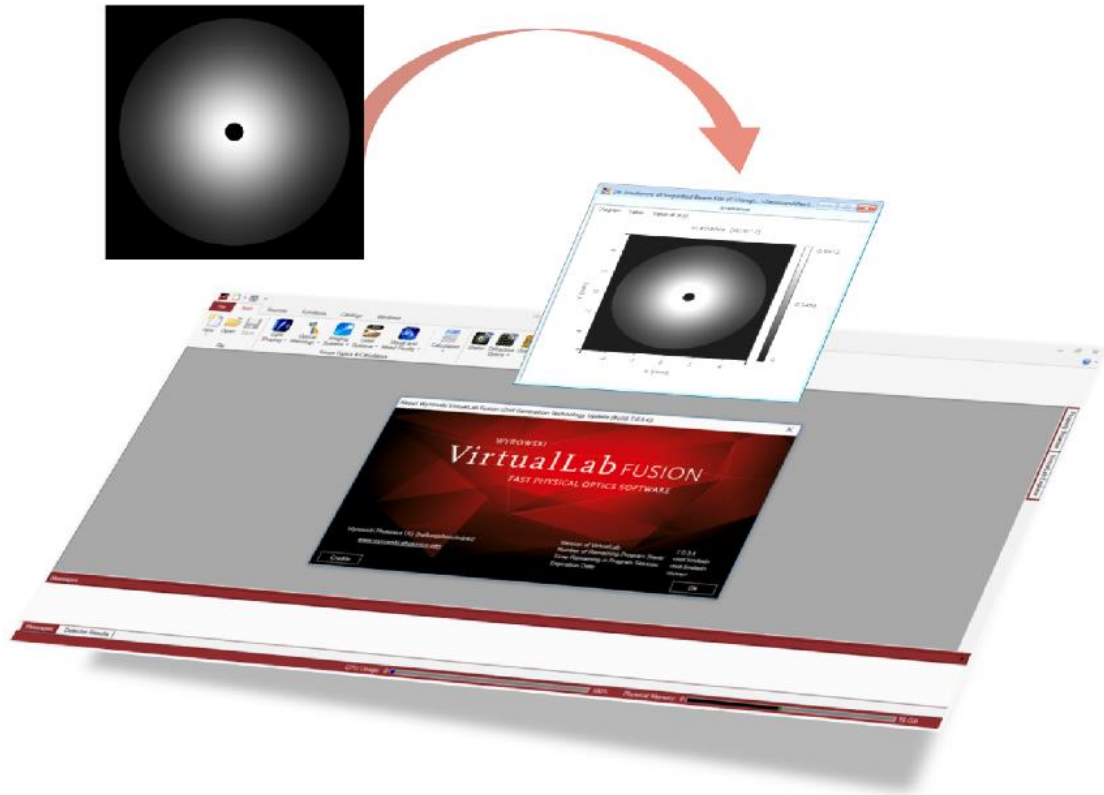


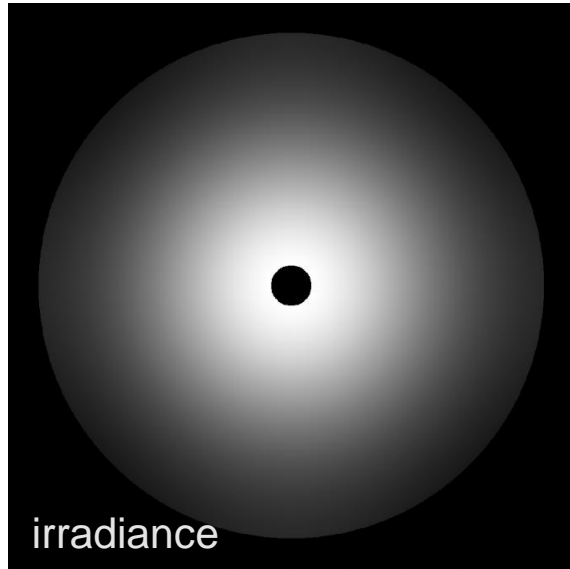
# Import Beam Files from Zemax OpticStudio®

