

**Design of the Synchrotron-Light Monitors for PEP-II\***, A.S. FISHER, E. DALY, N. KURITA, J. LANGTON, SLAC; K. KENNEDY, LBNL - PEP-II is a 2-km-long collider with a 2.1-A, 3.1-GeV positron ring (the low-energy ring, LER) 1 m above a 1-A, 9-GeV electron ring (the high-energy ring, HER); both rings have a design current of 3 A. The beam size and pulse duration will be measured using visible synchrotron radiation (SR) from arc bending magnets, which have radii of curvature of 13.75 (LER) and 165 m (HER). Light will be extracted horizontally by a grazing-incidence, water-cooled mirror which must withstand a power of 50 (LER) or 200 W/cm (HER) along an SR fan with a height of 1.2 (LER) or 0.5 mm (HER) FWHM. A shallow longitudinal slot in the mirror will allow the hot core of the synchrotron fan to pass beyond the mirror to a separate absorber downstream, while the broader visible and near UV emission is reflected. Although the mirror must withstand the full heat load, image-quality surface flatness is required only when the beam is properly aligned with the slot.

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