

Scenario 24.01 : Rigorous analysis of gratings using the field inside grating analyzer

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.

Keywords: Grating, Triangular Grating, Field Inside Grating Analyzer, Slit, Chromium Slit

Required Toolboxes: Grating Toolbox

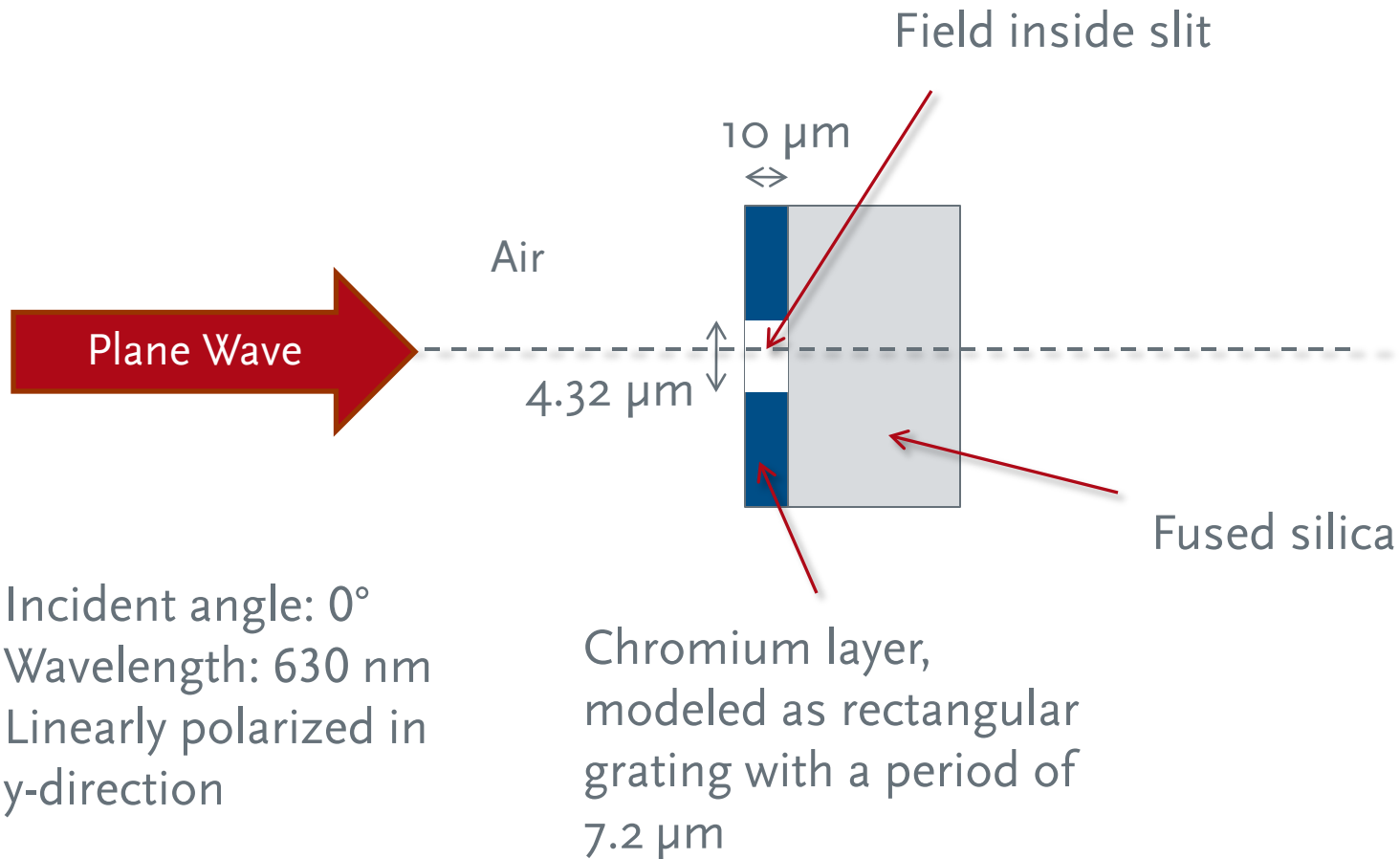
Related Tutorials:



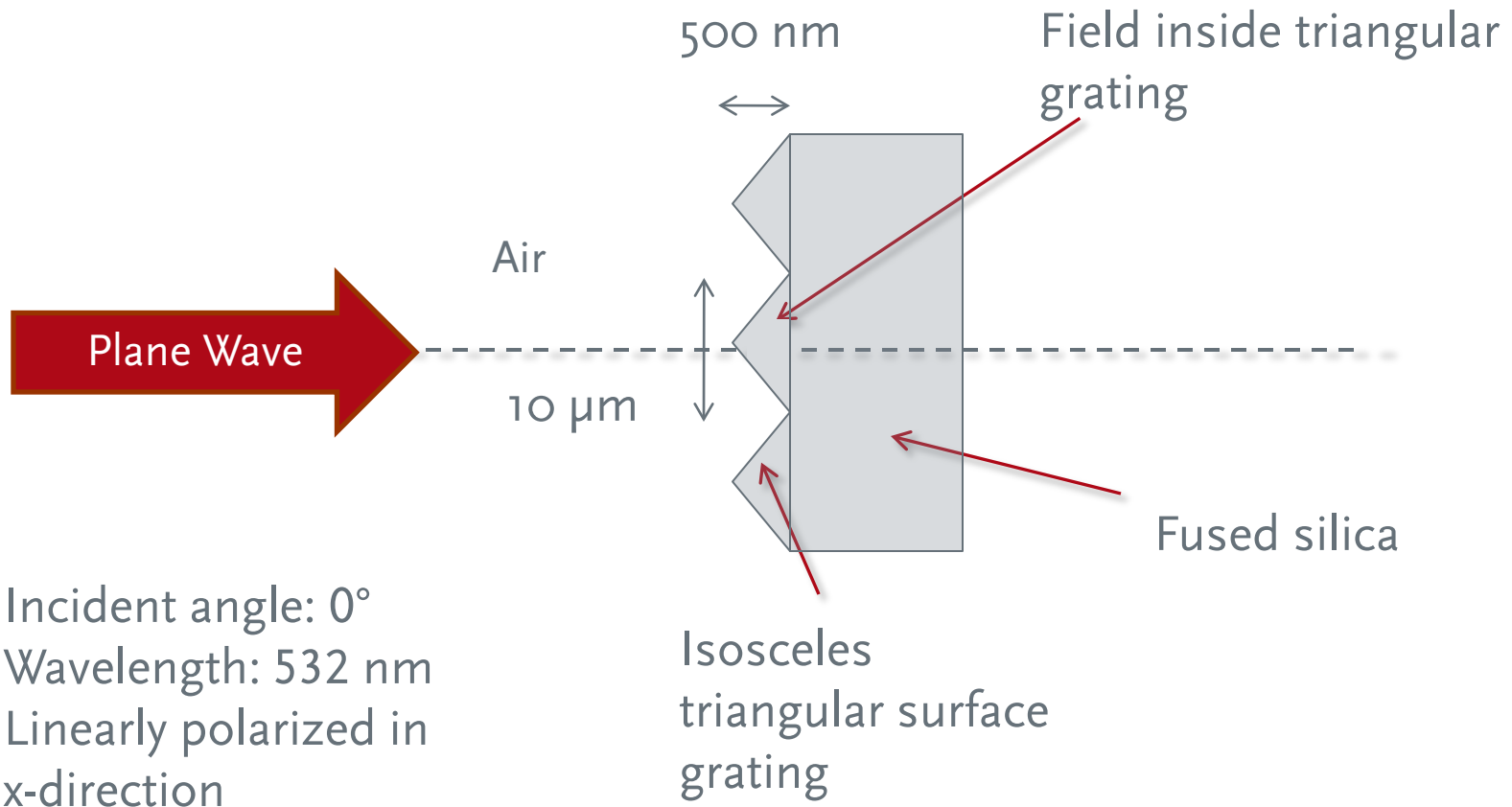
Modeling Task

- The Grating Toolbox of VIRTUALLAB™ enables the rigorous calculation of the field inside a grating.
- The calculation of the field inside a grating allows the identification of hot spots.
- The calculation of the field will be demonstrated on the examples of a chromium slit and a isosceles triangular grating.