# Abstract



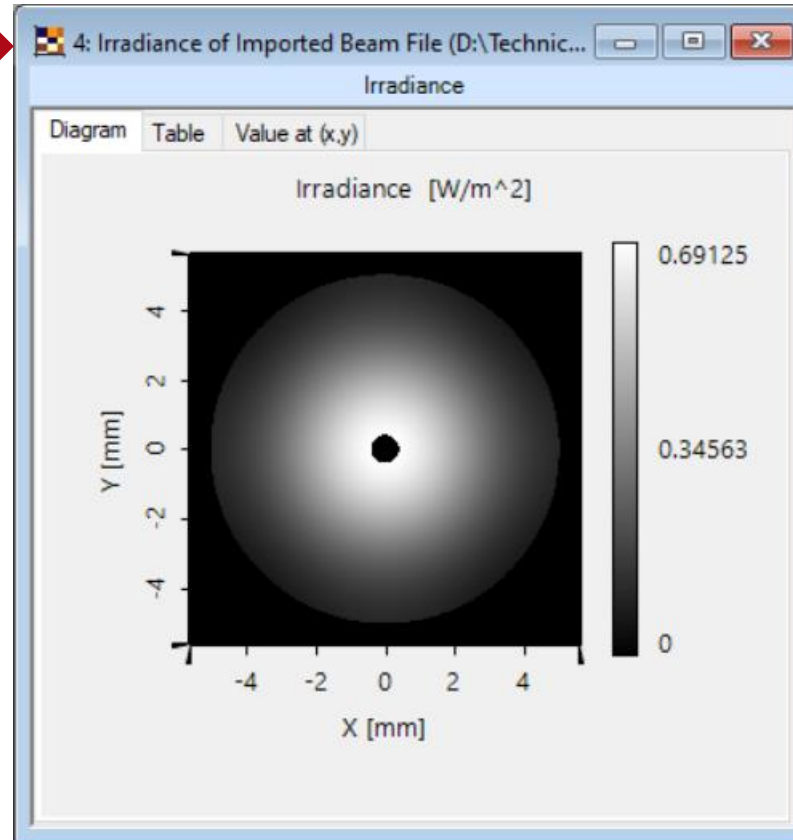
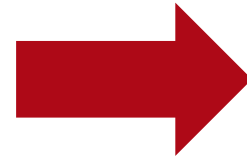
The beam files in Zemax OpticStudio<sup>®</sup> contain the irradiance and the phase information of the field. VirtualLab Fusion can import the beam files and automatically convert them into electromagnetic field information. After importing, the field can be stored to a source, and further operation of the field can be applied in optical setup, e.g., propagation including diffraction.

# Modeling Task



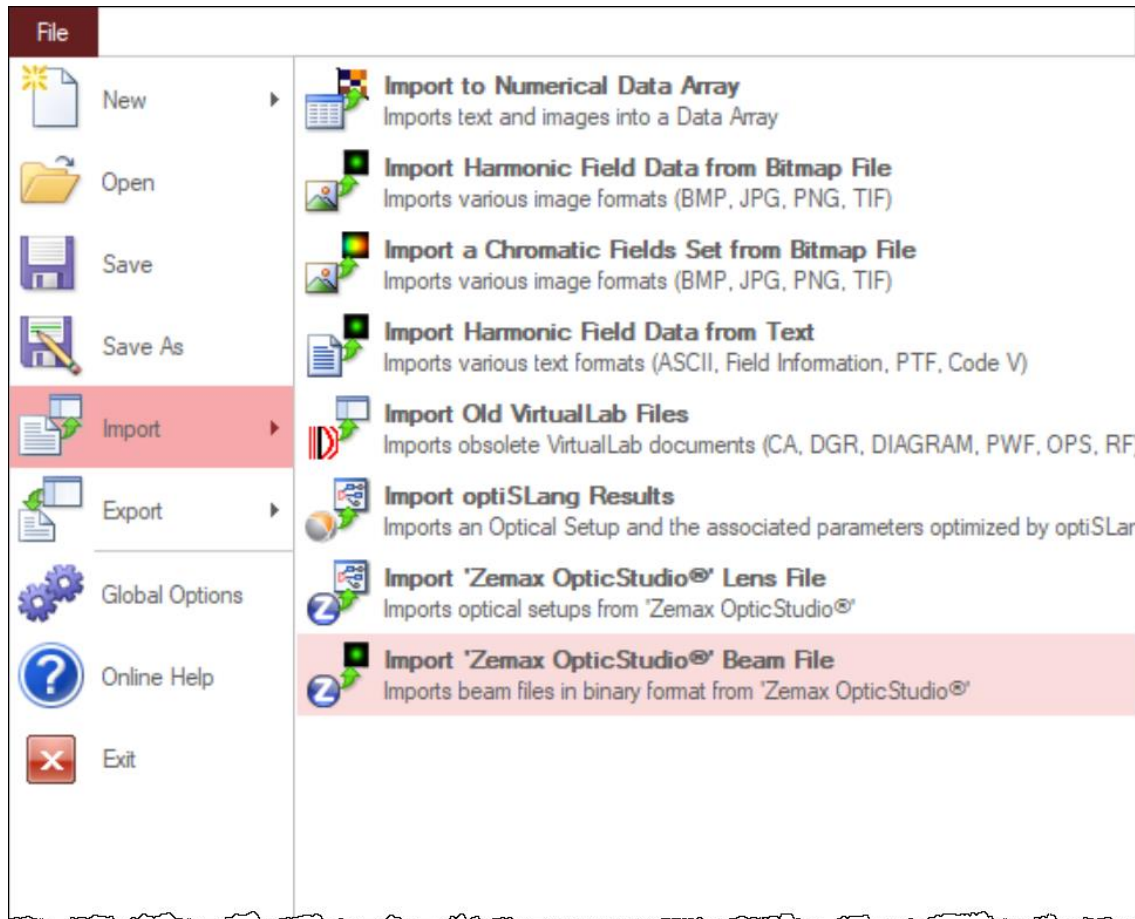
original beam file  
in Zemax OpticStudio®

