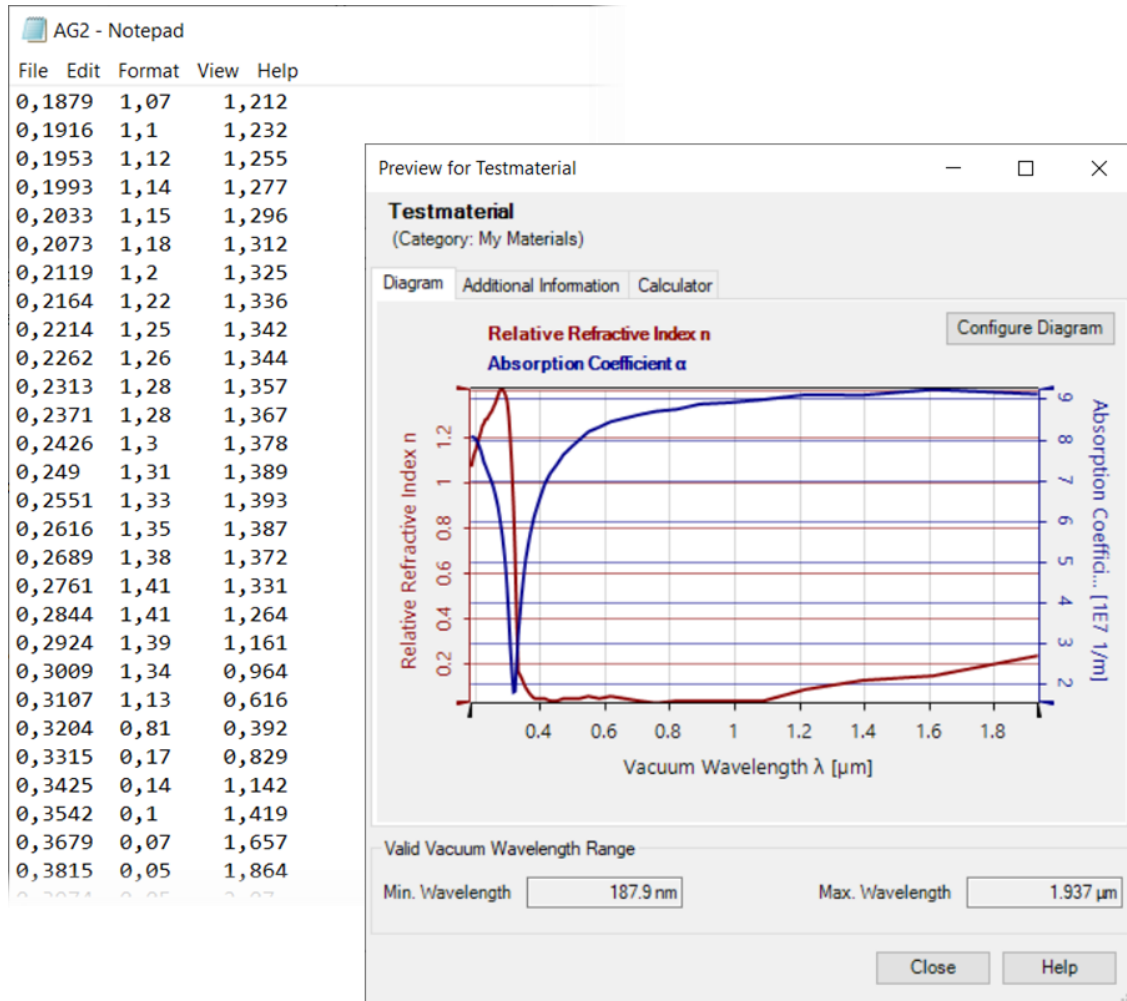


# Import of Material Data into VirtualLab Fusion

# Abstract



The refractive index of optical materials can significantly deviate from literature values when e.g. used in thin layers. Accurate measurements of the actual refractive index however are crucial for assessing material performance. For this purpose, we demonstrate a workflow for importing measured material data into VirtualLab Fusion.

