

UseCase.0003 (1.0)

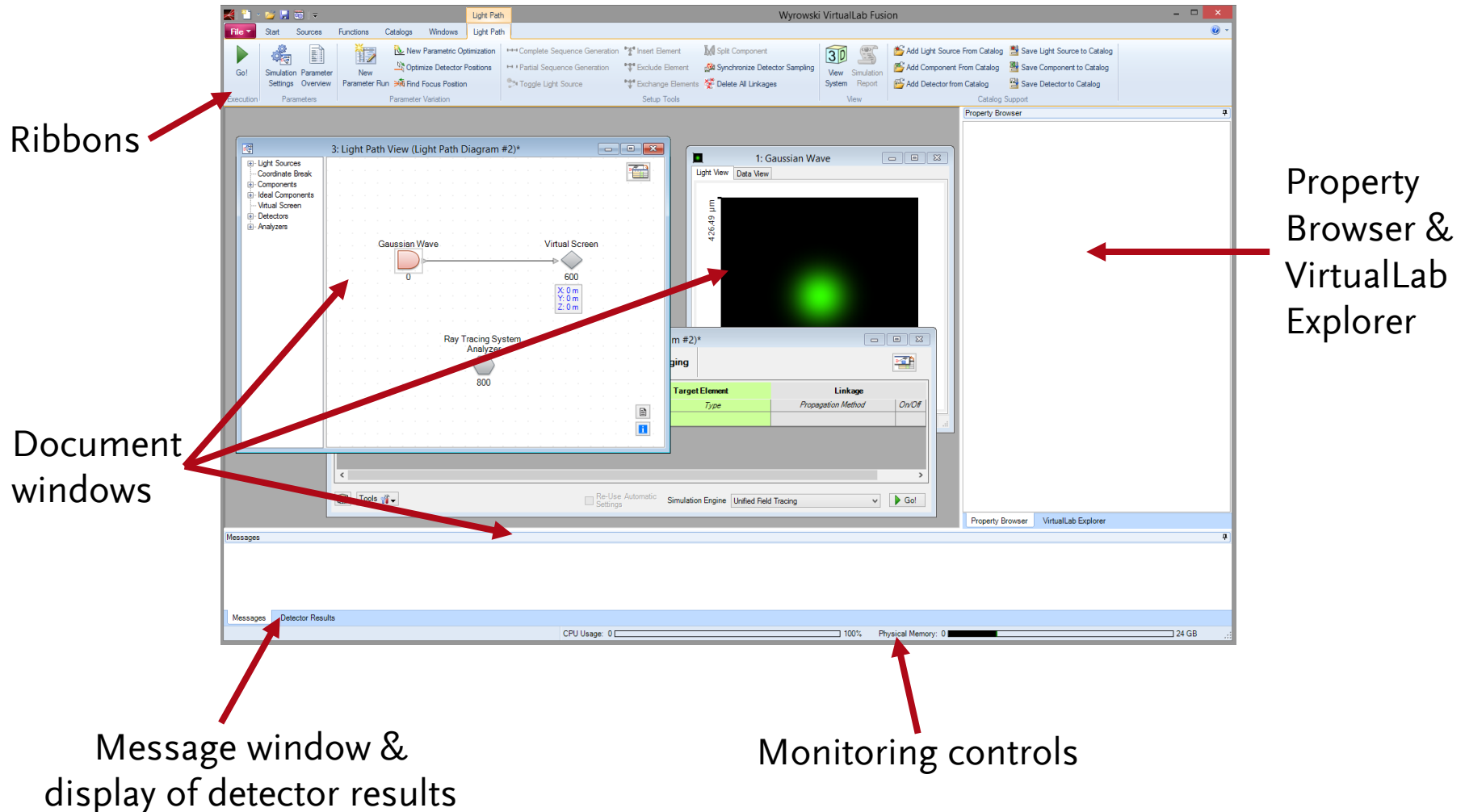
Structure of VirtualLab User Interface

Keywords: document, ribbon, docking windows, message window, detector result, property browser, VirtualLab explorer, document windows, monitoring

