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An Automated Test Bed for VISAR Probe Characterization
TERRY SALYER, NOOR KHALSA, LARRY HILL, Los Alamos National Laboratory — Accurate characterization of VISAR probes is helpful for their effective fielding on a given experiment. Much stands to be gained through optimal placement and choice of probe as well as optimal target surface preparation. Revelations through a series of dynamic shots can be time consuming, expensive, and inefficient. An automated system to measure probe illumination and return characteristics independent of the VISAR helps to alleviate these problems. Motion of a target reflector is simulated via linear traverses and a rotation stage. Laser illumination is provided to yield a probe response measured with sensitive optical power detectors. A beam profiler is used for 2-D analysis of the illumination spot over the full range of target travel. Furthermore, the whole system is automated through LabVIEW software control. A proposed standardized probe test consists of the 1-D axial response, sensitivity to target angle, sensitivity to target surface preparation, and the illumination spot characteristics. As the community recognizes the need for more specialized probes, such a tool enables the rapid development of new designs as well as the cataloging of current ones.

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