

Abstract Submitted  
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**VISAR ‘cross-hairs’: Simultaneous perpendicular line-imaging**  
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— Often the velocity measured at the rear surface of a dynamic compression target  
varies spatially, caused for instance by the tilt/curvature of a gas gun flyer, asym-  
metries in the magnetic field on a pulsed power driven experiment, or mesoscale  
heterogeneous targets. One way to monitor this in an experiment is to employ  
multiple point velocimetry techniques, but even with multiplexing this can become  
expensive in terms of hardware, in particular high speed sensors and scope channels.  
We report on the development of a multi-axis line-imaging VISAR system, which  
records the spatial velocity along two orthogonal directions. Cylindrical optics are  
used to project a set of cross-hairs onto the target, maximising the use of input  
laser light. We describe the image relay and interferometer configuration, along  
with an evaluation of system resolution. This ‘quasi’ two dimensional system will  
become one of the principal diagnostics on the MACH (Mega Ampere Compression  
and Hydrodynamics) facility, where the multi-axis measurement will help optimise  
strip-line design to achieve uniform ramp compression of targets.

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