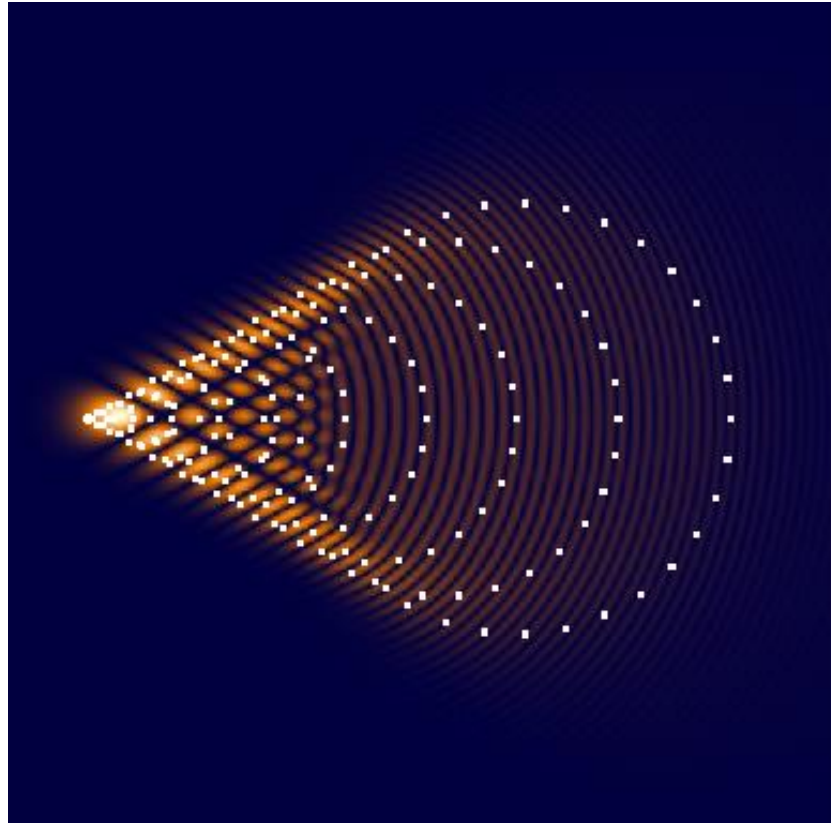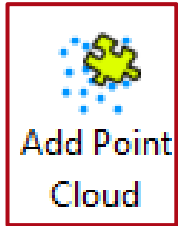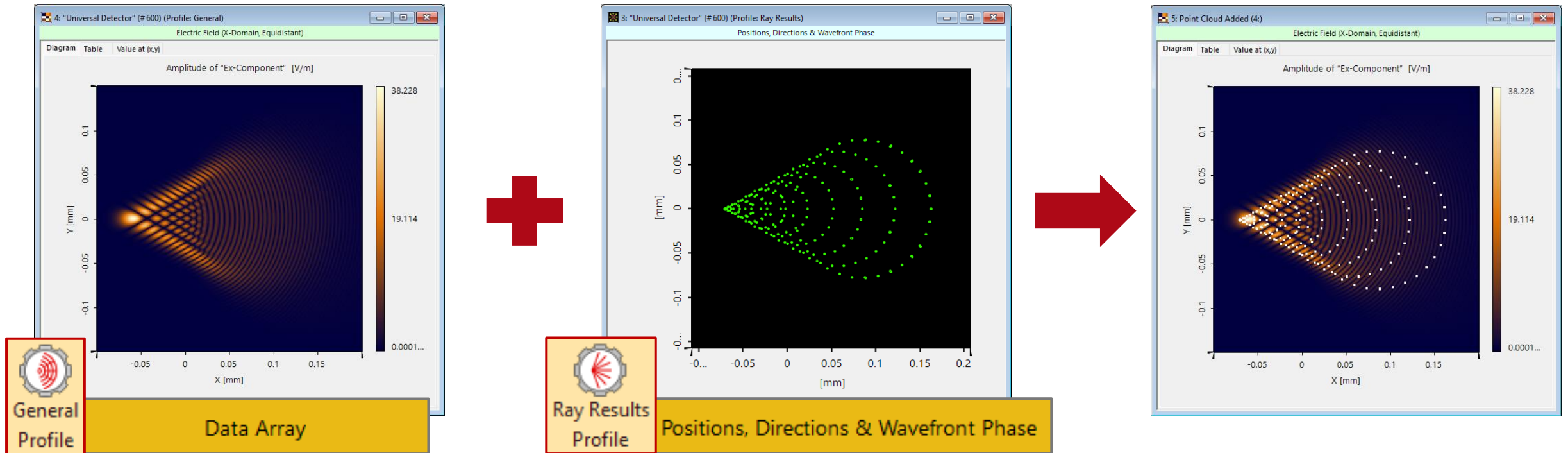# Add Point Cloud to Data Arrays

