Graphic Add-Ons

Abstract

Add Point Cloud

Add Region
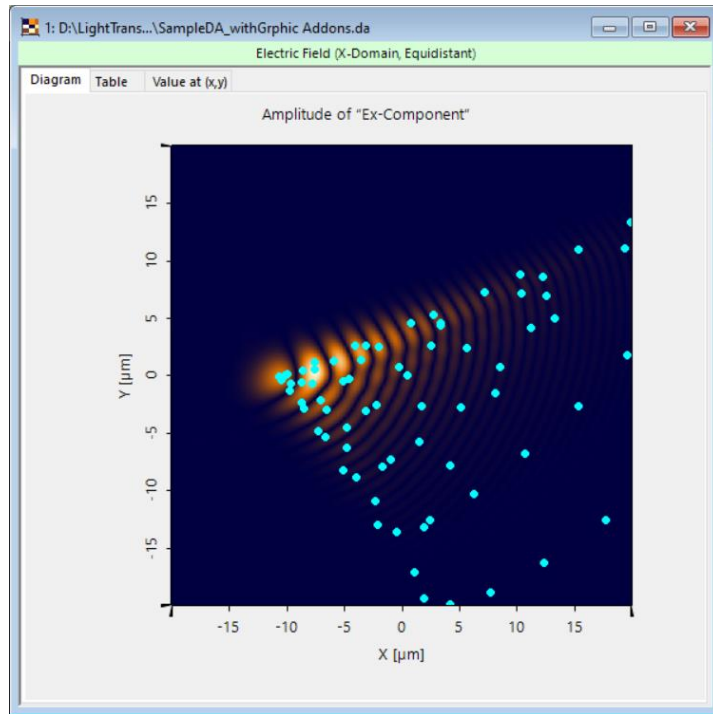
Add Polarization Ellipses

Graphics 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.
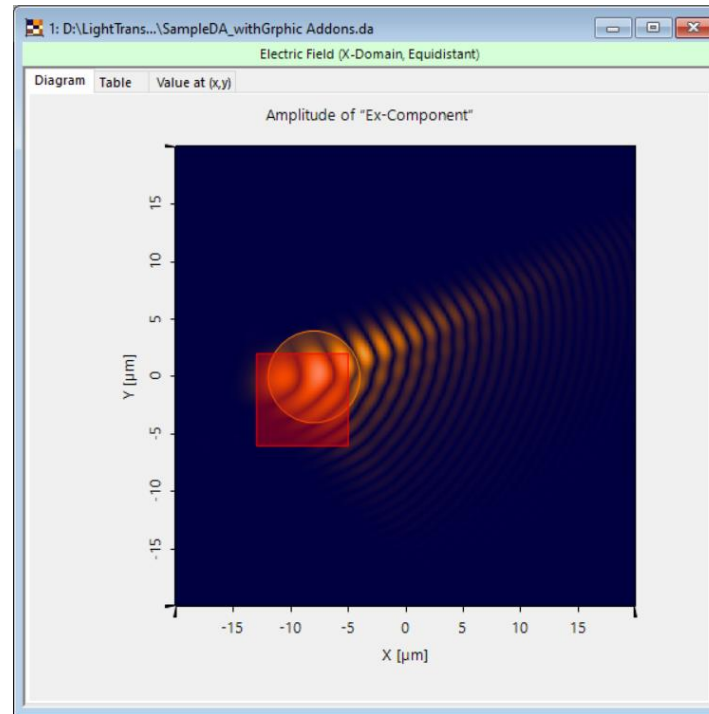
Graphics Add-Ons

