On 19 April 1995, the first 60-beam target test shot was taken on OMEGA. This shot initiated a two-week period during which the formal performance verification tests of the 60-beam OMEGA were conducted. The performance requirements included 60-beam energy on target of up to 30 kJ for a five-shot series taken at a repetition rate of one shot per hour. During these performance tests, OMEGA exceeded all its specifications, delivering in excess of 32 kJ per shot on target for a series of five sequential shots taken at a rate of one shot per hour.

On 1 May 1995, OMEGA placed 37.3 kJ on target.

Record electron temperature (~4 keV) and record x-ray line energy (~16 keV) from laser-imploded targets were obtained on the upgraded OMEGA.

LLE completed construction of the current 60-beam OMEGA Laser System in 1995, on time and on budget. This upgraded system is a 30-kJ, ultraviolet (351-nm), pulse-shaped, direct-drive laser system with on-target irradiation nonuniformities approaching the 1% to 2% level. Currently, OMEGA is used to explore target physics at near-ignition conditions, investigate the hydrodynamics of energy-scaled, high-performance targets, and perform laser–plasma interaction experiments using large-scale-length plasmas and laser intensities relevant to high-performance, direct-drive target implosions.

In recognition of their “outstanding theoretical work, computational analysis, and experimental work leading to a quantitative and predictive understanding of the Rayleigh–Taylor instability in high-energy-density plasmas,” the American Physical Society awarded the 1995 Award for Excellence in Plasma Physics Research to Charles P. Verdon and James P. Knauer.