

# Tutorial 212.01 Using Essential Macleod Coatings in VirtualLab™

This tutorial demonstrates how a Essential Macleod coating can be applied to the Single Interface component of VirtualLab™.

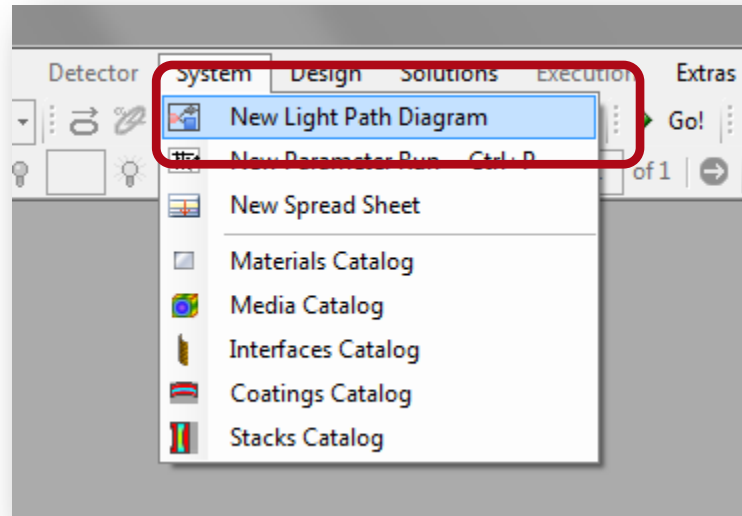
Keywords: Essential Macleod, coatings

Required Toolboxes: Starter Toolbox

Related Tutorials: FS.001



# 1. Generate a new Light Path Diagram

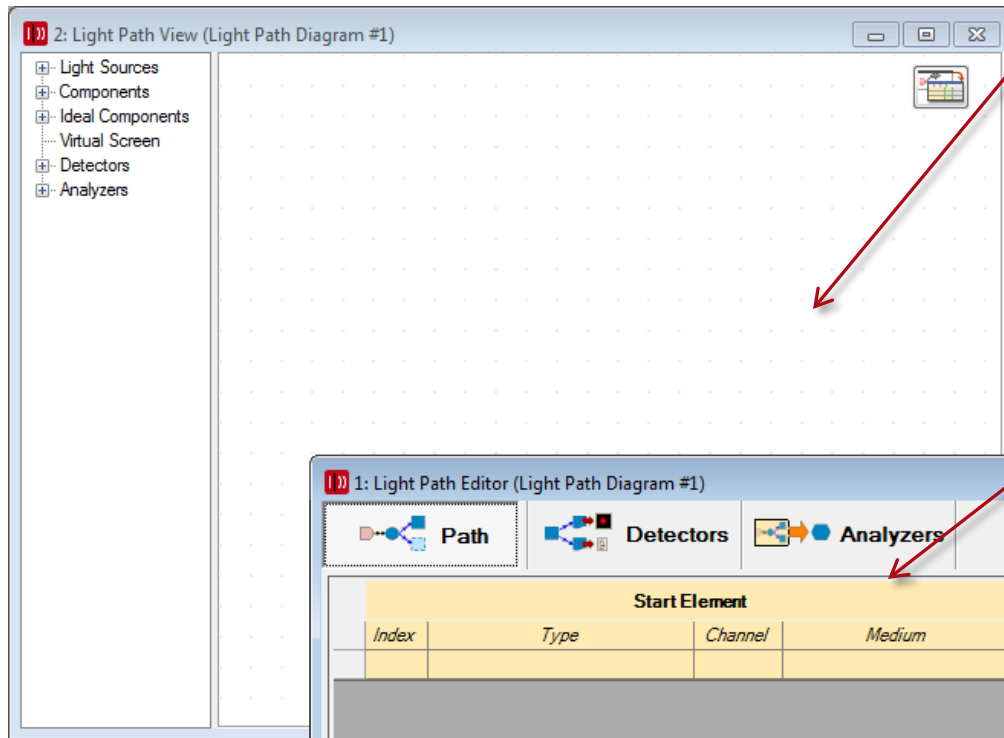


Via the main menu you can create an empty *Light Path Diagram*.

