The planar wire array Z pinch experiments have been carried out on Qiangguang generator (1.5 MA, 100 ns). Different wire loads were tested to provide a broad spectrum of plasma conditions. The wire array loads made from 15μm Al wires consisted of 10-34 wires with the load widths of 6-24 mm. Time-integrated and time-gated X-ray images were obtained and analyzed. The K-shell power and yield were recorded by filtered PCDs and XRDs, as well as the total X-ray energy and power measured by a Ni foil bolometer and a scintillator-photodiode detector. The electron temperatures were estimated from the X-ray spectra recorded by a TIAP crystal spectrometer. Relations between the X-ray radiations and the load parameters were analyzed. The results show that the maximum total x-ray energy is about 25 kJ with the power of 650 GW, while the K-shell yield is 4.5 kJ with the power of 160 GW.

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