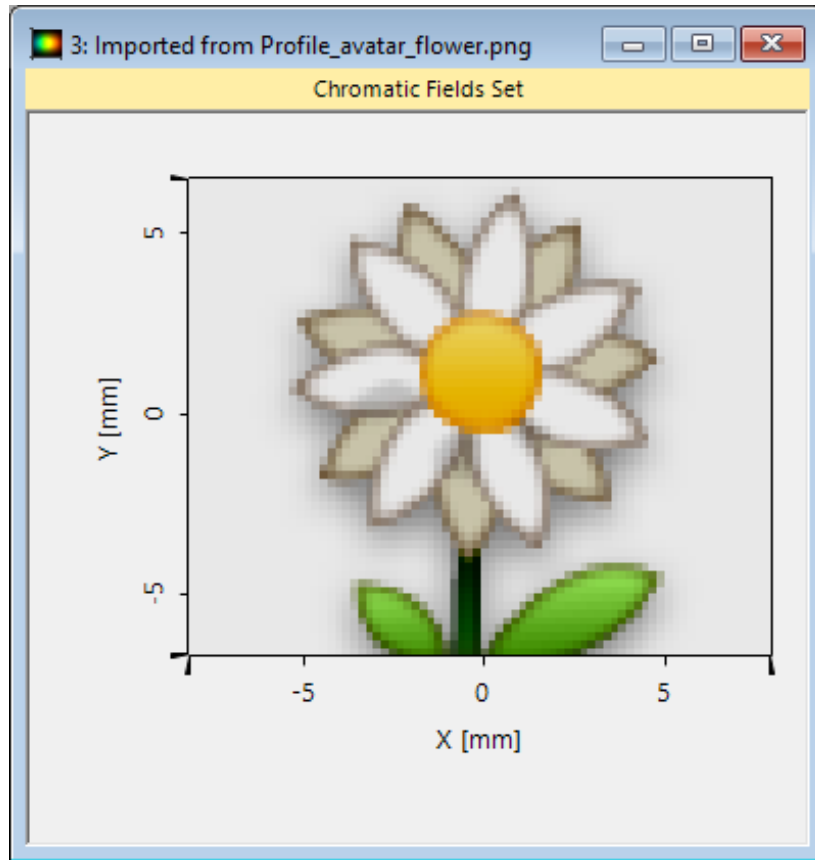


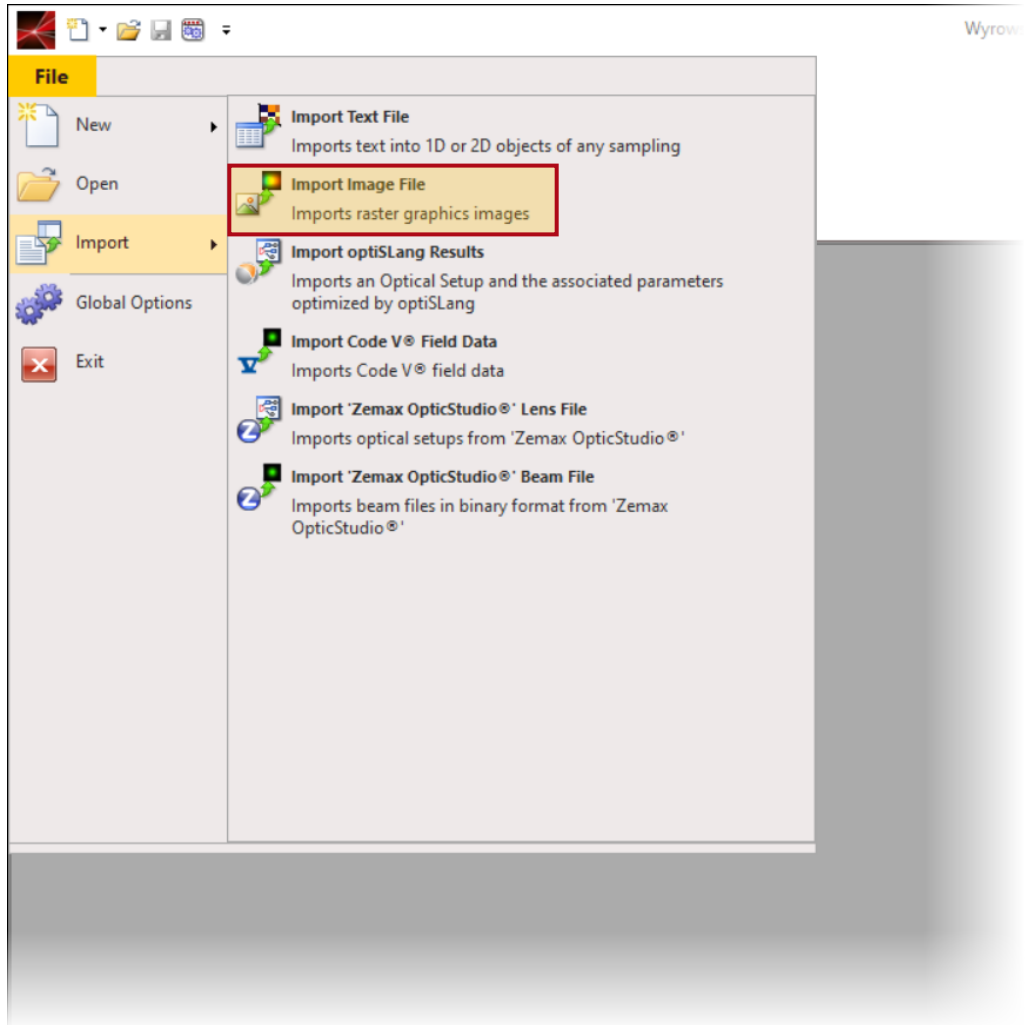
Import Images into VirtualLab Fusion

Abstract



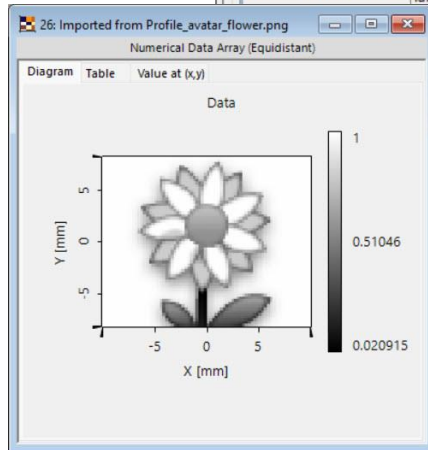
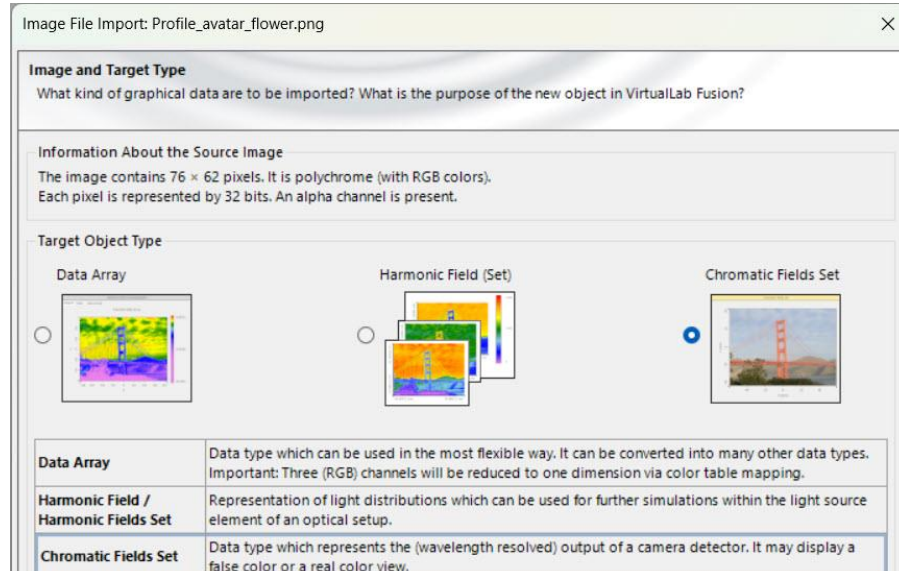
Many important physical information, such as height distributions of microstructures or the field information in panel sources, are saved in form of images. Hence, to make these information available in VirtualLab Fusion, we want to demonstrate the import tool for image files, such as PNG, JPG or BMP.

Import of Images

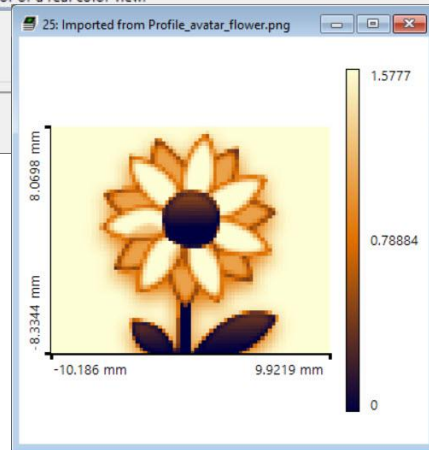


You can access the import tool by navigating to File > Import > Import Image File. It supports various custom image data formats like bmp, jpg, or png.