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.
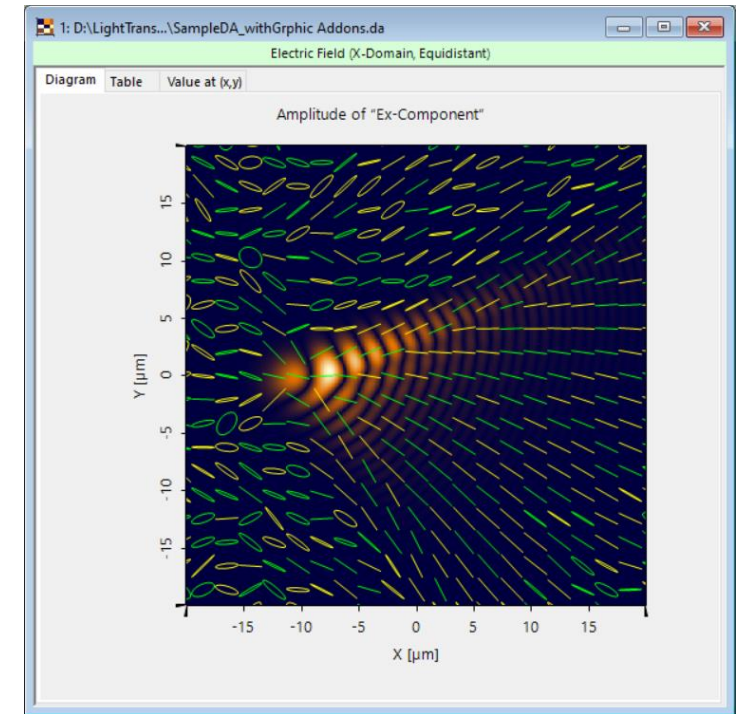
Add Point Cloud Add Region Add Polarization Ellipses

Graphics Add-ons

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

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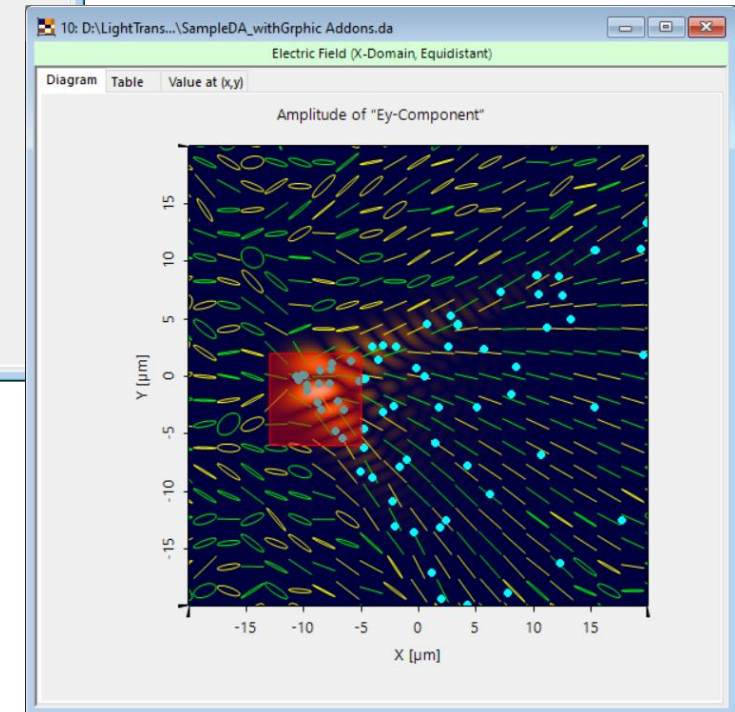
With the *Configure All* button, the user can get an overview of all graphics add-ons assigned to a data array. For different components, the graphics add-on can be different.

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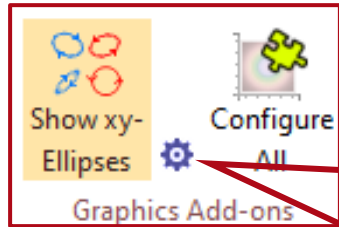
The visualization options for the Polarization Ellipses can also be accessed directly from the main menu. This is a shortcut, the options itself are identical.