How to import a beam file from Zemax OpticStudio®?



And, how to  
propagate the field  
that is imported from  
Zemax OpticStudio®?

# Import Zemax Beam File

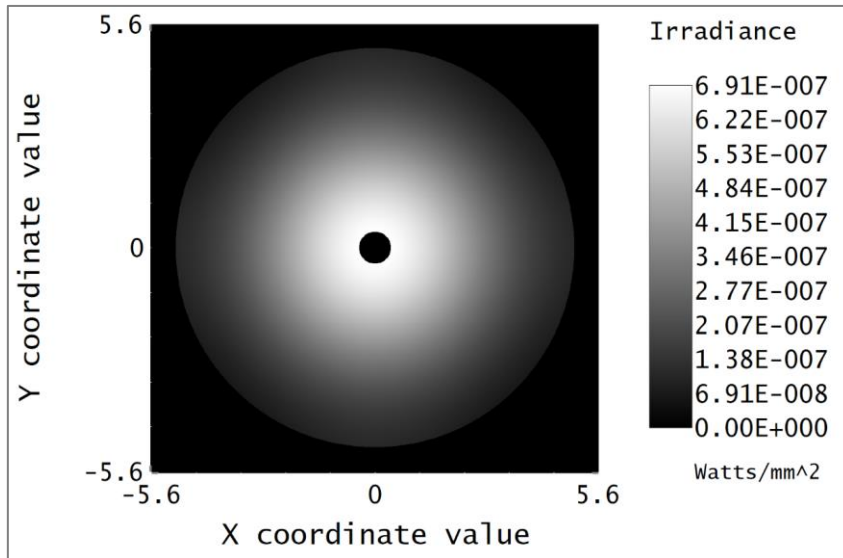


- In VirtualLab Fusion, Zemax OpticStudio® beam files can be imported via steps:
  - File → Import → Import Zemax OpticStudio® Beam File.
  - Then open the sample file with .zbf extension.