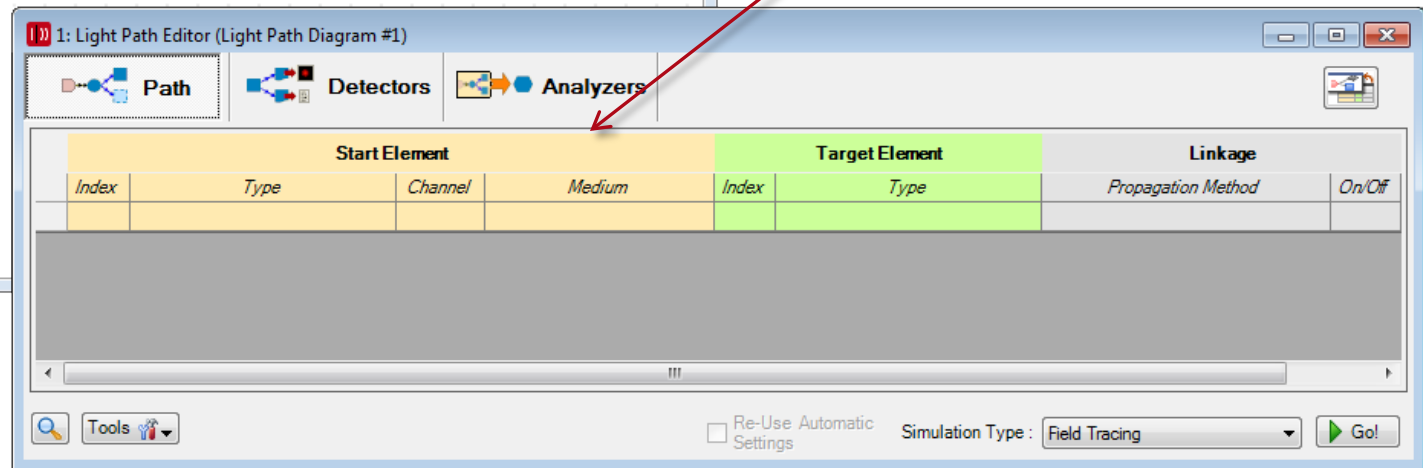
Results in



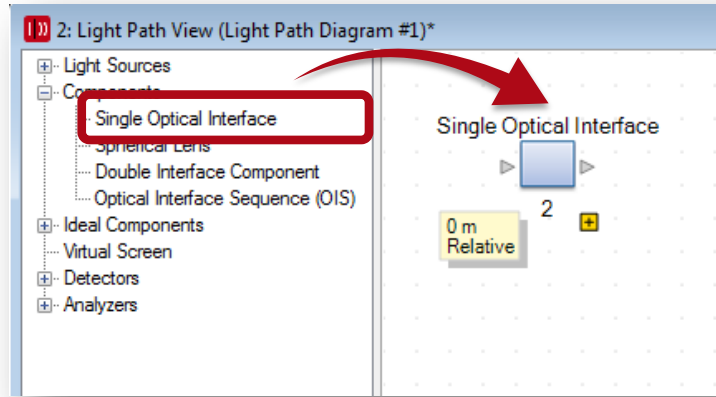
# 1. Generate a new Light Path Diagram



The two parts of the Light Path Diagram will appear:  
*Light Path View* and *Light Path Editor*



## 2. Add Single Optical Interface

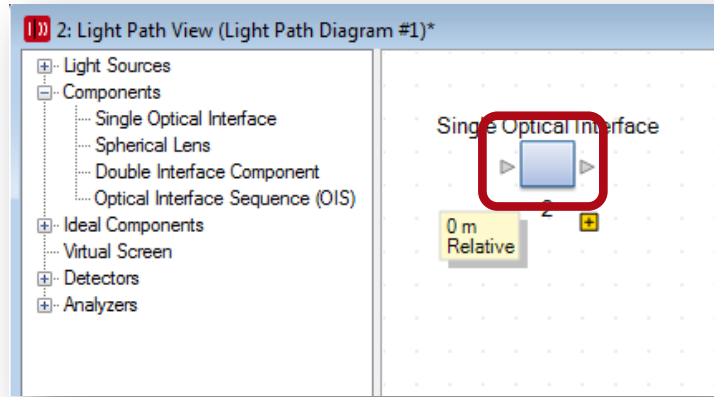


Add a *Single Optical Interface*  
to the *Light Path Diagram*.