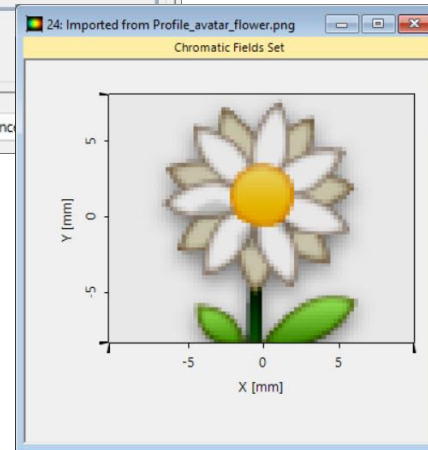
Import Image Files



Data Array



Harmonic Field Set



Chromatic Field Set

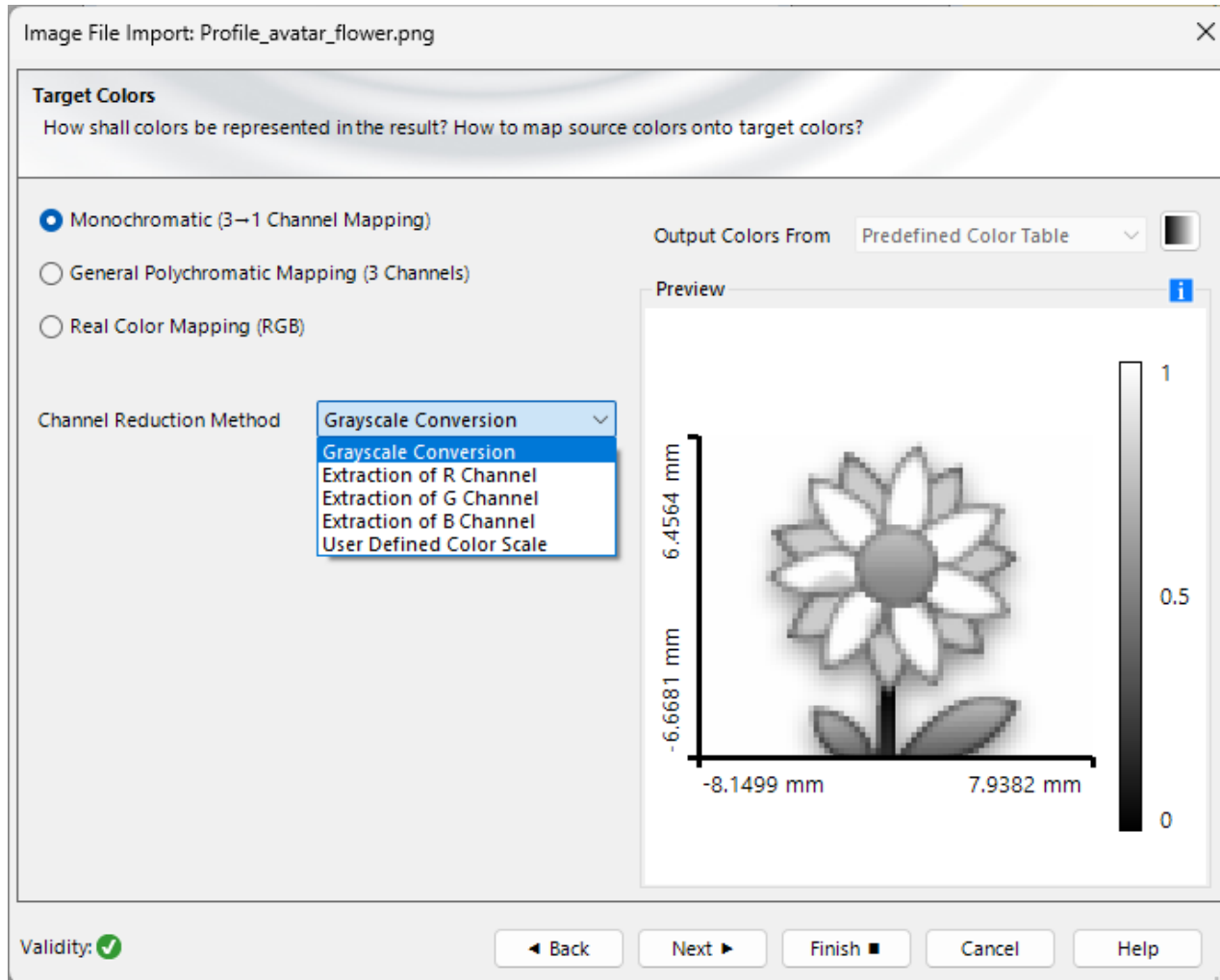
VirtualLab Fusion can import images into three primary data types:

1.Data Arrays: This versatile data type can be converted into various formats and is highly flexible. Notably, RGB channels are condensed into one dimension through color table mapping.

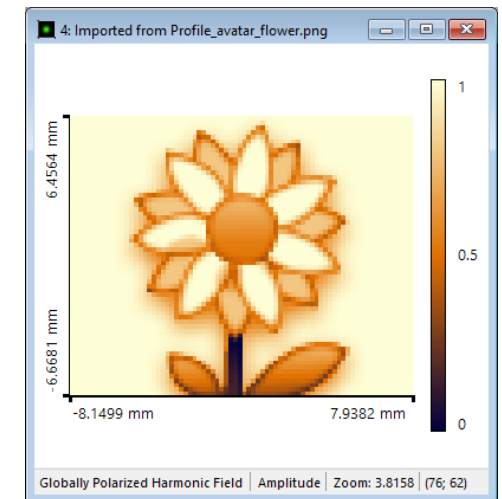
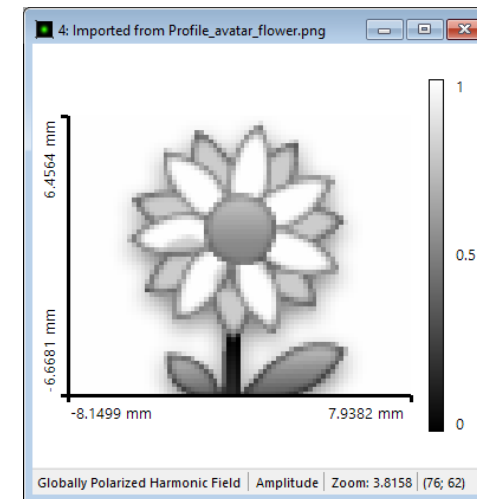
2.Harmonic Field (Set): This type represents light distribution in terms of amplitude and includes additional tools for propagation and detection within the main window.

