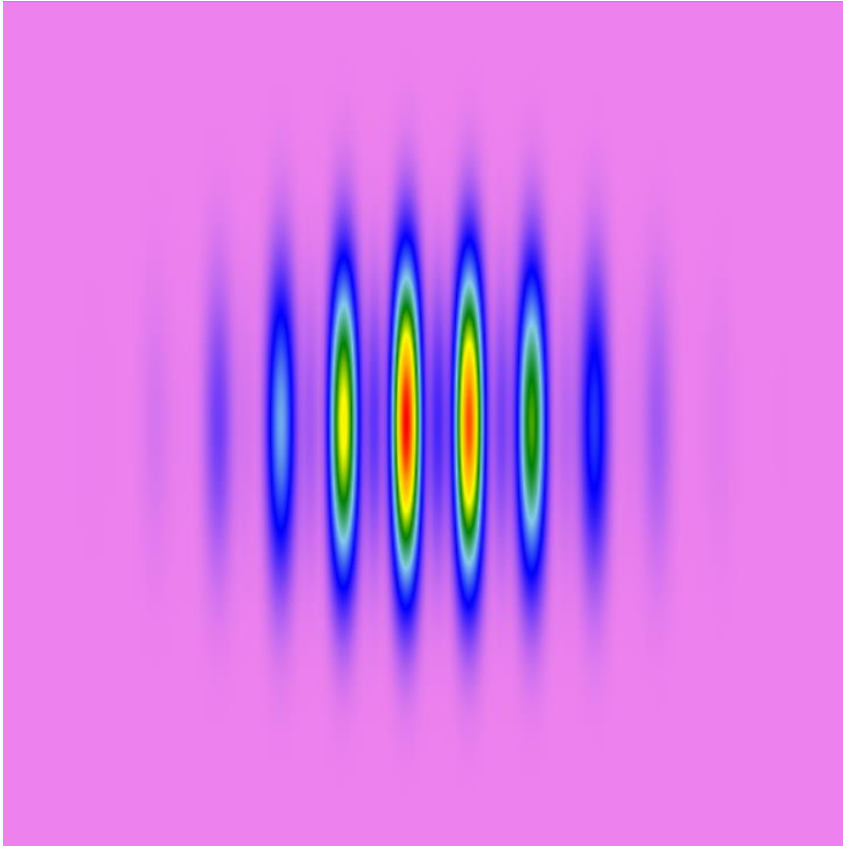


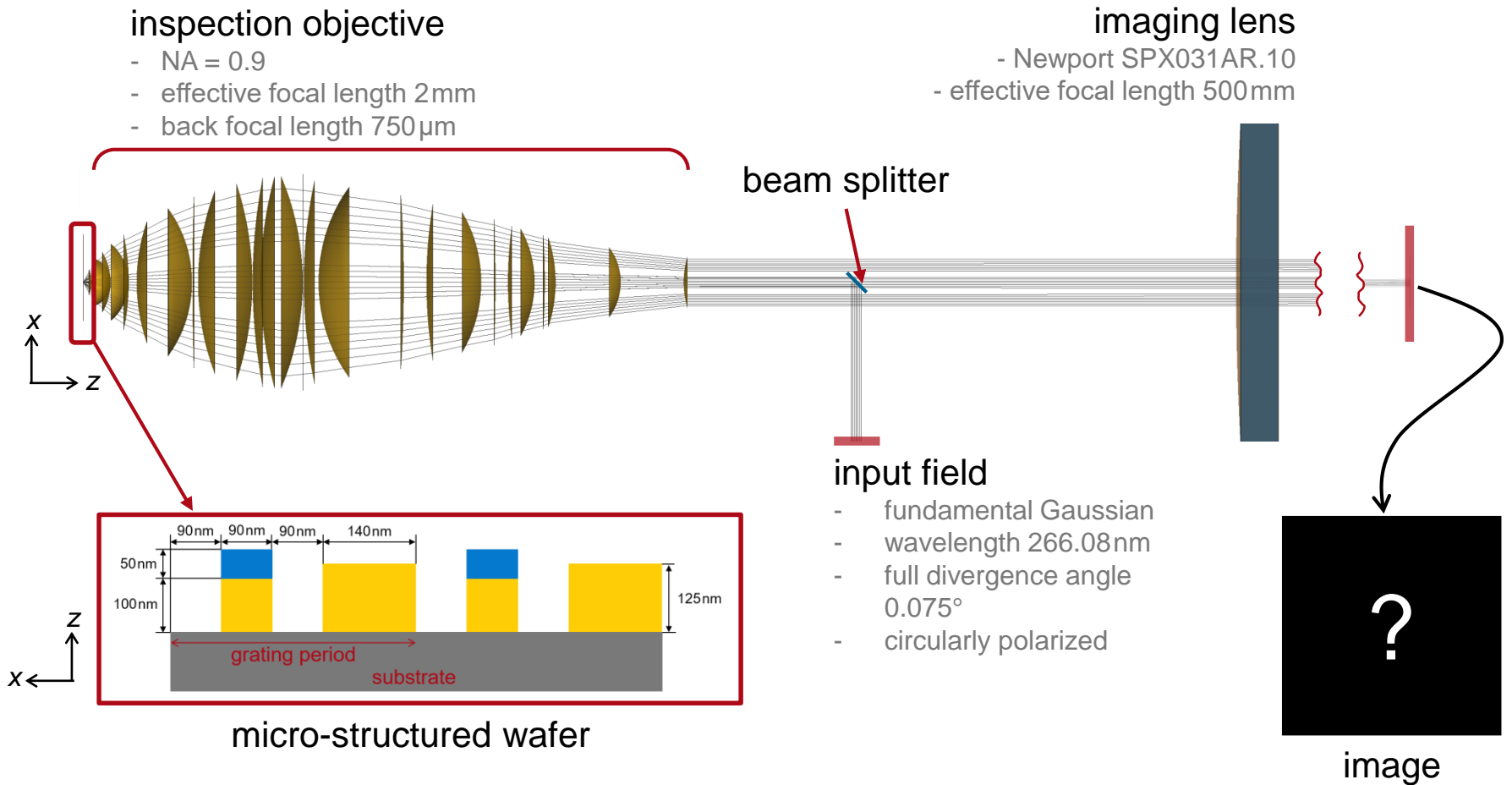
Optical System for Inspection of Micro-Structured Wafer