Edit View Settings for Array of Polarization Ellipses in xy-Plane ✕

Line Width   1.0

Direction of Rotation
☐ Draw Arrows
☑ Different Colors

Clockwise Color ▢(yellow)   Counterclockwise Color ▢(green)

Grid
Minimum Cell Size (Screen Pixels)   20

Extraction via   ○ Nearest Neighbor   ◉ Average
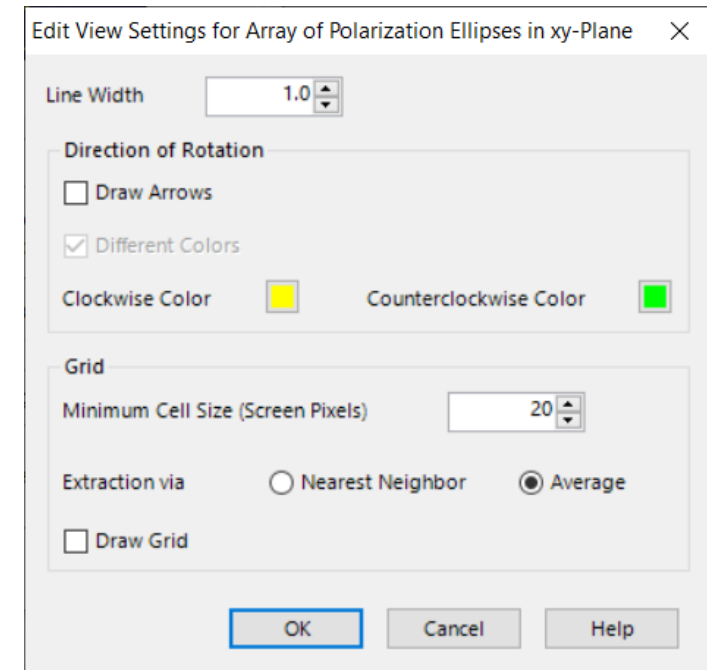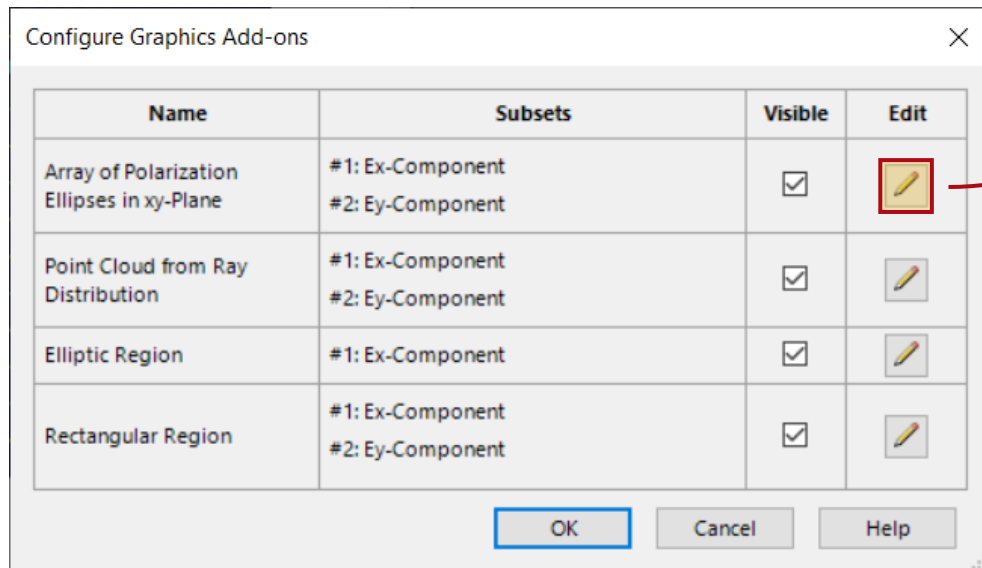
☐ Draw Grid

