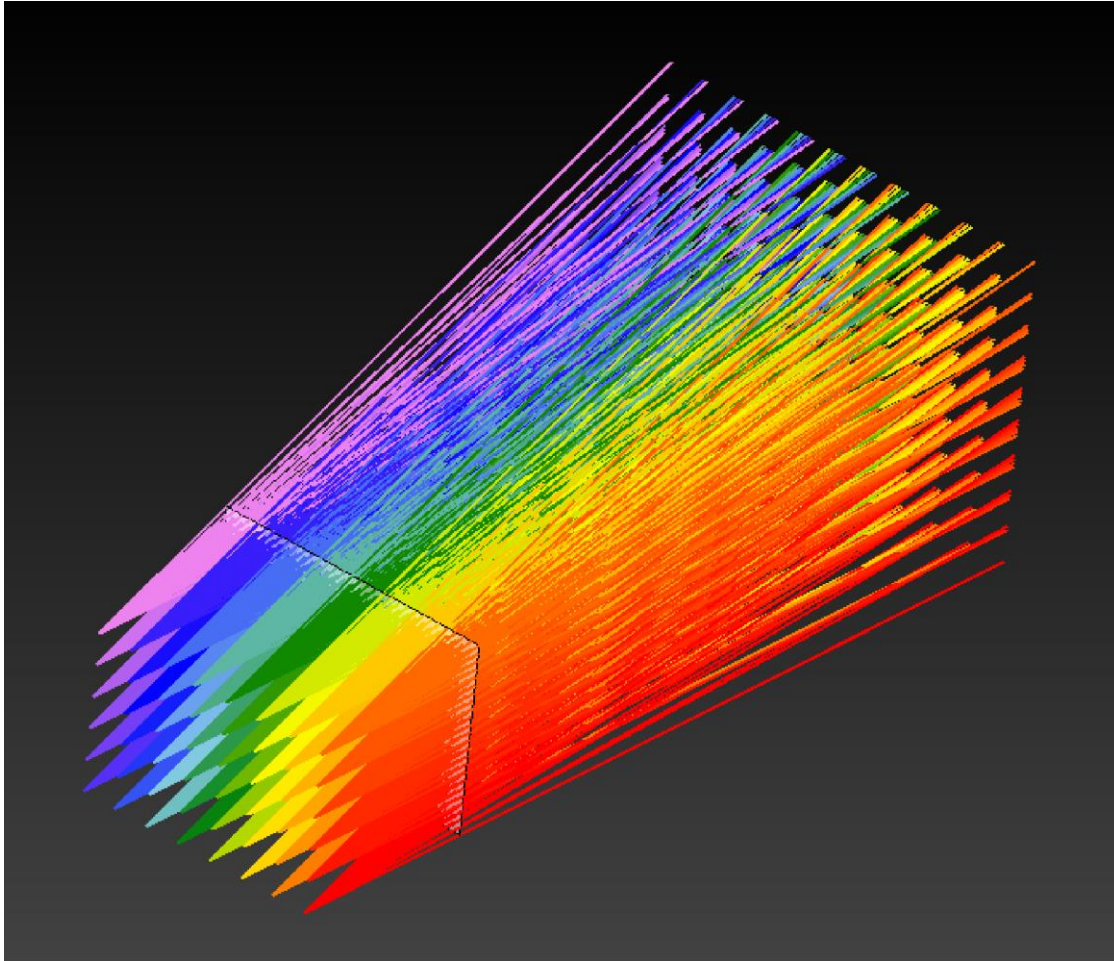# How to Set Up a Panel-Type Source

Abstract

By using the panel-type source in VirtualLab, it is possible to model a pixelated display as in the reality. The panel-type source can be defined by given number of pixels and pixel picthes, and each pixel is emitting a spherical wave with adjustable opening angle. Together with ParameterRun, all pixels can be scanned, and one can choose