Feature.0025

Usage of Camera Detector

Evaluation of the real color and false color intensity by the usage of the Camera Detector.

About This Use Case

- The following toolbox is required:
  - Starter toolbox
- This use case was created using VirtualLab Fusion (Build 7.0.0.35).
- Get your free Trial Version <u>here</u>!

This Use Case Shows...

- what the *Camera Detector* is used for.

- how to customize the settings of the Camera Detector for different visualization options.
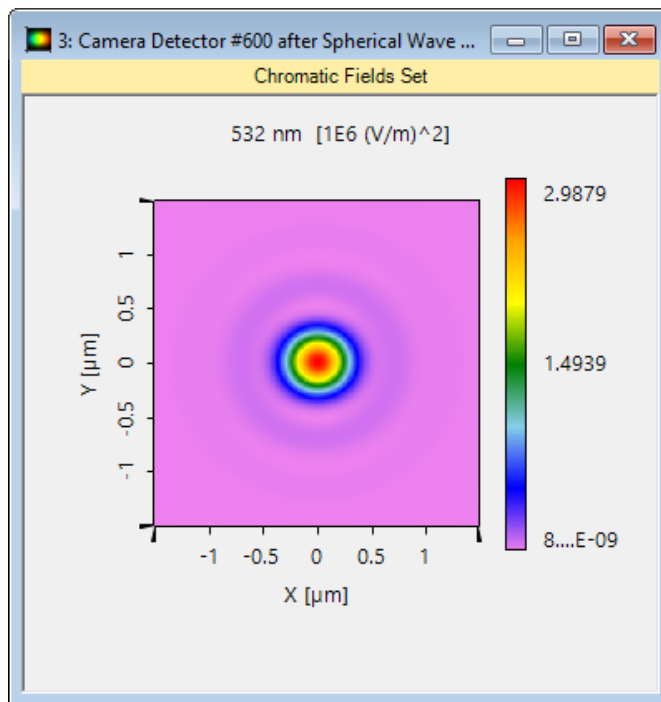

The *Camera Detector* generates a chromatic fields set which is used for the visualization of the intensity distribution.

Overview

- The camera detector can be used to evaluate the intensity distribution within the detector plane.

- The camera detector supports the evaluation of the intensity as

  − real-color view

  − false-color view

- The real color view show the intensity distribution how it would like in the laboratory as real color display.

- The false color view allows to use different color lookup tables for the intensity visualization.

- The user can define which vectorial components shall be evaluated by the *Camera Detector*.

Edit Options of Camera Detector
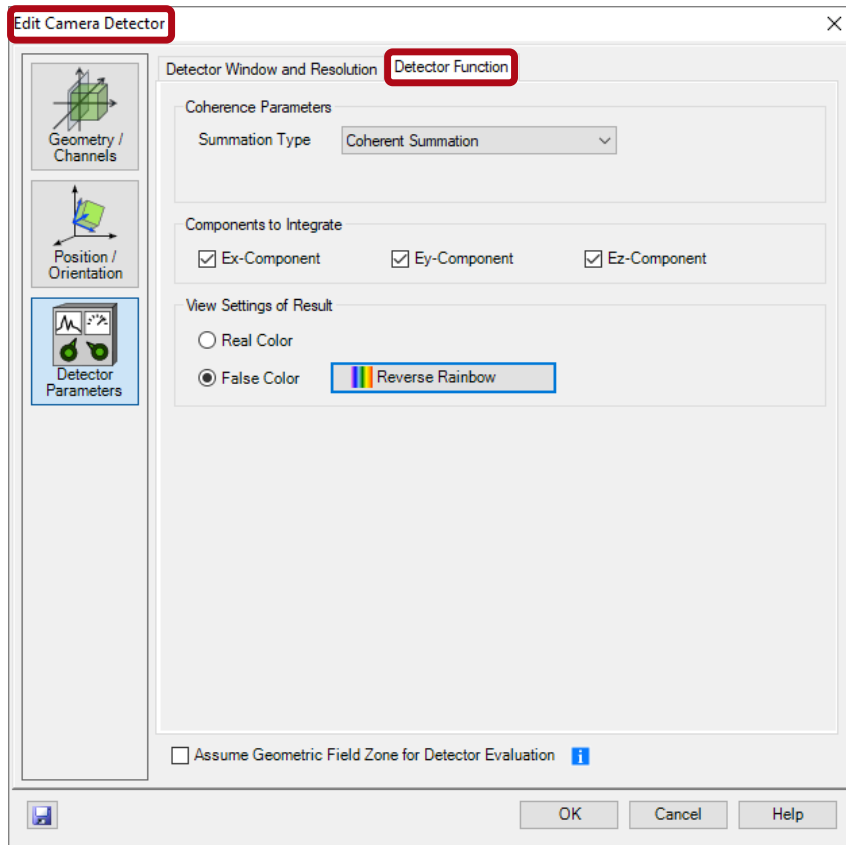
- The edit dialog of the camera detector can be accessed by double clicking on the detector item within the light path diagram view.