3.Chromatic Field Set: Representing radiant energy density, this data type enables the depiction of light in real or false color, akin to the capabilities of the *Camera Detector* or corresponding *Universal Detector Add-ons*.

Target Colors – Monochromatic Conversion

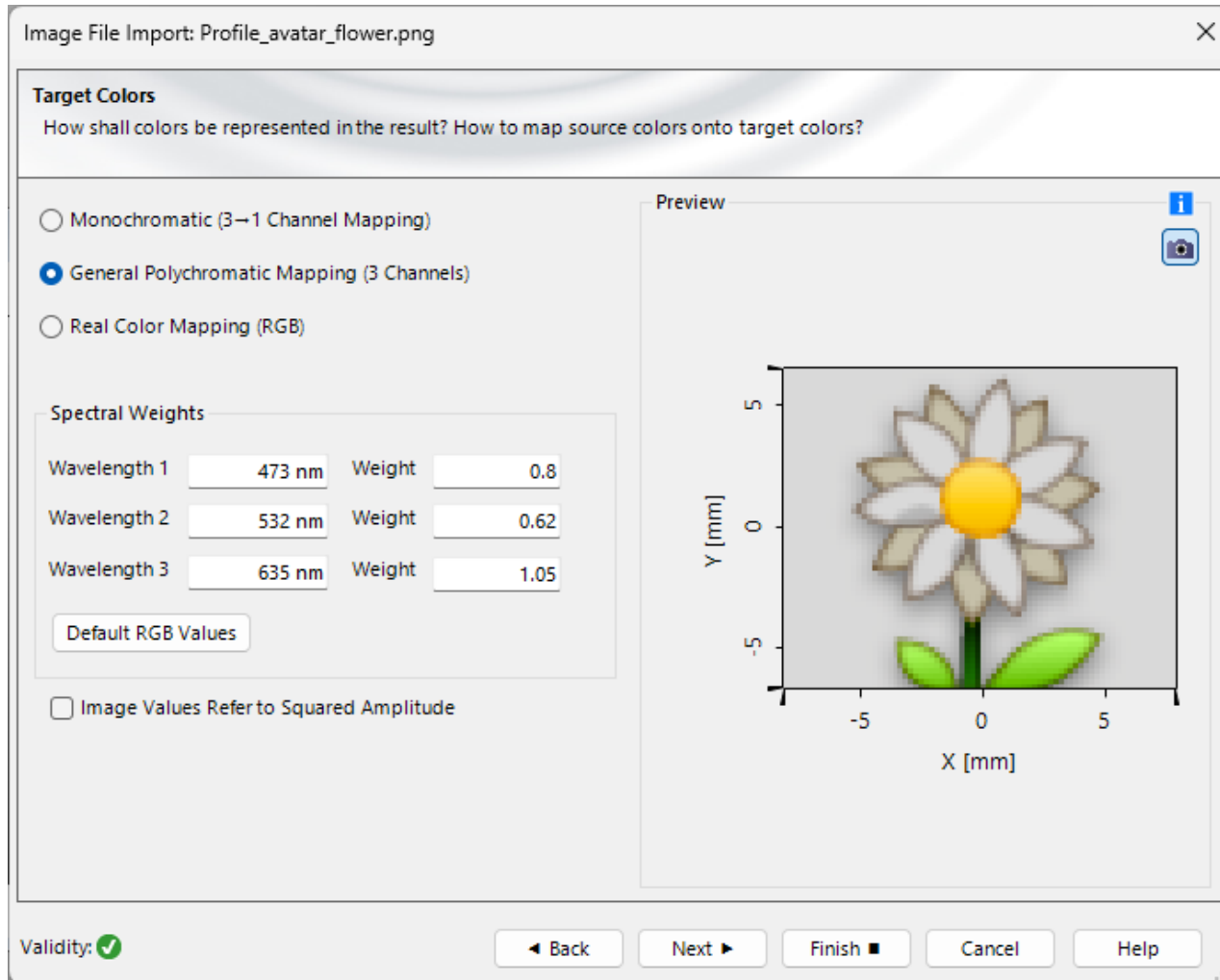


Monochromatic mode transforms the image into a single data subset. When applied to an image with R/G/B channels, users can choose to extract a specific channel, employ a custom color scale, or perform a *Grayscale* conversion.

