

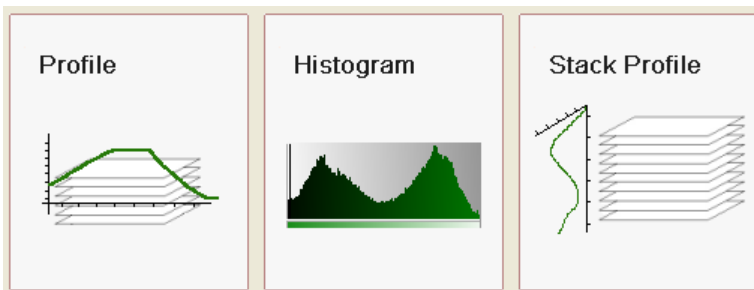
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Quantification Tools

LCS offers three quantification tools: *Profile*, *Histogram* and *Stack Profile*. These tools can be found under the *Quantify* tab.



The individual tools

The ***Profile*** tool will measure intensities along a line segment within a single image. The line segment can be either a straight line or a polygon/free-hand line. To draw a polygon line, select the *P.Line* button. Define the points of the polygon line by left-click at the desired position. To draw a free-hand line just keep the left mouse button pressed while you draw the line. To set the end for both lines simply double-click.

The ***Histogram*** tool will measure the frequency of intensity values in a given ROI. The user can choose between rectangle, ellipse and polygon ROIs.

Both the ***Profile*** and the ***Histogram*** tool can work with single images and series. If a series is selected the analysis will only be performed on the currently active image of the series.

The ***Stack Profile*** tool can be used to analyze stacks of images, i.e. z-stacks, lambda scans or a time series. Intensity values are displayed with regards to the either the z-position, wavelength or time stamp. Possible ROIs include rectangle, ellipse and polygon.

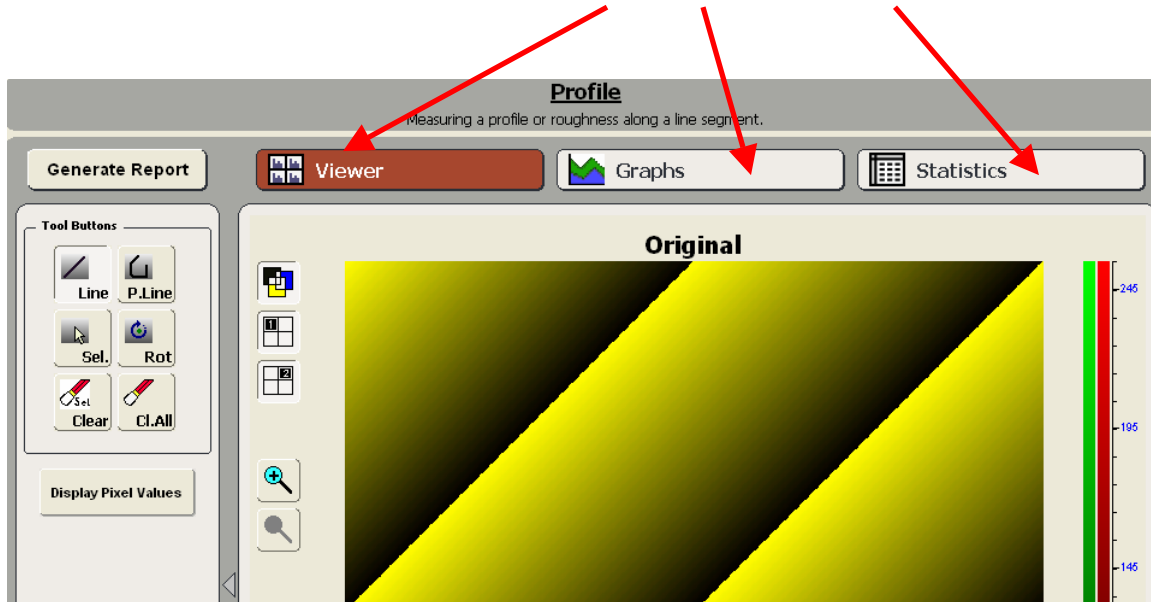
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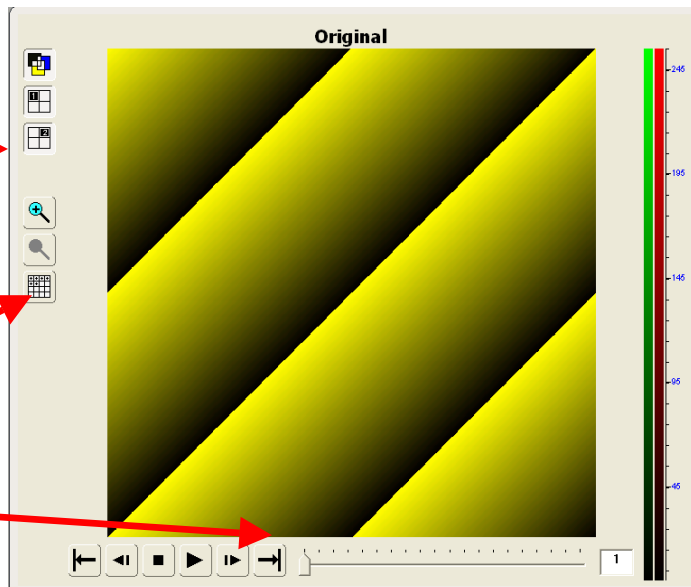


The user interface

All of these quantification tools use the same interface to make them user-friendly. Each window consists of three main components: *Viewer*, *Graphs* and *Statistics*.