Description

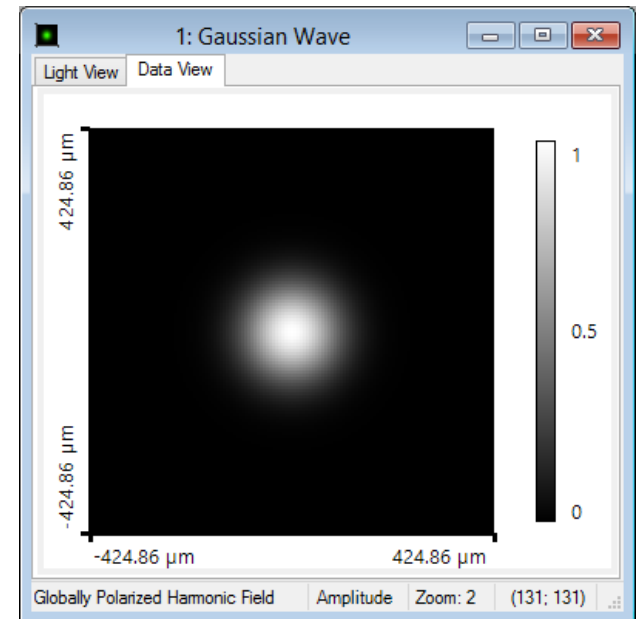
- This use case gives a basic description of the general structure of the user interface of VirtualLab.
- The usage of documents will be shown as well as permanent and document-specific ribbons.
- Also the additional support windows (e.g. property browser) will be mentioned.

General Structure of VirtualLab User Interface



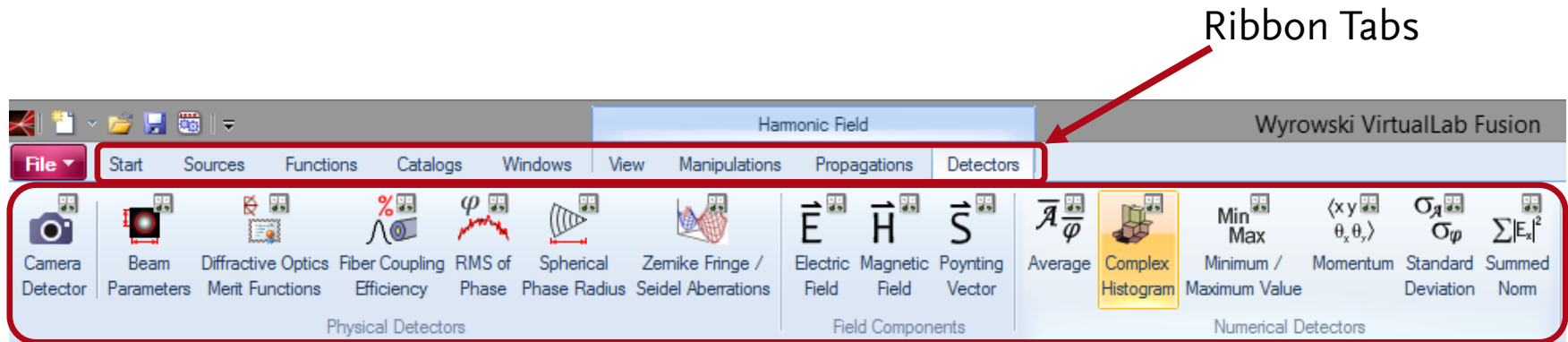
Document Windows

- VirtualLab enables the user to work with a lot of different documents in one instance of the software.
- Typically examples for documents are:
 - Harmonic Fields
 - Data Arrays
 - Light Path Diagrams
- Each document has its own view and allows the manipulation of the object or the evaluation of the document via ribbon items at the top of the main window.



Document window of a harmonic field

Usage of Ribbons



- The ribbons are used to generate VirtualLab documents or to trigger actions (like the simulation of a light path diagram) for the active document.
- The **File** menu allow to save and load files and also to import and export data.
- Also the Global Options can be accessed and edited via the File menu.
- The permanent view of the ribbon can be switched off/on by double clicking on a ribbon tab.