the scanning modes flexibly for specific applications, e.g., for the analysis of imaging system with a pixelated image generation unit.
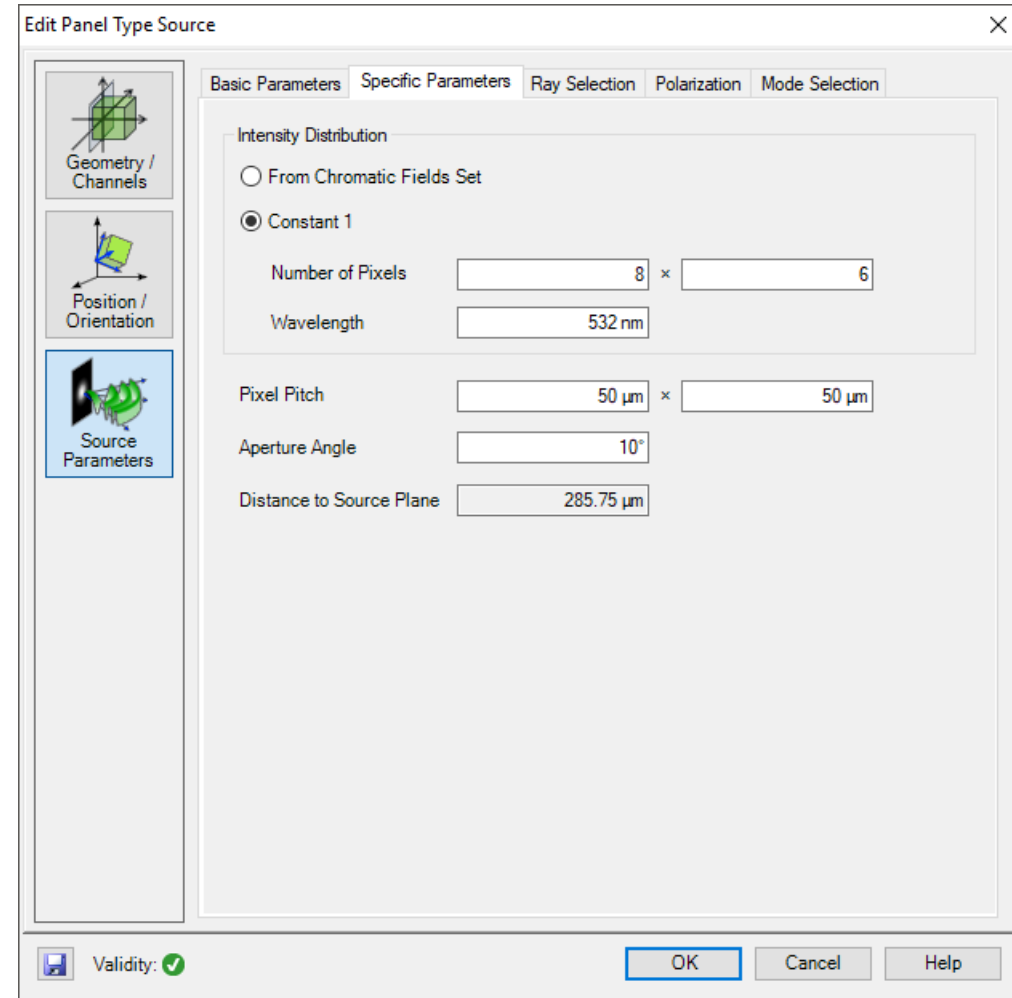
Basic Parameters

- The panel-type source simulates a defined number of pixels, with each pixel represented by a spherical wave, as a fundamental mode.

- All modes share the same aperture shape and it can be configured in the *Basic Parameters* tab.