Abstract

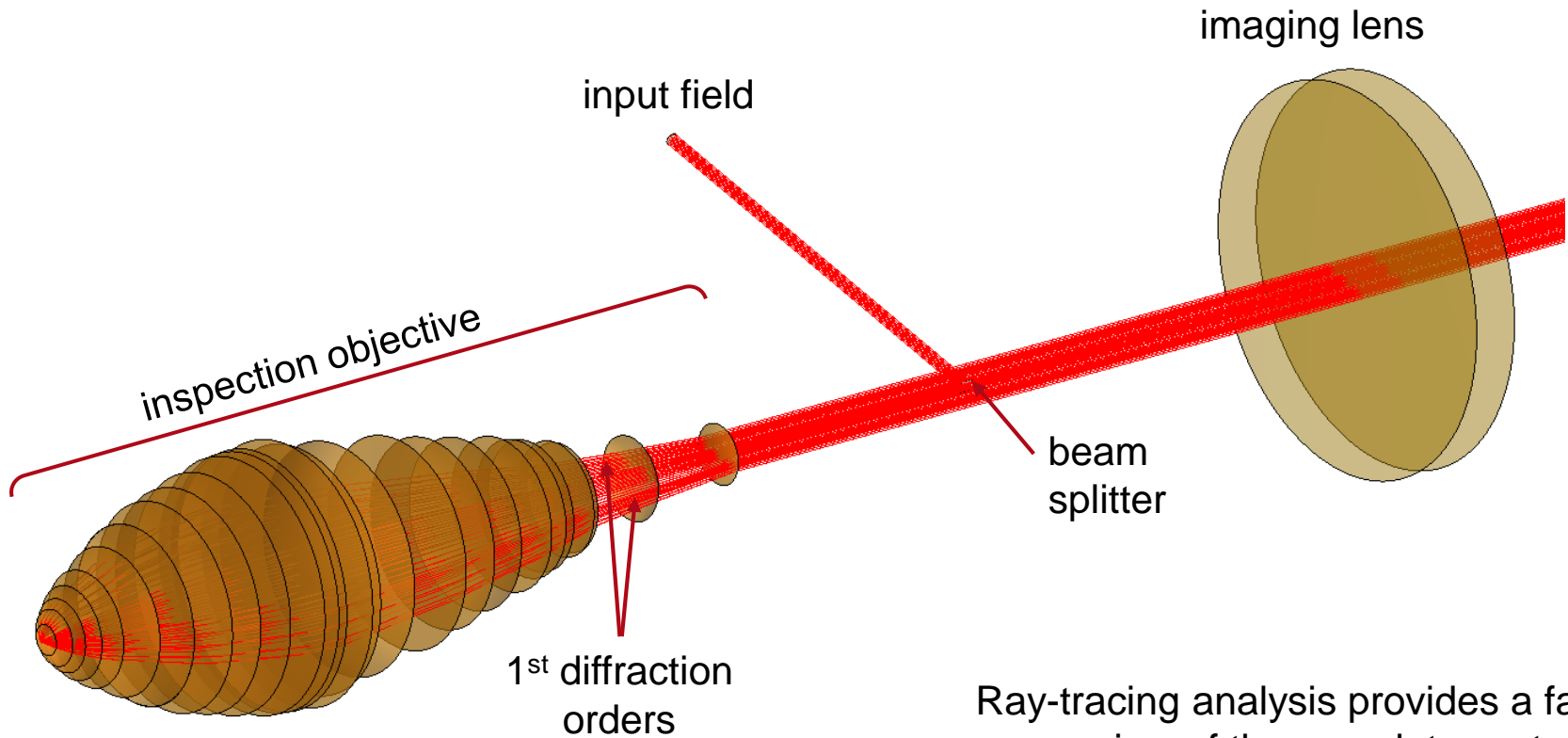


In semiconductor industry, wafer inspection systems are used to detect defects on a wafer and find their positions. To ensure the image resolution for the microstructures, the inspection system often employs a high-NA objective and works in the UV wavelength range. As an example, a complete wafer inspection system including high-NA focusing effect and light interaction with microstructures is modeled, and the formation of image is demonstrated.