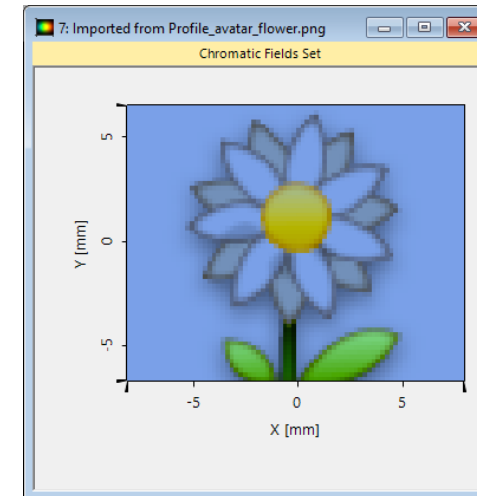


monochromatic results with different color schemes

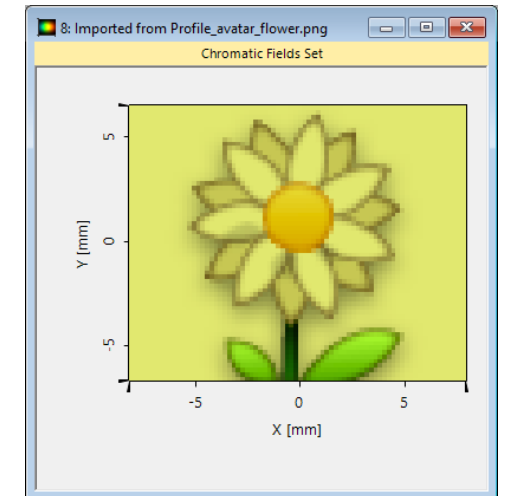
Target Colors – General Polychromatic Mapping



For *General Polychromatic Mapping* (applicable to both *Harmonic Field Sets* and *Chromatic Field Sets*), users can define the wavelengths and weights for the three channels, enabling the creation of arbitrary false color representations.

