ enables you to acquire images via two methods: directly from a Q-View™ Imaging System or by importing an image file (TIFF or JPEG). These methods are explained in detail in the following subsections. Q-View™ can continue to be used to analyze other images in the project while an image is being captured. Once the image is available for viewing, two tabs become available in the Q-View™ main screen: **Image Tools** and **Export Image**. Similar tabs appear when Image Analysis is selected; the use of these tabs is explained on page 9.

### Acquiring an Image from a Quansys Imaging System

To acquire the first image of a project from a Quansys imaging system, select the **Capture Image** button on the Q-View™ opening screen. To acquire subsequent images for that same project, select **Image Acquisition > Imaging System** from the Navigation Bar or the **Capture Image** button on the Q-View™ main screen. A camera control window appears.



If the camera is recognized, “Connected” appears in Green in the top left corner of the dialog box. If the camera is not recognized, “Not Connected” appears in red. Please contact customer support at 1-888-QUANSYS for assistance in connecting the camera.

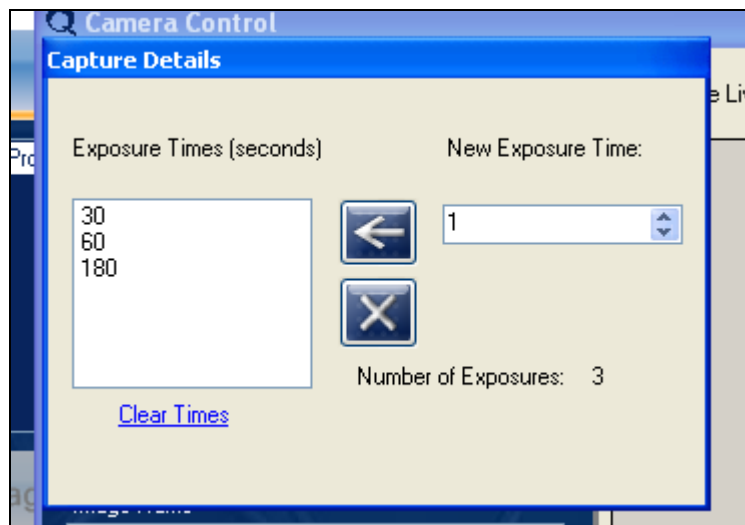
If the camera is connected, set the desired ISO, F-Stop, and Image Quality. Recommended settings are as follows:

ISO: 400

F-Stop: 2.8

Image Quality: RAW

The Exposure Times can be set by clicking on the **Exposure Times** button.



These times can be modified to meet the needs of your assay. Recommended times are as follows: 30, 60, and 180 second exposure times are recommended for most assays.

One can modify the times by first clearing the default entrees by clicking **Clear Times**. Enter the new time in the **New Exposure Time** box and click the left arrow to move it to the **Exposure Times** box. This can be repeated for additional exposure times if a stacked image is required (see an explanation of image stacking on page 8). Individual times may be removed from the **Exposure Times** box by highlighting the time and clicking the X button. Once set, one can exit the Exposure Times dialog by mousing outside of the dialog box.

Once the settings are adjusted as desired, place the plate in the Imager and shut the door. Click the capture button. The image will then be displayed in the Q-View™ main screen.

### **Acquiring an Image by Importing an Image File**

Q-View™ software can process images in the following formats: TIFF, JPEG, PNG, and BMP. Users should review [www.quansysbio.com/support/imagers.html](http://www.quansysbio.com/support/imagers.html) for more information on which imaging systems can be used with Q-Plex™ technology. Images should be taken on cameras with high resolution.

To acquire the first image of a project from a Quansys imaging system, select the **Import Image** button on the Q-View™ opening screen. To acquire subsequent images to be included in that same project, you may select **Image Acquisition > Import Image** from the Navigation Bar or the **Import Image** button on the Q-View™ main screen. An Open dialog box will appear. Navigate to the file you want and select **Open**. Q-View™ will automatically stack all images which are imported at the same time to build a single 32-bit TIFF image. Selection of multiple images to import is accomplished by holding down the Ctrl key while clicking on the image files.

The software will then prompt for input on the type of imager used to acquire the image. Selecting the imager type will allow the software to adjust for vignetting that might be present. Selecting **other** will not apply any vignette correction to the imported image.

The time to upload the image will vary depending on the image file type and size. Once acquired, the image will appear in the Q-View™ main screen.

## Image Stacking

Quansys' Q-View™ Software enables the user to merge, or stack, images of an assay which were obtained using various exposure lengths, resulting in a single high dynamic range image. Besides supplying an image optimized for fast and accurate analysis at both ends of the standard curve, this feature provides ELISA developers greater flexibility to design antigen standard curves which take advantage of the reagents' full quantitative range.

Often restrictions in developing a chemiluminescent ELISA can be introduced by the limitations of the camera used to capture the light produced. Chemiluminescent ELISA reactions which are very bright require shorter exposures to prevent the CCD or CMOS chip of the camera from becoming saturated, while long exposure times are necessary for capturing the signal of very dim reactions. Without image stacking, an ELISA developer was required to curtail the assay's standard curve to fit within the limits of the camera, possibly sacrificing sensitivity at both the high and low end of the curve (see Figures A and B below). With image stacking, an assay with both very bright and very dim spots is no longer a problem. Exposures optimized for the "bright," "mid" and "dim" reactions can all be taken and combined, or stacked, by the Q-View™ Software.

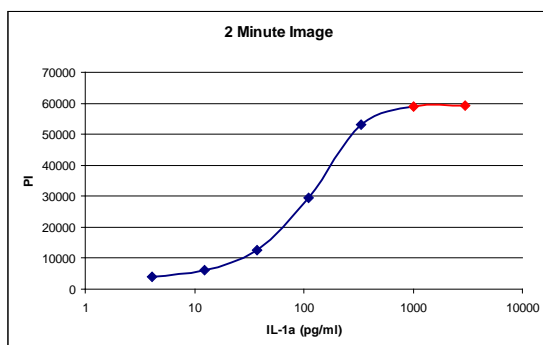


Fig. A

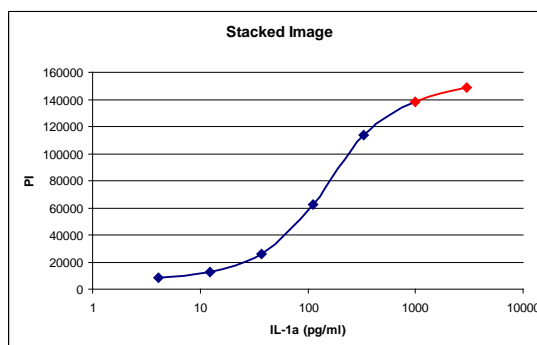


Fig. B

When looking at these two standard curves the advantages of stacking multiple different exposures become clear. It is not possible to quantify using the top 2 points of the curve (represented in red) from Figure A. However, the slope of the same segment in Figure B, the stacked image curve, is still robust, allowing accurate quantification. An additional benefit to image stacking is that this combining of multiple images increases the signal to noise ratio, providing even greater sensitivity at the low end of the curve.

When using a Quansys Q-View™ Imager, the software defaults to 30, 60, and 180 second exposures which are then combined to create one 32-bit TIFF image. These times and/or the number of exposures can be customized to the needs of a particular assay. Customers using other CCD based imaging systems can also take advantage of Q-View™ Software image stacking capabilities by using the import image function to import multiple images at once.

## **Blot Analysis Tools**

In addition to being used to capture images of Quansys Q-Plex ELISA plates, the Q-View imager can be used to acquire images of chemiluminescent western blots. Once acquired, these images can be analyzed using the Blot Analysis Tools available under the Image Acquisition tab.