Usage of Ribbons - Permanent

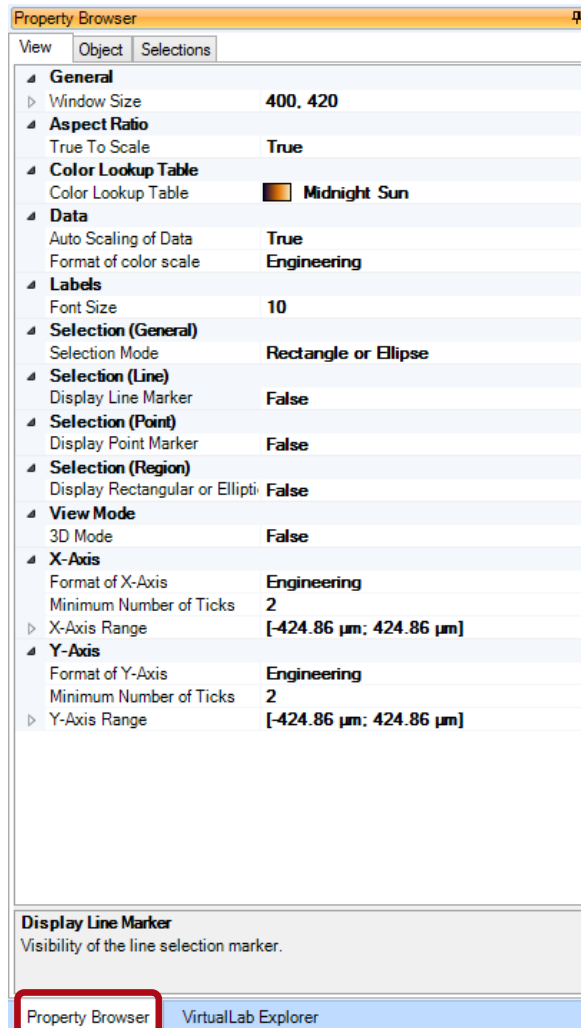
- For the ribbons we differ two different types:
 - Permanent ribbons
 - Document specific ribbons
- Permanent ribbons are always available and have always the same structure.
- The following permanent ribbons are available:
 - Start (access to toolboxes and calculators)
 - Sources (generation of light sources and spectra)
 - Functions (generation of transmission functions and signal region)
 - Catalogs (access to VirtualLab catalogs)
 - Windows (handling of document windows)

Usage of Ribbons – Document Specific

- The content of document specific ribbons depend on the currently active document.
- The document specific ribbons for a harmonic field are (for example):
 - View (settings for view options)
 - Manipulation (different operations to manipulate the harmonic field)
 - Propagation (access to propagation operators to propagate the active harmonic field)
 - Detectors (available detectors for the harmonic field)

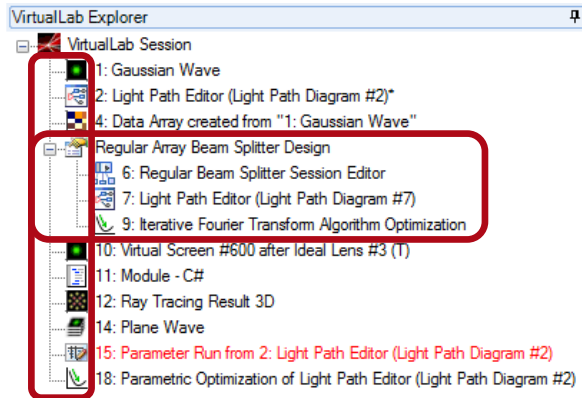


Property Browser



- The property browser is also document specific.
- It allows the access to information of the active document.
- It also enables the user to manipulate certain information of the active document.
- Adjacent the property browser of a data array is shown.
- The view of the property browser can be switched on/off by the shortcut F4.

VirtualLab Explorer



Property Browser

VirtualLab Explorer

- The VirtualLab explorer gives an overview of the opened documents within the main window.
- Each document type has its own icon for better identification.
- By double clicking the selected document will be activated and brought to front.
- For specific tasks sessions are available (e.g. for design within the diffractive optics toolbox). This allows an introduction of a hierarchy of the opened documents.

Message Window

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Messages
[08/18/2015 15:23:16] Simulation of Unified Field Tracing (Light Path #7) finished. (Total Time: 00:00:01.4375114)
[08/18/2015 15:54:40] Refresh of 3D View
[08/18/2015 15:54:42] Simulation of Ray Tracing System Analyzer finished. (Total Time: 00:00:02.5625185)
[08/18/2015 15:54:48] Simulation of Geometric Field Tracing (Light Path #2) finished. (Total Time: 00:00:00.4843620)
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Messages Detector Results
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- Within the **Messages** window the user can read messages generated by VirtualLab.
- Here is typically logged if a simulation is finished (and how long the simulation time was) as well as status messages for export and saving of document.
- Within the **Messages** window also warnings and errors generated by VirtualLab are logged.
- The user can edit (delete/add) text, also via context menu.

