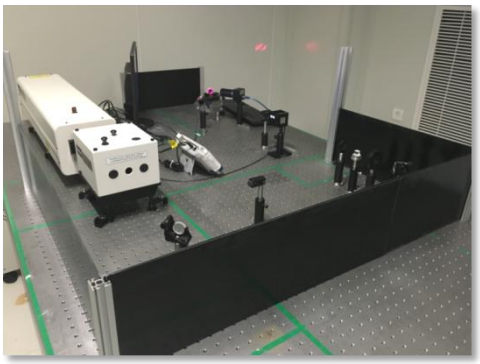
High Laser Damage Threshold Optics

The Laser Induced Damage Threshold (LIDT) is one of the most critical parameters for laser systems especially for high power applications. The damage may be initiated and driven by different mechanisms predominantly known as thermal effects or field strength effects. Absorption and Defects contribute to many cases of breakdown varied with different laser conditions.

With decades of knowledge and experience in laser industry, CASTECH masters both super polishing and IBS coating techniques which could exhibit extremely low optical losses and high laser induced damage threshold. The weak absorption of coatings and substrates down to 1ppm could be detected by our photothermal common-path interferometer. Combined with the selected right materials, we are capable of delivering laser optics with remarkable performance for the challenging applications.

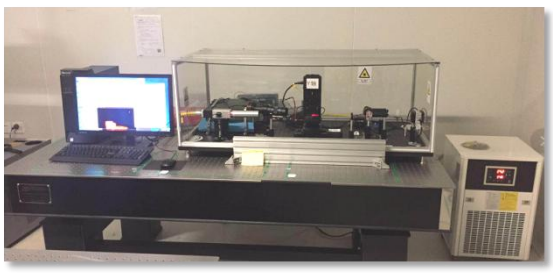
Metrology

CASTECH has built LIDT measurement systems in house working at 266 nm, 355 nm, 532 nm and 1064 nm with pulse duration of 5ns. Either 1-on-1 or S-on-1 regime is available.

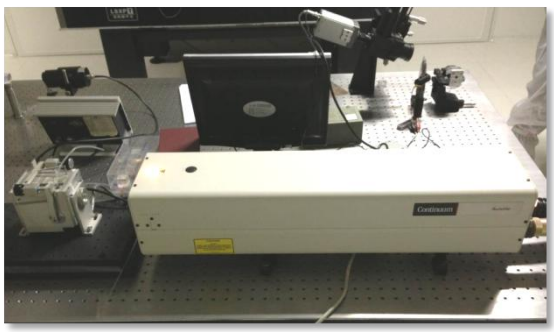


266nm laser damage threshold testing system
Repetition frequency : 1-10Hz
Pulse width: 5ns

Bulk and surface absorption testing by PCI
(355nm,532nm,1064nm)



1064nm laser damage threshold testing system(CW,100W)



1064nm, 532nm & 355nm laser damage threshold testing system
Repetition frequency : 1-10Hz
Pulse width: 5ns