- Several options can be preconfigured in the edit dialog.

Parameters of Camera Detector
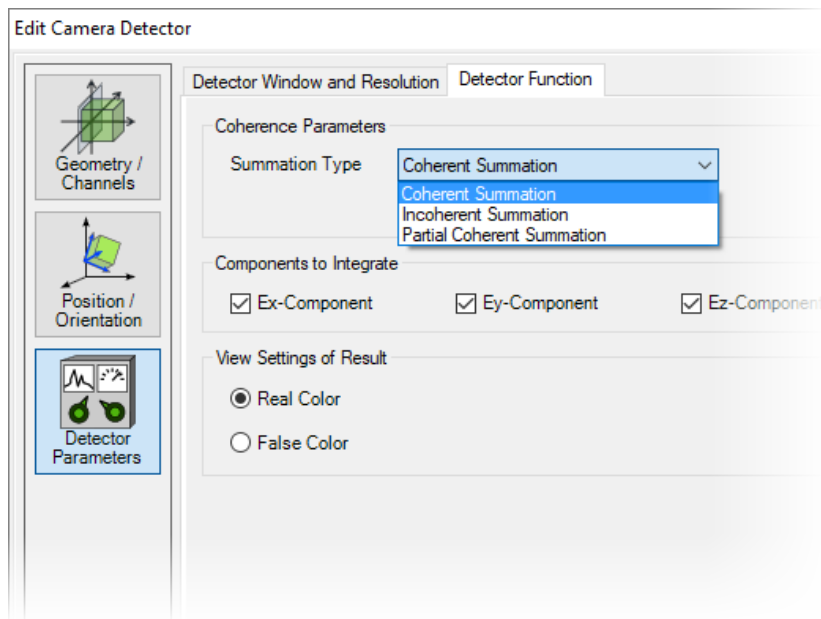
Description

Coherence Parameters determines how the modes shall be handled by the detector, and can be selected amongst coherent, incoherent, or partial coherent (coherence time required) summation.

Components to Integrate controls the vectorial components to be used for calculation. By default E_x, E_y and E_z are selected.

View Settings of Result can be selected between
− *Real Color* showing the intensity distribution as color perception in the lab,
− *False Color* showing the intensity according to pre-defined or customized color lookup tables.

