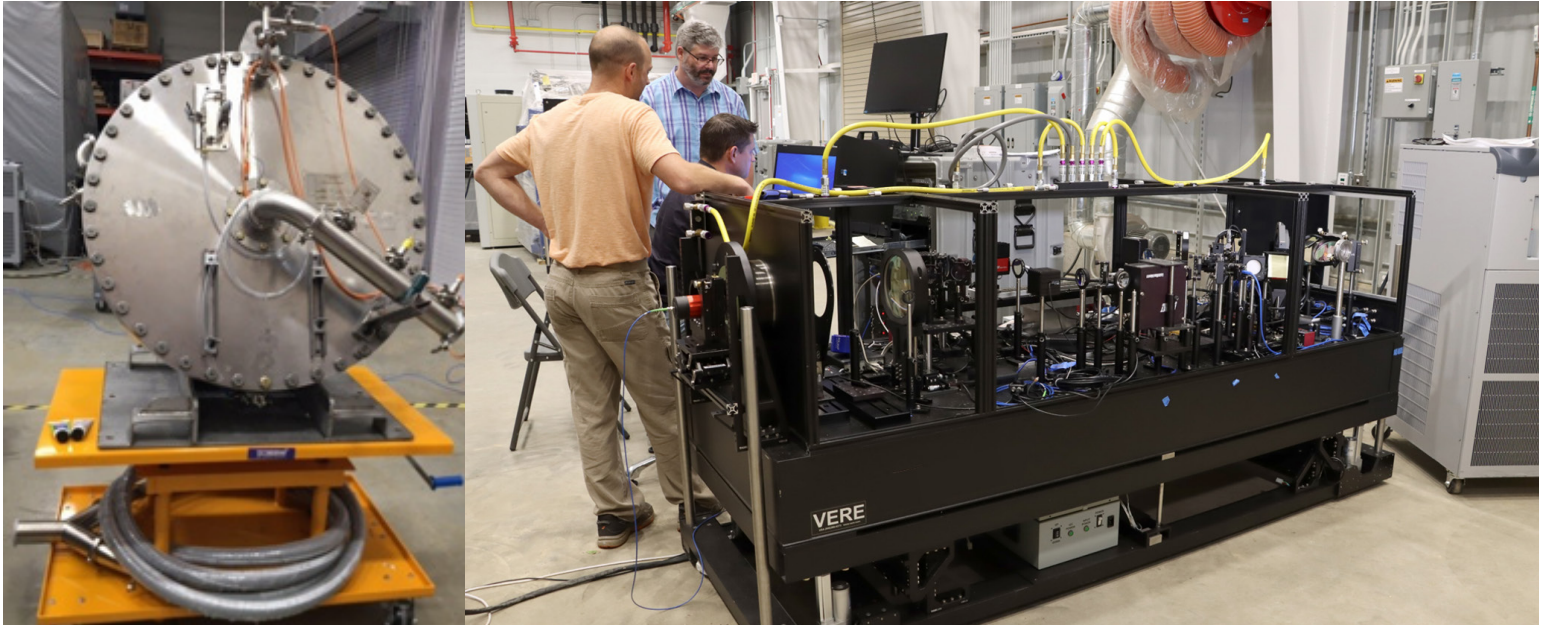


DIRECTED ENERGY SYSTEMS INTEGRATION LAB (DESIL)



DESIL provides turnkey testing and integration for High Energy Laser systems, ensuring readiness and accelerating the transition of capabilities to the warfighter.

The Directed Energy Systems Integration Laboratory (DESIL) is a key U.S. Army Space and Missile Defense Command facility for maturing Directed Energy (DE) systems such as High Energy Laser (HEL) technologies. Its mission is to serve as a turnkey test site, providing system verification and performance assessment to ensure HEL weapon systems meet requirements prior to expensive field testing. DESIL supports the entire HEL development lifecycle, from component-level analysis to full system integration. By providing a controlled laboratory environment, DESIL reduces program risk, validates system performance, and accelerates the transition of advanced directed energy capabilities to the Soldier. The laboratory is critical to advancing the Army's air and missile defense systems capabilities.

- Provides full “turnkey” testing for High Energy Laser weapon systems.
- Characterizes laser performance including power, beam quality, and tracking.
- Supports risk reduction prior to expensive live-fire range events.
- Accelerates the transition of directed energy technology to warfighters.





The Directed Energy Systems Integration Laboratory (DESIL) provides the Army with critical capabilities for the functional verification and performance assessment of High Energy Laser (HEL) weapon systems.

The facility, located at Redstone Arsenal, evaluates individual sub systems as well as fully integrated systems to reduce program risk and validate performance before deployment. DESIL has a full suite of capabilities for testing the core components of a HEL weapon.

For the Laser Sub-System, the laboratory uses the Small-beam Measurement and Analysis System for HEL (SMASH) to measure critical characteristics like beam quality, power, polarization, and spectrum for lasers up to 500kW. The High Power Beam Dump (HIPOW) allows the laser to be fired at full power in a safe, controlled lab environment.

For the Beam Control Sub-System, DESIL employs the Big Aperture Shack-Hartman (BASH) and its high-power variant (BASH-HP) to characterize the system's ability to acquire, track, and point the laser, measuring wavefront, jitter, and tracking errors. The facility also possesses partial capabilities that are maturing.

For Electrical Energy Storage and Management, DESIL has hardware with programmable load banks capable of testing up to 200kW to provide testing for HEL batteries and power management systems. DESIL will continue to position the Army at the forefront of directed energy technology.



For more information, please contact: USASMDC Public Affairs Office

P.O. Box 1500
Huntsville, AL 35807
256-955-3887

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Distribution: 0226-05