- Further, the relative or absolute edge width can be configured.
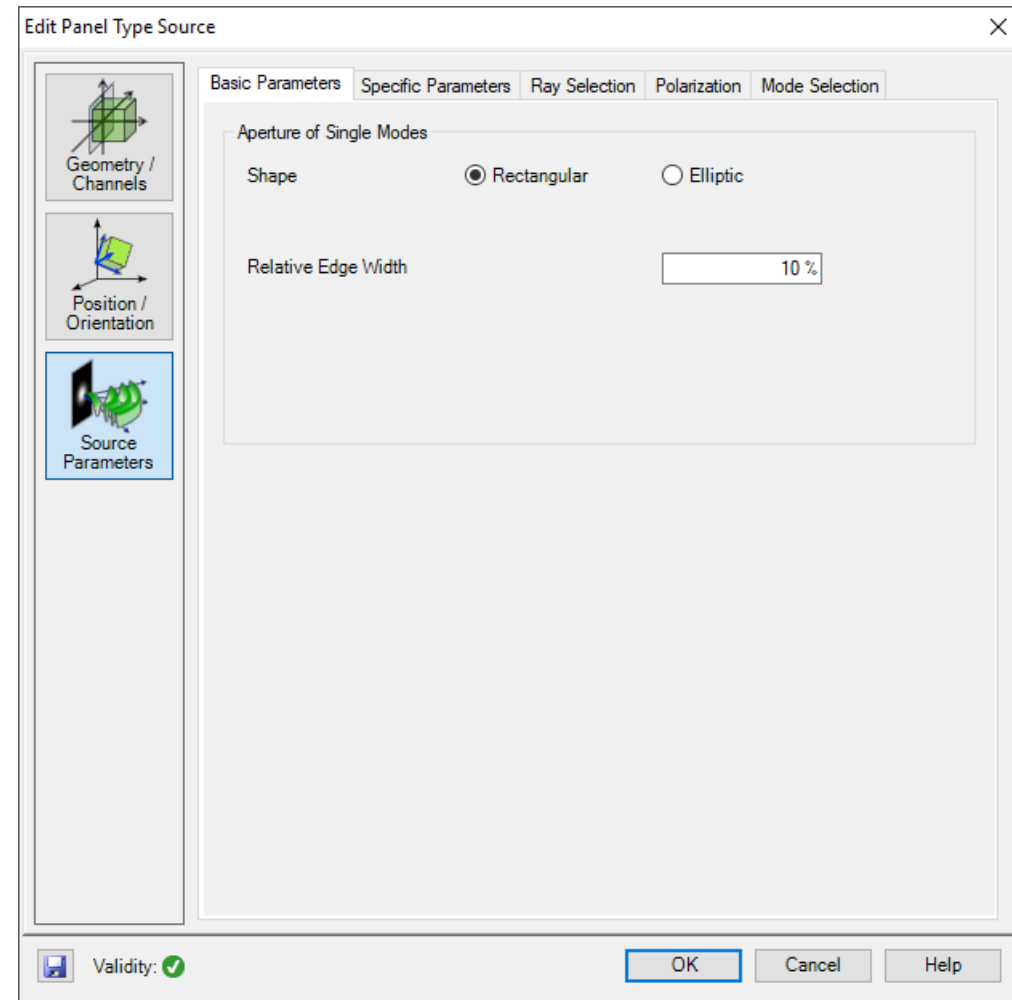
Specific Parameters – Intensity

- The *Specific Parameters* tab controls the **intensity** and pixel settings of the source.

- The distribution of the intensity can be set according:
  - To a desired variation by specifying a Chromatic Fields Set, or by importing an image file. In this case, the wavelengths are chosen from the input distribution;
  - Or constant over all pixels for one wavelength. In this case, the number of pixels can be set along x- and y-direction respectively.
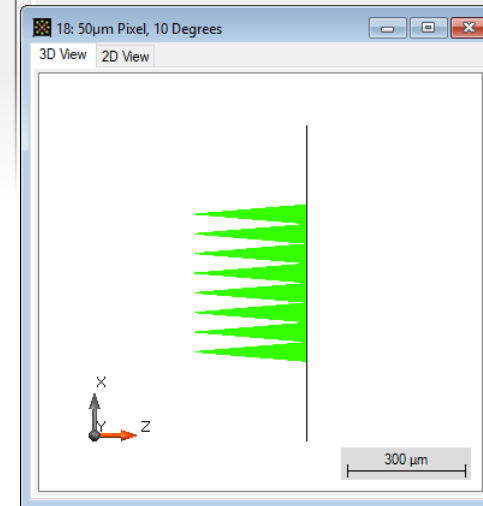
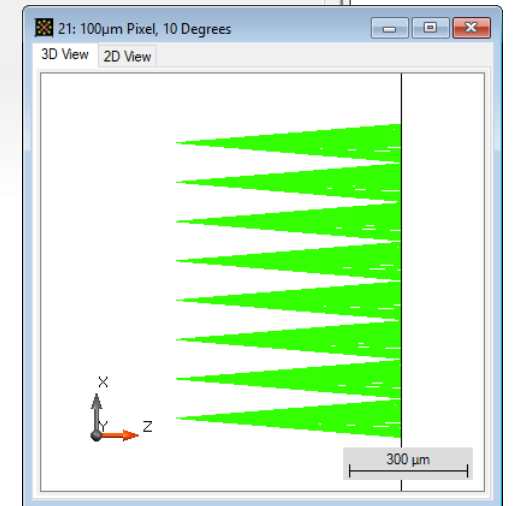# Specific Parameters – Pixel Settings

- The *Specific Parameters* tab controls the intensity and **pixel settings** of the source.

- The *Pixel Pitch* can be set along x- and y-direction respectively.

