1. Title:	Comparison of extreme ultra-violet interference lithography optical designs for photoresist research
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3. Abstract body:
Photoresist performance is one of the highest risks impeding the adoption of extreme ultra-violet (EUV) lithography. A critical issue in addressing this challenge is the lack of a practical and affordable optical system for evaluating new materials at resist suppliers. The objective of this work is to compare the performance and economics of optical designs for EUV interference lithography (EUV-IL). Although synchrotron based EUV-IL systems do exist, our study will address the issues associated with using a relatively incoherent plasma source.

The key parameters in the optical evaluation are source coherence requirements, field size, contrast, depth of focus, and radiometric efficiency. Economic factors include system complexity and cost, platform issues, and cost of ownership. Five systems were explored for this study that employed a single grating, cascaded gratings, a grating with two mirrors, and grating imaging systems with 1X Offner and 10X Schwarzchild optics. Considering source constraints, system performance and economics, the cascaded grating model has advantages for this particular application.