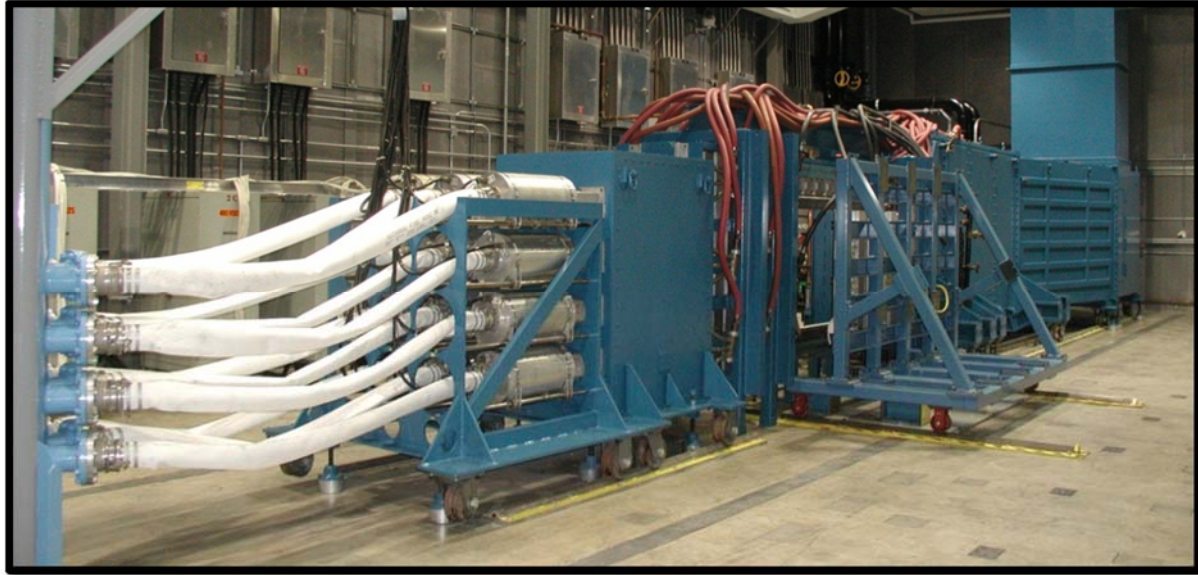




Facility Factsheet

Aerospace Structures Test Complex Combined Environment Acoustic Chamber (CEAC)



Purpose: The CEAC imposes combined acoustic, thermal, and mechanical loads on aerospace structures. The CEAC is employed to measure structural response and determine acoustic fatigue life of structural components when exposed to simulated aeroacoustic and thermal loads. The CEAC is used to validate advanced technologies for hypersonic, space access, weapons bay, and exhaust-washed vehicle structures.

Capabilities: The CEAC is a progressive wave tube that can test specimens up to 4.46 ft x 9 ft.

- Up to 170dB overall sound pressure level produced by acoustic modulators with a controllable output range of 44.7-562 Hz by a third octave band computer controller.
- Over 700 specially designed 6,000 W quartz lamps radiantly impinge up to 72 Btu/ft²s on specimens with eight control zones.
- Real time display and record up to 130 channels of high speed data (up to 208 kHz) from transducers including accelerometers, strain gages and pressure transducers.
- Real time display and recording at up to 200 samples/sec for as many as 128 channels of thermal data from thermocouples, RTDs and flux gages.
- Non contacting sensors available, such as 3-D laser vibrometer, infrared thermal imaging, and digital image correlation.
- Access to 10,000 gal liquid nitrogen Dewar, 3,000 psig facility hydraulic and 100 psi pneumatic systems.

Contact: The Structural Validation Branch at 937-656-8827