Abstract

While the fast and accurate provision of simulation results is the main purpose of any optical simulation software, the ability to manipulate the visualization of the results and adjust it according to personal preference or in order to best showcase a specific set of results should not be underestimated. With this in mind, the fast physical optics software VirtualLab Fusion makes a point of providing maximum flexibility in the manipulation and configuration of displays of results. In this use case we want to put the spotlight on a specific graphics add-on, which allows the user to overlay a point cloud (such as a dot diagram generated by a *Ray Results Profile* simulation) on another result document.

Add Point Cloud

The *Add Point Cloud* tool creates a result document in which a point cloud is overlaid over another result document. This is particularly useful to superimpose a dot diagram on top of the corresponding field result.

The tool is available for all *2D Data Arrays* and requires a set of gridless data (*Positions, Directions & Wavefront Phase* document or *Data Array* document with gridless data) generated for instance by a *Ray Results Profile* simulation or by a *Universal Detector* when the interpolation is deactivated.
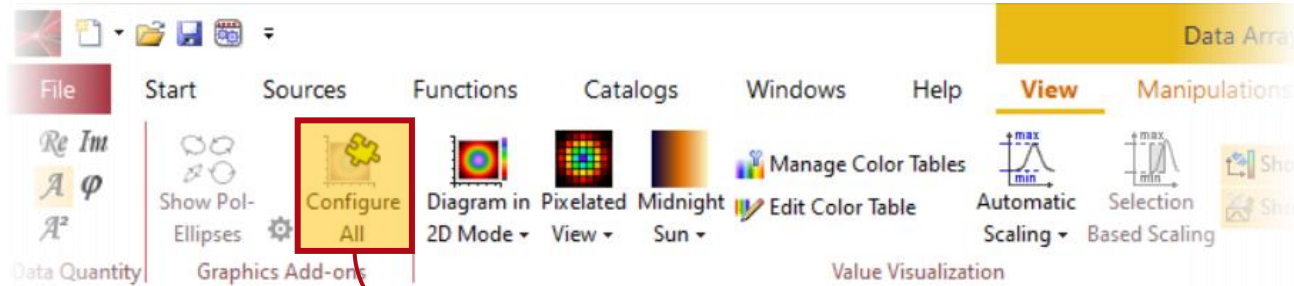
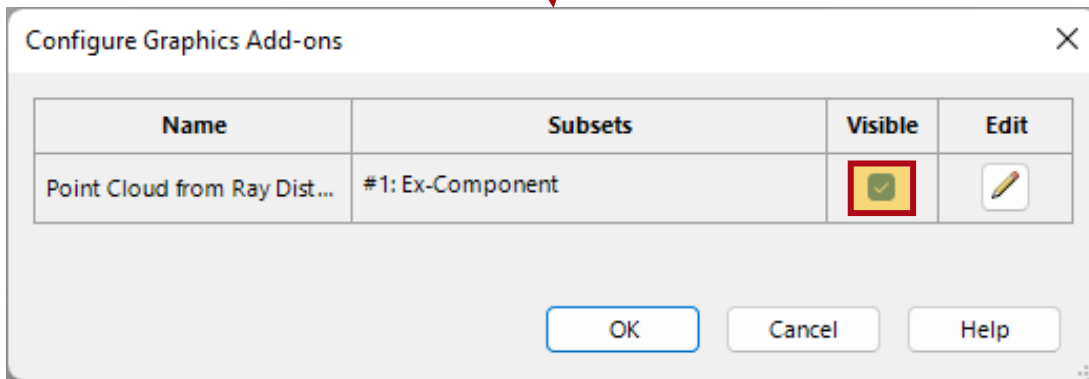# How to Add a Point Cloud to Another Data Array