The *Viewer* window will display the active image or series. The user can select to display individual channels or an overlay of a multiple channels. A series of images can also be displayed as a gallery. Individual images from a series can be selected from either the gallery or via this slider.

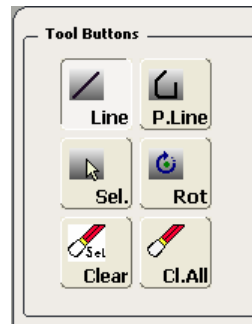


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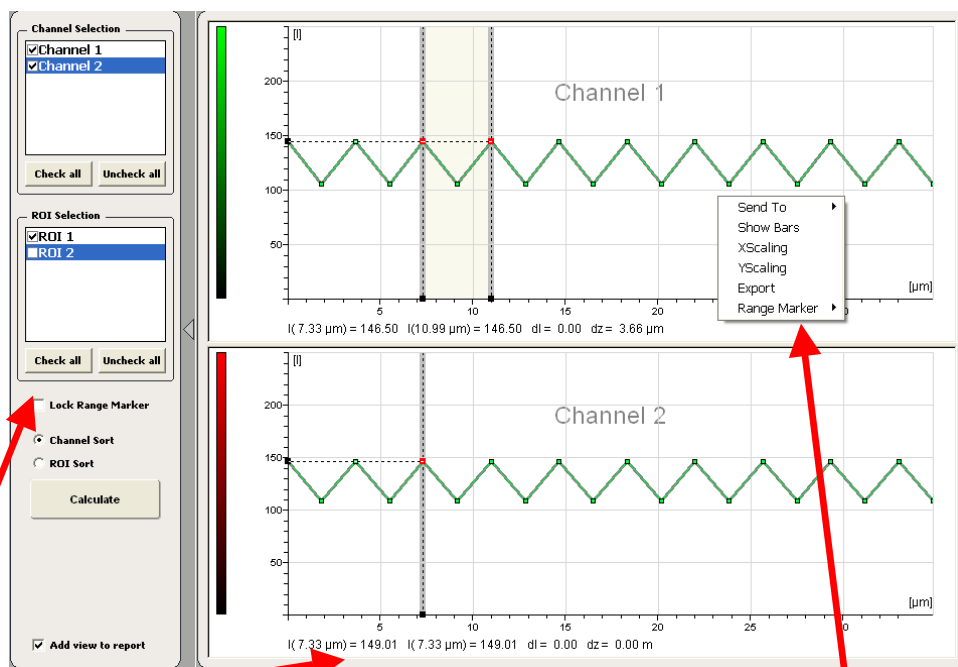
Each *Viewer* window includes a set of tool buttons to select ROIs. The quantification tool dictates which tool buttons will be available, i.e. the *Line ROI* button is only available in the *Profile* tool.



ROIs can be saved to be available later. To save ROIs just right-click into the image shown in the Viewer window and select *Save Selected* or *Save All* from the menu. Select *Open* to load previously saved ROIs.

The *Graphs* window will display the graphs of your data. The user has the option to display only selected channels and ROIs.

Range markers can be shown by left-clicking into graph; the markers can then be dragged to the right locations. To apply the same range for all channels simply select *Lock Range Markers*.



To display measurement values only one ROI can be selected at a time. Right-click into the graph will bring up a new menu. Here you can select i.e. the x/y scaling for the graph. You can also *Export* the graph data into a text file for further analysis with other software packages. This text file will contain the values for the *Statistics* window too.

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The *Statistics* window will show statistical information about the selected ROIs. Again, the user can select the channels and ROIs to be included. Each quantification tool has a designated set of statistical variables appropriate for the tool. The user can select which variables from this set are displayed by modifying the *Table Settings*.

Mathematical equations for all variables can be found in the LCS Help file.

Channel 1		
	ROI 1	ROI 2
#Pixel(ROI)	350.00	220.00
Area	1335.14 μm^2	839.23 μm^2
Length	34.80 μm	34.80 μm
Mean Amplitude	127.00	127.00
Max. Amplitude	146.50	180.50
Pos. Max. Ampl.	0.00 m	0.00 m
Min. Amplitude	107.50	73.50
Pos. Min. Ampl.	1.74 μm	1.74 μm
Average Deviation	19.50	53.50
Standard Deviation	20.01	54.89
Variance	400.26	3012.89
I (z1)	146.50 (7.33 μm)	
I (z2)	146.50 (10.99 μm)	
dl	0.00	
dz	3.66 μm	

Channel 2		
	ROI 1	ROI 2
#Pixel(ROI)	350.00	220.00
Area	1335.14 μm^2	839.23 μm^2
Length	34.80 μm	34.80 μm
Mean Amplitude	129.51	129.49
Max. Amplitude	149.01	183.05
Pos. Max. Ampl.	0.00 m	0.00 m
Min. Amplitude	110.00	75.93
Pos. Min. Ampl.	1.74 μm	1.74 μm
Average Deviation	19.51	53.56
Standard Deviation	20.01	54.95
Variance	400.49	3020.05

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Generate Report



Users can create a report that summarizes the analysis. This report contains a snapshot of the image showing ROIs, snapshots of the graphs and the values from the *Statistics* window. The report can be saved as a *.xml file. Data and statistics can be exported again into a text file.