Modeling Task

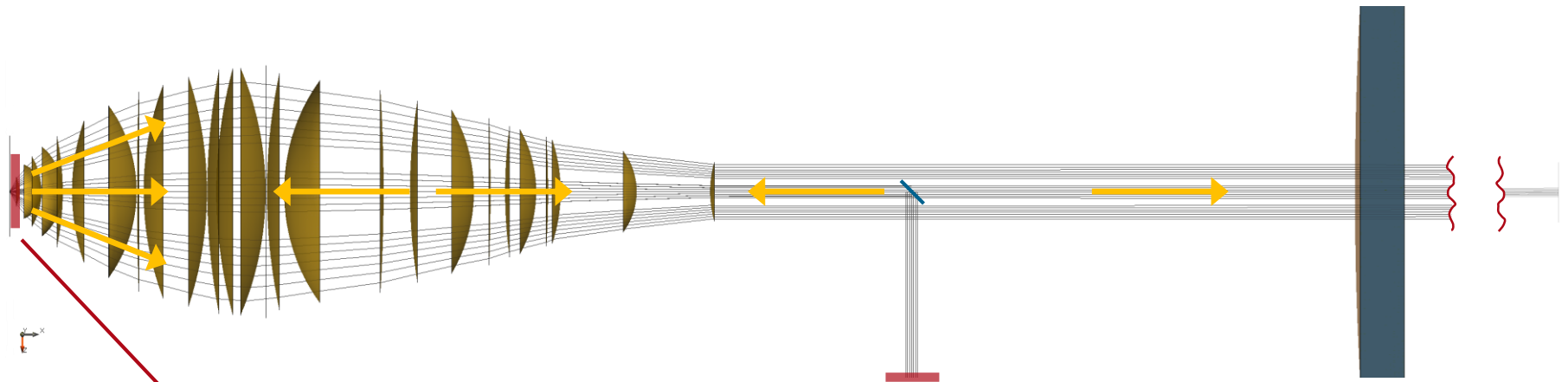


Results

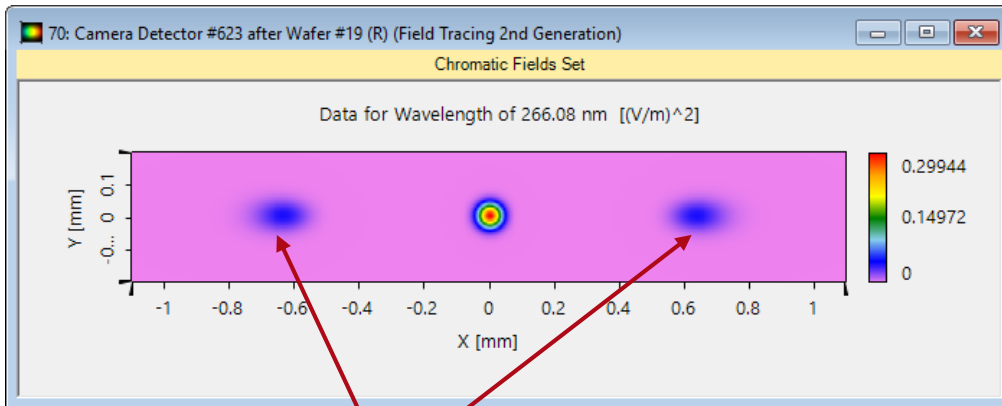


Ray-tracing analysis provides a fast overview of the complete system, including high-NA lens and grating.

Results



behind micro-structured wafer



1st diffraction orders

Rigorous simulation of grating with Fourier modal method (FMM) is imbedded within the system simulation.

