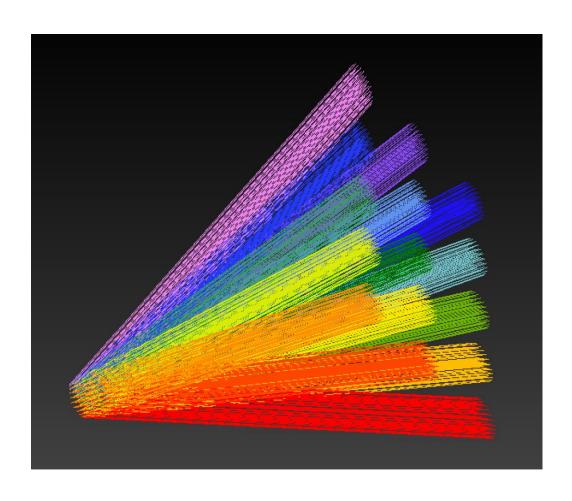


How to Set Up a Scanning Source

Abstract

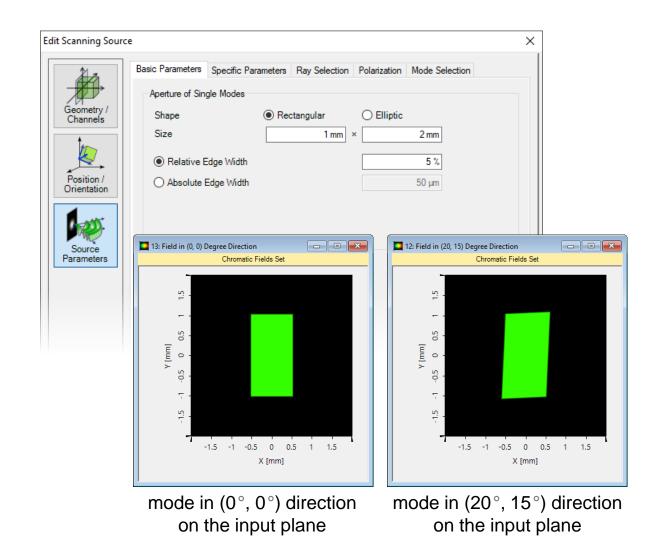


With the scanning source in VirtualLab, it is possible to define a multi-mode source that radiates into different pre-defined directions. The scanning source can be used, e.g., in a laser scanning system for analyzing the performance under different scanning angle, or in an imaging system for modeling of certain field of view. Together with ParameterRun, the directions/angles can be scanned in different modes, and one can define it flexibly for specific applications.

2 www.LightTrans.com

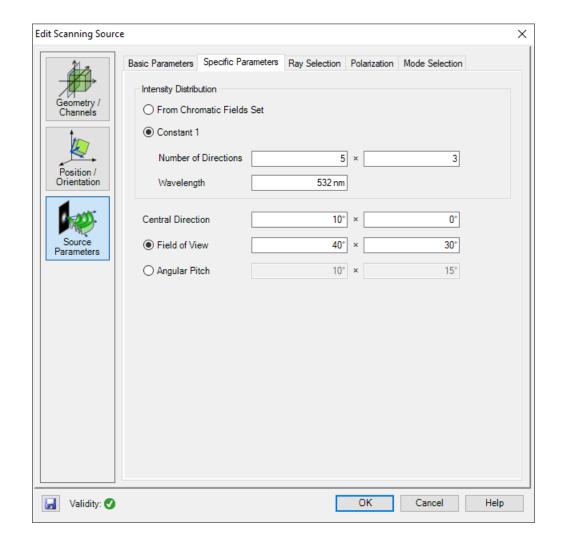
Basic Parameters

- For each scanning angular direction, there is one mode representing the field.
- All modes share the same aperture shape and size (defined in the plane orthogonal to the mode direction), and these parameters can be configured in the Basic Parameters tab.
- Further, the relative or absolute edge width can be configured.