To add 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.
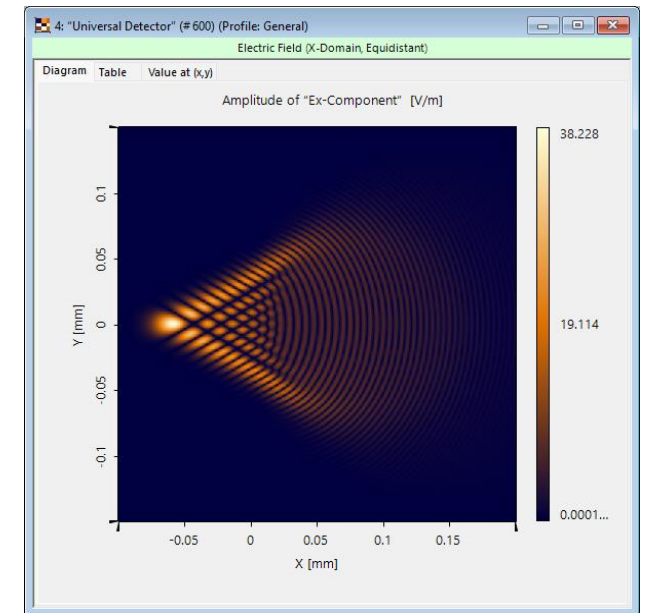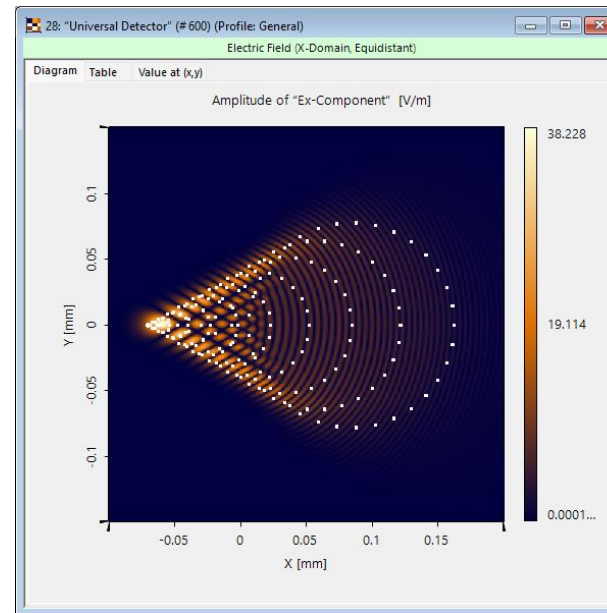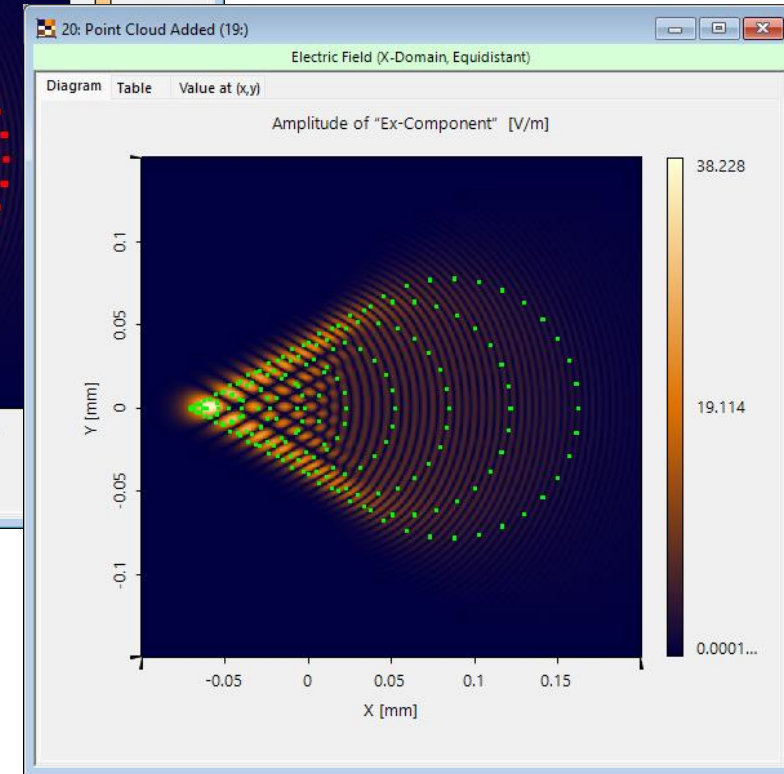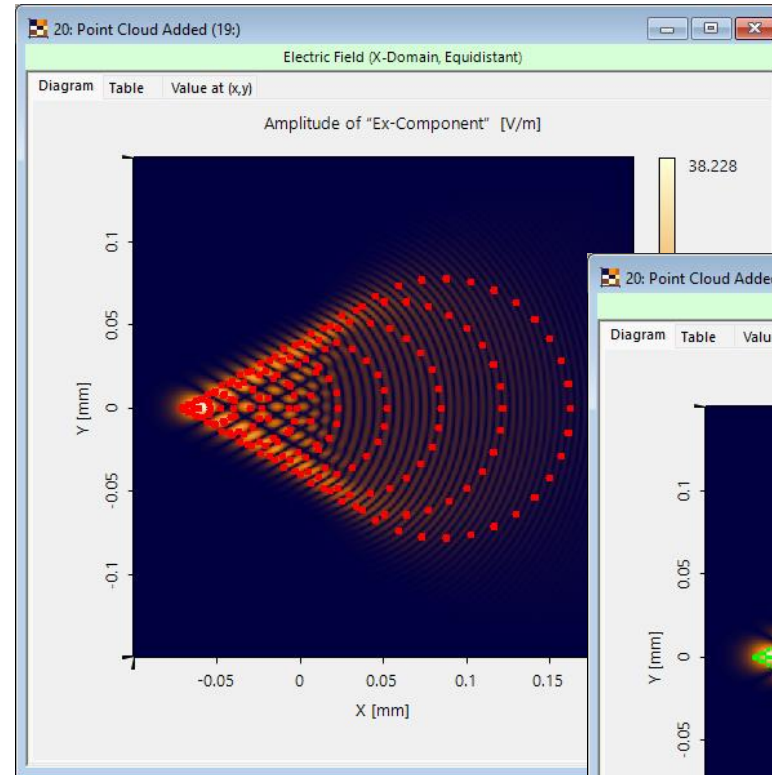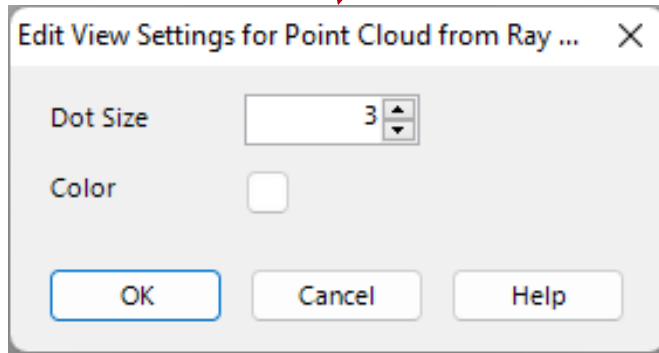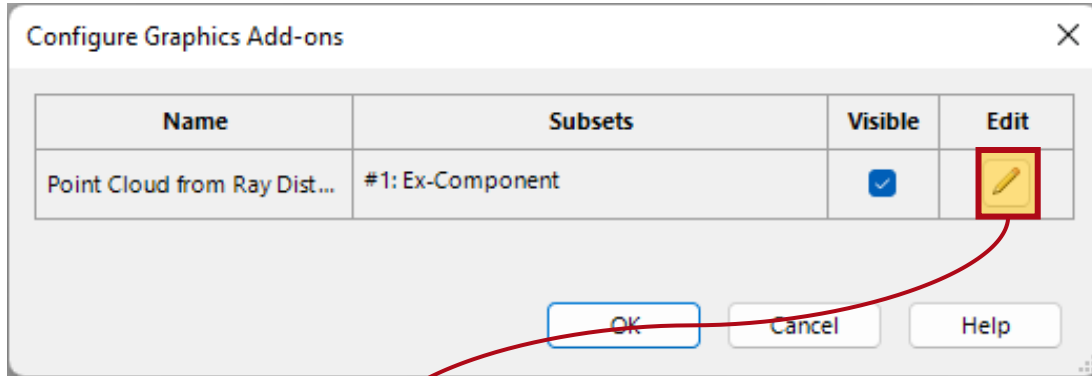
Visualization Options – Point Clouds

Note: While in this example we use a point cloud from a Ray Results Profile *simulation, the same principles apply to any kind of point cloud (e.g. one that is imported).*

Through the option *Configure All* in the *View* ribbon, the visualization parameters for the point cloud can be specified, including the option to not show it at all.

Visualization Options – Point Clouds

It is also possible to specify the color and size of the individual dots – allowing the overlay to be customized to the user's liking.

Document Information

title	Add Point Cloud Overlay to Data Arrays
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software version	2022.1 (Build 1.554)
category	Feature Use Case
further reading	• Graphics Add-ons • Look & Feel -Video: Add Point Cloud to Data Array