### ***Auto Select Tool***

The Auto Select tool can be used to automatically find the edges of a shape and report the number of pixels that are enclosed by the shape, the mean pixel intensity of those pixels, and the standard deviation of the pixel intensity. To use this tool, simply click the auto select radio button. The sensitivity setting can be adjusted by increasing the number to make the tool more sensitive and decreasing the number to make it less sensitive. With the tool selected, click in the middle of the shape to be selected. The selected shape will be identified by a red outline. The selection can be moved by clicking within the shape and dragging it to a new location.

### ***Rectangle and Ellipse Tools***

Selections can be made using the Rectangle and Ellipse tools. After clicking the radio button corresponding to the desired tool, one simply clicks and drags to create the desired selection. As with the Auto Select tool the selections created with the Rectangle and Ellipse tools can be repositioned by clicking within the shape and dragging it to the desired location.

### ***Polygon Tool***

At times there is a need to select a non-symmetrical shape; the Polygon tool is ideal for such shapes. After clicking the Polygon radio button one can draw a custom shape using a series of connected lines. To start drawing the selection, click once with the mouse, this will establish an anchor point for the first line. Move the mouse pointer to the desired location for the end of the first line and click again. The second click will establish the first line as well as set an anchor point for the second line that will make up the polygon selection. Continue this process until the desired selection is made then right click the mouse to close the polygon selection. As with the other tools, the polygon selection can be repositioned by clicking within the shape and dragging it to a new location.

### ***Blot Report***

Any time a selection is made the software reports the number of pixels that are enclosed by the selection, the mean pixel intensity of those pixels, and the standard deviation of the pixel intensity. These values can be recorded by clicking the *Add to Report* button. New selections and analyses can be added to the report by creating new selections and clicking *Add to Report*. The recorded values can be seen by clicking the *View Report* button. The report can be exported to a CSV file or copied and pasted into a spreadsheet.

## Analyzing an Image

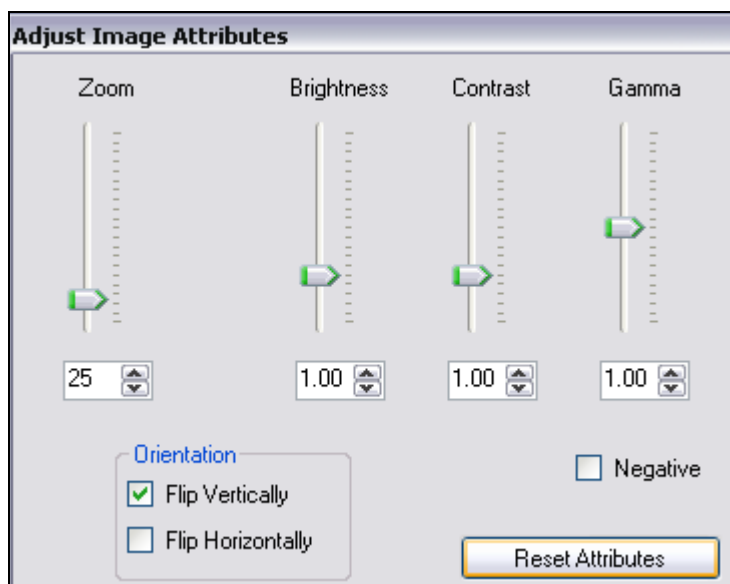
After acquiring an image, select **Image Analysis** from the Navigation Bar. Four tabs become available in the Q-View™ main screen: **Image Tools**, **Export Image**, **Plate Alignment Tools**, and **Manual Spot Tools**. To analyze the image, use these tabs and features as described in the following subsections.

### Moving the image within the display window

With the image selected, the scroll wheel on the mouse will zoom in or out. Hold down the scroll wheel and drag the mouse to move the image. Select **Center Image** to automatically center the image in the display window.

### *Using the Image Tools tab*

With the **Image Tools** tab active, you can adjust the Zoom, Gamma, and orientation of the Image. Select **Advanced**, and the following window appears:



Adjust the settings of the image to enhance visualization of the spots within the array.

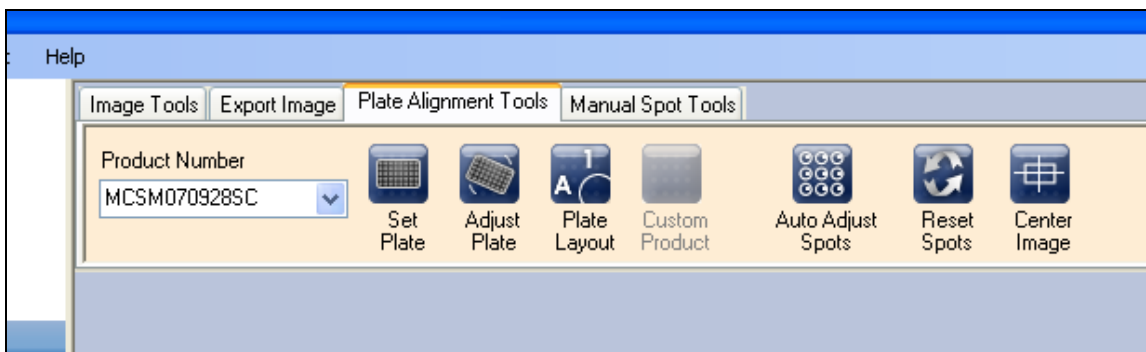
### *Using the Export Image tab*

With the **Export Image** tab active, you can export the image itself, or the screen as a whole. Select the **Export Image** button to export the image into one of the following formats: TIFF, JPEG, BMP, or PNG. Or select the **Export Screen** button to export a screenshot into one of the following formats: TIFF, JPEG, BMP, PNG, or EMF. A **Save As** dialog box will appear.

Type a file name, navigate to where you want it saved, and select **Save**. The image will be exported to the location you specified.

## Using the Plate Alignment Tools tab

Activate the **Plate Alignment Tools** tab, and a window similar to the following appears:



The following subsections will guide you through the features available to input both standard and custom product/lot specifications and align the resulting plate overlay on the image. Creating and placing the plate overlay assists the auto-spot finding and data analysis features of the Q-View™ Software.

### **Working with Products and Lots**

Each kit produced by Quansys Biosciences has a unique product code assigned to it. In addition, each lot of that product is also given a unique number as new lots of the same product are released. The product code and lot number together make the product number for each lot of each product.

Product numbers for standard products are preprogrammed into your software and can be used to quickly specify the assays names, expected antigen standard concentrations, and optimal spot radius and spacing for the plate overlay.

In the event that a custom lot or product is needed, there are several different ways the user can “design” products and/or lots to match their specific applications.

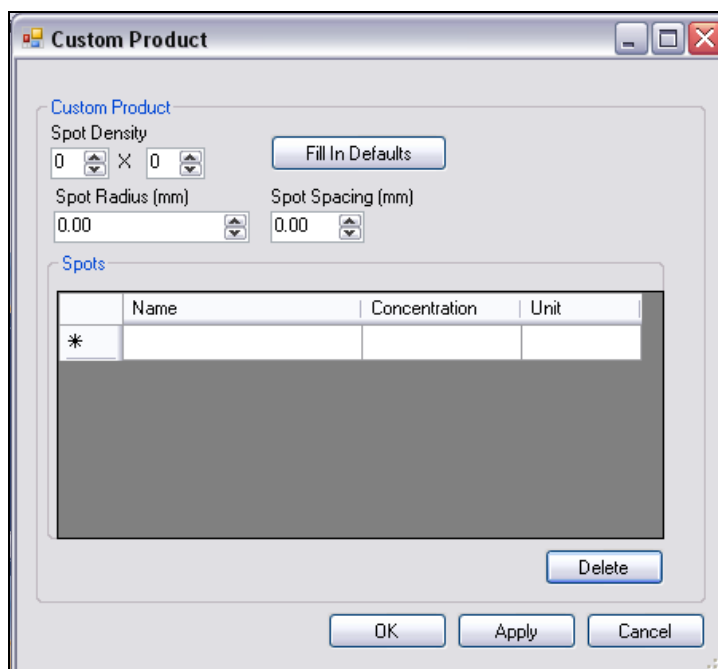
#### ***Input product number – standard product***

For a standard product, type the product number in the **Product Number** box. The text will appear red until the number is complete and the software recognizes it. Once the software recognizes the product number, the text will turn black and the software will automatically enter the names of the assays within the array, the expected concentration of the standards, and the spot radius and spacing for the overlay. These specifications can be viewed, edited, and copied to make a new product as explained in “Defining Products and Lots” on page 11.