- Additional, the *Aperture Angle* of each pixel can be configured.
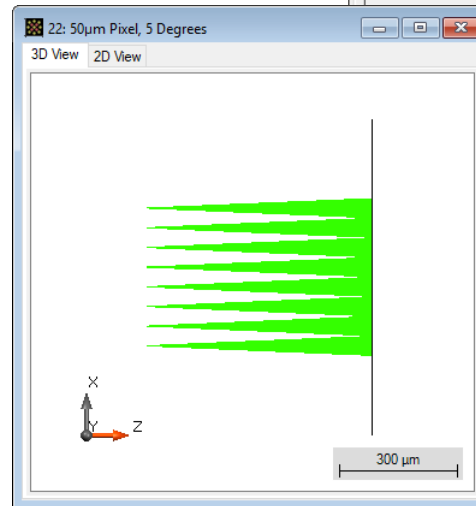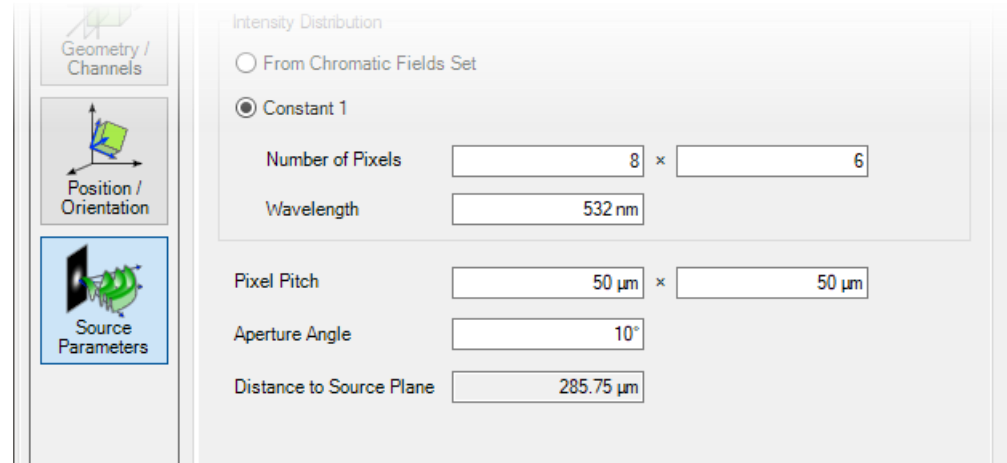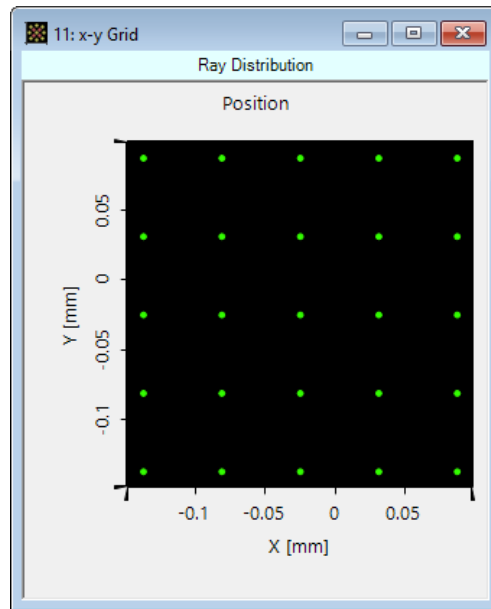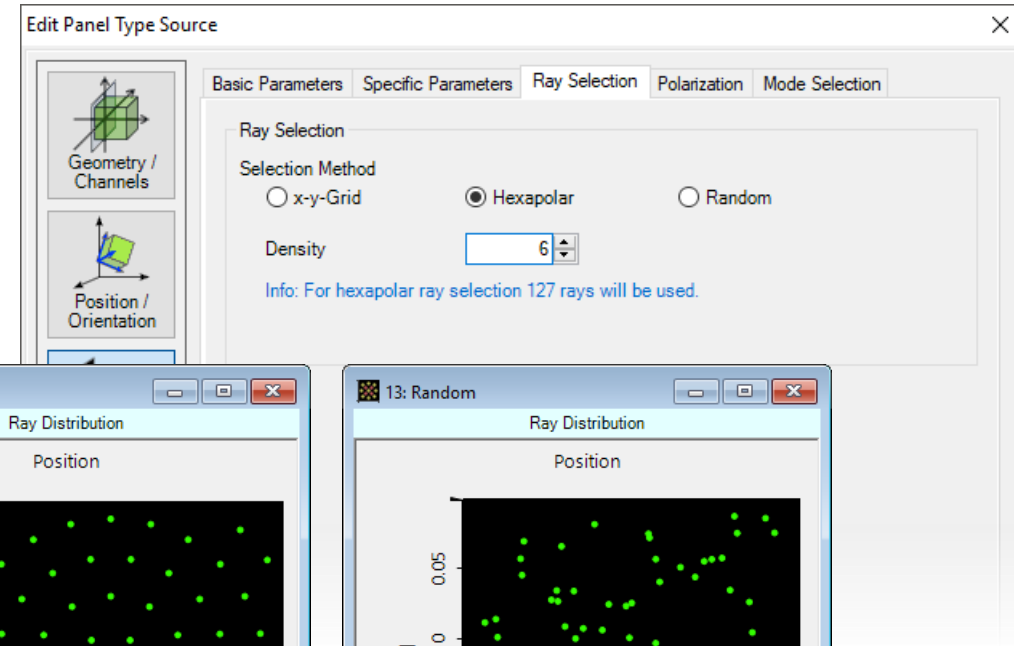