# Material Data Format

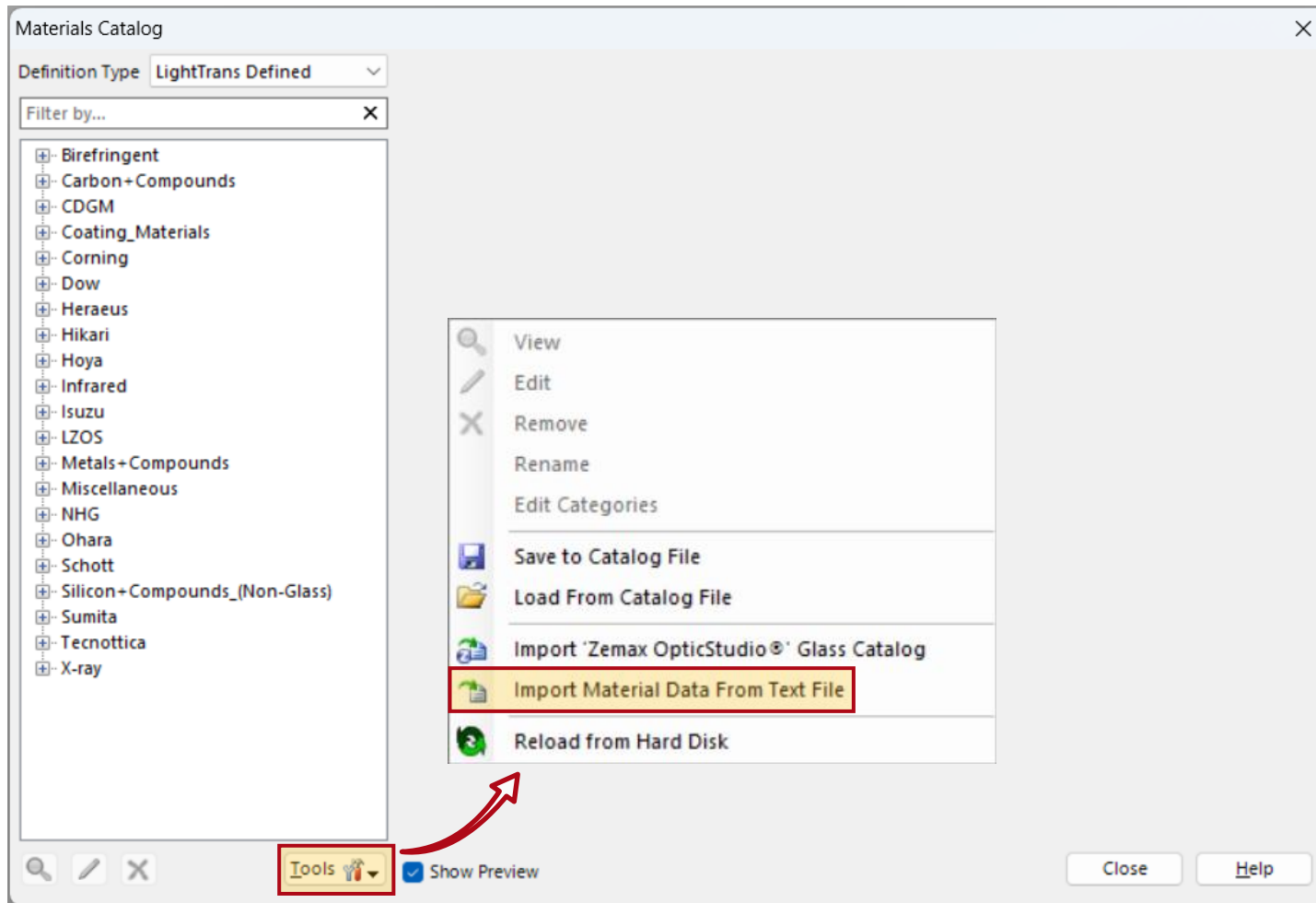


File	Edit	Format	View	Help
0,1879	1,07	1,212		
0,1916	1,1	1,232		
0,1953	1,12	1,255		
0,1993	1,14	1,277		
0,2033	1,15	1,296		
0,2073	1,18	1,312		
0,2119	1,2	1,325		
0,2164	1,22	1,336		
0,2214	1,25	1,342		
0,2262	1,26	1,344		
0,2313	1,28	1,357		
0,2371	1,2	1,367		
0,2426	1,3	1,378		
0,249	1,31	1,389		
0,2551	1,33	1,393		
0,2616	1,35	1,387		
0,2689	1,38	1,372		
0,2761	1,41	1,331		
0,2844	1,41	1,264		
0,2924	1,39	1,161		
0,3009	1,34	0,964		
0,3107	1,13	0,616		
0,3204	0,81	0,392		
0,3315	0,17	0,829		

For the import wizard, material data could be written using the format shown on the left and include the following information:

- (1) ascending wavelength  $\lambda$
- (2) refractive index  $n$
- (3) absorption coefficient  $\kappa$

# Import via Wizard



In the *Materials Catalog*, open the import wizard and select the text file containing the material data.