Sample System for Camera Detector

# Result of Ray Tracing System Analyzer
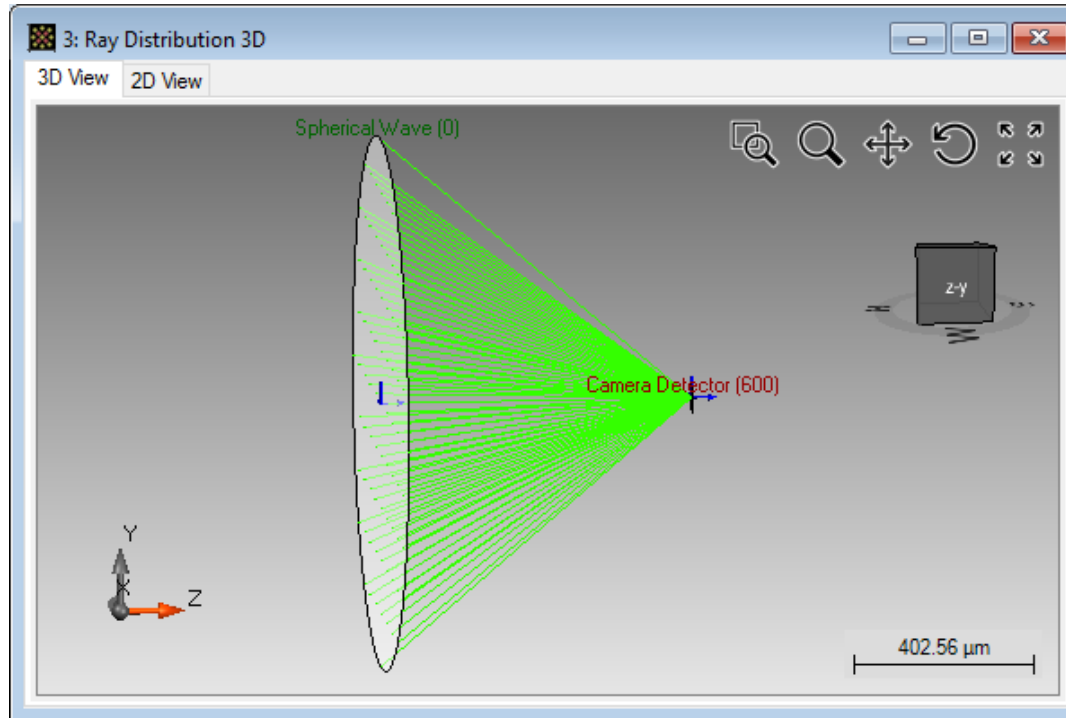
- The sample system contains a spherical wave and a camera detector placed in the focus.

- The NA of the spherical wave is 0.58.

Camera Detector Output for Ray Tracing
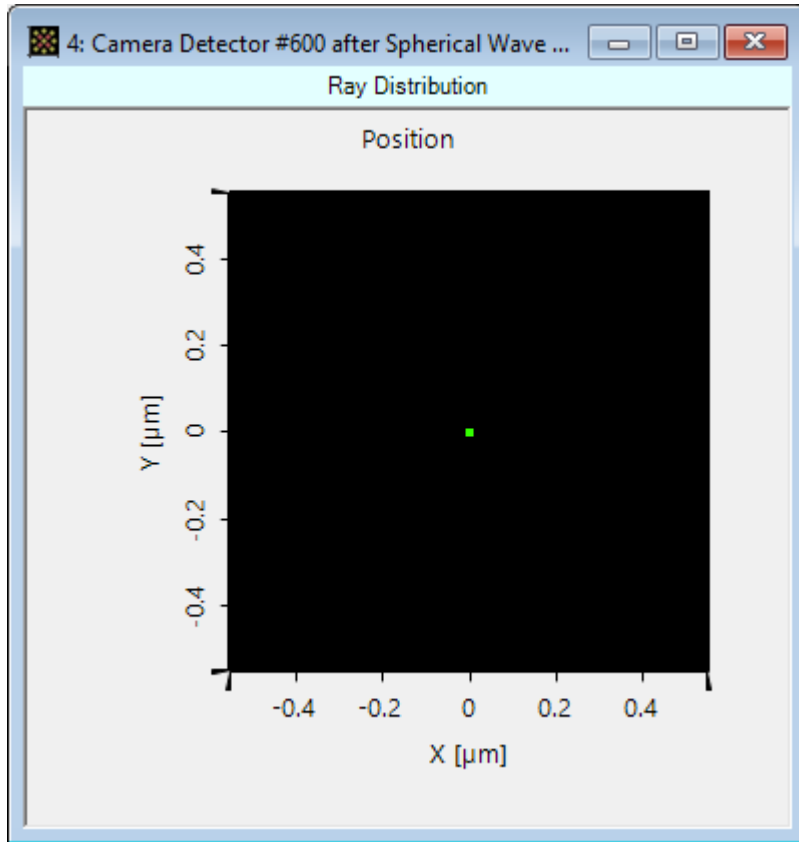
- If the user performs ray tracing analysis of the system which contains a camera detector, a dot diagram showing the rays in the detector plane is shown.