- pixel picth 50 µm
- aperture angle 5°

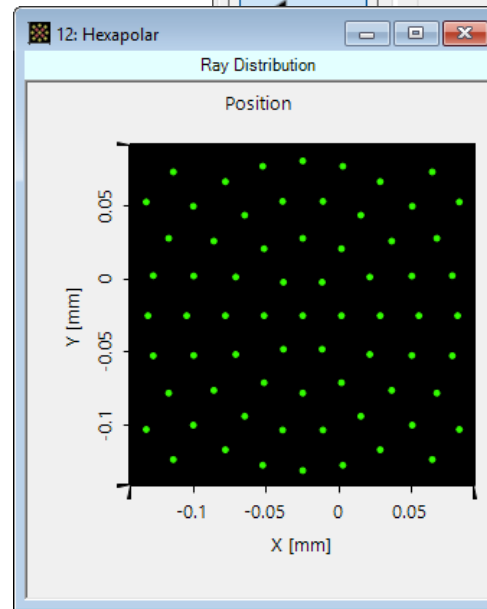- pixel picth 50 µm
- aperture angle 10°

- pixel picth 100 µm
- aperture angle 10°
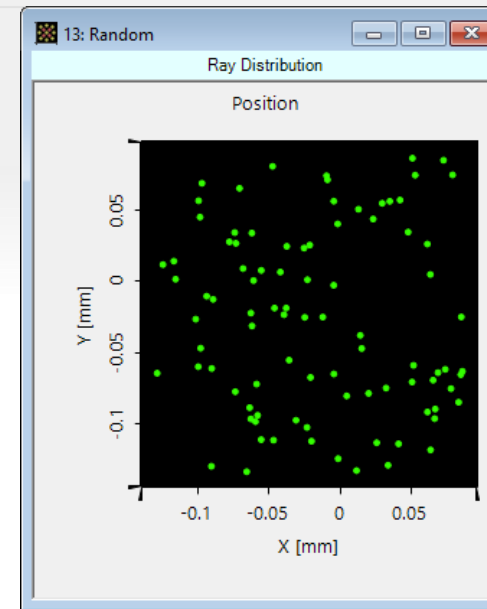
Ray Selection

- In the *Ray Selection* tab, for each mode, the desired selection method and the number of rays can be specified.
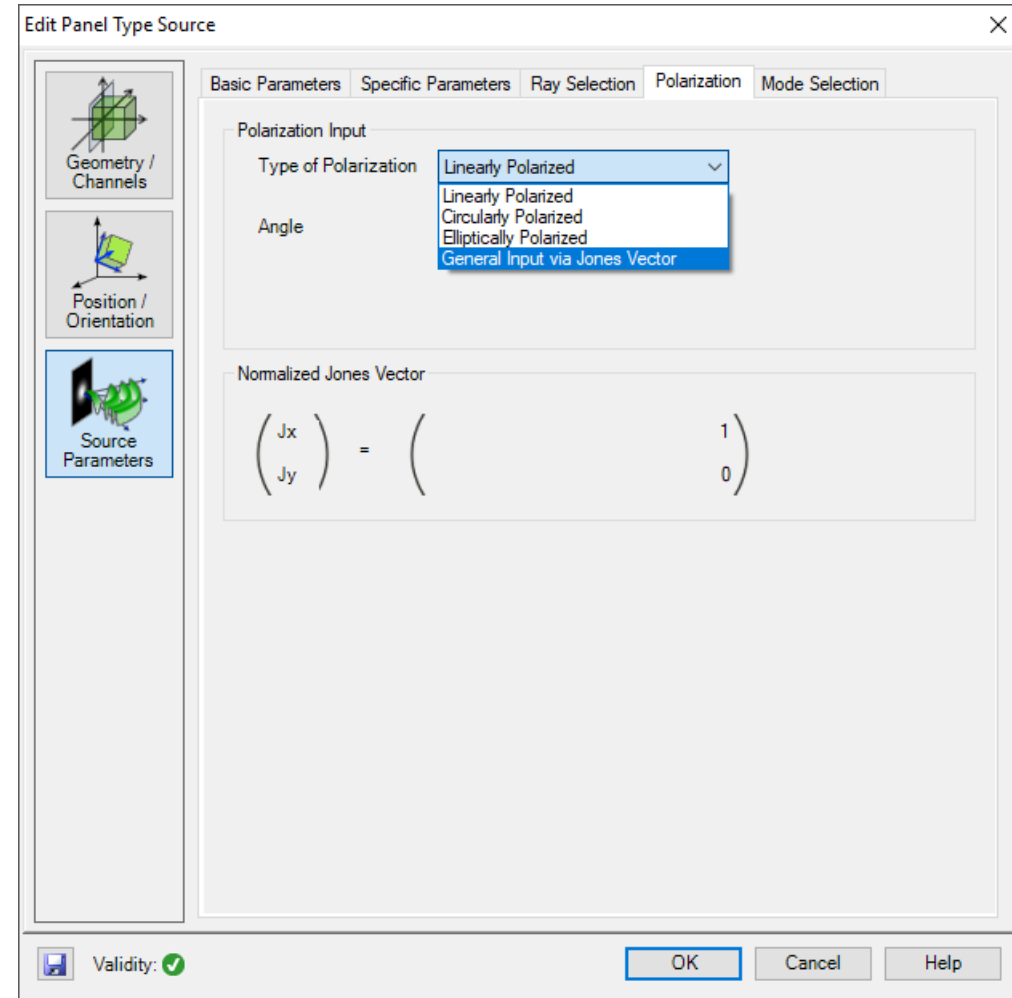