OK   Cancel   Help

Configure Graphics Add-ons ✕

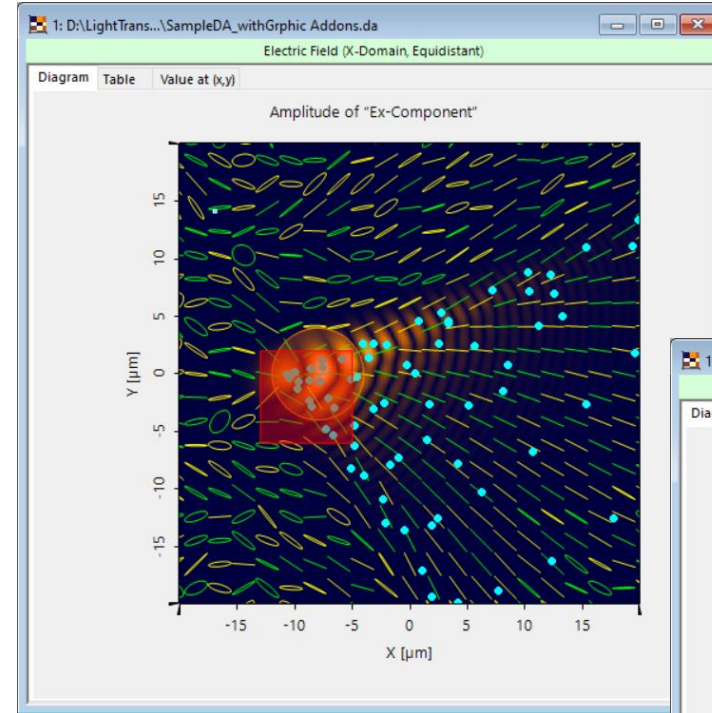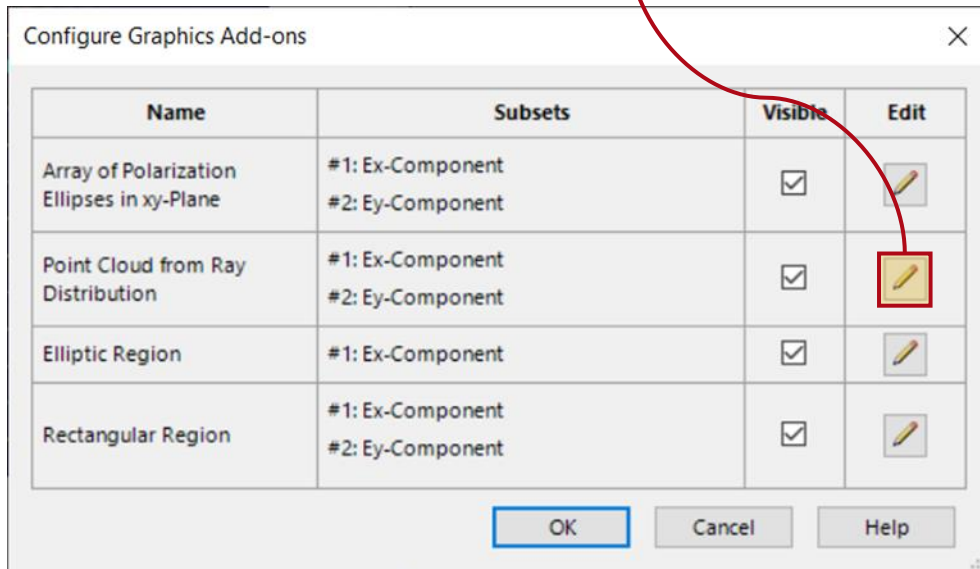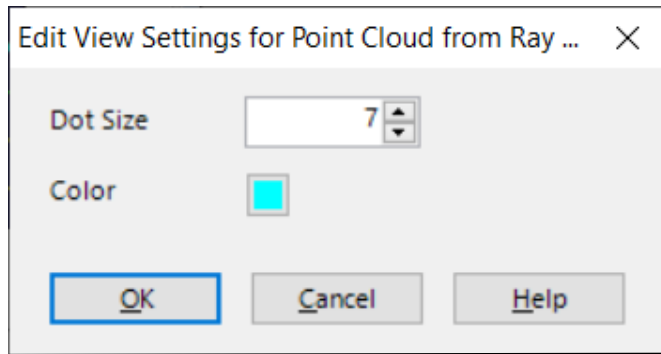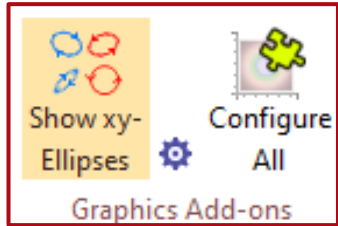| Name	Subsets	Visible	Edit
Array of Polarization Ellipses in xy-Plane	#1: Ex-Component #2: Ey-Component	☑	🖉
Point Cloud from Ray Distribution	#1: Ex-Component #2: Ey-Component	☑	🖉
Elliptic Region	#1: Ex-Component	☑	🖉
Rectangular Region	#1: Ex-Component #2: Ey-Component	☑	🖉