Results in



### 3. Open Edit dialog of Component

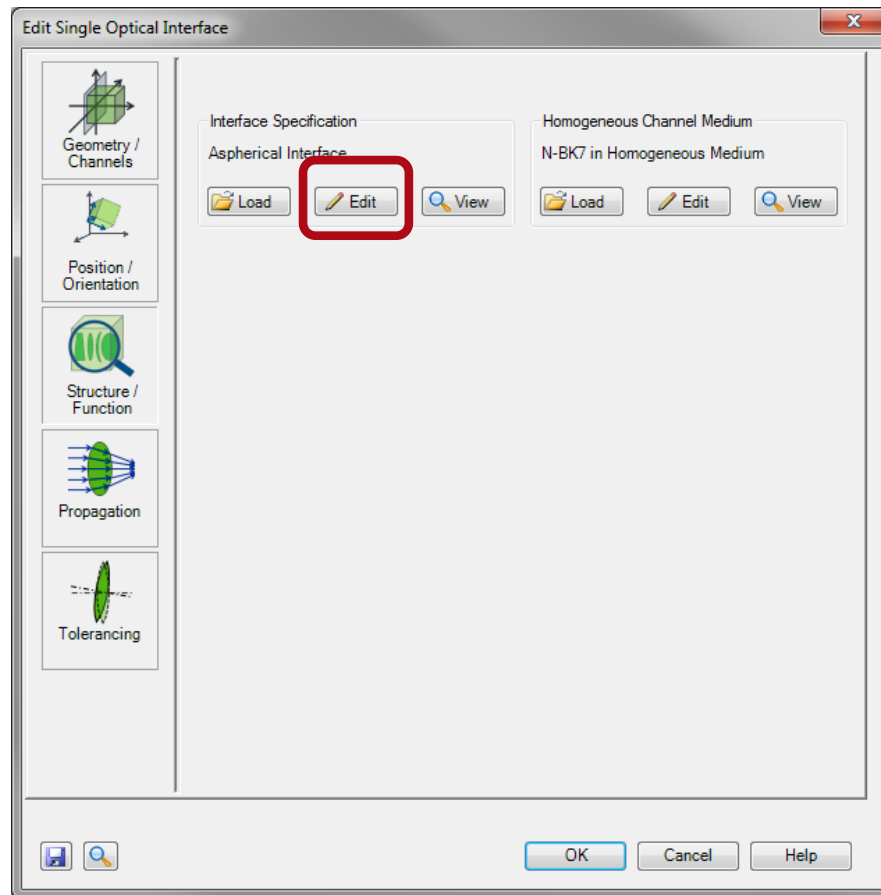


Open the Edit dialog of the component by double-clicking on its symbol.