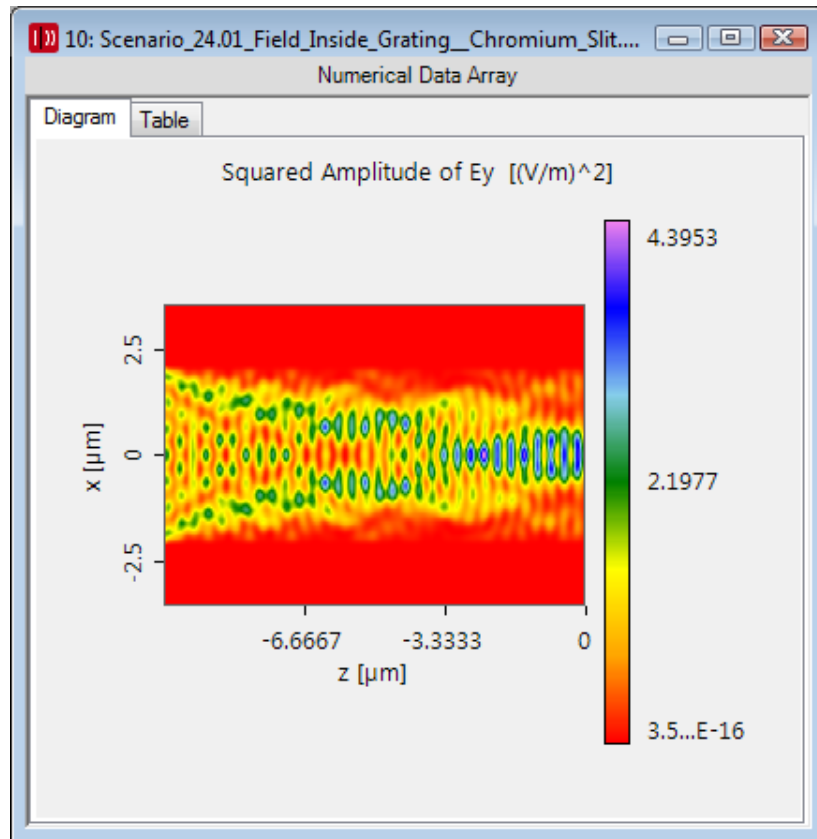
Modeling Task



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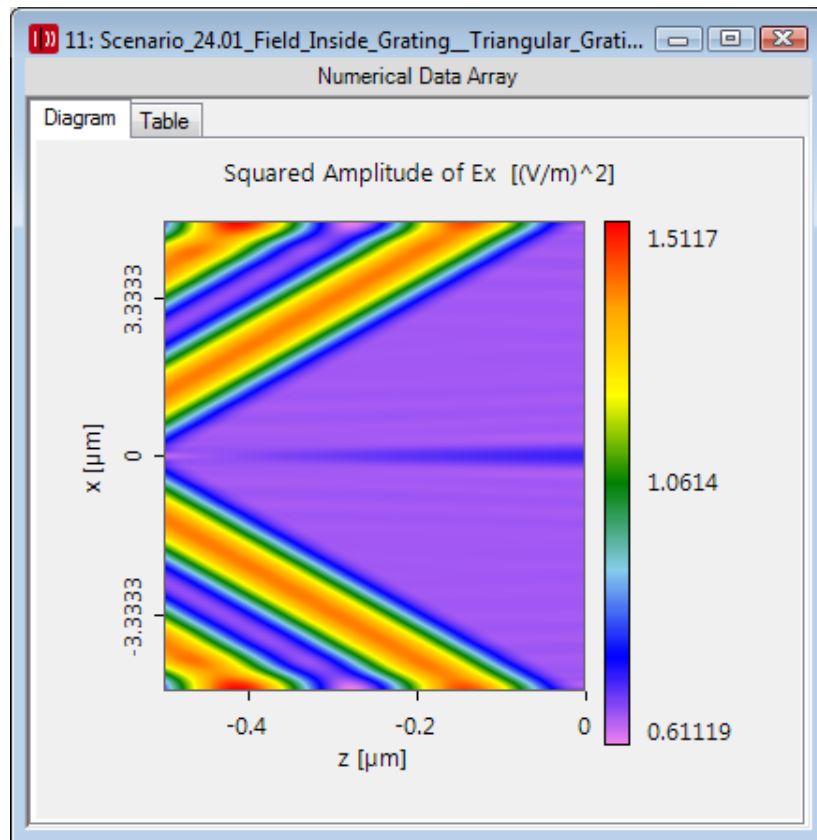


Simulation Result Chromium Slit



Squared amplitude of y-component of the field.

Simulation Result Triangular Grating



Squared amplitude of x-component of the field.

Conclusion

- VirtualLab™ can simulate not only the near field behind a grating but also the field inside the grating.
- The simulation of the field inside the grating allows to identify hot spots that could destroy the grating if used with high-power lasers.