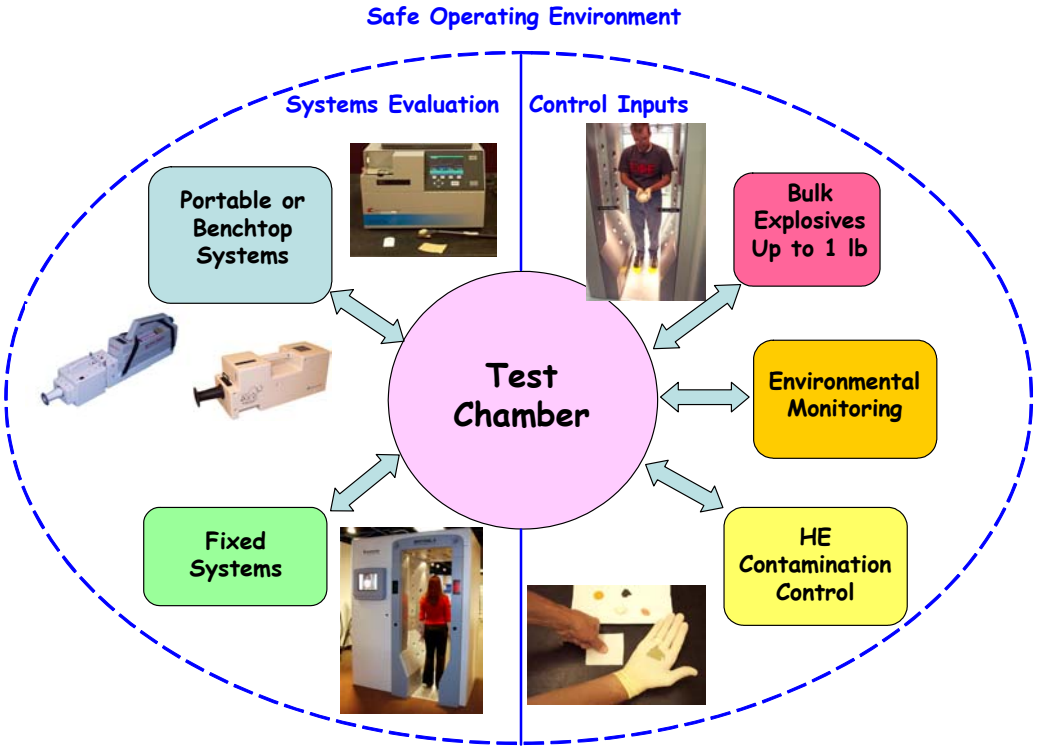
High Explosives Test Chamber



Functional Diagram of Test Chamber for High Explosives (HE) Detection

The Need

Detecting explosives and other hazardous chemicals is critical for U.S. security. To successfully combat these threats, we need to identify, understand, and evaluate all of the critical components of detection systems, including the source term, sample collection, preconcentration, sensors, and data analysis. We need to characterize the operating conditions and materials that could degrade system performance before deploying systems in the field.

Capability Description

The Test Chamber at Sandia National Laboratories will provide a performance validation capability for explosives detection systems in all phases of the research and development cycle, including commercial equipment. The test chamber will accommodate systems ranging from hand-portable devices with micro-scale components to personnel portal-sized systems. To enable more realistic testing of explosives, the chamber will

- handle trace and bulk amounts of explosives and chemicals (up to one pound).
- monitor environmental variables such as temperature, background contamination, and interferents.
- control cross-contamination from explosives testing.

The Test Chamber supports Sandia's mission as the Department of Energy's lead laboratory for physical protection. Sandia National Laboratories provides the technology base in HE detection systems performance testing.

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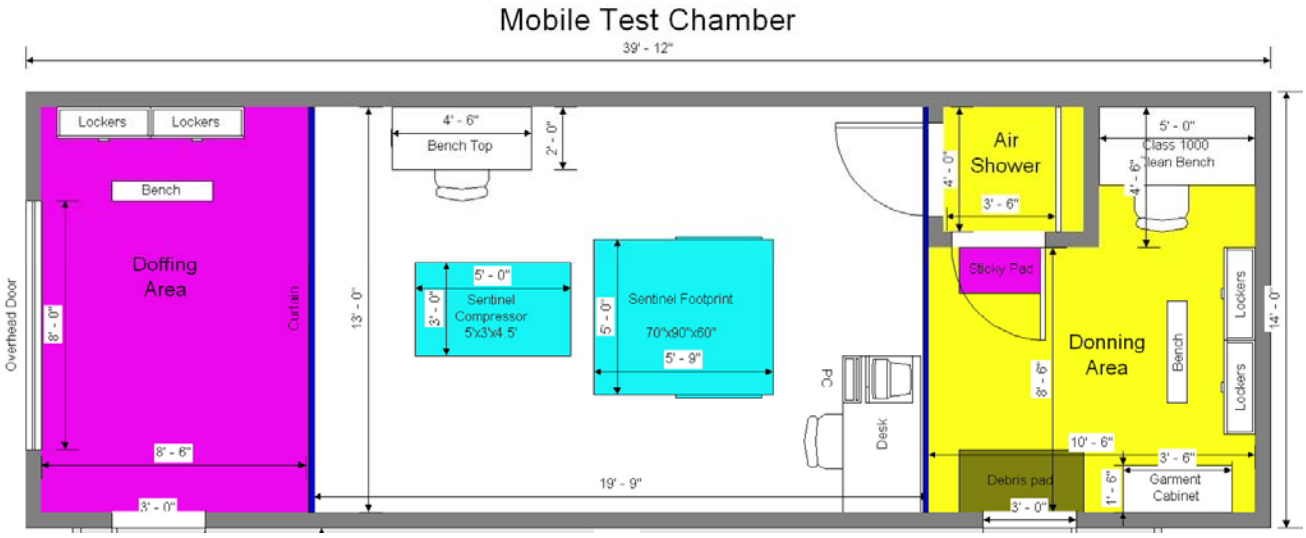
Sandia National Laboratories



Test Chamber Floor Plan

Features

- Class 100 Clean Room controlling explosive particle contamination that can handle large fixed-site equipment such as personnel portals. Dimensions: 20' long by 12' wide by 10' high
- Class 100 Clean Bench for testing small devices, such as handheld explosives "sniffers"
- Air-tight seal for dust control
- Activated charcoal filtration for background vapor control
- One-way traffic flow to reduce cross-contamination
- Environmental monitoring, i.e., temperature and humidity

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