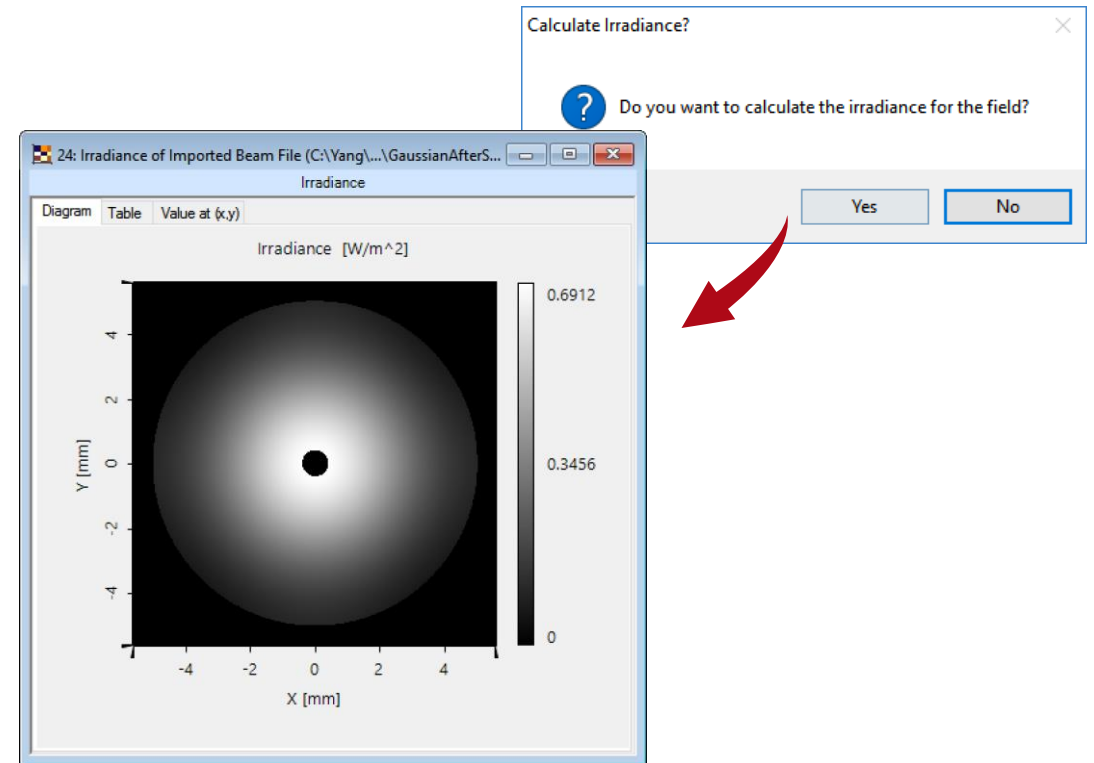
# Imported Irradiance

- In this Use Case, we use a Zemax beam file of a Gaussian beam after a stop as an example.

irradiance of a Gaussian beam behind a stop in Zemax OpticStudio®

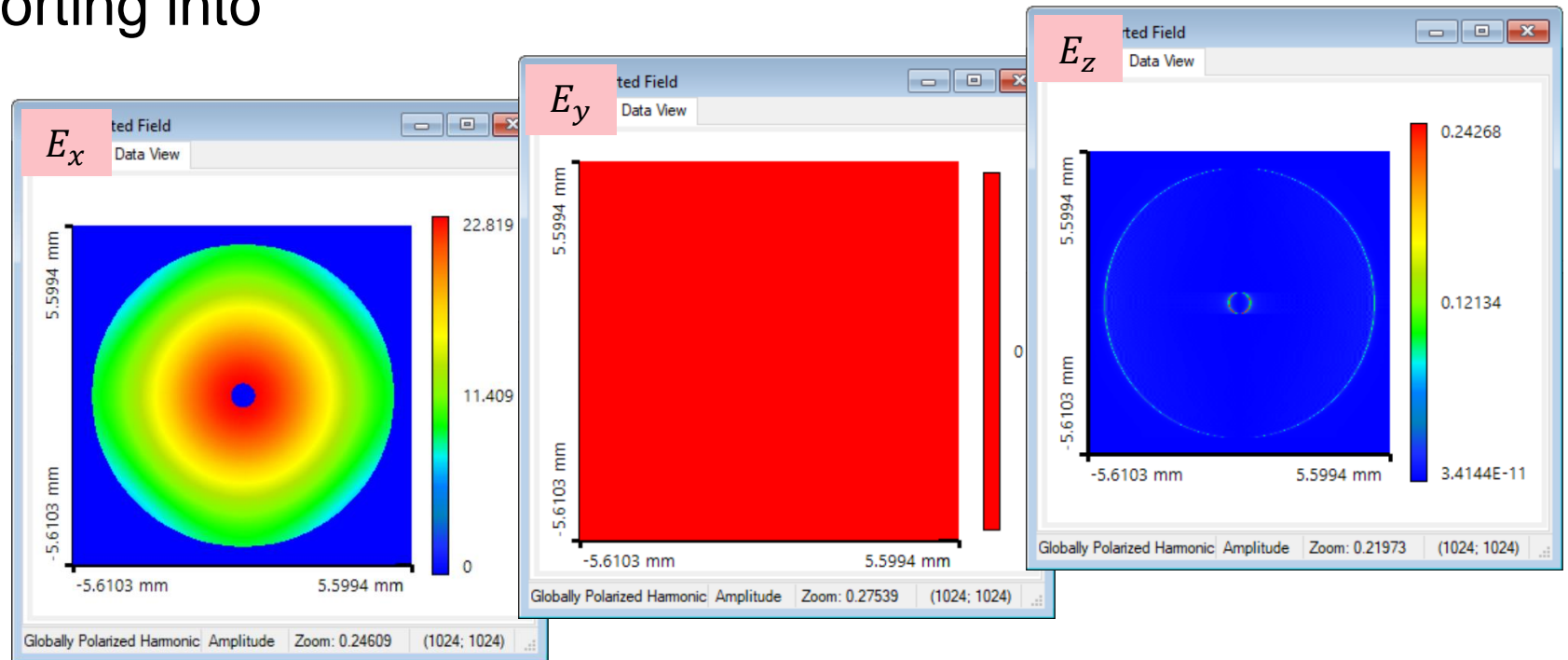


- During importing to VirtualLab, one may choose to calculate the irradiance of the field.



