

Status of the Diamond CRL development

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The next generation light sources such as diffraction-limited storage rings and high repetition rate free electron lasers (FELs) will generate x-ray beams with significantly increased peak and average brilliance. These future facilities will require x-ray optical components capable of handling large instantaneous and average power densities while tailoring the properties of the x-ray beams for a variety of scientific experiments.

Euclid Techlabs had been developing x-ray refractive lens for 3 years. Standard deviation of lens residual gradually was decreased to sub-micron values. Post-ablation polishing procedure yields ~ 10nm surface roughness. In this paper we will report on recent developments towards beamline-ready lens. This will include recent measurements at the Advanced Photon Source.