If the software does not recognize the product number, you may need to acquire an update. This process is described in the sections “Importing Update Files from the Internet” and “Importing Update Files from a Memory Device” (page 26). If the program still does not recognize the product number you input after importing update files, follow the instructions for a custom product.

### **Input product number – custom product**

If you have a custom kit or your product number is not recognized, you need to enter the product specifications manually. The first way to enter product specifications for a custom product is to type CUSTOM into the **Product Number** field. The **Custom Product** button becomes available. Select this button, and a **Custom Product** dialog box similar to the following appears:

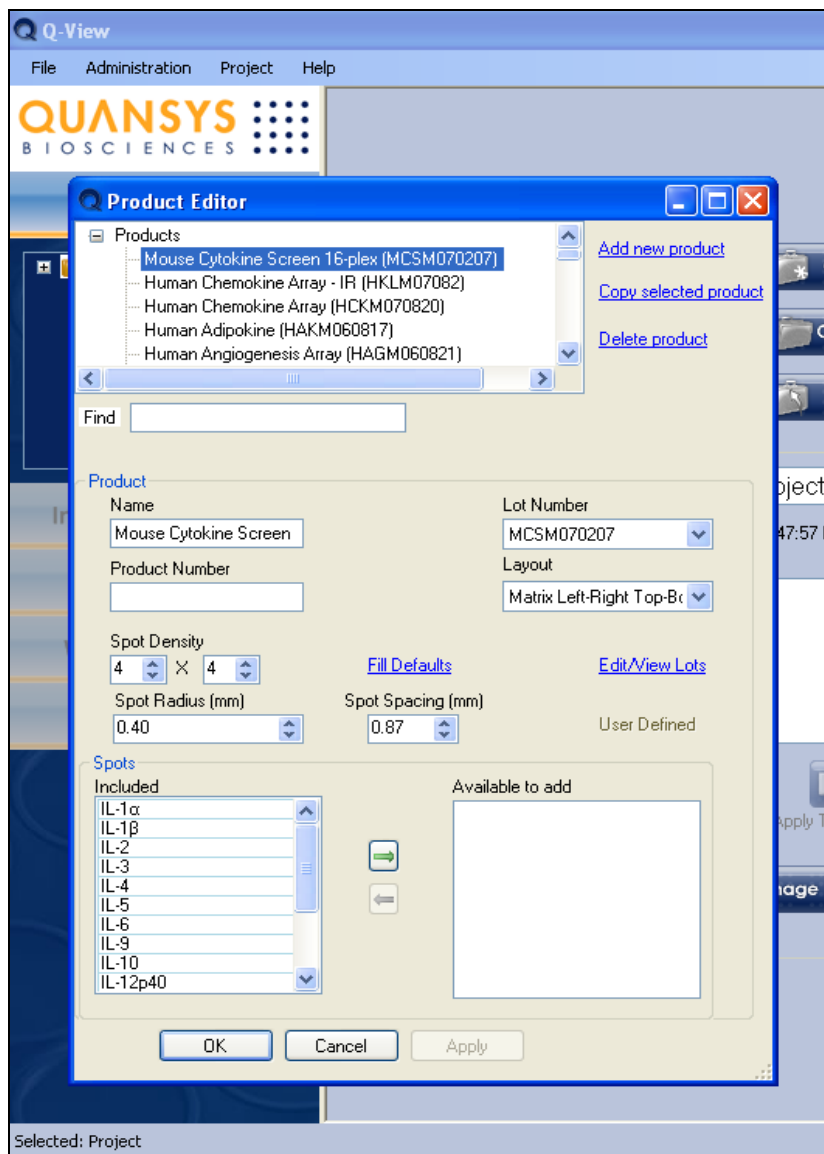


Input the spot density (the number of columns and rows, respectively, of assays in each well) of your product, and press the **Fill in Defaults** button. This will approximate spot radius and spacing as well as create a table where the assay name of each spot and high point concentration of each antigen standard can be entered. *Make sure the correct numbers and units are entered here as it will determine the concentrations calculated during Data Analysis.* The spot radius and spot spacing that were automatically filled in can be modified as desired for the overlay. We recommend that the spot radius be set such that assay circles form a perimeter just inside the edge of most mid-range spots.

### **Defining Products and Lots**

The second way to enter customize product specifications is to edit current product or lot specifications or define a new product or lot.

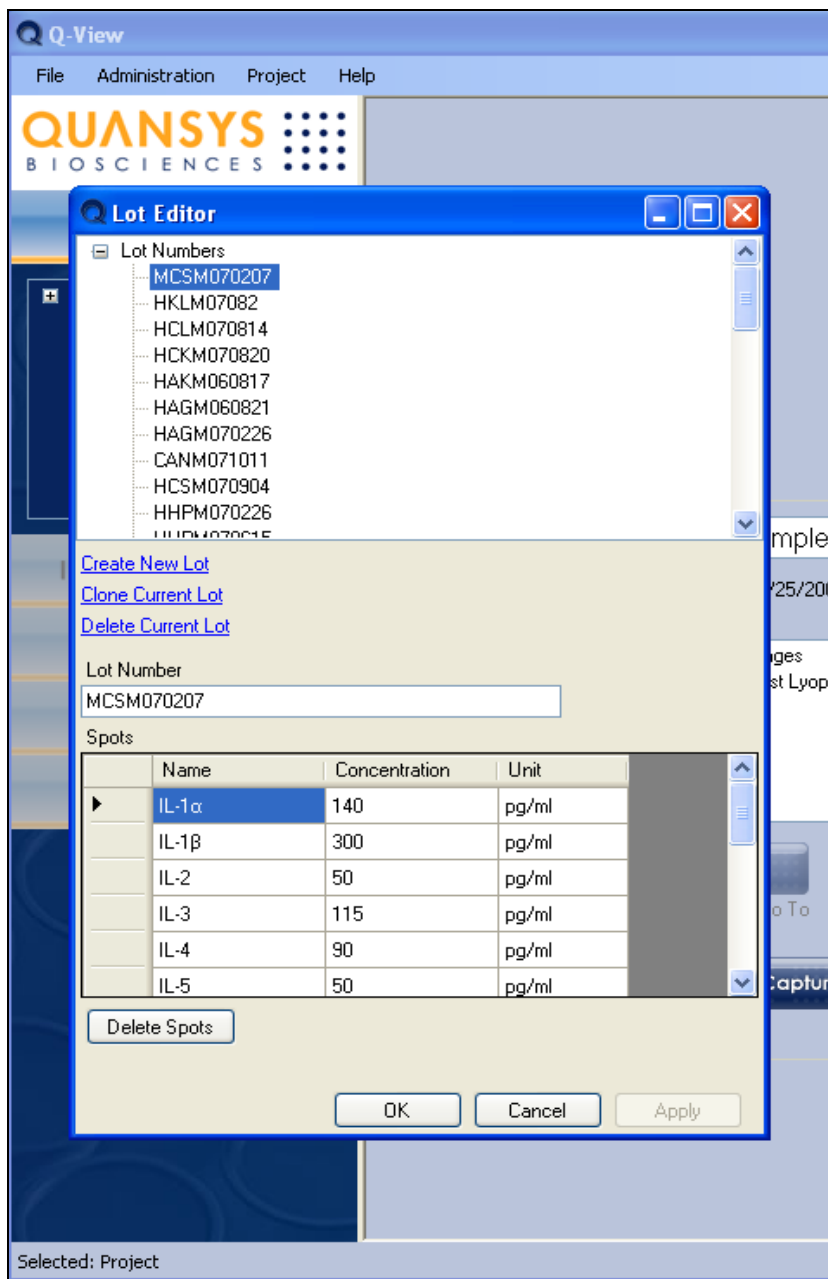
To view and/or edit a list of standard Quansys Biosciences products, select **Administration > View/Edit Product Definitions**. A Product Editor dialog box similar to the following appears:



- To add a new product, select **Add new product**. Type the appropriate information in the fields available.
- To modify the number of spots within the array and the array spacing, select the product and type changes in the fields available. The array spacing feature is important as it creates the overlay that will recognize the array of spots.
- To copy a product, highlight the product and select **Copy selected product**. After copying the product, you can modify it by typing changes in the fields available.
- To delete a product, highlight the product and select **Delete product**.