Detector Results Window

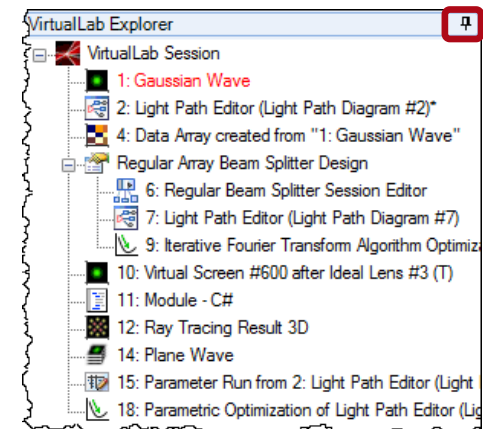
Detector Results				
	Date/Time	Detector	Sub - Detector	Result
8	08/18/2015 16:01:19	Spherical Phase Radius of 1: Gaussian Wave	Radius	+inf m
7	08/18/2015 16:01:15	Fiber Coupling Efficiency of 1: Gaussian Wave	Fiber Coupling Efficiency	97.328 %
6	08/18/2015 16:01:08	Beam Parameters of 1: Gaussian Wave	Radius X	99.994 μm
5			Radius Y	99.994 μm
4			Waist Radius Y	99.994 μm
3			Divergence Angle X	0.097096°
2			Waist Distance Y	0 m
1			M ² -Parameter in y-Direction	1.0007

Messages Detector Results

- The detector result window gives the user an overview of all evaluated detector values.
- The table lists its entries in alternating colors to have a fast access to the detector results of interest.
- By the usage of the context menu, the user can clear the detector results or copy selected detector results (for example into Excel for further processing).

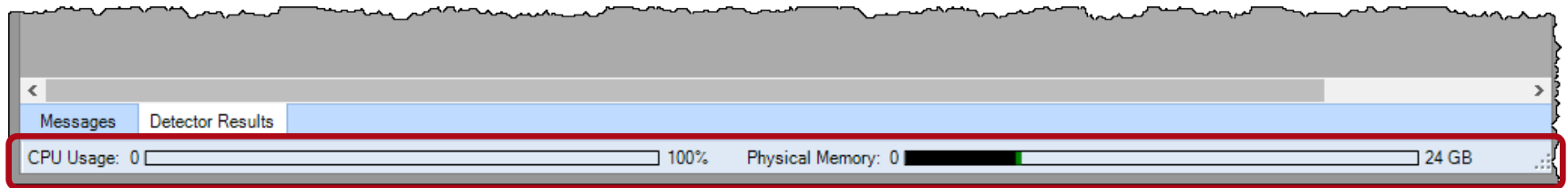
Docking Window Options

- The **Message**, **Detector Result**, **Property Browser** and **VirtualLab Explorer** window can be positioned arbitrarily on the screen. Therefor simply the drag & drop mechanism can be used by clicking on the top of the corresponding window. Such windows are called docking windows.
- It is also possible to combine some of these window in one window. This is done by moving one window (by drag & drop) over another window.
- The auto hide pin on the right top of the windows can be used to specify whether the window shall be hidden by default.



Monitoring Controls

- At the bottom of the VirtualLab main window two bars can be found:



- These bars are used to monitor the CPU usage as well as the physical memory consumption of the computer.
- For the memory consumption there are two colors used to indicate the used memory:
 - Green for the memory consumption of the active VirtualLab instance
 - Black for the memory consumption of all other programs and the operating system

Summary

- VirtualLab allows the usage of many documents in one instance of the simulation software. (Also more than one optical setup can be opened simultaneously.)
- The usage of the ribbon enables the user to find the function he is interested in intuitively and as fast as possible.
- The docking tabs for the property browser, VirtualLab explorer, messages window and detector result window allow a user friendly customization of the optical simulation environment.
- The usage of multiple monitors is supported completely.