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Table Top Extreme Ultraviolet Holography. Present and future capabilities PRZEMYSŁAW WACHULAK, MARIO MARCONI, RANDY BARTELS, CARMEN MENONI, JORGE ROCCA, Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO 80523, USA, NSF ENGINEERING RESEARCH CENTER FOR EXTREME ULTRAVIOLET SCIENCE & TECHNOLOGY TEAM — We report nanometer-scale spatial resolution obtained with Gabor holography using a highly coherent table-top capillary discharge laser. This compact table-top laser provides highly coherent illumination at $\lambda = 46.9$ nm. The hologram was recorded with high spatial resolution in a photoresist and subsequently digitized using an atomic force microscope to reveal the topography of the imprinted pattern. The final image was numerically reconstructed with a Fresnel propagator. Optimal reconstruction parameters and quantification of spatial resolution were obtained with a wavelet analysis and image correlation.

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