Select **Apply** to finish defining products.

To define lots, select **Administration > View/Edit Lot Definitions**. A Lot Editor dialog box appears. You can then select any of the lot numbers to display the assay names and antigen standard concentrations of each lot.

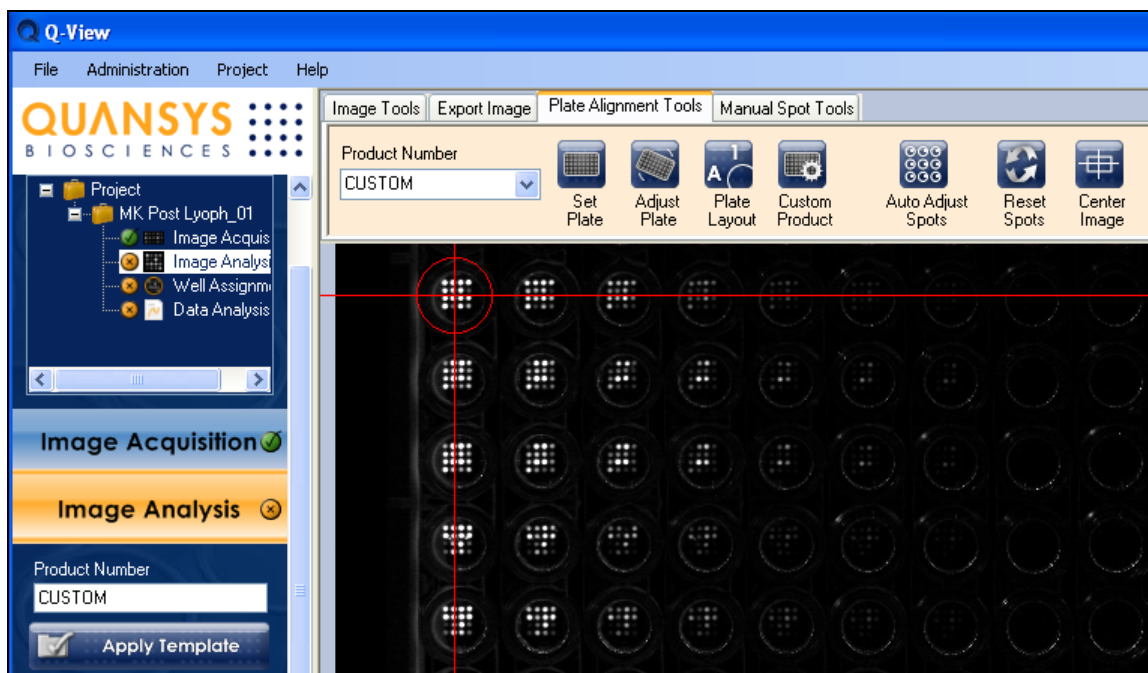


- To create a new lot for custom applications, select **Create New Lot**. Then, type the name, concentration, and unit in the Spots window.
- To modify a lot, select the lot and type changes in the fields of the Spots window.
- To clone, or copy, an existing lot, highlight the lot and select **Clone Current Lot**. After cloning the lot, you can modify it by editing the fields in the Spots window.
- To delete a lot that is not needed, highlight the lot and select **Delete Current Lot**.

Select **Apply** to finish defining lots.

## Set the spot overlay

In order to set the spot overlay over the image, select **Set Plate**. When the cursor is held over the image, a red circle with a horizontal and vertical line will appear.



Set the circle over the top left well in the plate, then click and drag towards the bottom right well in the plate. Carefully position the overlay until the circles are over the spots of the image. Once the left mouse button is released, the overlay will stay over the image. If you wish to move the overlay, select **Adjust Plate**, and click in the upper left or lower right wells which are highlighted in blue. The overlay can then be pivoted and expanded or contracted to better match the image beneath it.

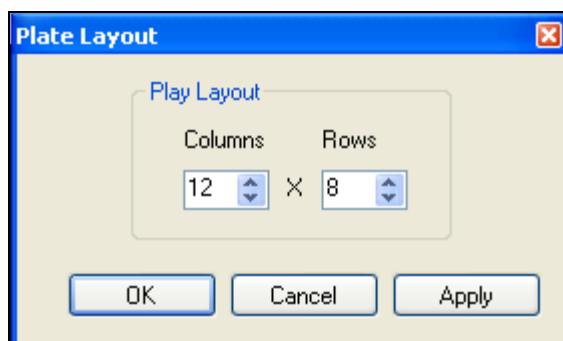


Once the overlays are over the spots, select **Auto Adjust Spots**. Each assay circle in the overlay will automatically snap to the nearest spot via algorithms with set tolerances. If you want to undo the Auto Adjust Spots action, select **Reset Spots**, and the circles in the overlay will return to their preset locations within the wells.

Wells with no sample and wells that respond close to background may cause the grid of those wells to become misaligned. If you observe this, select **Manual Spot Tools** tab (see Using the Manual Tools tab on page 16.)

### **Modifying the columns or rows of wells in the plate overlay**

The plate overlay in Q-View™ defaults to twelve columns and eight rows of wells, however, the number of columns and rows in the overlay can be increased or decreased. This feature can be used, for example, to analyze 384-well (24X16) plates, or to make overlay alignment for a mostly-empty plate easier. You can change the number of columns or rows by selecting the **Plate Layout** button. A dialog box similar to the following appears:



Specify the desired number of rows or columns of wells to be included in the plate overlay.

### **Saving an overlay template**

Once you have aligned the plate overlay on top of the array image, you can save the overlay as a template to apply the product information (names of the assays within the array, expected concentration of the standards, spot radius, and spot spacing) and overlay position to a future image. If Well Assignment and Data Analysis have been performed when the template is saved, the user will later have the option to apply these settings along with the template; Well Assignment templates can be saved and applied separately, as explained on page 20. To save a template for a future plate, select **Save Template** in the Navigation Bar. A Save As dialog box will appear. Type a file name, navigate to where you want it saved, and select **Save**.

### **Opening a previously saved overlay template**

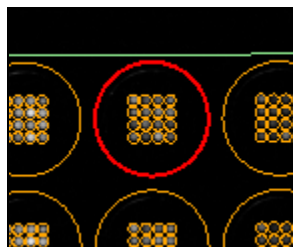
To open an overlay template, select **Apply Template** in the Navigation Bar. An Open dialog box will appear. Navigate to the file you want and select **Open**. Another dialog box appears which allows you to choose to apply the Product and Plate Overlay and/or the Well Assignment Template. Checking the **Apply Product and Plate Overlay** box will place the overlay template over the new image. Checking the **Apply Well Assignment Template** box will set the well assignments as they were when the overlay template was created.

Select **Auto Adjust Spots** to automatically find the spots. If this proves ineffective, readjust the overlay positioning by selecting **Set Plate**.

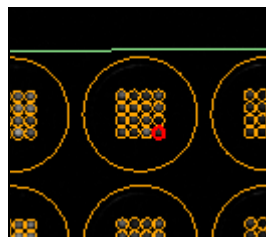
### ***Using the Manual Spot Tools tab***

With the Manual Spot Tools tab active, you can manually place individual well grids or customize spot placement.