Results

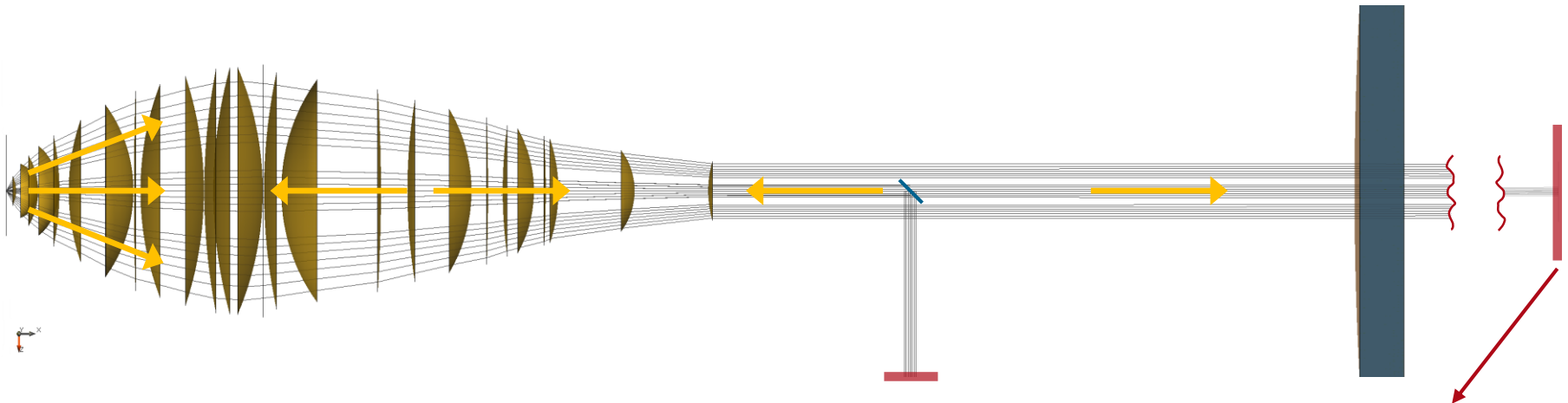
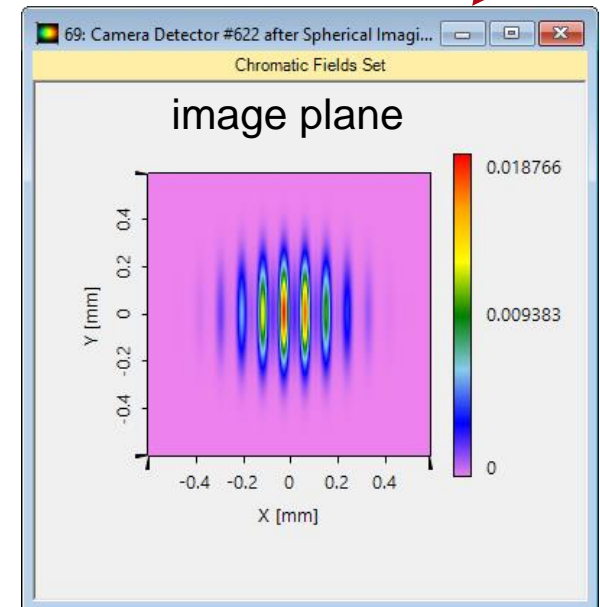


Image is formed by interference of different diffraction orders. Simulation of complete system from input field to image plane takes less than 5 seconds!



Document Information

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VL version used for simulations	7.4.0.45
category	Application Use Case