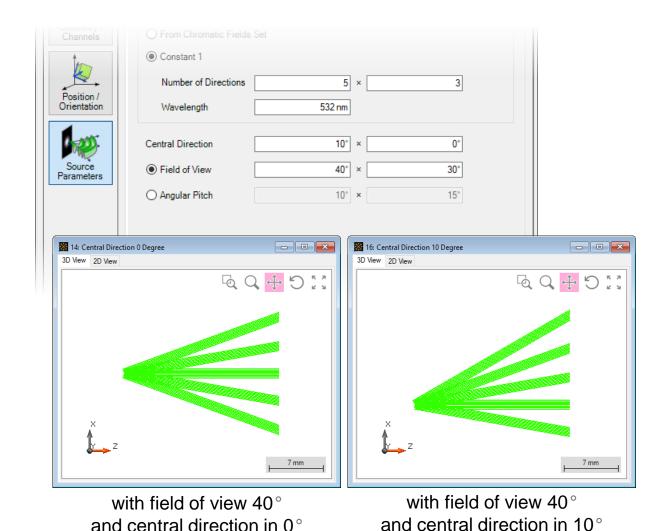
Specific Parameters – Intensity

- The Specific Parameters tab controls the intensity and angular 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.
 - Or constant over all scanning angles for one wavelength. In this case, the number of directions can be set, which means the number of scanning steps along x- and ydirection.



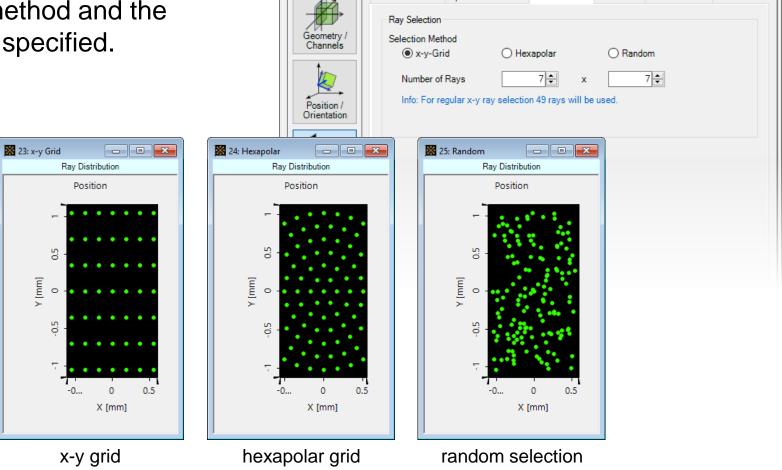
Specific Parameters – Angular Settings

- The Specific Parameters tab controls the intensity and angular settings of the source.
- You can set the *Central Direction*, i.e. the direction into which the center of the overall field propagates.
- The scanning range can be configured either by an specific Field of View or by the Angular Pitch of each scanning direction.



Ray Selection

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

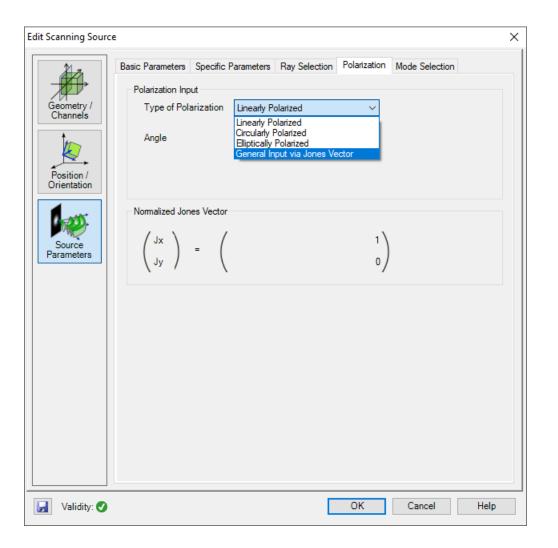


Basic Parameters | Specific Parameters | Ray Selection | Polarization | Mode Selection