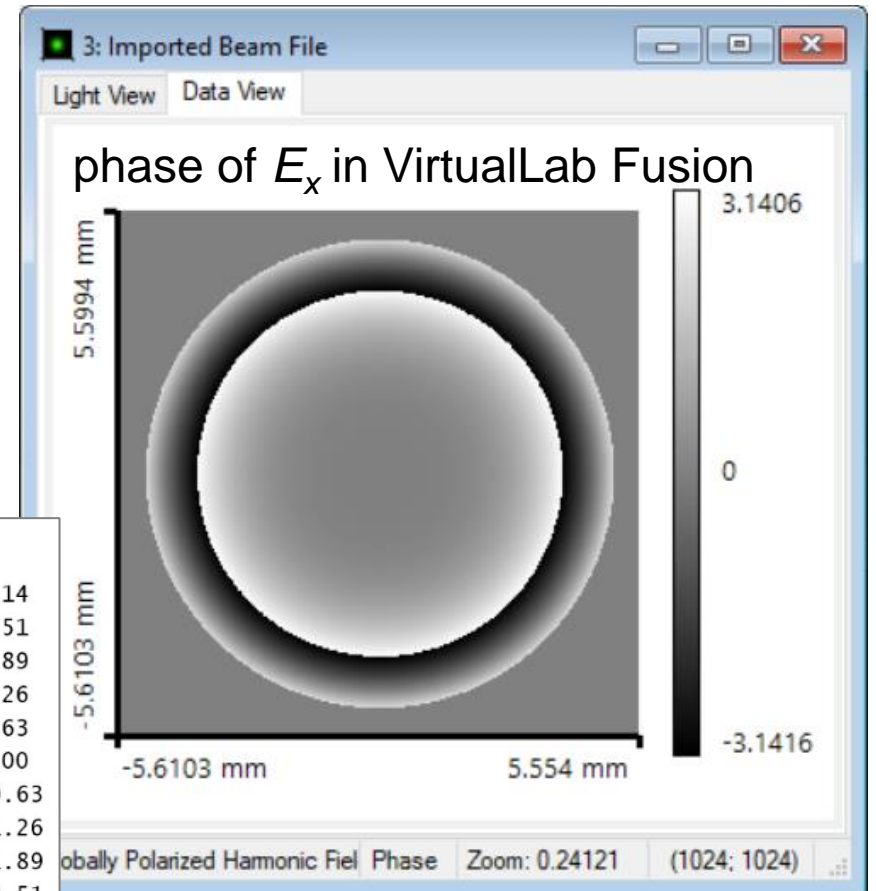
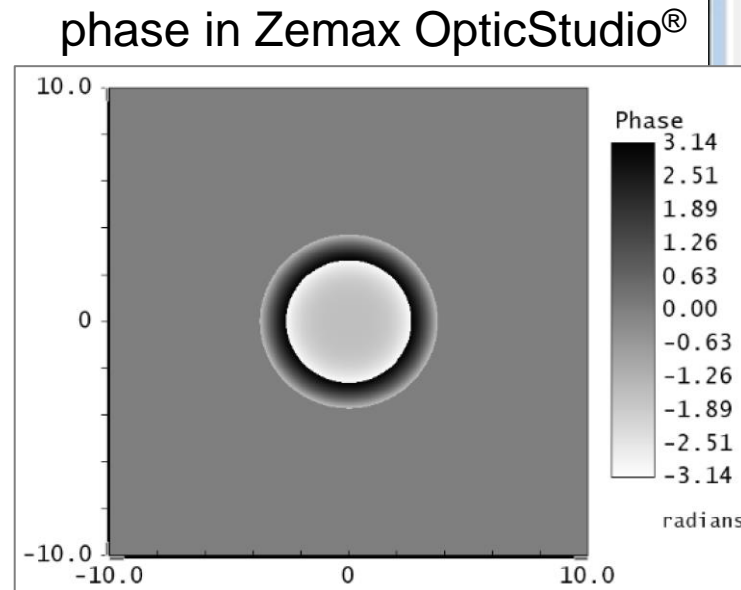
# Imported Field - Amplitude

- In addition to the irradiance, the fully vectorial electromagnetic field information is automatically calculated, after importing into VirtualLab Fusion.



