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Mirror mounts designed for high heat loads of the Advanced Photon Source SRI-CAT sector 2

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SRI-CAT Sector 2 at the Advanced Photon Source contains two beamlines, one from an undulator source and the other from a bending magnet source. Both use a mirror as the first high-heat-load optical component.

On the insertion device beamline (2-ID), four horizontal reflecting mirrors switch the undulator beam to three beam branch lines. Two mirror tanks with precision mounts and supporting tables are designed for these mirrors. The first mirror tank contains one 1200-mm-long, direct-water cooled, silicon-based spherical mirror. The second mirror tank combines three indirect water-cooled mirrors, each of which has an independent mount and precision manipulating structure in the same tank.

On the bending magnet beamline (2-BM), a vertical reflecting mirror tank has been designed for the 1200-mm-long, indirect water-cooled, silicon-based mirror.

The designs of the mirror mounting system and the fixed masks, which prevent the missteered beam from impinging on the unprotected beamline components, are presented in this paper.

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