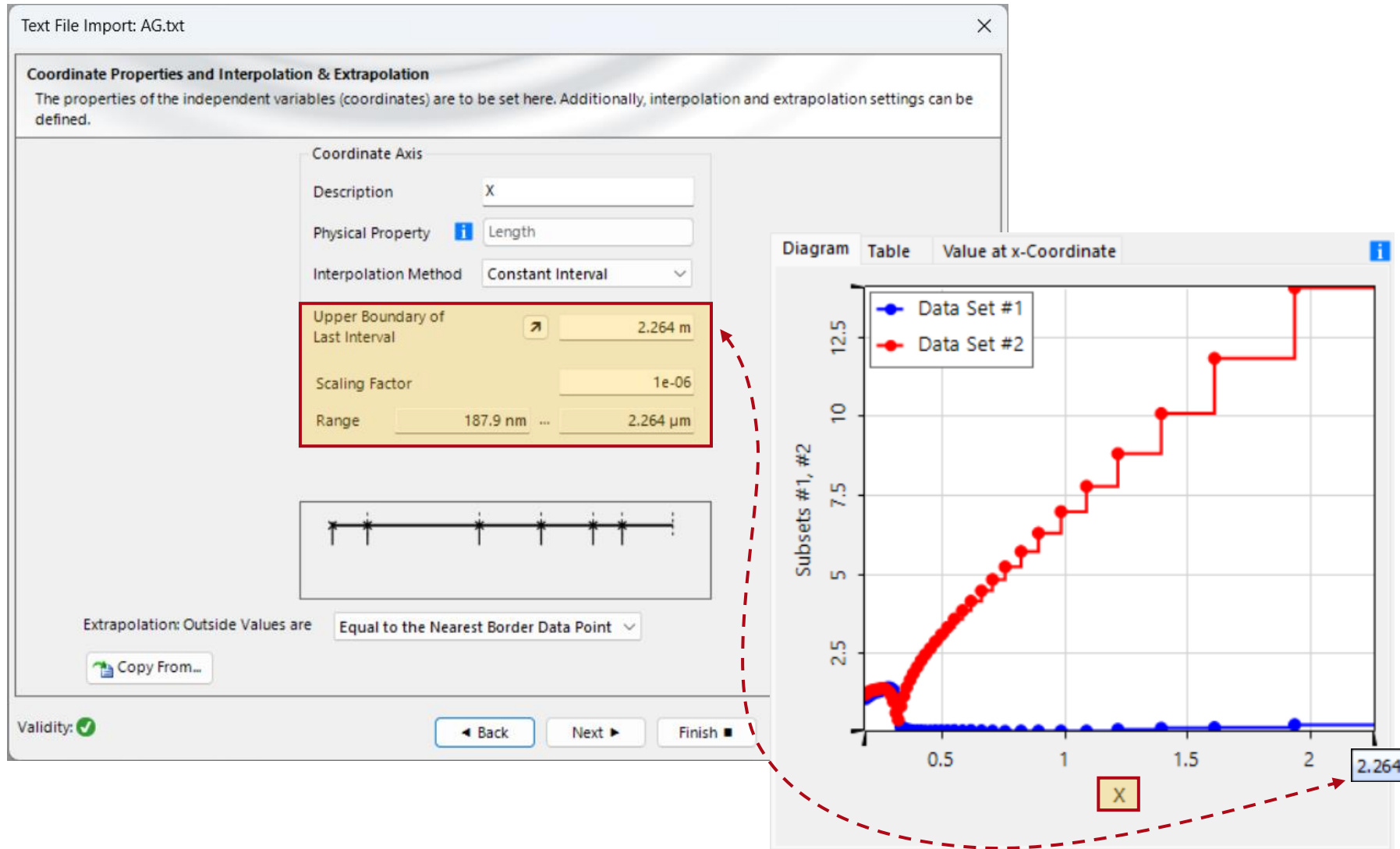
# Interpret Text Strings as Numbers

The image shows a Notepad window with a list of numbers and a 'Text File Import: AG.txt' dialog box. The dialog box is used for parsing text into numerical values. It includes sections for 'Parsing of Text', 'Relevant Content', 'Handling of Rows and Columns', and 'Handling of Numbers'. The 'Relevant Content' section shows 'Read Rows' from 'First Row' to 'Last Row' and 'Ignore First' 0 characters. The 'Handling of Rows and Columns' section shows 'Skip Lines Starting with' #, 'Column Separator' as 'Any Whitespace', and 'Contains Complex Values' unchecked. The 'Handling of Numbers' section shows 'Decimal Separator' as 'Comma' and 'Digit Group Delimiter' as '(None)'. A preview table shows the data being imported, with columns separated by whitespace and commas as decimal separators. The 'Validity' indicator is green, and navigation buttons 'Back', 'Next', 'Finish', 'Cancel', and 'Help' are at the bottom.

Row	Col 1	Col 2	Col 3	Col 4
1	0,1879	1,07	1,212	
2	0,1916	1,1	1,232	
3	0,1953	1,12	1,255	
4	0,1993	1,14	1,277	
5	0,2033	1,15	1,296	
6	0,2073	1,18	1,312	
7	0,2119	1,2	1,325	
8	0,2164	1,22	1,336	
9	0,2214	1,25	1,342	
10	0,2262	1,26	1,344	
11	0,2313	1,28	1,357	
12	0,2371	1,28	1,367	
13	0,2426	1,3	1,378	
14	0,249	1,31	1,389	
15	0,2551	1,33	1,393	
16	0,2616	1,35	1,387	
17	0,2689	1,38	1,372	
18	0,2761	1,41	1,331	
19	0,2844	1,41	1,264	
20	0,2924	1,39	1,161	
21	0,3009	1,34	0,964	

