Graphic Add-Ons
While the fast and accurate provision of simulation results is the main purpose of any optical simulation software, the ability to customize the visualization of the results should not be underestimated. Therefore, VirtualLab Fusion provides the user with a set of tools to help adding meaningful information to the raw numerical data. In this use case we want to put the spotlight on the Graphics Add-Ons, allowing the user to overlay a field result with various forms of additional information, such as point clouds, specific regions or visualizations of polarization ellipses.
The **Graphics Add-Ons** allow the user to overlay a field result with additional information in graphic form, such as point clouds, specific regions or visualizations of polarization ellipses.

Further information:
- Add Point Cloud
- Add Region to Data Array

point clouds  
regions  
polarization ellipses
How to Add a Data Overlays to Another Data Array

To add additional information (e.g. a point cloud) to another Data Array, first select the Data Array in question. Then, under the Manipulations tab, the tool Add Point Cloud should be visible. After clicking there, a list of all open point cloud results available to act as the overlay will pop up, for the user to choose the desired one.
Visualization Options – Component

With the Configure All button, the user can get an overview of all graphics add-ons assigned to a data array. For different components, the graphics add-on can be different.

In this example we can see that the elliptical region is only available for the x component while the rectangular region is defined for both x and y components.
Visualization Options – Polarization Ellipses

With the Configure All button, the user can get an overview of all graphic add-ons assigned to a data array. The view settings of each add-on can be adjusted by clicking on Edit.

The thickness and color of Polarization Ellipses can be changed. There are also a few more options, like the addition of arrows or the visualization of the underlying grid.

The visualization options for the Polarization Ellipses can also be accessed directly from the main menu. This is a shortcut, the options itself are identical.
Example for Polarization Ellipse Visualization

Here as an example in which we change the Line Width from 1.0 (left side) to 3.0 (right side).
For point clouds, size and color of the points can be customized.

Here we change the color of the point cloud from cyan to red.
Visualization Options – Regions

For Regions, it is also possible to fill it with a different color. The user can uncheck the Visible option for other graphics add-ons to emphasize a specific one.

Here we change the color of the elliptic region from orange to green. The opacity is changed from 30% to 50%.
### Document Information

<table>
<thead>
<tr>
<th>title</th>
<th>Graphics Add-ons</th>
</tr>
</thead>
<tbody>
<tr>
<td>document code</td>
<td>SWF.0032</td>
</tr>
<tr>
<td>document version</td>
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<td>software version</td>
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</tr>
<tr>
<td>category</td>
<td>Feature Use Case</td>
</tr>
</tbody>
</table>
| further reading     | • Add Point Cloud Overlay to Data Array  
                       • Add Region Overlay to Data Array |