# Imported Field - Phase

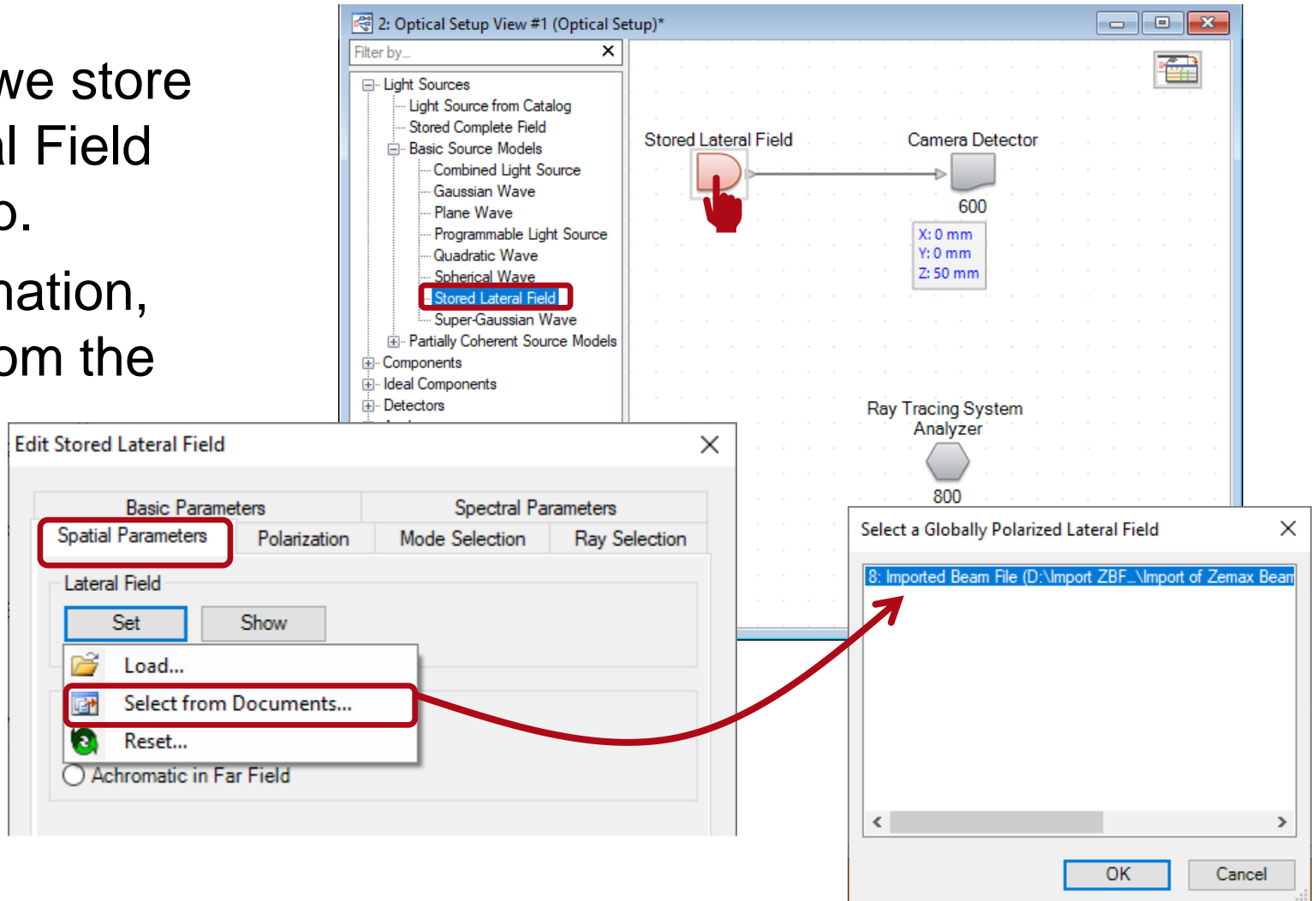
- The phase distributions in both software packages are also in agreement. (Note that different scales are used for the the figures.)



