

A Construction of Optical Beam Profile Monitor for High Brilliance Configuration of the Photon Factory, T. MITSUHASHI, M. KATOH, KEK - A beam profile monitor by means of an imaging the visible synchrotron light was designed and constructed for the high brilliance configuration of the Photon Factory. The monitor consists of an extraction mirror for SR beam made of Be and a diffraction-limited focusing system. Thermal deformation of the Be-mirror is watched by the interferometer. Performance of the monitor was tested at BL27 optical laboratory of the Photon Factory. The Be-mirror was deformed cylindrical way about 4 μm (p-v) by irradiation of SR beam under the ring operation condition of 2.5 GeV and 150 mA. Fourier optical analysis of the system has been done by the use of result of aberration analysis of the surface deformation of the Be-mirror. Result of the focusing error due to the deformation of the mirror was about 10 times larger than the diffraction effect. The correction of this effect is also described.