Results in



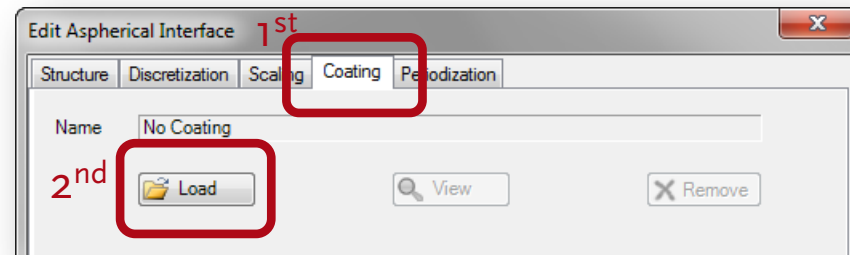
## 4. Open Edit Dialog of Interface



Results in



## 5. Load a Coating from the Catalog

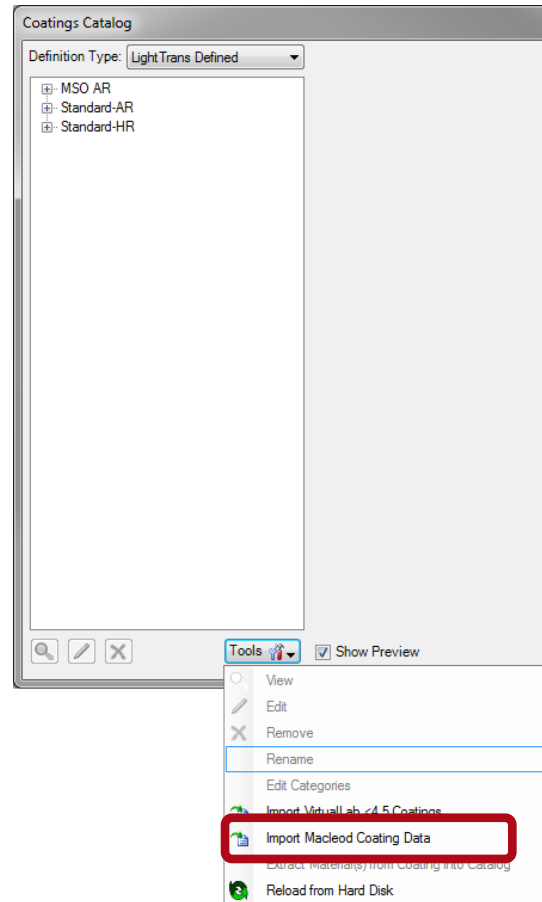


- Go to the *Coating* tab
- *Load* a coating from the coatings catalog

Results in



## 6. Start the Import of Macleod Coatings

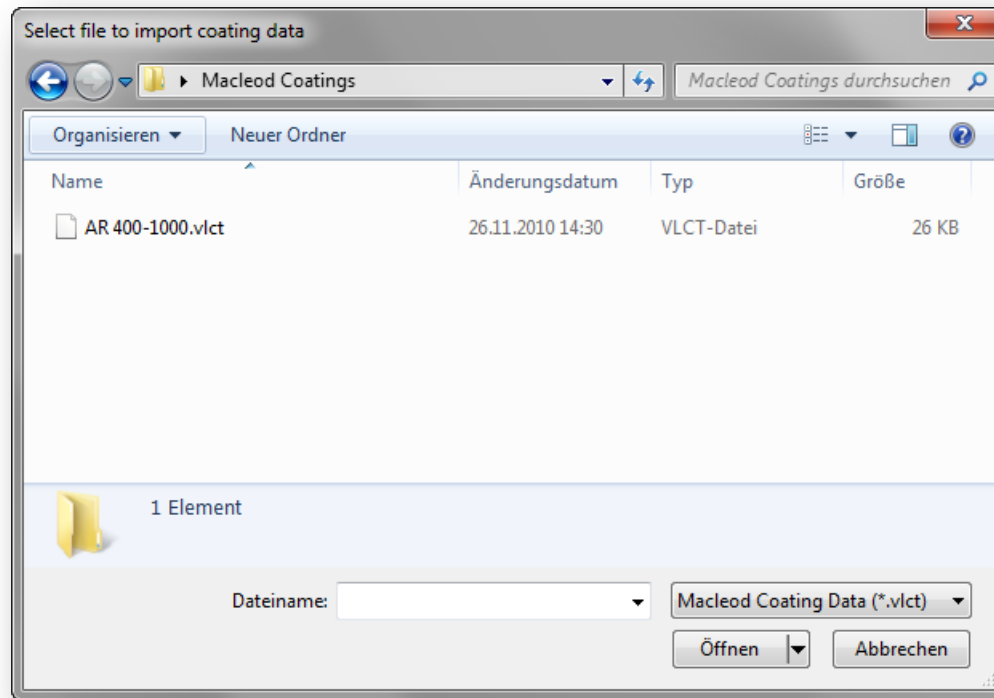


Results in





## 7. Select an Essential Macleod Coating File

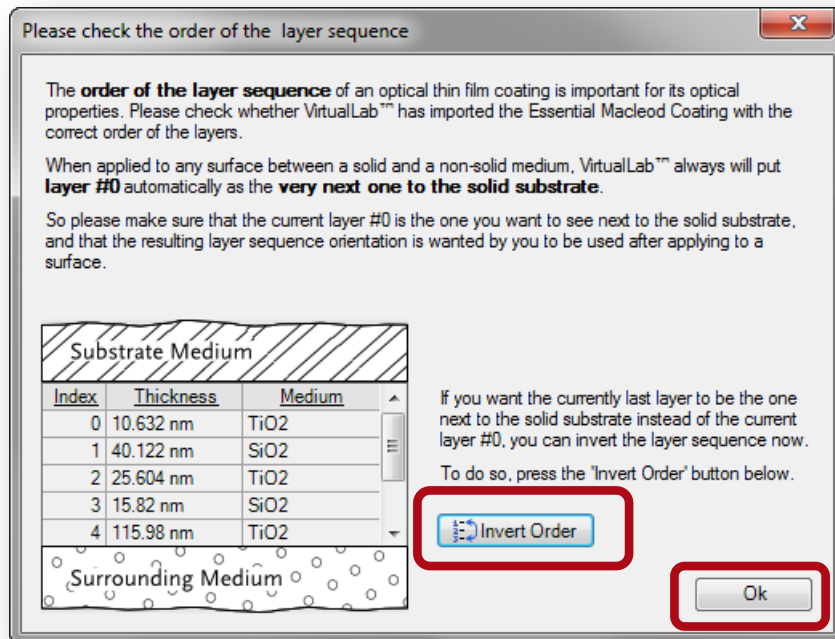


This sample file can be found in the Samples subfolder provided with this tutorial.

Results in



## 8. Dialog for Checking the Layer Sequence

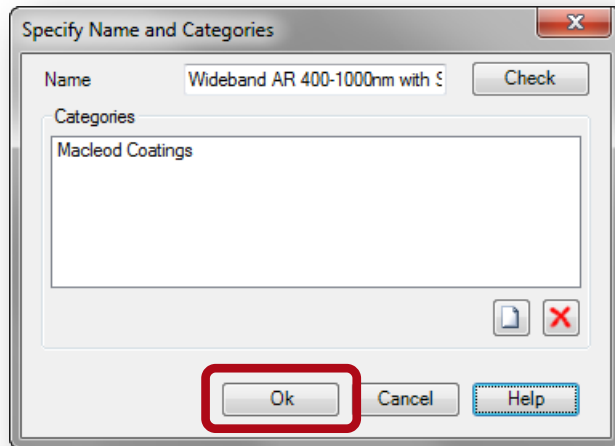




- This dialog is only shown for coatings with a non-symmetrical layer sequence.
- It allows you to invert the order of the layer sequence. This can be necessary as unlike Essential Macleod, VirtualLab™ always puts layer #0 next to the solid substrate.
- Confirm the layer sequence with *Ok*.

Results in



## 9. Specify Names and Categories



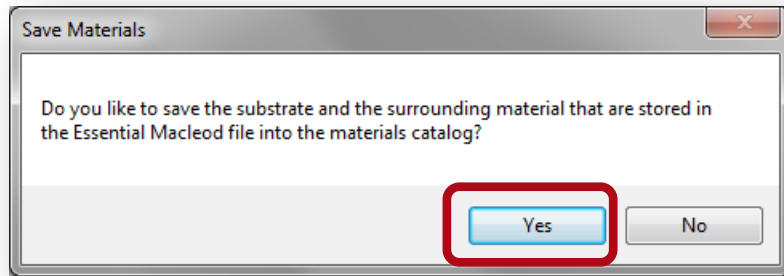
- The name and the categories for the catalog entry can be set up in this dialog.
- You can change the proposed name directly in the corresponding text box.
- You can add categories with the -button and delete them with the -button.
- Confirm your changes with *Ok*.