Edit Scanning Source

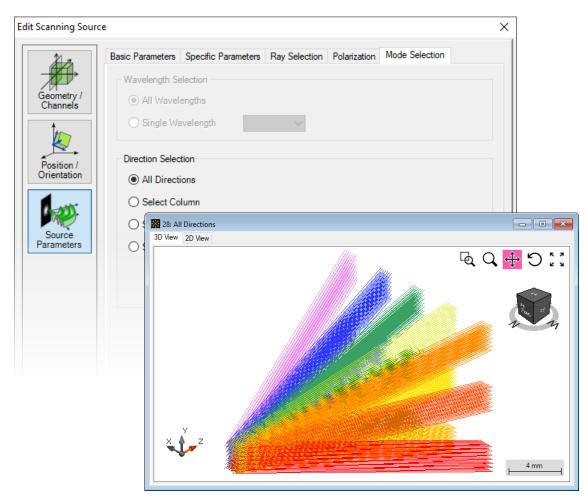
Polarization Settings

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



Mode Selection

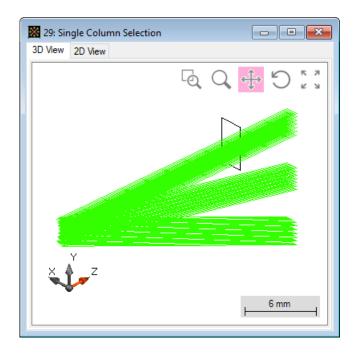
- In the Mode Selection tab, different possible spectral components and scanning directions can be selected.
- The wavelengths can be selected individually or all together.
- The scanning direction can be chosen within a specified column or row of angles, or can be chosen as a single direction.



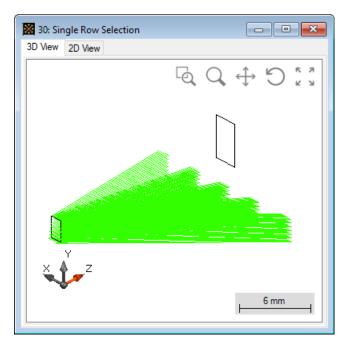
with all scanning directions

Mode Selection

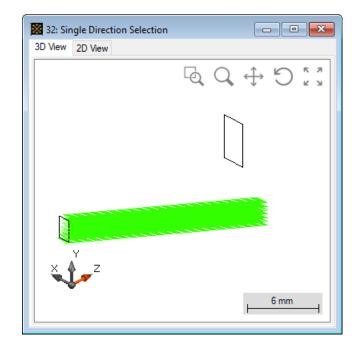
Single column



Single row

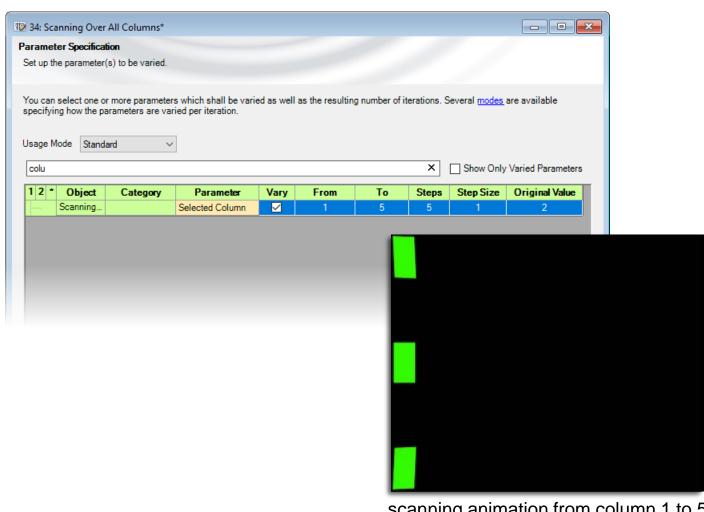


• Single direciton



ParameterRun – Scanning over Columns / Rows

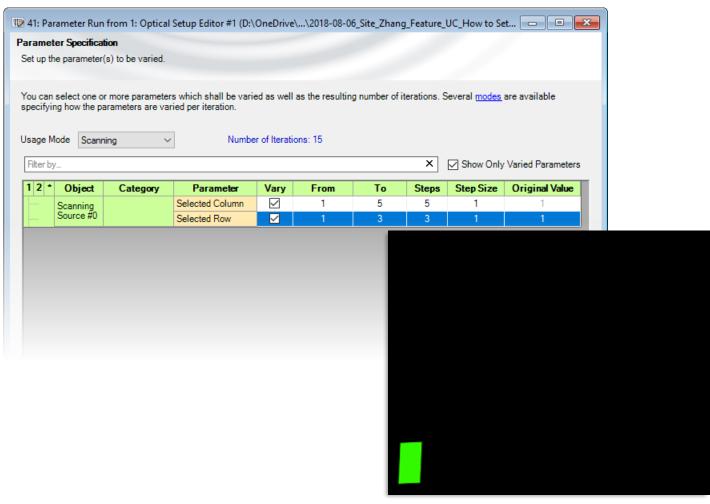
- In mode selection tab, check select column.
- Start ParameterRun and scan over selected column index.
- In a similar way, one can also scan over rows.



scanning animation from column 1 to 5

ParameterRun – Scanning over Each Single Direction

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



scanning animation over all directions

Document Information

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VL version used for simulations	7.4.0.40
category	Feature Use Case