OK   Cancel   Help

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.
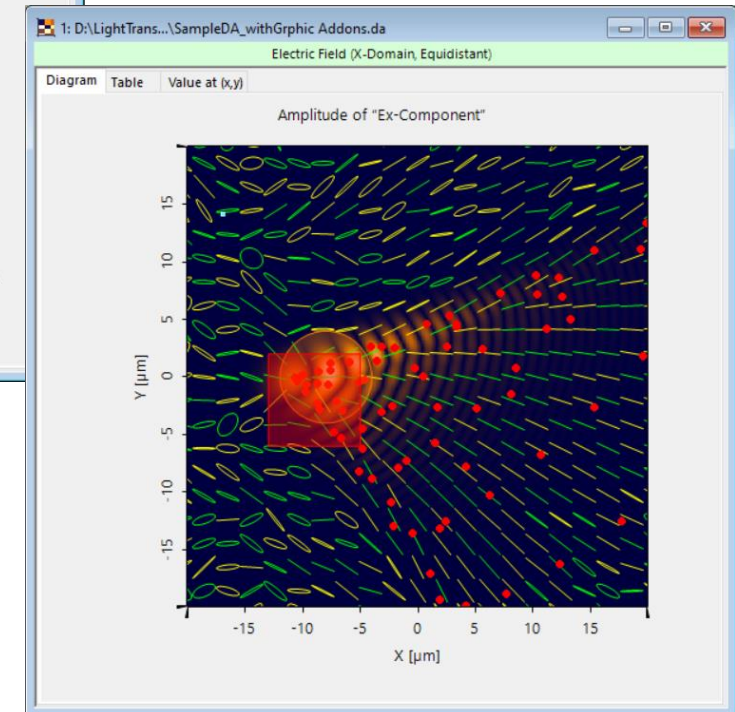
Example for Polarization Ellipse Visualization

