

Abstract Submitted
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Ejecta Particle-Size Measurements from the Break-Up of Micro-Jets in Vacuum and Helium Gas Using Ultraviolet In-Line Fraunhofer Holography. DANNY SORENSON, PETER PAZUCHANICS, RANDALL JOHNSON, Los Alamos National Laboratory, ROBERT MALONE, MORRIS KAUFMAN, THOMAS TUNNELL, DUANE SMALLEY, DANIEL MARKS, NSTec, LLC Los Alamos, NM, GENE CAPPELLE, MIKE GROVER, BRUCE MARSHALL, GERALD STEVENS, DALE TURLEY, BRANDON LALONE, NSTec, LLC Special Technologies Laboratory, Santa Barbara, CA — An ultraviolet (UV) in-line Fraunhofer holography diagnostic has been developed for making high-resolution spatial measurements of ejecta particles traveling at many mm/ μ sec. Recent results will be presented for high-explosive shock-driven tin ejecta experiments. Particle-size distributions will be shown that cover most of the ejecta velocities for experiments conducted in both a vacuum, and helium gas environments. In addition, a modification has been made to the laser system that produces two laser pulses separated by 6.8 ns. This double-pulsed capability allows a superposition of two holograms to be acquired at two different times, thus allowing ejecta velocities to be measured directly. Results from this double-pulsed experiment will be described.

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