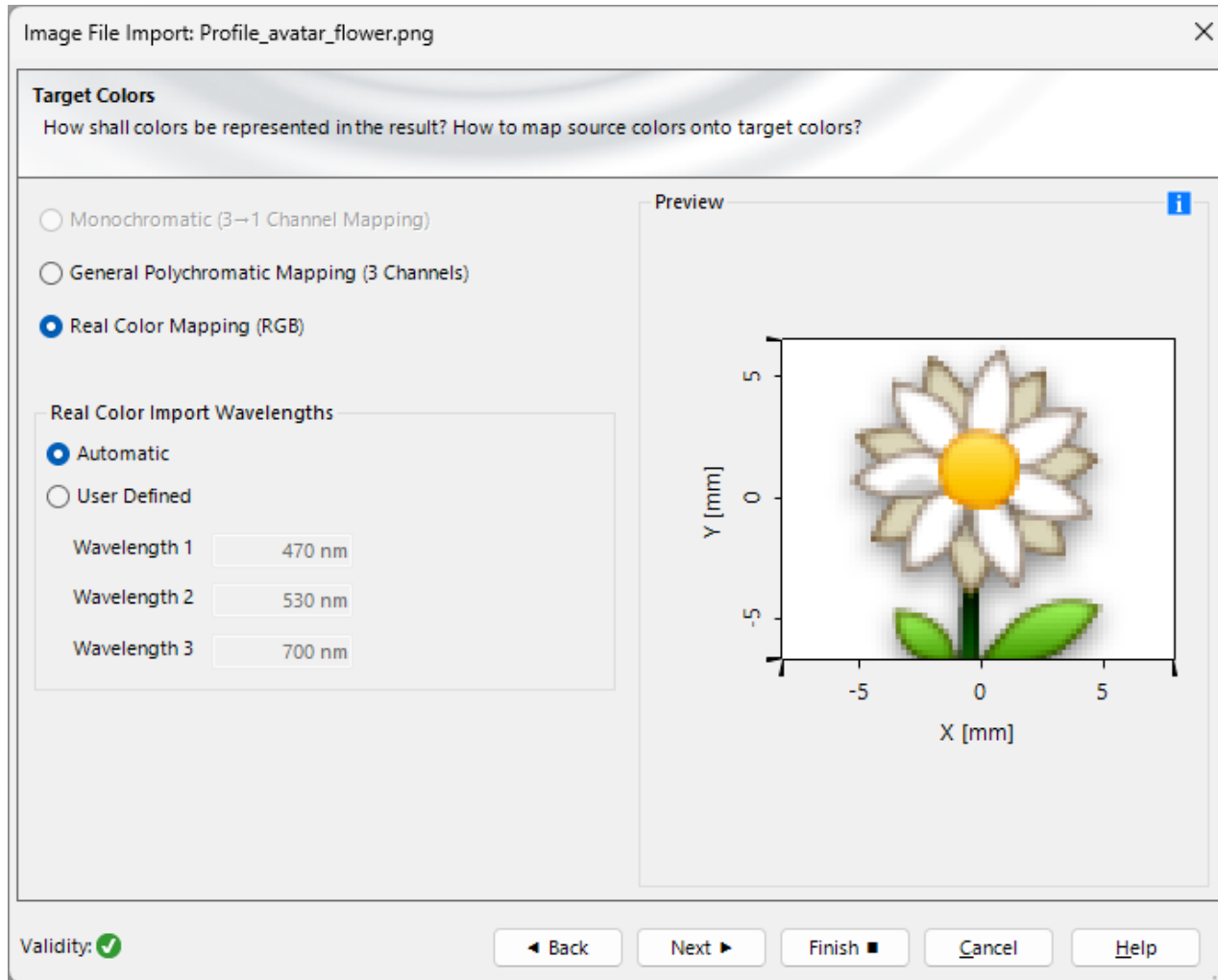


wavelengths: 473 nm, 532 nm, 635 nm
weights: 3, 1, 1

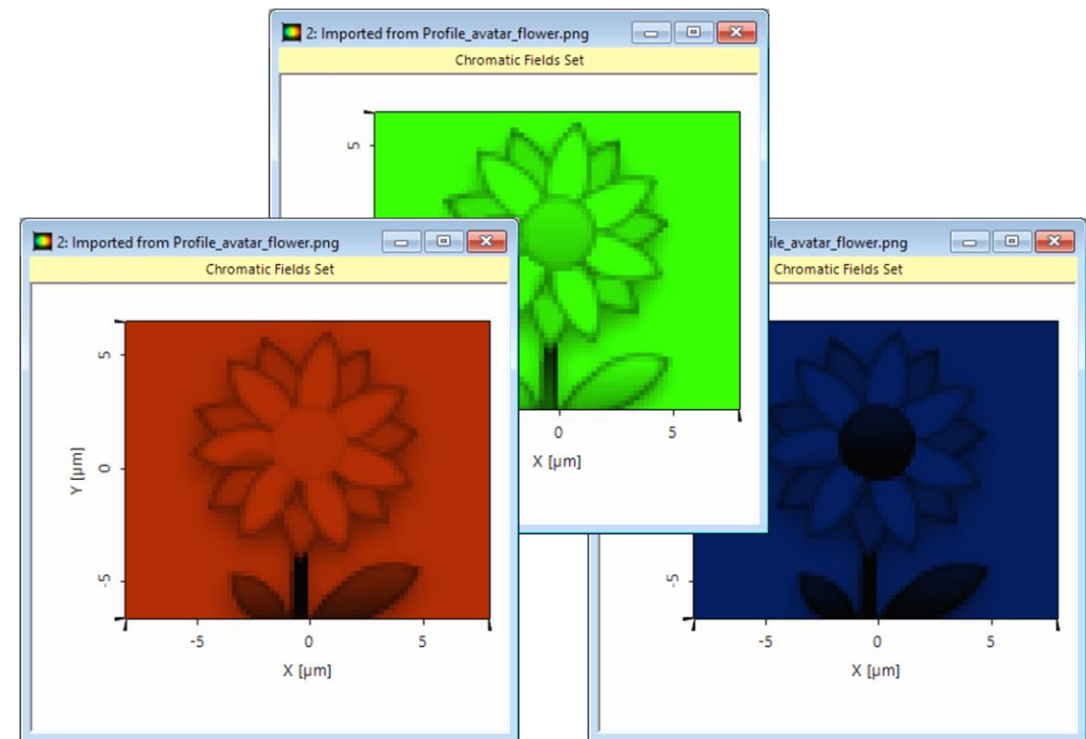


wavelengths: 473 nm, 532 nm, 635 nm
weights: 0.5, 2, 3

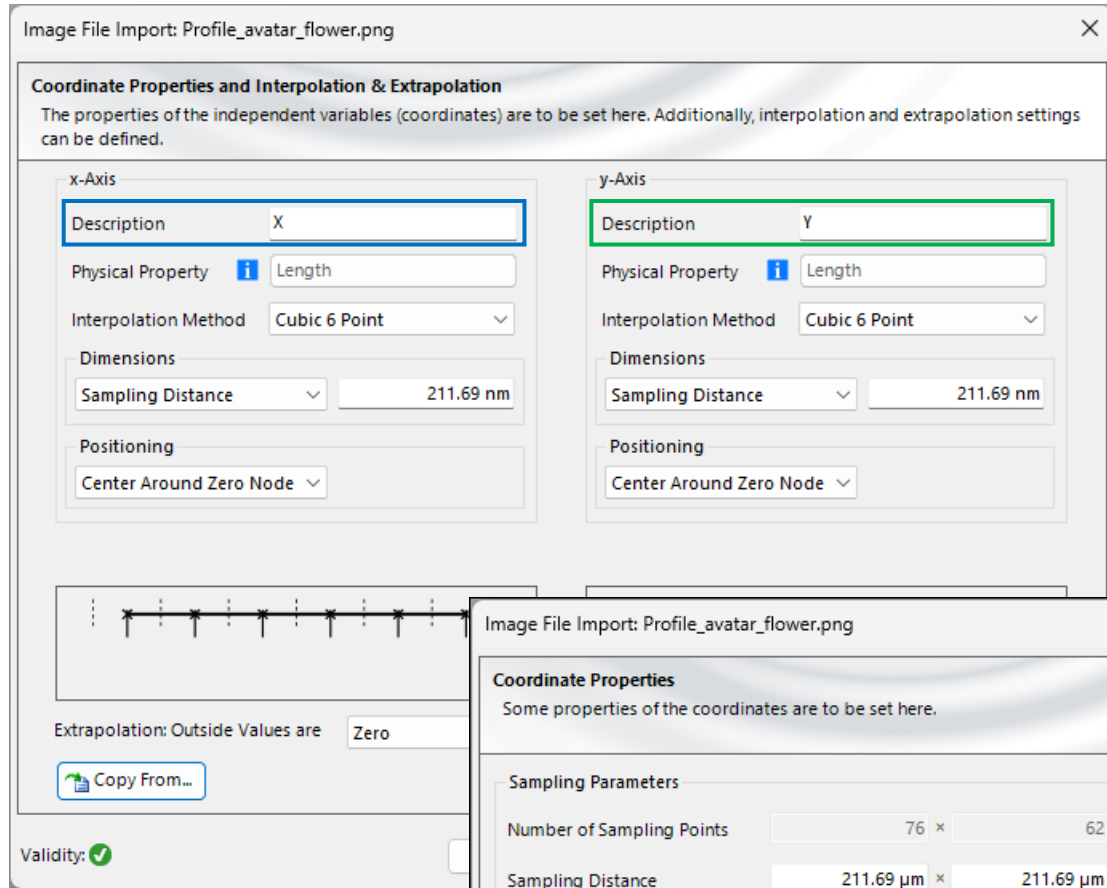
Target Colors – Real Color Mapping



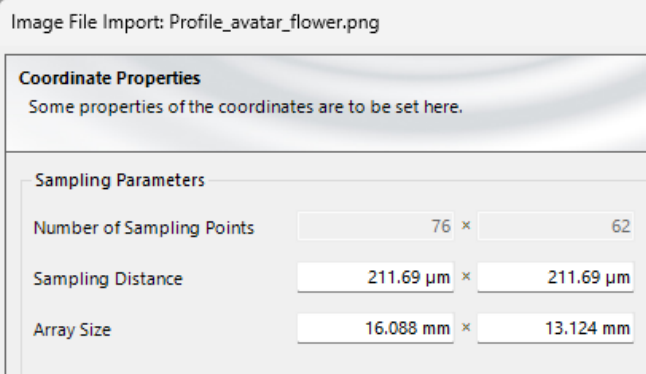
For *Real Color Mapping* (also applicable to *Harmonic Field Sets* and *Chromatic Field Sets*), VirtualLab Fusion automatically configures the weights and wavelengths to produce a true color image.