Here as an example in which we change the *Line Width* from 1.0 (left side) to 3.0 (right side).
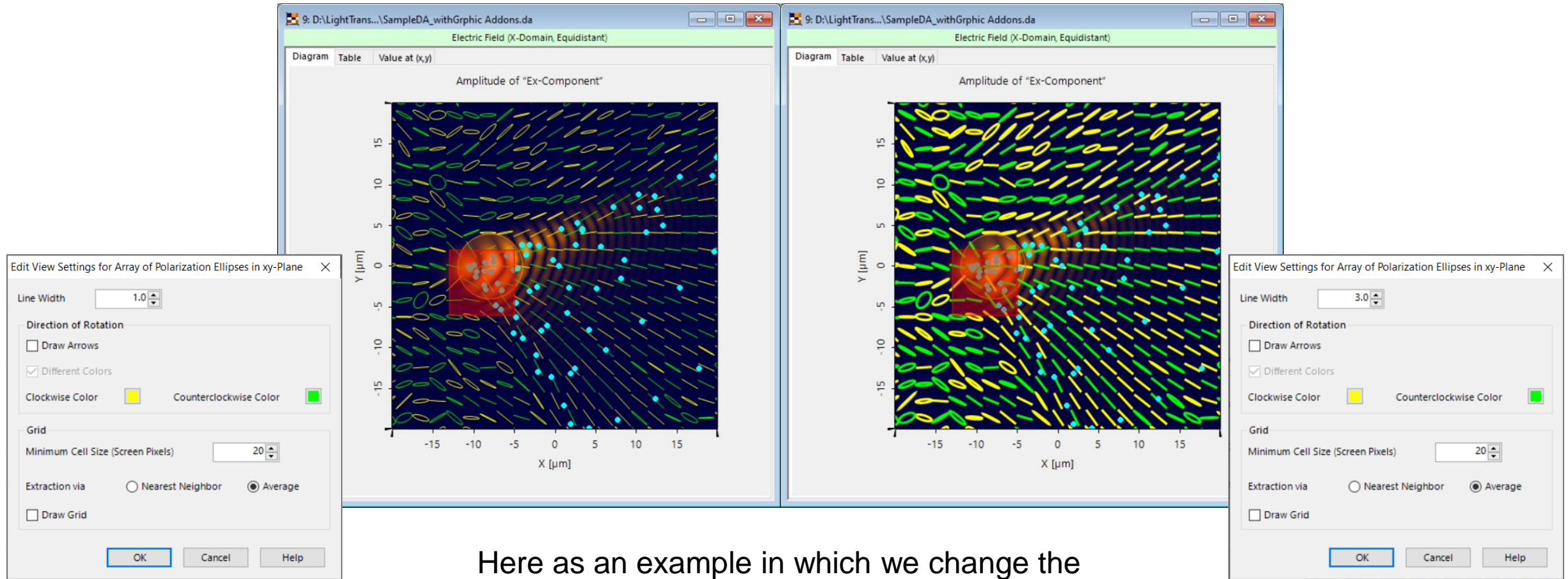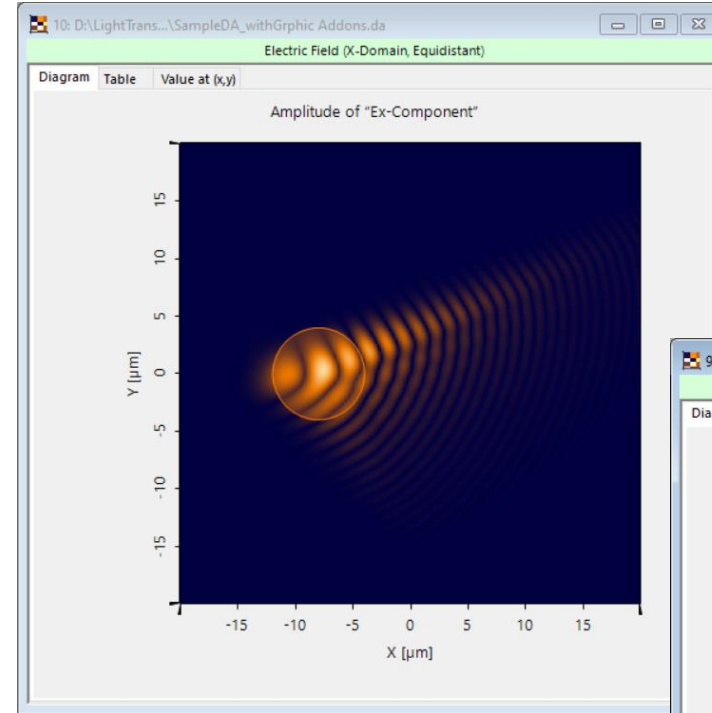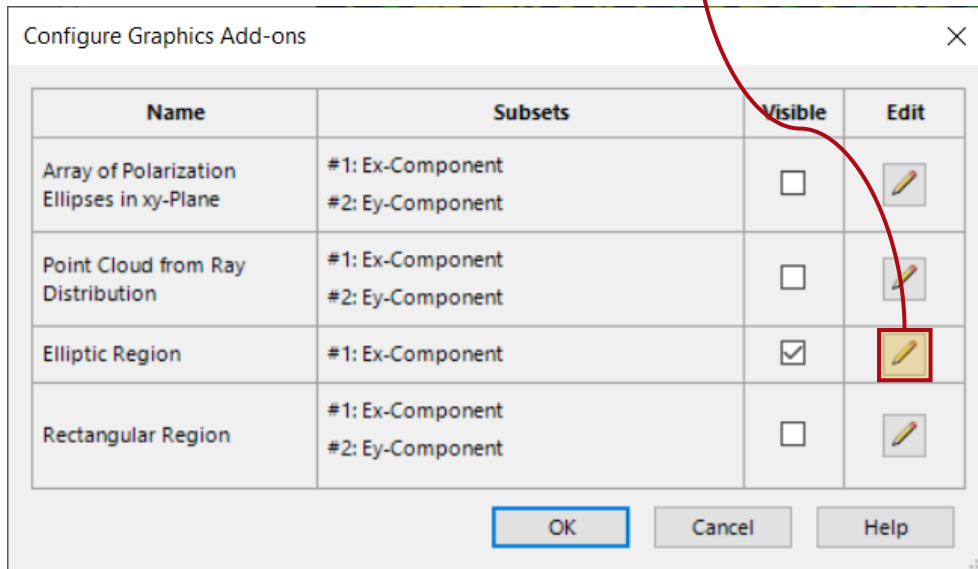
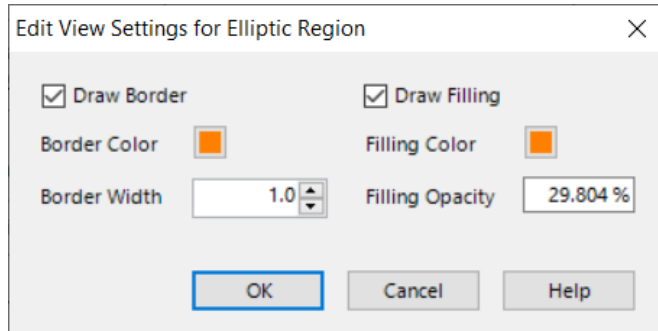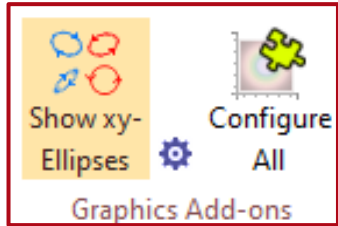# Visualization Options – Point Clouds

