

Application Scenario 24.01: Field Inside Grating Analyzer

Abstract

This application scenario for VirtualLab demonstrates how to rigorously calculate the field inside a grating with two examples: a chromium slit and an isosceles triangular grating.

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Keywords:	Grating, Triangular Grating, Field Inside Grating Analyzer, Slit, Chromium Slit
Requirements:	VirtualLab version 5.3.0 or higher – Grating Toolbox
Scenario Version:	2.0
Sample Files:	Corresponding files can be found here .

Modeling Task

The Field Inside Grating Analyzer of VirtualLab allows you to visualize the field inside a grating structure. This application scenario provides sample files for the following two gratings:

1. An isosceles triangular grating in Fused Silica with a period of $10\ \mu\text{m}$ and a modulation depth of $0.5\ \mu\text{m}$
2. A chromium slit with a width of $4.32\ \mu\text{m}$.

Solution with VirtualLab

This application scenario provides two sample Light Path documents (one for the triangular grating and one for the chromium slit). To calculate the field inside a grating simply choose *801: Field Inside Grating Analyzer* as *Simulation Type* and click *Go!*. The result will be a data array showing a x-z-intersection of one period.

Further information and screen shots can be found in the accompanying slides.

Technical Support

If you have any questions, remarks or problems concerning this application scenario, or in using VirtualLab in general, please do not hesitate to contact us by E-Mail support@lighttrans.com.

Please use the update service to install the current version of VirtualLab. Alternatively you can use the latest **Trial Version** of VirtualLab which is available at our [download site](#). If you have been registered already for an older

trial version, just contact us by [E-Mail](#).

To ensure that this application scenario gives the same results as described, set the global settings to the default values. In VirtualLab this can be done in the **Extras > Global Options** dialog with the *Reset All* button.