- For the presented example we only one point, because of the perfect converging spherical wave.
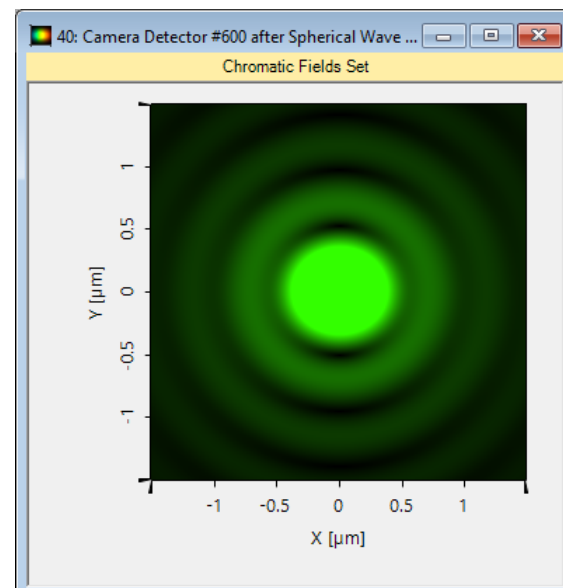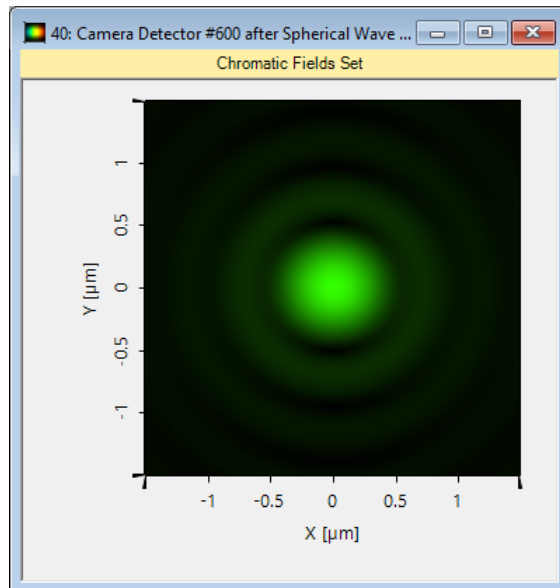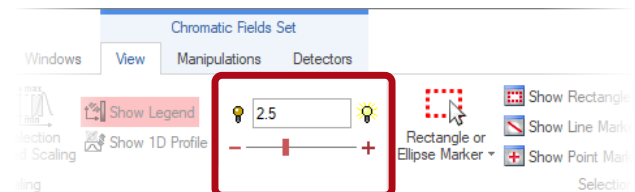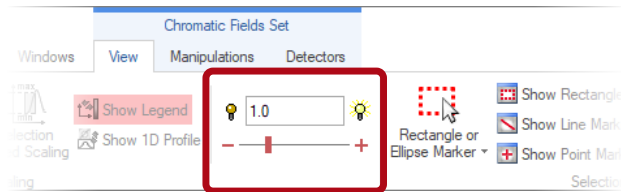
Real Color Output
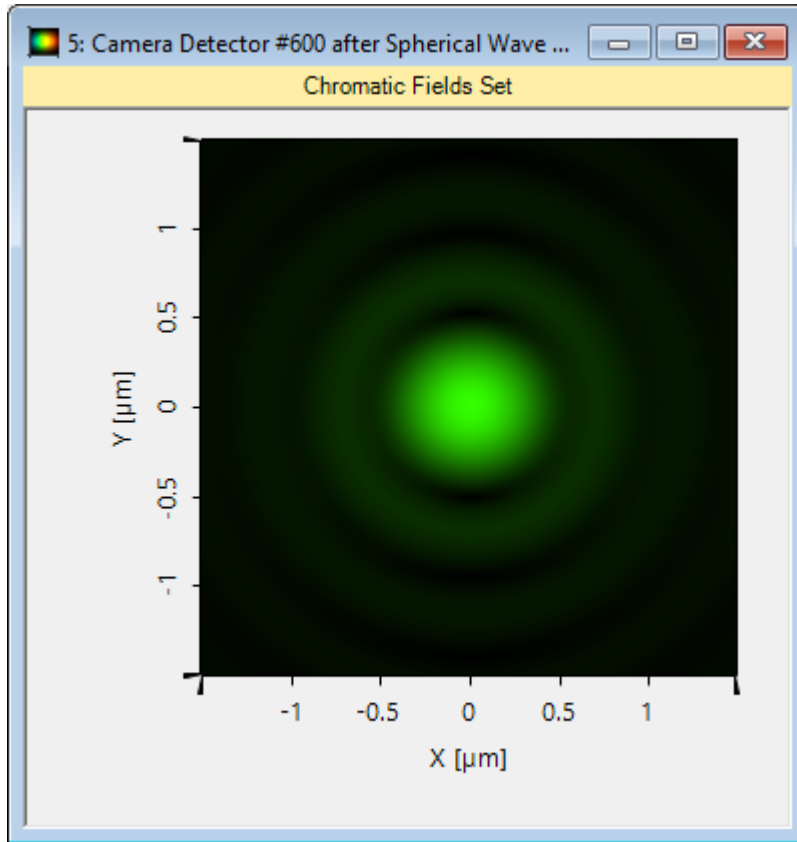
- The picture on the left side shows the real color output of the camera detector.

