



Facility Factsheet

Aerospace Structures Test Complex

Sub-Element Facility (SEF)

Purpose: The SEF was designed to impose combined acoustic and thermal loads on aerospace structures, conduct high temperature acoustic response and fatigue testing of aerospace structural components, and validate advanced structures technologies for hypersonic, space access, weapons bay, and exhaust washed aerospace vehicles.

Capabilities: The SEF is a progressive wave tube for testing specimens up to 11.5 in x 17.5 in.

- 174 dB overall sound pressure level produced by acoustic modulators with a controllable output range of 44.7-562 Hz using a third octave band computer controller.
- 66 6,000W quartz lamps can radiantly impinge up to 75 Btu/ft²s on specimens with three control zones.
- Real time display and recording up to 80 channels of high speed data (up to 208 kHz) from sensors including accelerometers, strain gages, and pressure transducers.
- Real time display and recording up to 72 channels of thermal data (up to 100 samples/sec) 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

