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## **Design of the commissioning filter/mask/window assembly for undulator beamline front ends at the Advanced Photon Source**

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A compact filter/mask/window assembly for front ends has been designed for undulator beamline commissioning activity at the Advanced Photon Source. The assembly contains one 300- $\mu\text{m}$  graphite filter, one 125- $\mu\text{m}$  CVD diamond filter, and two 250- $\mu\text{m}$  beryllium windows. A water-cooled Glidcop fixed mask with a 4.5-mm x 4.5-mm output optical aperture and a 0.96-mrad x 1.6-mrad beam missteering acceptance was a major part of the assembly. The CVD diamond filter, which is mounted on the downstream side of the fixed mask, was also designed as a transmitting x-ray beam position monitor. The sum signal from the monitor could also be used to monitor the operating status of the graphite filter and prevent any possible chain reaction damage to the beryllium windows.

This paper discusses detailed structural design of the commissioning window assembly.

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