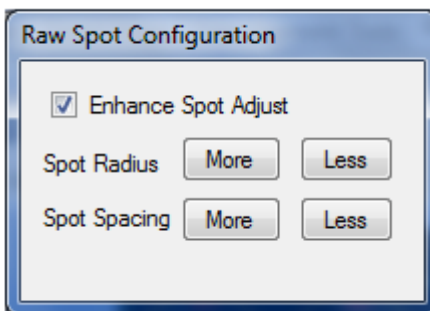
- If a well grid is not placed correctly, click on the **Adjust Wells** button, and then click anywhere within the desired well. When selected, a well changes color from orange to red. Now use the arrow keys, or click and drag the well grid with the left mouse button to align the overlay with the image.



- If only one spot needs to be moved, select **Adjust Spots**. Click on the circle in the overlay that needs to be moved. The circle will turn from orange to red when selected. With the circle selected, click and drag or use the arrow keys to move it.

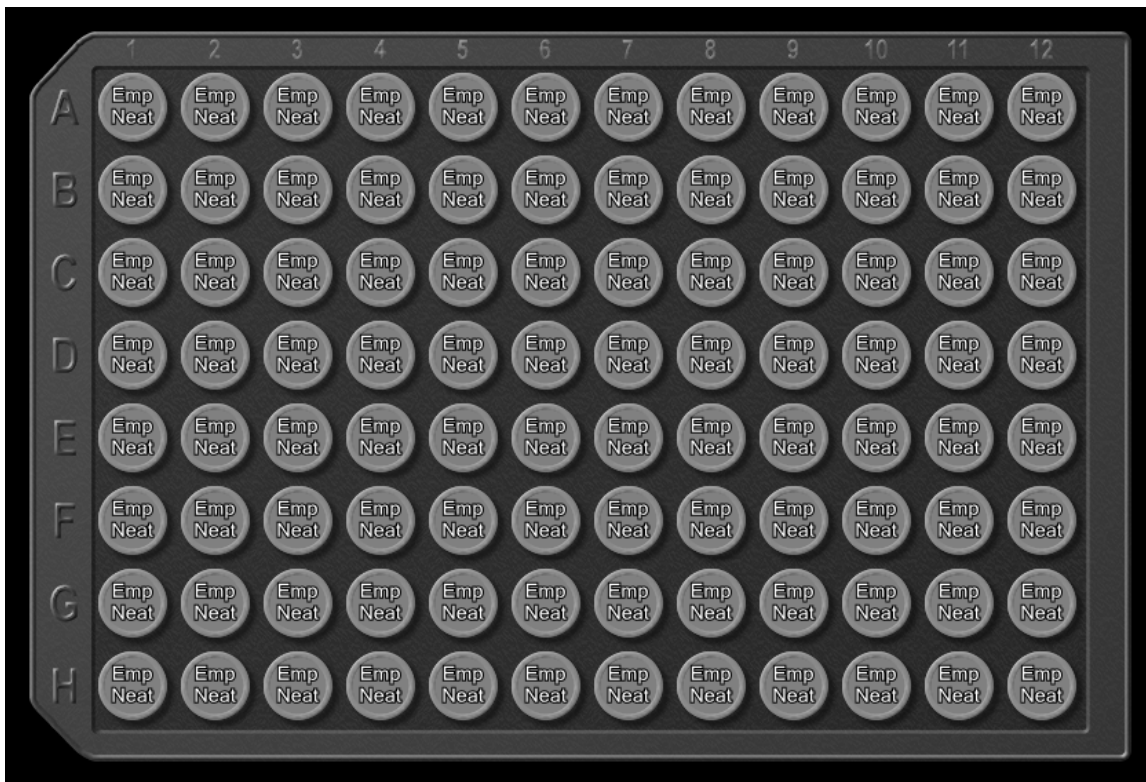


- Use the **Advanced** button to change the spot radius and spot spacing of the entire plate incrementally. In addition, one can enable or disable the enhanced spot adjust function. This function defaults to being enabled.



## Assigning Wells

Once you have analyzed an image, select **Well Assignment** from the Navigation Bar to assign well types and well dilutions. A blank plate appears.



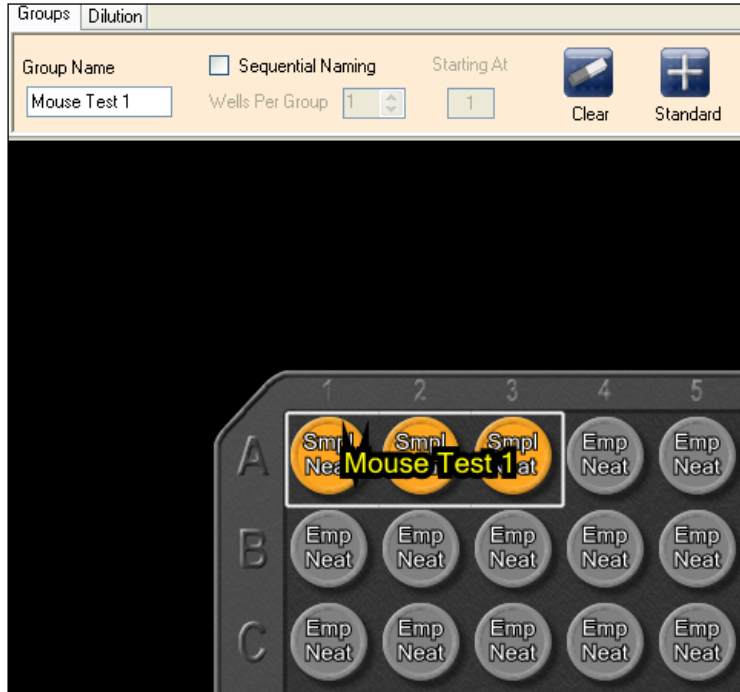
There are two tabs within **Well Assignment: Groups** and **Dilutions**. To assign wells, select wells as described below, and use the tabs as described in the following subsections.

### Selecting Wells

Select wells by clicking and dragging from the top left to the bottom right of the wells that you desire to highlight. If the wells are selected, they will turn light green. Multiple areas can be selected at once by holding Control while selecting wells. Individual wells can be deselected by holding Control and re-clicking on a highlighted well. To permanently clear the designations of a well or wells, select the wells and press **Clear** button.

## Using the Groups tab

Select the desired wells and type a group name in the **Group Name** field. You can also place the cursor in the dialog box and input the sample code via barcode. Once the name is entered, press the appropriate well-type button: Sample, Standard, Control or Negative. The name will appear over the wells and the well color will change: green for Controls, grey for Negative Controls, orange for Samples, and blue for Standards.

