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The ramp compression experiment with laser-driven reservoir target at Shenguang-III prototype facility SHAN LIANQIANG, XIN JIANTING, SHUI MIN, GU YUQIU, Research Center of Laser Fusion, Chinese Academy of Engineering Physics — The quasi-isentropic compression of material can be obtained by the ramp wave loading of plasma jet produced by laser-driven reservoir target. The experiments were carried out on the high power laser facility of SG-III prototype using Al with direct-driven and indirect-driven method. The smooth and continuous speed history of free surface of specimen was recorded with a line-imaging velocity interferometer(VISAR). 16/26/36μm Al foil were compressed to more than 40 GPa with good planarity. The back-integrating method gave almost the same loading history for the three steps. 7μm Al backed by 500μm LiF were compressed to near 200GPa. The rise time of the load was about 10ns and the strain was about $10^8 s^{-1}$.

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