Results in



# 10a. Import of Additional Materials

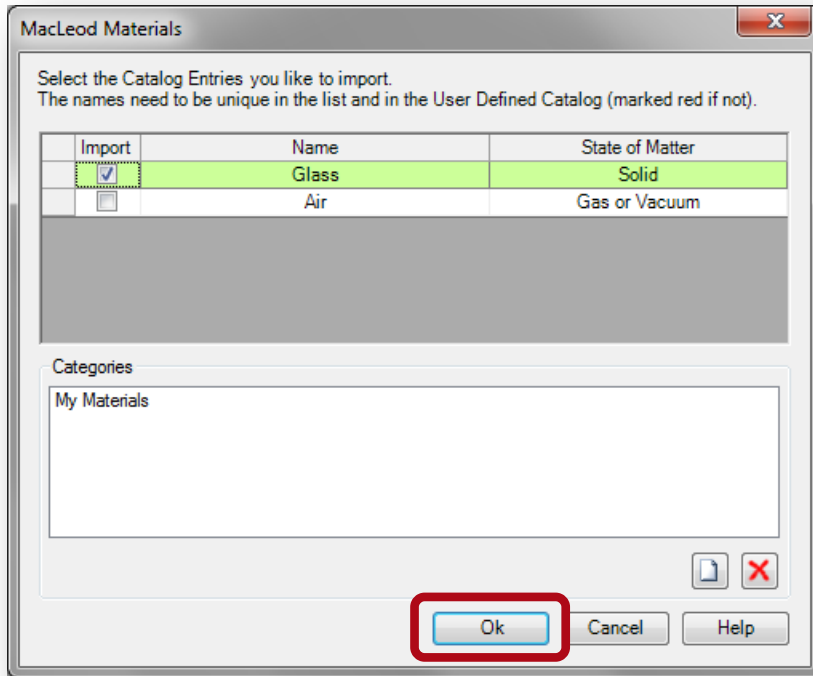
You can save the substrate and the surrounding material which are also included in the Macleod file to the materials catalog.





Results in



# 10b. Import of Additional Materials

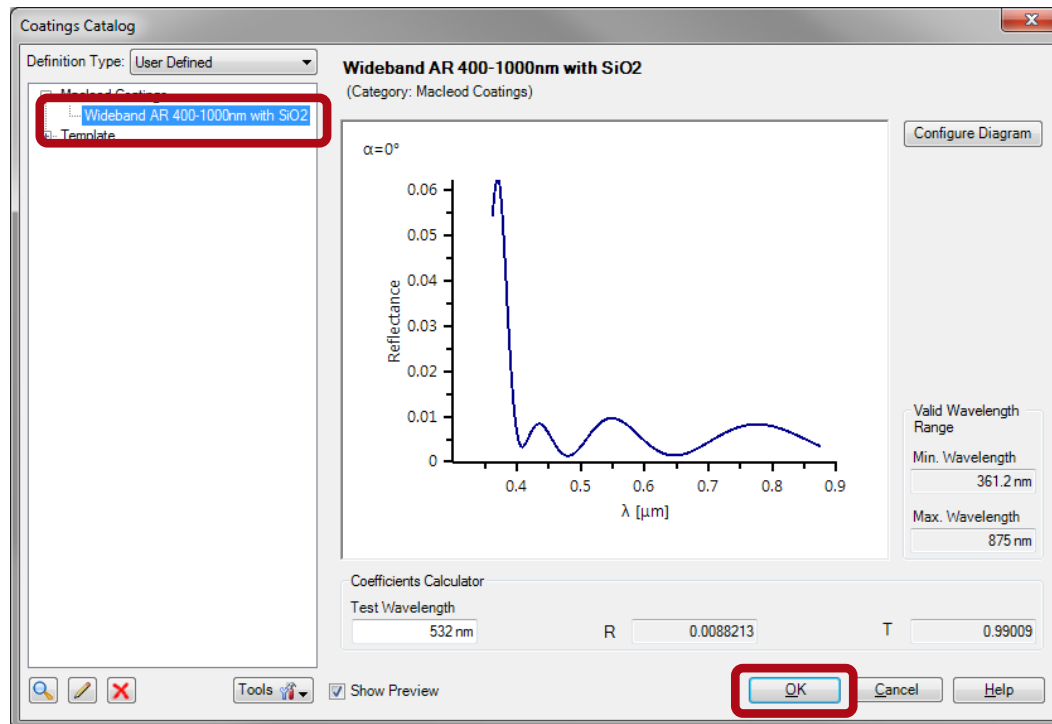


- In the upper part of the dialog you can choose which materials are to be imported, change their names and their states of matter.
- In the lower part you can define the categories the materials are stored into. You can add categories with the -button and delete them with the -button.
- Confirm your changes with *Ok*.