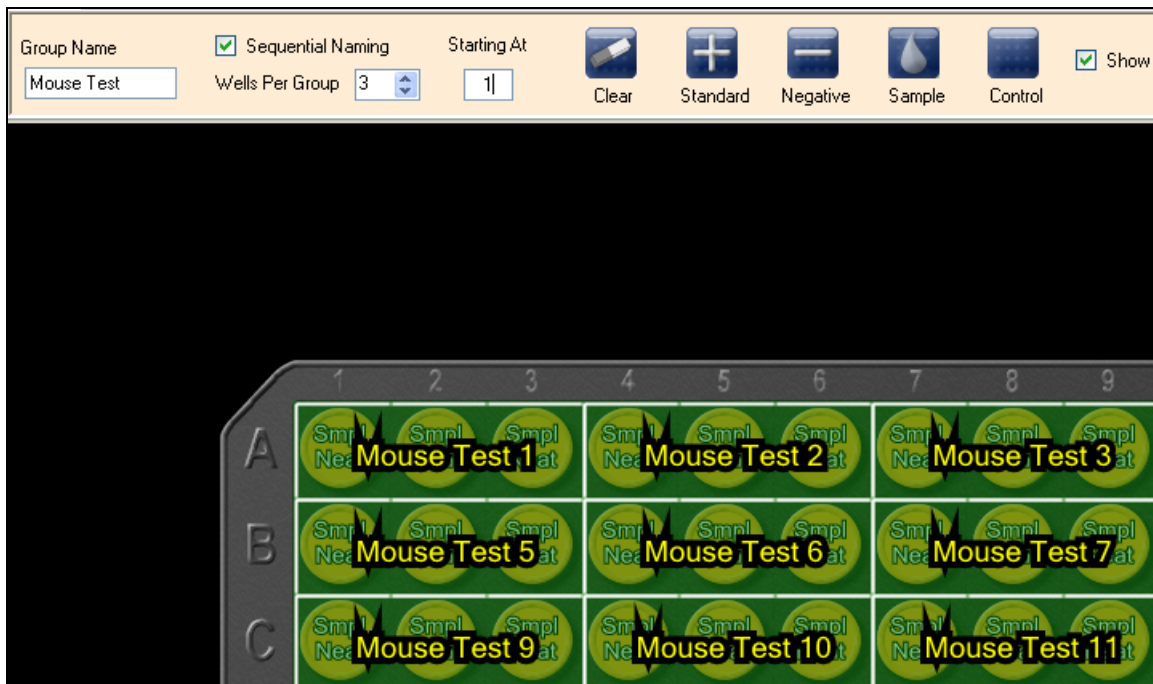


For example, to assign a standard curve, select all the standard curve wells (excluding the negative control wells). Then click on the well-type button labeled “Standard” to register the change. Dilutions can then be assigned as explained on page 20.

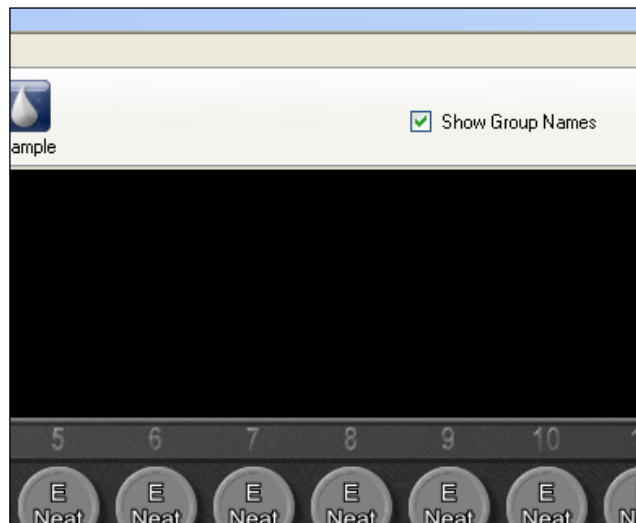
## Sequential Naming

If multiple samples are run that share the same prefix, the **Sequential Naming** tool can be used to more efficiently enter the sample names. To use this feature, click the **Sequential Naming** box. The name entered in the **Group Name** box will become the prefix for the sample names. The suffix is determined by first selecting the number of samples in each group (replicates) then assigning either a numeric or alphabetic starting point.

For example if one had run 15 samples named *Mouse Test 1-15* in triplicate, they would enter *Mouse Test* in the **Group Name** box, 3 wells per group, and starting at 1. They would then highlight the wells that contained these samples and click the **Sample** button.



If you do not want to see well names, unselect the **Show Group Name** box at the top right of the window.



## Using the Dilution tab

Features in the Dilution tab allow the user to assign the dilution factor of any sample or standard well. Dilution assignments can be given for a single well, a set of replicates, or multiple wells within a dilution series. This information is then used by the software to calculate analyte concentrations.

To set one dilution for a selected well or group of wells (replicates), simply set the number in the **Initial Dilution** box equal to the dilution factor used for the well(s), and press any of the directional buttons, i.e. **Top to Bottom**, to register the assignment.

To assign a group of selected wells to be included in a dilution series, set the high point of the dilution series in the **Initial Dilution** box and the dilution factor of the series in the **Dilution Factor** box, then press the appropriate directional button, i.e. **Top to Bottom**, to register the assignment.

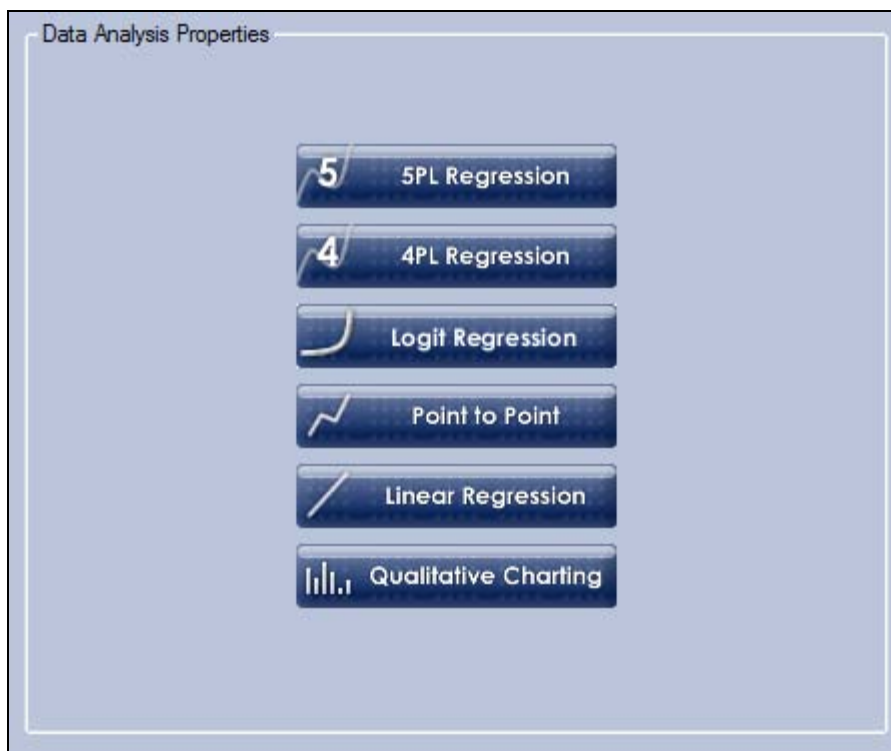


## Using Well Assignment templates

Once you create a well assignment layout that you want to use again in the future, you can save the template by selecting the **Save Template** button on the Navigation Bar. Reopen the template with new images by selecting the **Apply Template** button on the Navigation Bar. As with plate overlay templates, if other steps of analyzing the plate have been completed when the Well Assignment template is made, the user will have the option to apply these settings along with the template.

## Analyzing Data

Once you have completed Image Acquisition, Image Analysis, and Well Assignment, select **Data Analysis** from the Navigation Bar. There are six options for data output. Access the option you want by selecting the corresponding button on the Navigation Bar. These options are also available on the Q-View™ main screen when the Parameters tab is active. Each option is described in the following subsections.



### ***Data Output Options***

#### **5 PL Regression**

The 5 Parameter Logistic Regression model is often cited in the literature as the ideal method for fitting sigmoidal immunoassay standard curves. Within the graphs/charts tab, the user can see all regression statistics and fitting parameters.

#### **4 PL Regression**

This method is slightly less complex than the 5 PL regression, but is also often cited in the literature as an acceptable method for analyzing ELISA standard curves. Within the graphs/charts tab, you can see all regression statistics and fitting parameters

#### **Logit Regression**

This curve-fitting method uses log based regression on both the X and Y axes.

