Low Turbulence Pressure Tunnel

6/19/97 10:05:21 AM

Activity:

National Aeronautics and Space Administration
Langley Research Center

HAMPTON, Virginia 23681
United States

Updated as of: Mar 20, 1996

Facility Type:

- Research Laboratory
- Wind Tunnels
- Wind Tunnels, Subsonic

Description:

The Low-Turbulence Pressure Tunnel (LTPT) is a single-return, closed-circuit tunnel that can be operated at pressures from 1 atm. to 10 atm. The test section is rectangular (3 ft wide, 7.5 ft high, and 7.5 ft long), and the contraction ratio is 17.6:1. The LTPT is capable of testing two dimensional and three dimensional models at Mach numbers from 0.05 to 0.50 and Reynolds numbers from 4E6 to 15E6 per foot. The chord length for a typical two dimensional multi-element airfoil tested in the facility is approximately 2 ft. A high-lift model support and force balance system is provided to handle both single-element and multi-element airfoils. Flow-quality measurements in the LTPT indicate that the velocity fluctuations in the test section are less than 0.1 percent over most of the operating envelope. The LTPT is a unique facility that provides flight Reynolds number testing capability for airfoils testing and a low turbulence environment for laminar flow control and transition studies. Data acquisition and real-time data reduction are performed utilizing a ModComp 9250 (32-bit, 16 Meg) computer, interfaced with a Neff 600/Series 600 data acquisition unit, and PC-486 computers. Data analysis is accomplished on Sun workstations utilizing a UNIX platform.

Available data file(s)
- Subsonic Wind Tunnel Facilities

Facility Capability:

- aerodynamics research
- experimental res: fld mechanics measurement calib
- wind tunnel/subsonic

Parameters:
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<tr>
<th>Name</th>
<th>Unit of Measure</th>
<th>Values</th>
<th>Type</th>
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<tr>
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<tr>
<td>mach #</td>
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**Programs Supported:**

- Not Available

**Status:**

- Percent Utilization: 100%
- Based On: 1
- Occupancy Year: 1940
- Current Status: Active
- Condition: Good
- Non Owner Use: Yes
- Military: Yes
- Civilian Government: Yes
- Commercial: Yes

**Contact:**

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