x-y grid   hexapolar grid   random selection

Polarization Settings

- The *Polarization Settings* tab provides the polarization options for all pixels.
- The polarization state can be:
  - linear;
  - circular;
  - elliptical;
 - general input via Jones matrix;

Mode Selection

- In the *Mode Selection* tab, different possible spectral components and pixels can be selected.

- The wavelengths can be selected individually or all together.

- The pixels can be chosen within a specified column or row, or can be chosen as a single pixel.
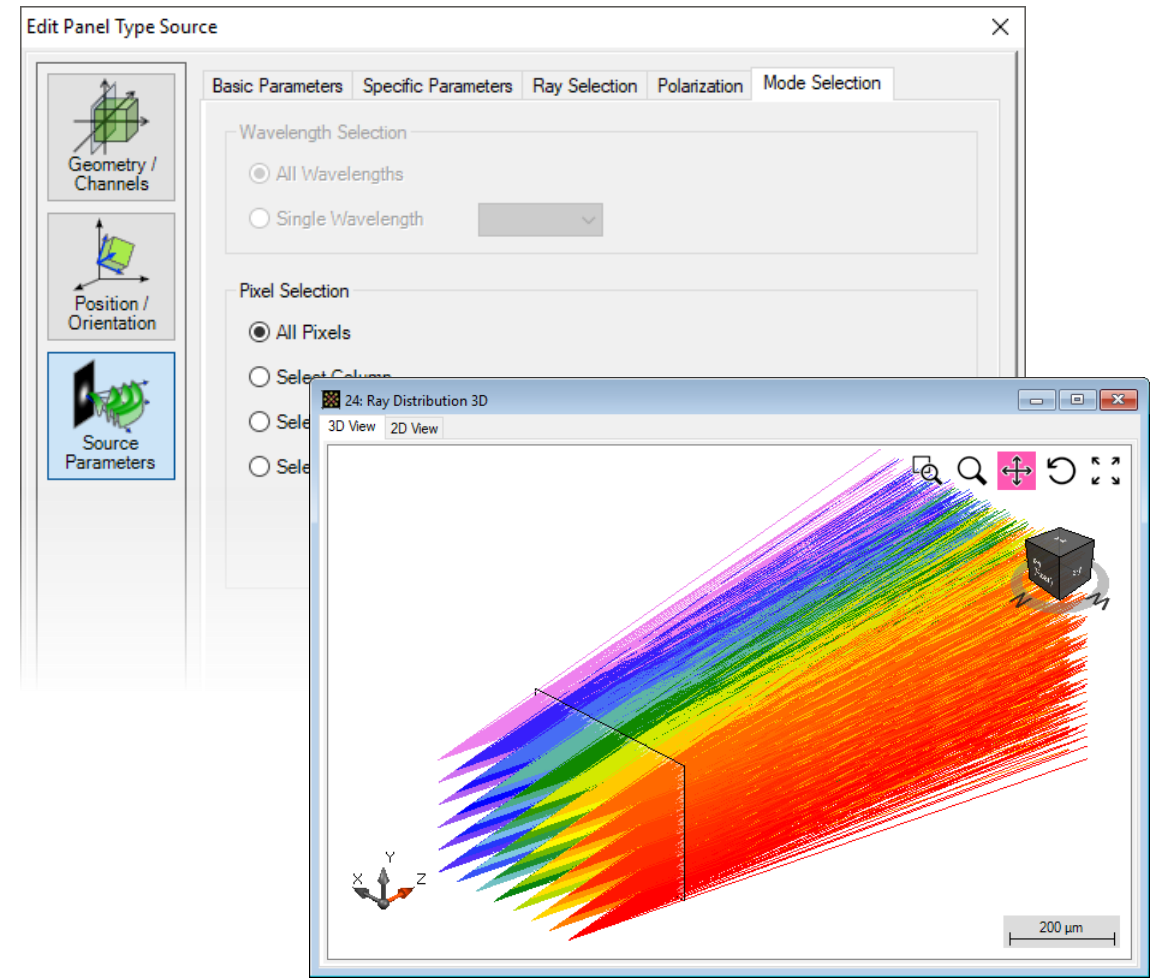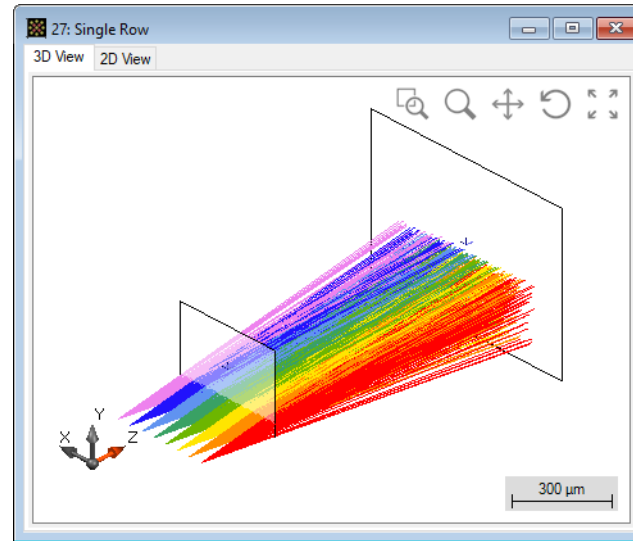

