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Influences of target size on hot electron number and emission image TOSHINORI YABUUCHI, RYOSUKE KODAMA, KEN ADUMI, ILE, also at the graduate school of engineering, Osaka Univ., MOTONOBU TAMPO, ILE, Osaka Univ., SHINYA AWANO, HIDEAKI HABARA, KIMINORI KONDO, KAZUO TANAKA, ILE, also at the graduate school of engineering, Osaka Univ., KUNIOKI MIMA, ILE, Osaka Univ. — The number of electrons accelerated by ultra-intense laser-solid interactions could be as high as 10^{13} . Therefore, intense electric fields and magnetic fields are generated around the electron cloud. The electrons are influenced by these fields especially at the rear side of the solid target. The electric field is caused by the charge separation between the target (positive charge) and the electron cloud (negative charge). We assume that the magnitude of the electric field depends on the charge density. If the diffusion speed of the positive charge in the target is fast enough, the charge density on the target surface could be varied depending on target material, size and shape. In this study, we keep target material and shape, but change only the target size. The detected electron number and emission image changed with the target size. These dependences can be explained by the formation of the electric fields.

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