Definition of Coordinates

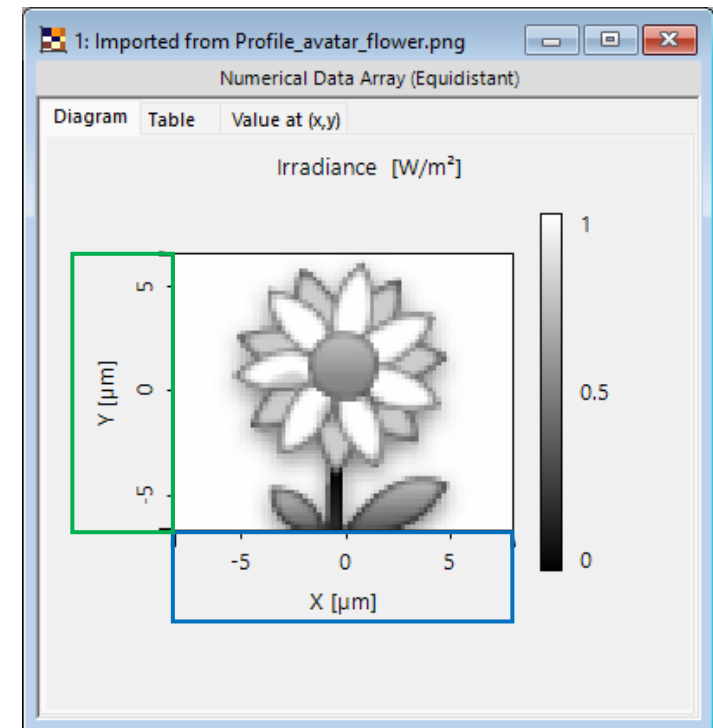


data arrays &
chromatic fields set

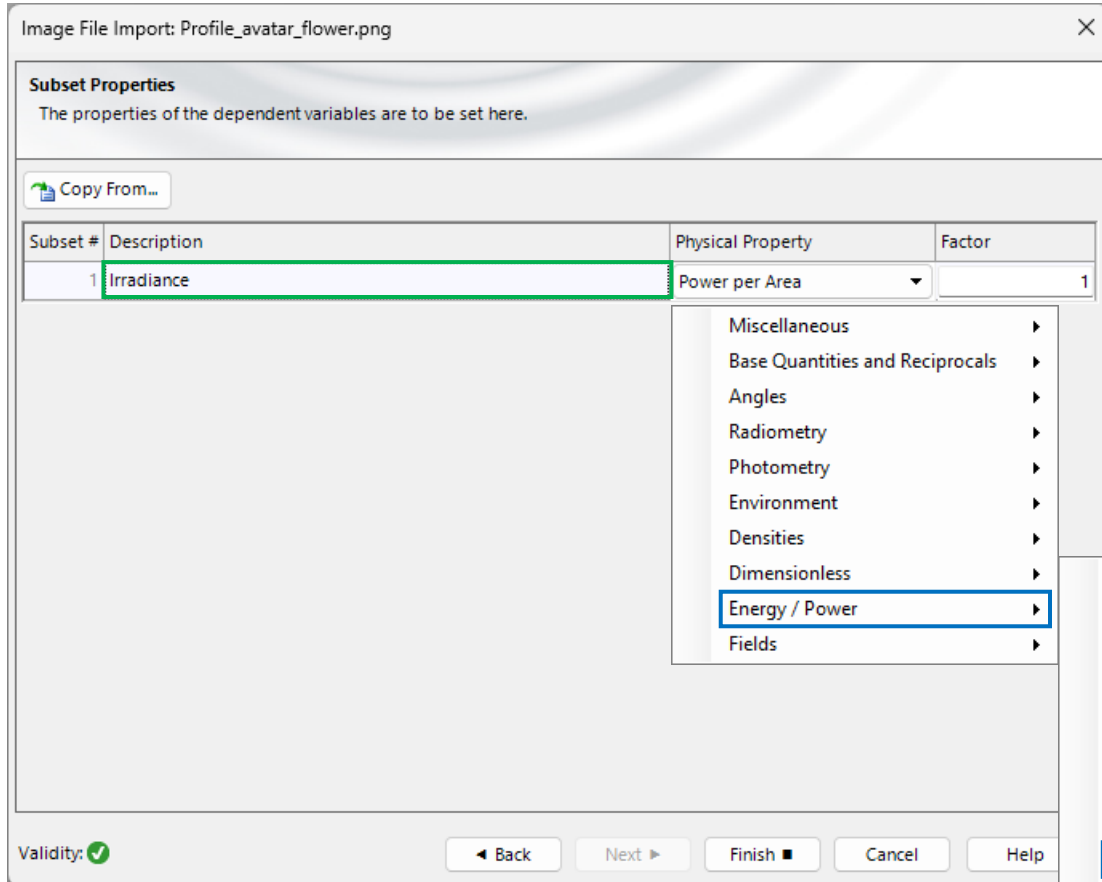


harmonic fields set

Data arrays and chromatic field sets support custom axis definition, including name, sampling parameters, and interpolation method. For *Harmonic Field Sets*, users can specify sampling parameters.

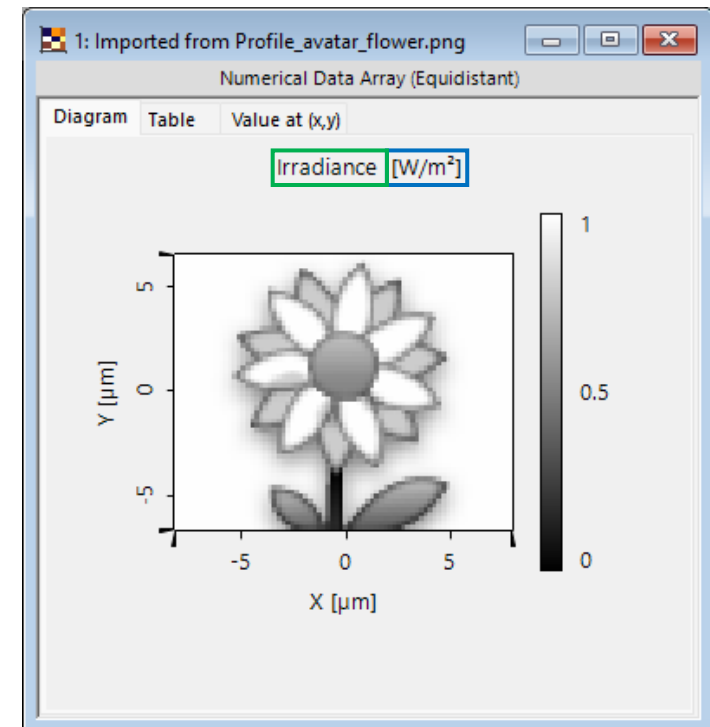


Physical Properties - Unit



Specifically for data arrays, users can also define the description and unit of its corresponding data.

- Absorption Coefficient
- Area per Energy
- (Area per Energy)²
- Energy (eV)
- Energy (J)
- Energy per Area
- Energy per Volume
- Power
- Power per Area
- (Power per Area)²
- Power per Solid Angle
- Power per Solid Angle and per Area
- Power per Volume
- Volume per Energy
- (Volume per Energy)²



Document Information

title	Import Images into VirtualLab Fusion
document code	SWF.0052
document version	1.0
software edition	<ul style="list-style-type: none">• VirtualLab Fusion Standard
software version	2023.2 (Build 1.242)
category	Feature Use Case
further reading	<ul style="list-style-type: none">- <u>Import of Text Files into VirtualLab Fusion</u>- <u>Import of Bitmap file containing Height Data of a Microstructure into VirtualLab Fusion</u>