with all the 8x6 pixels
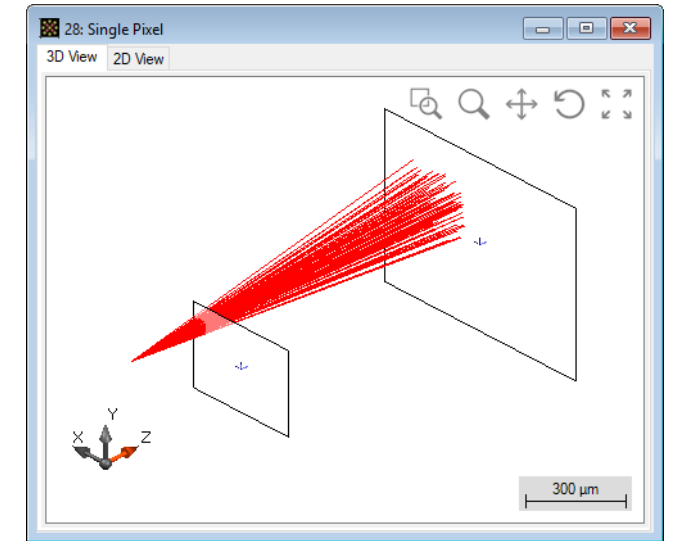
Mode Selection

- ## Single column
- ## Single row
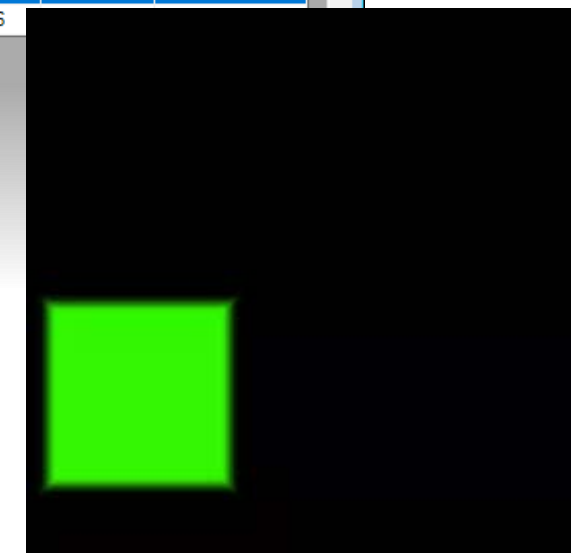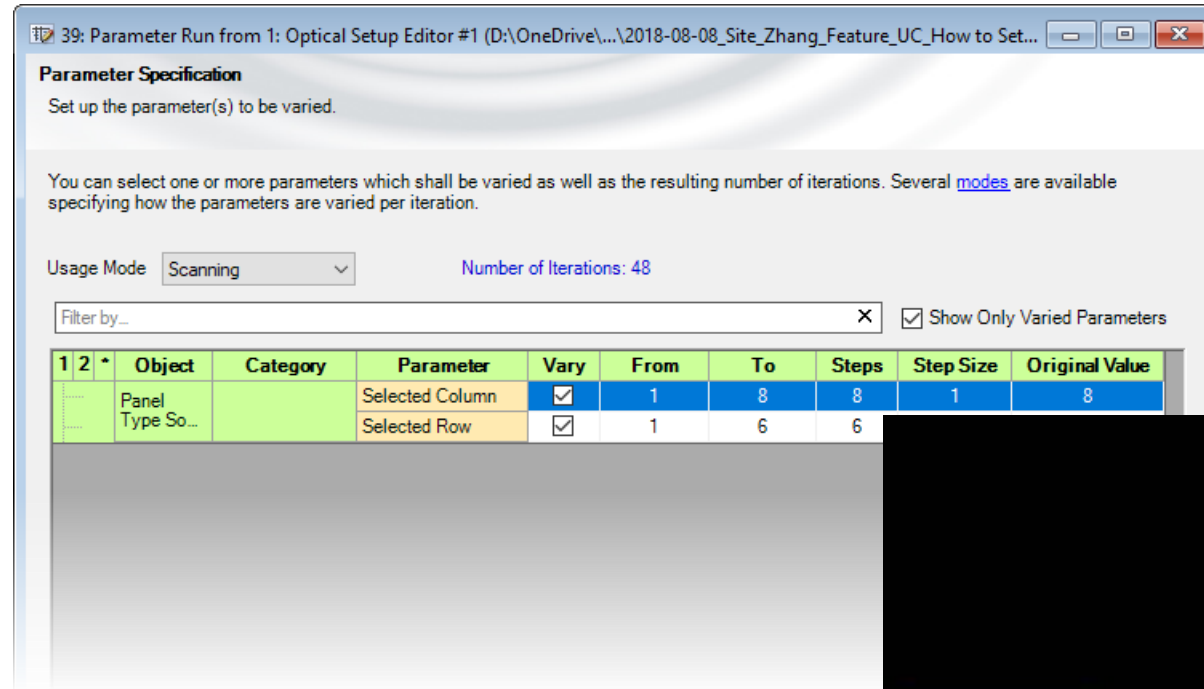- ## Single pixel
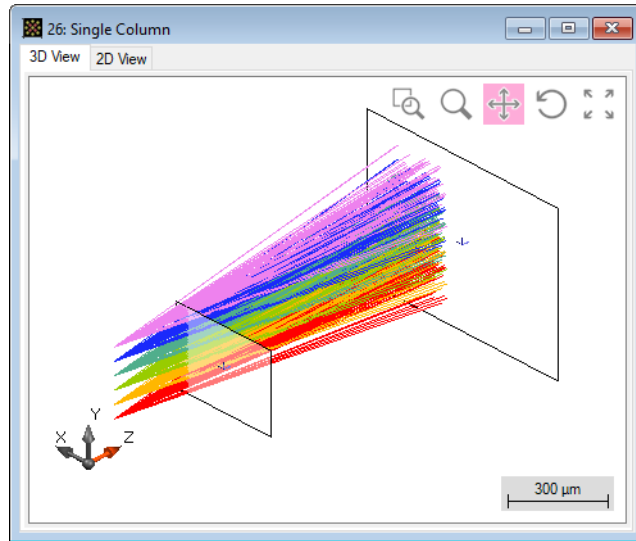
- all pixels in column #8

- all pixels in row #1

- column #8
- row #5

ParameterRun – Scanning over Each Single Pixel

- In mode selection tab, check select pixel.
- Start ParameterRun and switch to scanning mode. Then scan over selected column and row indices.

scanning animation over all pixels

Document Information

title	How to Set Up a Panel-Type Source
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VL version used for simulations	7.4.0.40
category	Feature Use Case