



IRIS AO SHAPES HIGH POWER LASERS

Berkeley, August 27 2014: Iris AO is working with several industrial partners to support the use of our deformable mirrors with powerful lasers. The results are already promising and we are excited to share some of the details with you.

A leading laser-micromachining system provider has tested a UV pulsed laser (355nm, 15W average power, ps pulse) with a dielectric coated **PTT111** mirror equipped with our harsh-environment upgrade. This new upgrade consists of a water-cooled heatsink and purge ports to eliminate organic materials. This industrial partner uses our PTT111 to improve beam quality and correct for aberrations introduced by optical elements. The DM was tested at 5W for 60 hours, 10W for 17 hours, and 15W for 80 hours and showed no signs of damage that would affect beam quality. The 15W test was conducted with a beam approximately 1 mm in diameter incident on the DM. Even at this high power density, the DM showed no signs of permanent damage. Plans to test a similar system under 1,000 hours of use are set to begin in the near future.

Another leading laser-machining solution provider, **Raydiance Inc.** (Petaluma, CA), has successfully demonstrated operation of a gold-coated **PTT111 DM** operating in excess of 10W average power for a 1550 nm fs-pulse laser. These tests were completed with legacy packaging. Newer packaging currently in development and optimized for laser applications will further increase the average power handling capabilities of the gold-coated DM.

Improving the function and efficiency of our mirrors with high-power lasers is one of Iris AO's top priorities.. The availability of dielectric coatings (from 288 nm to 1600 nm), plus our new harsh-environment upgrade is positioning us as a leader in the laser micro-machining and laser shaping industries using a variety of laser sources from deep UV excimer to ND:YAG laser.