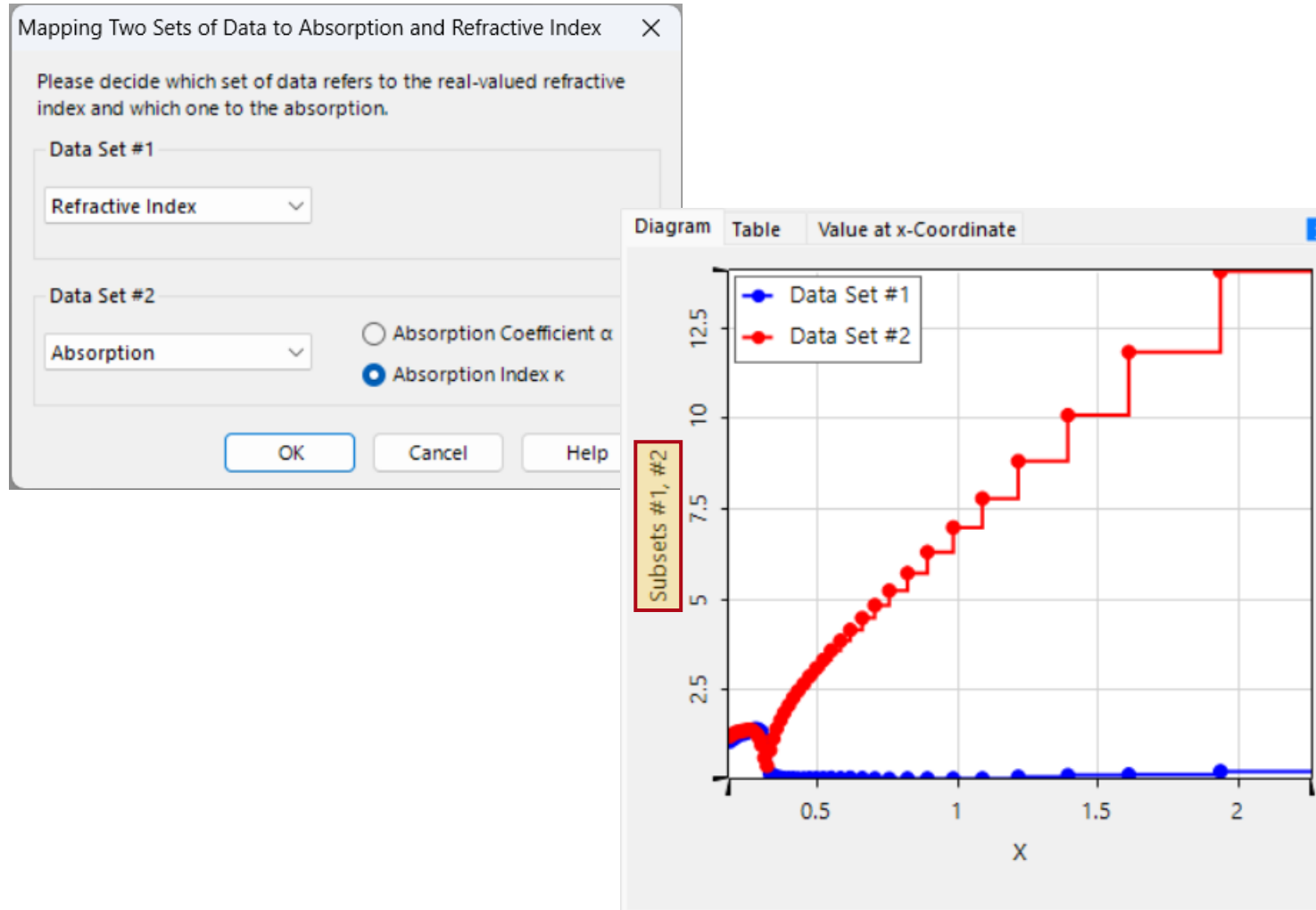
To interpret text strings as numbers, it is necessary to provide the basic information from the text file. In this example, the *Decimal Separator* is a comma, the *Column Separator* is whitespace, and all numbers are real values, so the option *Contains Complex Values* should be left unchecked.