## **Point to Point**

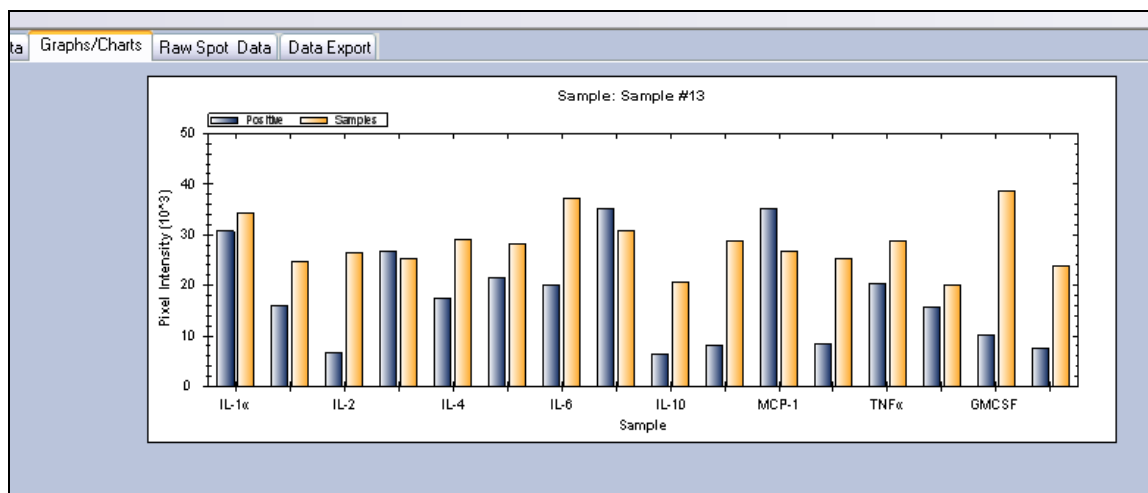
This method is also known as spline analysis. The unknowns are determined by the straight lines between each standard point.

## **Linear Regression**

This method takes the best fit line for the entire standard curve. You should carefully review the standard data as this is most likely not the ideal data output for standards provided in the Q-Plex™ kits.

## **Qualitative Charting**

The Qualitative Charting option generates bar graphs of the pixel intensities detected for each assay within the array. No concentrations are calculated. Each chart shows pixel intensities for any Positive Controls (Standards), Negative Controls, and Samples that were designated as such during Well Assignment. You can also set flags to be displayed within the charts. These flags will highlight, with the color of your choosing, assays within the report that have raw pixel intensities, concentrations, or %CVs that are above or below specified values.



## **Viewing Data on your Screen**

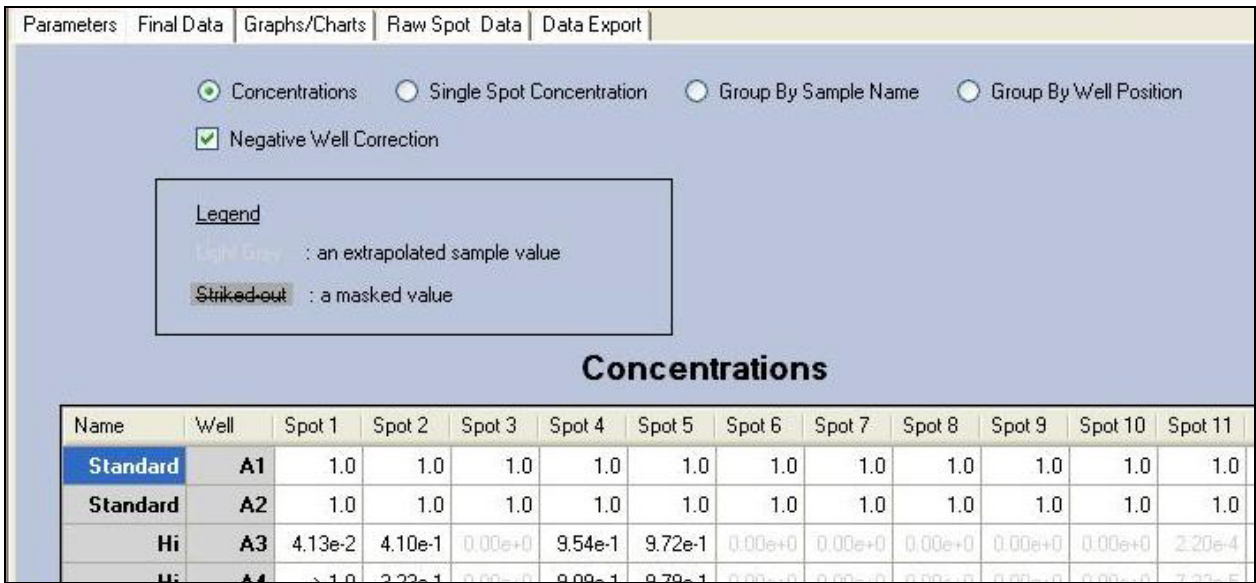
Once a data output option has been selected, the software will prepare all the data and graphs. The tab options are Final Data, Graphs/Charts, Raw Spot Data and Data Export.

While any of these tabs are activated, you can bring up a Pixel Intensity/Concentration Converter tool by pressing **I** on the keyboard.

## **Final Data**

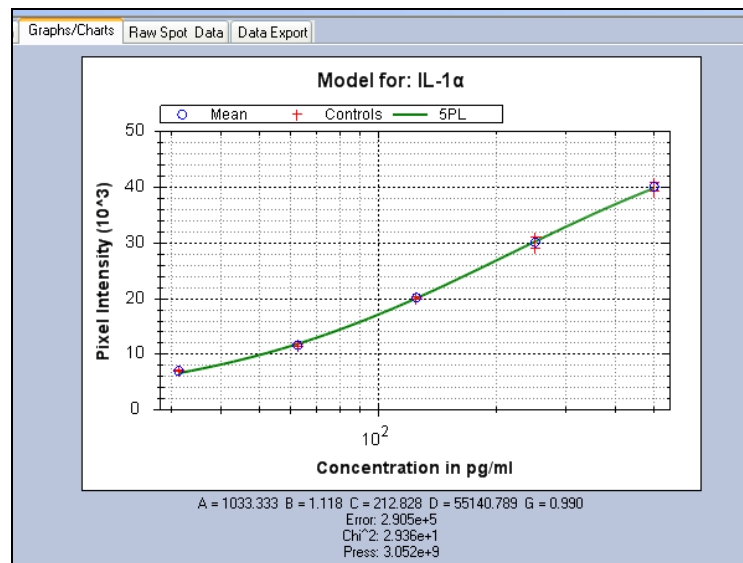
The **Final Data** tab offers several different viewing options, all of which include the concentration in pg/mL calculated for each spot. Spots can be masked (taken out of all data analysis calculations) and unmasked by right-clicking on the concentration or pixel intensity value. Selecting the **Negative Well Correction** box at the top of the Final Data screen will

re-calculate pixel intensity and concentration values with the background (average of Negative Control well pixel intensities for each assay) subtracted out.



### Graphs/Charts

The **Graphs/Charts** tab shows the standard curve fitting charts for each assay within the array. Regression statistics and fitting parameters are reported below each chart. You can click and drag areas in the graph to zoom in. To zoom out, right-click and select Un-Zoom. Several other features can be accessed via right-clicking on the chart. For example, to view the exact x and y values of each point, select Show Point Values.



