

Physics and Applications of High Brightness Beams



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Experimental Demonstration of Commercial Dielectric Laser Accelerator

We present experimental results using a tunable commercial dual grating dielectric laser accelerator (DLA). A 780 nm, 100 fs pulsed laser is used in a pulse-front-tilt configuration to maximize interaction length to an observed length of more than 750 μm and energy gain of 150 keV. The two gratings are mounted independently with piezo controls, allowing structure tuning for maximal energy gain. Interferometric measurement is used in parallel to diagnose structure parameters without the need for beamtime.

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