# Coordinate Setting



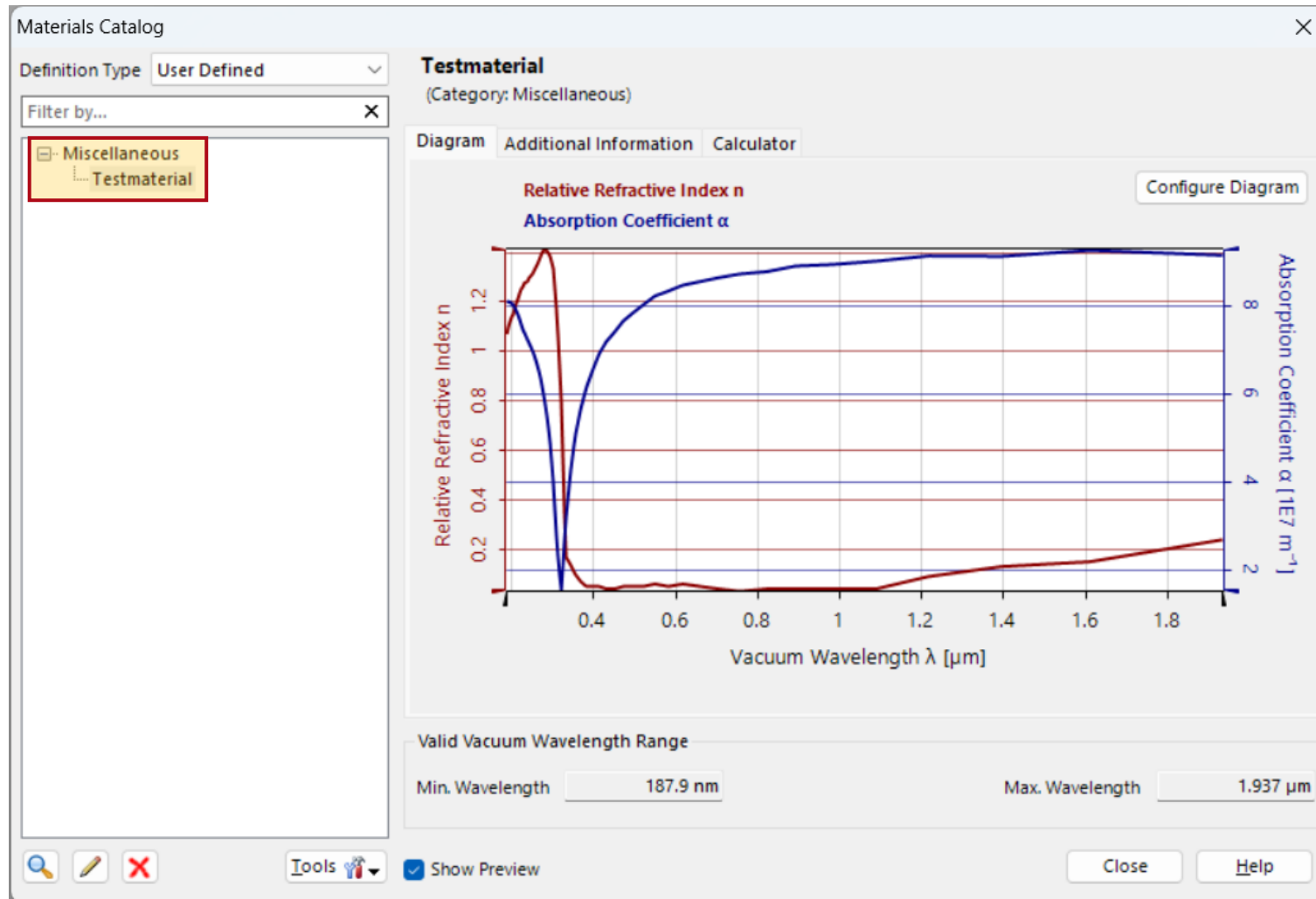
For this non-equidistant 1D data array, the maximum value of the x-coordinate is automatically determined, with the default length unit being meters. To ensure that the x-axis values correspond to the wavelength of light, you need to specify the correct *Scaling Factor*.

# Subset Setting



In the final step of the import wizard, you can specify the properties of the imported subsets.

# View in VirtualLab Fusion



Find the imported material in the *Materials Catalog*, where you can view or further edit its properties.



# Document Information

title	Import of Material Data into VirtualLab Fusion
document code	SWF.0007
document version	2.1
required packages	-
software version	2024.1 (Build 1.132)
category	Feature Use Case
further reading	<ul style="list-style-type: none"><li>- <a href="#">Import of Images into VirtualLab Fusion</a></li><li>- <a href="#">Import Lens into VirtualLab Fusion</a></li></ul>