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Absolute Calibration of Imaging Plate for Electron Spectrometer measuring GeV-class electrons. NOBUHIKO NAKANII, KIMINORI KONDO, TOSHINORI YABUUCHI, KAZUKI TSUJI, KAZUO TANAKA, Institute of Laser Engineering, Osaka University, SHINSUKE SUZUKI, TAKAO ASAKA, KENICHI YANAGIDA, HIROHUMI HANAOKI, Japan Synchrotron Radiation Research Institute/SPring-8, TAKASHI KOBAYASHI, KAZUHIRO MAKINO, TAKAHISA YAMANE, Fuji Film Co., Ltd — An electron spectrometer (ESM) is designed and tested to measure high-energy electrons generated from ultra-intense laser plasma interactions. In this ESM, Fuji film imaging plate (IP) is often used as a detector for avoiding the influence by a strong electromagnetic noise. In previous study, IP was calibrated for electron up to 100-MeV in order to obtain absolute number of high-energetic electron. However, in more recent laser acceleration study 1-GeV monoenergetic electron beam was produced. Therefore, we performed the absolute calibration of IP for 1-GeV electrons experimentally at SPring-8. The 1-GeV electron beam was generated from Linac for injection to the storage ring at SPring-8. In the result, it has been proved that IP has sufficient sensitivity for 1-GeV electrons and the absolute sensitivity curve for electrons up to 1 GeV was obtained.

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