- In this case we used $E_x^2 + E_y^2 + E_z^2$ for evaluation.

Real Color Output

- The user can change view settings of the document, for example, the brightness in the view ribbon.
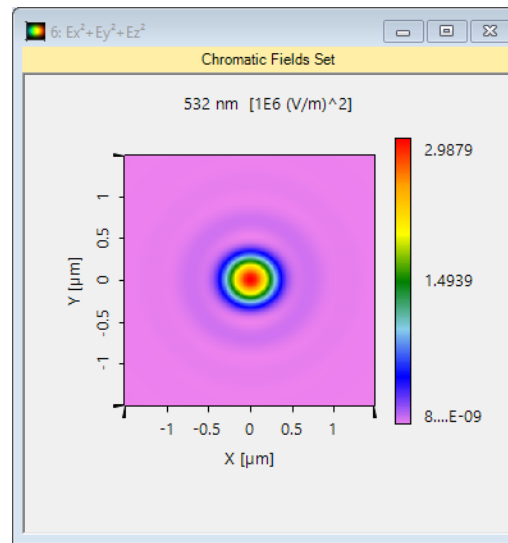
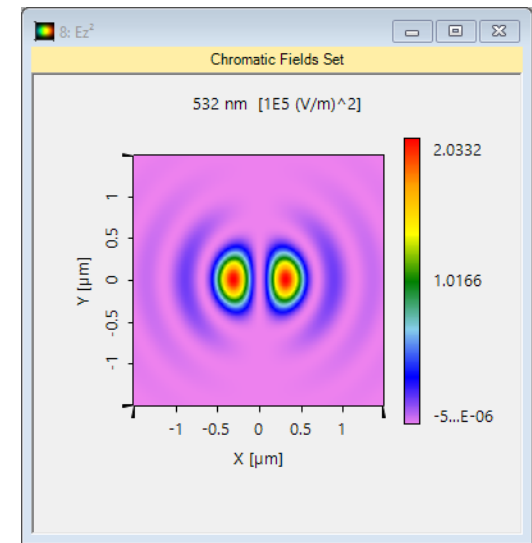# False Color Output (Different Field Components)

- The screenshots below show the output of the camera detector in false color view.
- We calculated the intensity distribution for several combinations of vectorial components.
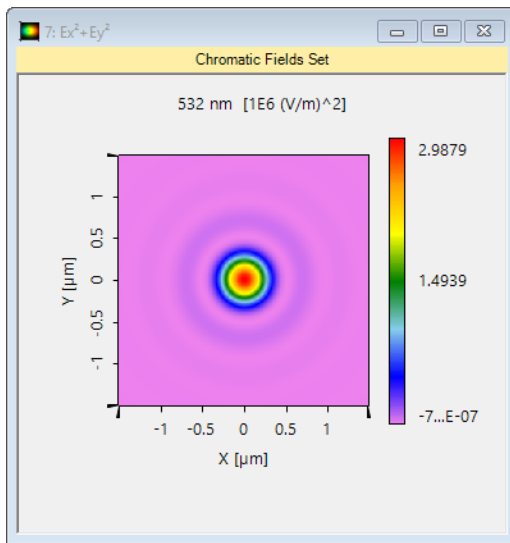
$$E_x{}^2 + E_y{}^2$$

$$E_x{}^2 + E_y{}^2 + E_z{}^2$$

$$E_z{}^2$$

Document & Technical Info

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