



SANTA CLARITA, CA

NTS FACILITY SPOTLIGHT



A HIGHER STANDARD

The World's Most Complex Testing



ABOUT SANTA CLARITA

Aerodynamic Heating for Simulated Hypersonic Flight

A HIGHER STANDARD FOR TESTING

With 28 labs in North America—and unrivalled technical knowledge—NTS is the world's undisputed leader in testing, inspection, and certification. Established in 1961, NTS thought leaders sit on advisory boards, speak at conferences, and author technical papers. As the most trusted testing company in the world, NTS won NASA's prestigious supplier award in 2019. Today, NTS experts are ready to provide you with a higher standard of testing.

THE WORLD TURNS TO SANTA CLARITA

NTS's Santa Clarita lab is one of the largest test facilities in the U.S., covering over 150 acres. As a trusted lab for the world's most complex projects, the engineers at the Santa Clarita facility have worked on the Space Shuttle, Mars Rover, International Space Station, MX Peacekeeper, Terminal High Altitude Area Defense system (THAAD), and Evolved Expendable Launch Vehicle (EELV). In order to support the next generation of testing innovation, the lab recently invested millions of dollars in infrastructure and equipment. Key services include the following:

- Environmental
- Dynamics
- Acoustic
- Hydraulics
- Pneumatics
- Space Simulation
- Cryogenics
- Materials
- Fluids
- Mechanical
- Gas Systems

A Leader in Dynamics

The lab boasts 12+ electrodynamic and hydraulic shaker systems—including a new large-force T-4000 dual shaker—with ratings up to 70,000 force pounds. With digital control systems and multiple channel instrumentation, NTS creates combined temperature, vibration, cryogenic, and humidity environments.

- 12+ vibration exciters from 6,000 to 45,000 force-pounds
- Random, swept sine, sine-on-random, and random-on-random vibration
- Dual shaker system up to 70,000 force pounds to 3,000 hertz
- High velocity servo hydraulic system with 9" stroke and 10,000 force-lb to 500 hertz
- Half-sine, trapezoidal, haversine, and sawtooth shock
- Centrifuge load up to 5,000 pounds
- Shaker simulated, metal-to-metal impact, and true ordnance pyroshock
- Slosh and vibration table with 2,000 pound payload
- Acceleration up to 400 g-forces (2-25 foot radius)

Advanced Acoustic Testing

Acoustic testing occurs across multiple chambers inside a 1,400 square foot high bay and Class 100K (ISO Class 8) clean room. The setup includes M+P and PAK closed loop control systems and 100+ instrumentation channels.

- Specialized chambers for emission measurements or high-level noise
- Reverberant sound levels to 167 dB
- Progressive wave tube sound greater than 174 dB
- Four Reverberation chambers up to 5,000 cubic feet

Climatic, Space, and Hypersonic

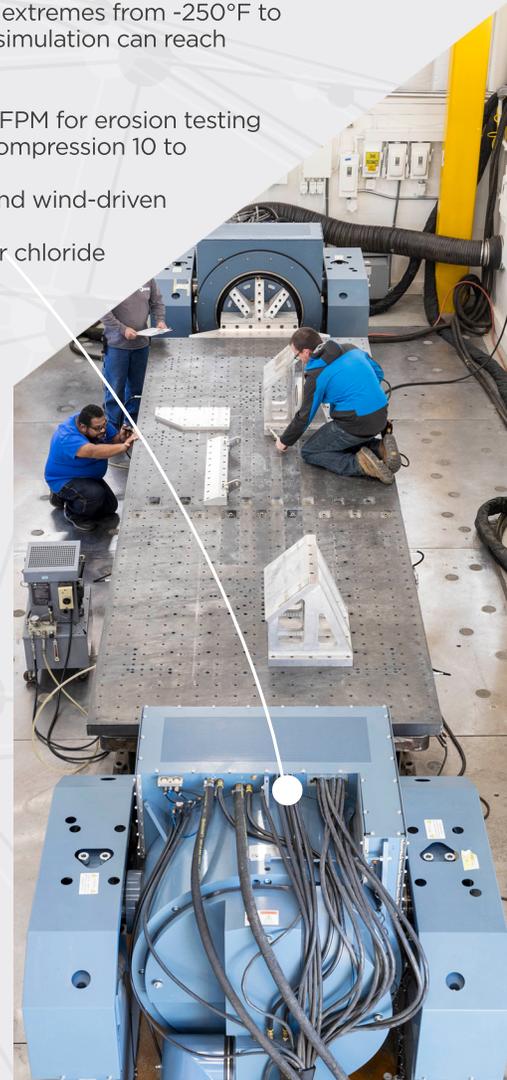
Climatic and Space Simulation provides for combined environments of temperature, vibration, altitude, and humidity from -70°F to +350° F. Thermal vacuum chambers provide temperature extremes from -250°F to 200°F with combined ambient pressures of 1×10^{-6} TORR—whereas hypersonic simulation can reach thermal exposure up to 4,000° F.

- Explosive atmosphere chambers to 70,000 feet at 250° F
- Temperature/altitude chamber to 70,000 feet
- Temperature chambers up to 40' x 60' x 15'
- Drive-in temperature/humidity chambers
- 1,500 cubic foot thermal vacuum chamber
 - 10' x 10' solar radiation heating effects
- Wind velocities to 4400 FPM for erosion testing
- Rapid and explosive decompression 10 to .01 mil/sec
- Hail strike at 800ft/sec and wind-driven rain at 70 MPH
- Salt-fog, SO₂, and copper chloride chambers to 10' x 10' x 8'

Mechanical, Fluids, and Gas Systems

The Santa Clarita facility is only test lab in Southern California to conduct fuel icing testing in strict accordance with MIL-F-8615D and SAE ARP 1401 while providing NAS Class V fuel cleanliness. Pressure, temperature, and flow capabilities for air, water, oils, fuels, solvents, cryogenic liquids, gases, and more. Air flow capability is provided up to 1,200°F, 300 lbs. min at 300 PSIG. Fuel flow is available to 850 GPM continuously—and multiple processed air facilities include bleed/ram air, blow down, and thermal endurance cycling.

- Flow and pressure with ramp rates of 5°C/min during vibration and climatic tests
 - » 600-900 GPM with -70°F to 135°F fuel temperature and fuel polishing to NAS Class III
 - » Fuel flow performance testing, contaminated fluid, cracking pressure, leakage, etc.
- DAC system recording up to 100 channels
- High flow water testing up to 3,000 gpm at ambient conditions
- Fuel icing pad containing three legs with a max flow of 300 GPM
- Airslab with multiple test bays to 350lbs/min at 280psi flow
- Three 3.9 million BTU heaters heat air up to 1,500°F
- 5,400 psig gaseous nitrogen and helium at high flows
- Custom fuel tests with high aromatic contents mixed with air



**A New High-Force T-4000
Dual Shaker System**

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