(additional spherical phase displayed)

# Propagation of Imported Field

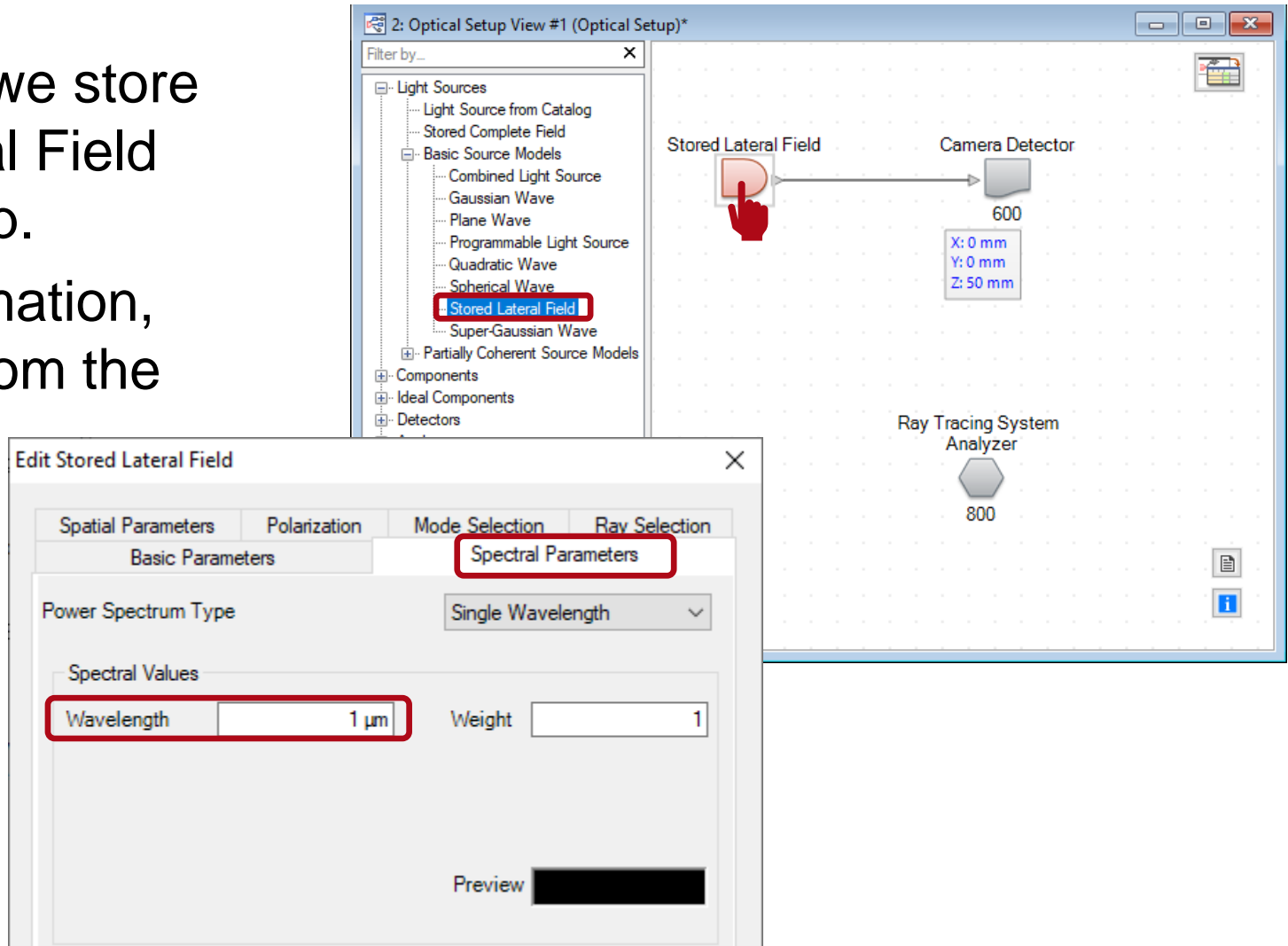
- For propagating the field, we store the field to a Stored Lateral Field source in the Optical Setup.
- For setting the Field Information, select the imported field from the document.