Here we change the color of the point cloud from cyan to red.
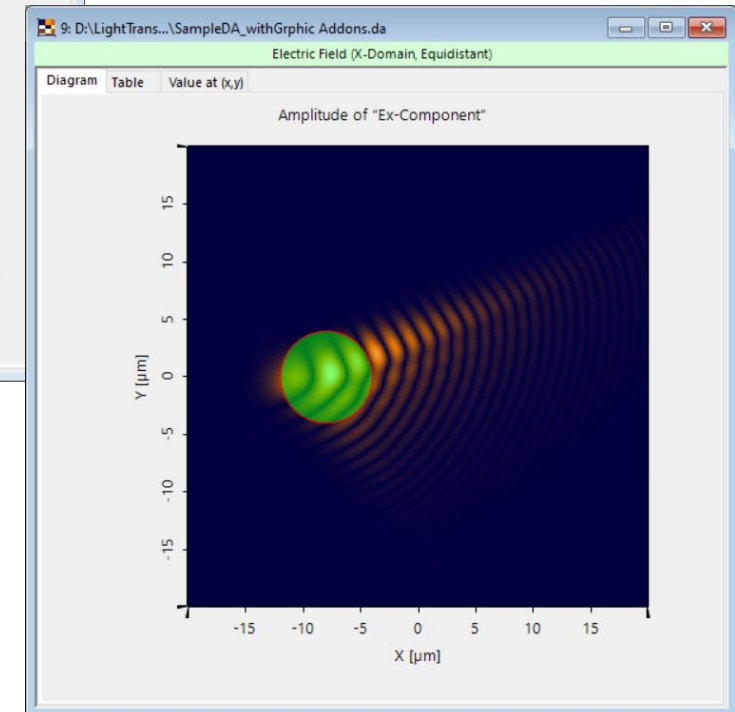
For point clouds, size and color of the points can be customized.

Visualization Options – Regions

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

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.

Document Information

title	Graphics Add-ons
document code	SWF.0032
document version	1.0
software edition	VirtualLab Fusion Basic
software version	2023.1 (Build 1.556)
category	Feature Use Case
further reading	• Add Point Cloud Overlay to Data Array • Add Region Overlay to Data Array