Results in



# 11. Close the Coating Catalog

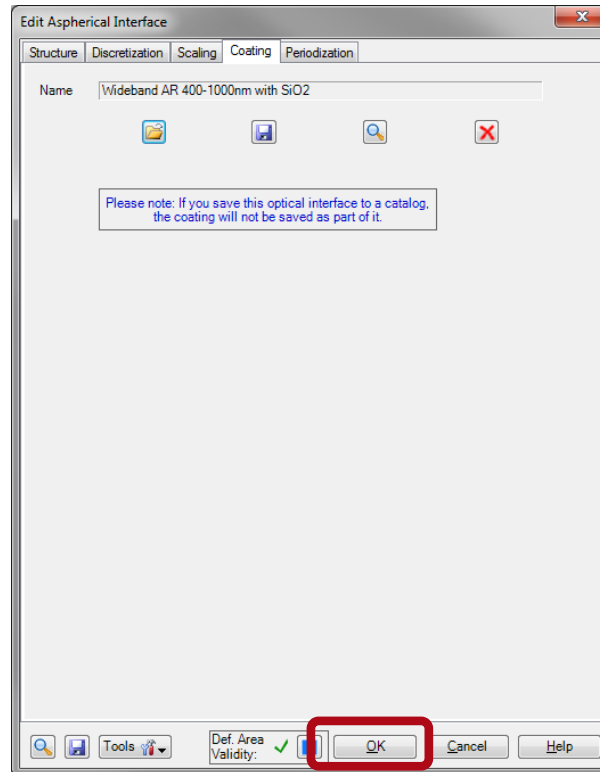


- Select the imported coating.
- Close the catalog with *Ok*.

Results in



# 11. Close the interface dialog

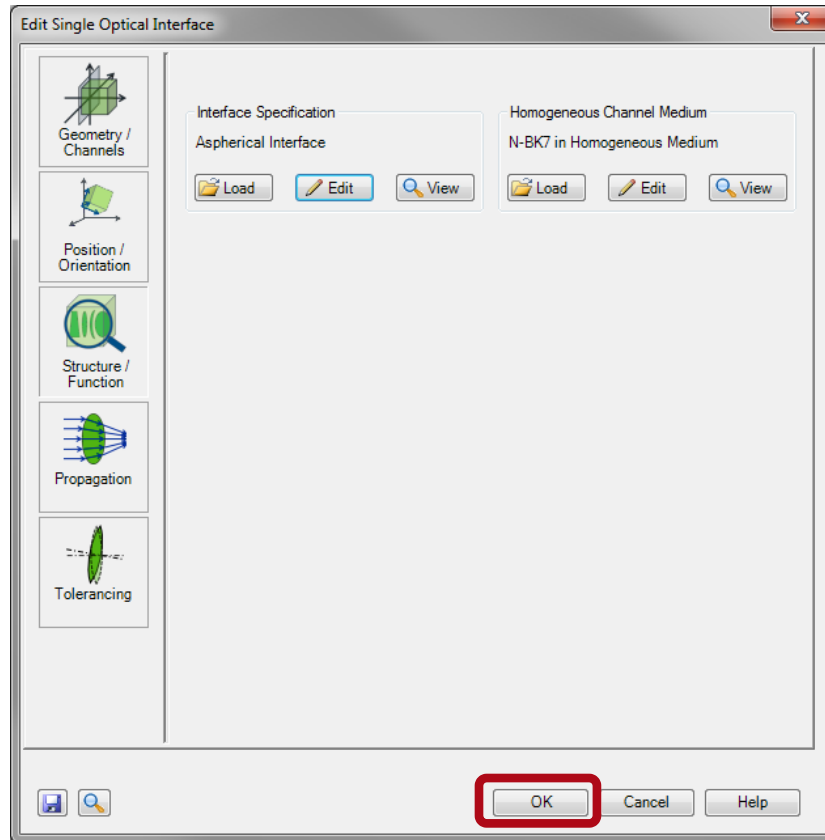


Close the interface dialog with *Ok*.

Results in



## 4. Open Edit Dialog of Interface



Close the component dialog with *Ok*.



# Final Annotations

- You now have a single optical interface component with a Macleod coating. To analyze this component further you must supplement the light path at least with a *Light Source* and a detector or *Virtual Screen*. See Tutorial FS.001 for reference.
- You can also analyze coatings with the *Fresnel Effects Calculator* which can be found in the **Solutions > Calculators** menu.