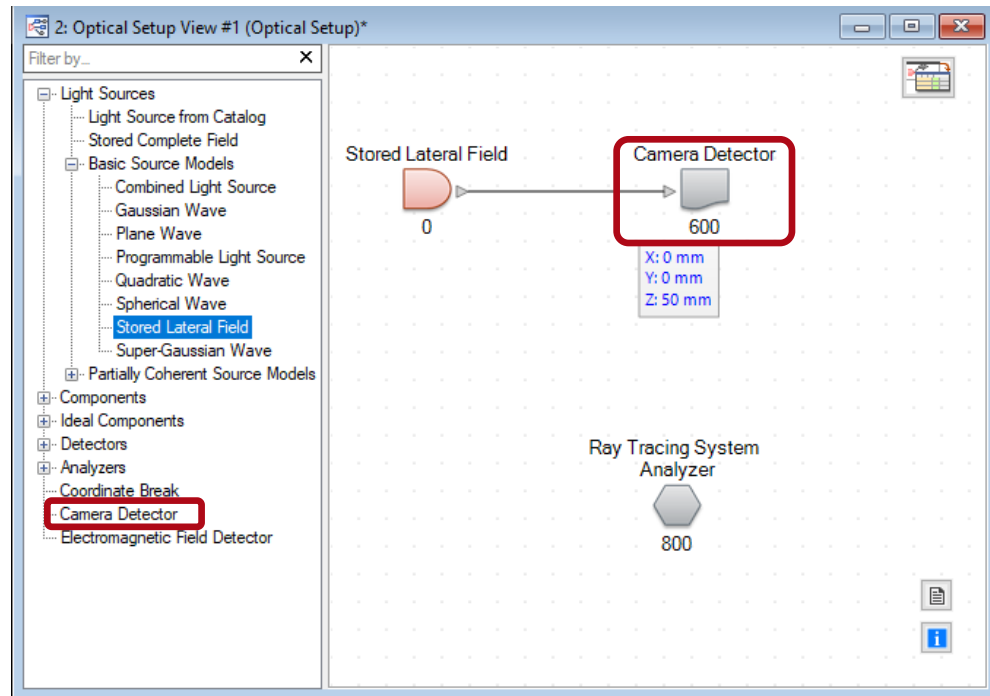
# Propagation of Imported Field

- For propagating the field, we store the field to a Stored Lateral Field source in the Optical Setup.
- For setting the Field Information, select the imported field from the document.
- In Stored Lateral Field, the source parameters can be defined. (e.g., wavelength and polarization)

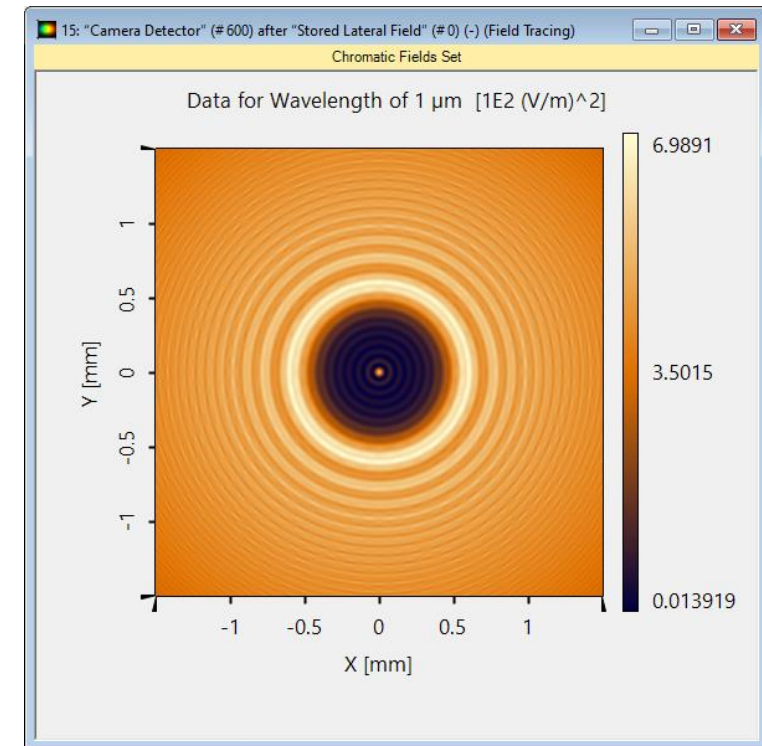


# Propagation of Imported Field

- A Camera Detector is used in the Optical Setup. Set the distance in between to 50 mm.



- With Field Tracing, the propagated field shows the diffraction pattern.



# Document Information

title	Import Beam Files from Zemax OpticStudio®
document code	CFP.0004
version	1.0
toolbox(es)	Starter Toolbox
VL version used for simulations	VirtualLab Fusion 2020.2 (Build 1.116)
category	Feature Use Case
further reading	- <a href="#"><u>Import Optical Systems from Zemax OpticStudio®</u></a>