## Raw Spot Data

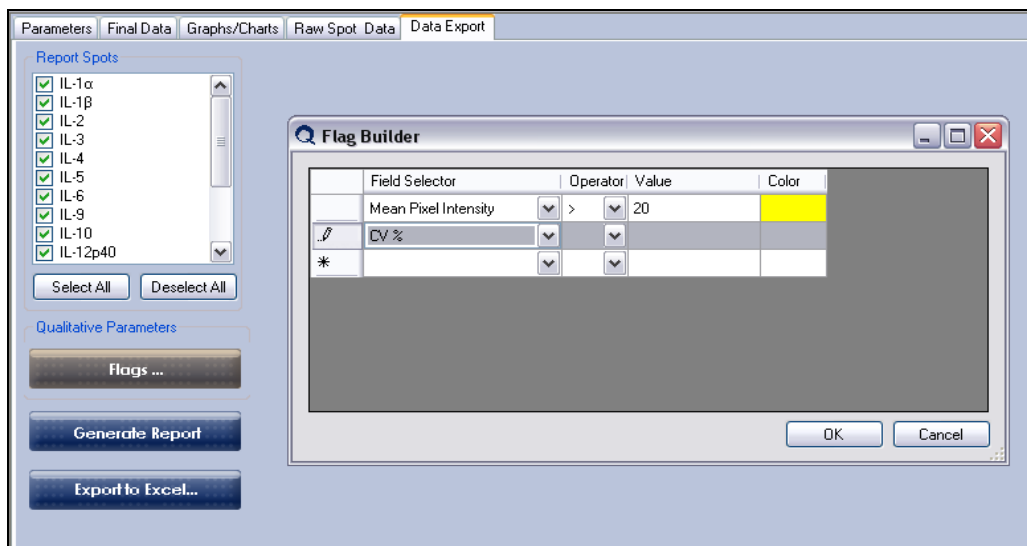
The **Raw Spot Data** tab also offers several different viewing options, all of which include the raw pixel intensities for each spot within each well of the plate. If you choose to perform your own statistical review of the data, they can be exported (copy/paste) from here. Note that if you would like background subtracted from the pixel intensities, you must go to the Final Data tab and select the Negative Well Correction box .

Well	IL-1 $\alpha$	IL-1 $\beta$	IL-2	IL-3	IL-4	IL-5	IL-6	IL-9	IL-10	IL-12p40	MCP-1	IFN $\gamma$	TNF $\alpha$	MIP-1 $\alpha$	GMCSF	RANTES
: A1	39306	31337	32058	25641	33818	33600	46663	35738	25377	34825	31903	35118	34066	24910	43528	28618
: A2	29184	17651	19917	24378	23510	22925	27804	25205	15501	22392	21487	15645	23076	15187	33894	18600
: A3	20354	7447	10677	18319	15141	13392	10527	15581	8802	11859	12822	4486	13311	8416	22418	11145
: A4	11465	3617	5566	12129	8936	6984	3733	8786	5484	6440	7351	1633	7642	4194	12615	6202
: A5	7123	1811	3056	6699	5681	4074	1280	4584	2908	2968	4308	579	3582	2299	7031	2701
ve: A6	1135	713	533	569	774	887	609	579	545	535	546	428	540	496	585	506
ble: ...	31134	38748	1053	22864	10035	3598	2777	50590	595	795	33588	1390	14495	6227	588	600
ble: ...	29676	39337	1321	22364	9469	3617	3121	50829	699	1028	33750	897	14578	6016	537	716
ble: ...	32430	39038	1491	22278	9562	3832	3160	51280	695	887	33273	2919	14858	6789	549	612
2: A10	8369	8086	758	5982	2151	1502	727	23894	553	631	9292	668	3054	1091	465	603
2: A11	7833	7915	635	6165	2718	1707	735	23686	609	568	8962	529	2705	1343	461	545
2: A12	7200	7622	603	5941	2393	1757	834	23141	573	577	8480	605	2676	1443	512	1034

## Data Export

To prepare a report of your experiment, activate the **Data Export** tab. Reports can be quite extensive (ie. ~120 pages for 16-plex) if you so choose, due to the number of assays, wells, and samples per plate. You can include only the data you need by selecting which assays and the types of data i.e. graphs, final results, raw data, etc. you want to see in the report.

You can also set flags to show in the report. These flags highlight, with the color of your choosing, assays within the report that have raw pixel intensities, concentrations, or %CVs that are above or below specified values.



Finally, choose which file type you would like the report in: a PDF document, an Excel file, or a CSV file. The PDF report is generated within Q-View™ by pressing **Generate Report** and can be printed or saved. Remember, the data can not be manipulated from this file type. When you prepare your report as an Excel file, Excel will automatically open with your report and prompt you to name and save the file before opening. The CSV file can be used to import into other data storage/manipulation programs, i.e. LIMS.

The report file is quite large and will take a few moments to be processed. Please refrain from clicking buttons while the report processes as that only complicates the report.

The screenshot shows the Q-View software interface. At the top, there is a 'Data Export' tab and a toolbar with navigation and zoom controls. The main content area displays the following information:

- Logo:** A stylized 'Q' logo with a blue and orange color scheme.
- Title:** Mouse Cytokine Array - Screen  
MCSM070928
- Date/Time:** 4/21/2008 11:14:52 AM
- Company:** QUANSYS BIO SCIENCES
- Section:** IL-1α
- Section:** Pixel Intensity for: IL-1α
- Table:** A data table with 13 columns (Row, 1-12) and 8 rows (A-H). Each cell contains a numerical value or a status letter (C, S, Neg).

Row	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	28618	18800	11145	6202	2701	506	600	716	612	603	545	1034
	C	C	C	C	C	Neg	S	S	S	S	S	S
<b>B</b>	29790	19326	10498	5866	3864	571	4986	4520	4200	1842	1971	1554
	C	C	C	C	C	Neg	S	S	S	S	S	S
<b>C</b>	11877	3641	1155	712	8973	3805	1045	562	4787	1397	758	529
	S	S	S	S	S	S	S	S	S	S	S	S
<b>D</b>	11452	3239	1228	655	9916	3068	1030	739	4346	1572	863	642
	S	S	S	S	S	S	S	S	S	S	S	S
<b>E</b>	10023	3382	787	602	8612	2960	793	564	4231	1235	714	550
	S	S	S	S	S	S	S	S	S	S	S	S
<b>F</b>	10995	4537	1553	642	10434	2964	1092	555	10424	3619	1207	603
	S	S	S	S	S	S	S	S	S	S	S	S
<b>G</b>	10636	4787	1260	592	10890	3864	983	555	11957	2986	771	647
	S	S	S	S	S	S	S	S	S	S	S	S
<b>H</b>	11230	3576	1346	810	15649	3903	1356	503	13589	3628	1076	646
	S	S	S	S	S	S	S	S	S	S	S	S

## Administrative Functions

### ***Importing Update Files from the Internet***

When Internet access is available, users can import their update files from the Quansys Biosciences website by selecting **Administration > Import Update from Internet**. The software will access databases at [www.quansysbio.com](http://www.quansysbio.com), download the latest update file, and automatically save the new file over older update files. Updating the latest information for new lots that have been released keeps the software up-to-date on all new lot specifications. We recommended you import update files on a monthly basis to ensure your data is accurate.

If not all computers on which you have installed Q-View™ software have Internet access, you should export the update file as instructed in the following section.

### ***Exporting Update Files***

If a computer does not have Internet access, you can export the update file from a PC which is connected to the Internet, then save and import the update file to the PC not on the Internet. Once you have obtained the update files as described in the previous section, select **Administration > Export Update File**. Navigate to the memory device folder in which you would like to save the update file, name the file, and select **Export**. Next follow importing directions in the next section.

### ***Importing Update Files from a Memory Device***

To import update files, select **Administration > Import Update File**. Navigate to the memory device folder storing the update file, and select **Import**. We recommended you import update files on a monthly basis to ensure your data is accurate.

### ***Uninstalling the Software***

To uninstall this software, select **Start > Quansys > Q-View™ > Uninstall**. A series of instructions will appear. Follow these instructions to complete the uninstallation process.

### ***Unlocking the Software***

If the software is locked via an administrator password, the user cannot view lot and product definitions or alter the update file. To unlock the software select **Administration > Unlock Admin**. When prompted, type the correct password.

### ***Changing the Password***

You can change the administrator password by selecting **Administration > Change Admin Password**. When the following dialog box appears, type the old password, type the new password, and reenter the new password in the corresponding fields.

### ***Using the Help feature***

To search for specific questions/topics or to view a tutorial on using the software, select **Help > Help** from the Q-View™ main screen. You will be automatically directed to Quansys's website. If you have further questions, please feel free to contact customer support at 1-888-QUANSYS