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Characterization of low-order aberrations in the SEMATECH North MET tool

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Previous papers have reported on print-based methods developed to measure the aberrations in the Berkeley EUV microfield exposure tool (MET). The data showed that the tool has larger aberrations than those measured during interferometry (both visible and EUV) performed before the optic was integrated into the tool. The same analysis has been performed on the SEMATECH North MET to measure the low-order aberrations.

As with the Berkeley tool, quantitative measurement of cross-field astigmatism has revealed elevated levels of astigmatism in the SEMATECH North tool. Additionally, we present quantitative measurements of field tilt and curvature, coma, and spherical error. Pending the availability of new data, we also investigate the effect of system temperature on aberrations.

Keywords: extreme ultraviolet, lithography, aberrations

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