

# 0.3 Meter Transonic Cryogenic Tunnel

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## Activity:

National Aeronautics and Space Administration  
Langley Research Center

HAMPTON , Virginia 23681  
United States

Updated as of: Mar 20, 1996

## Facility Type:

- Wind Tunnels
- Wind Tunnels, Transonic

## Description:

The Langley 0.3-Meter Transonic Cryogenic Tunnel is the only U.S. transonic, adaptive wall tunnel and is used for testing models, in gaseous nitrogen, at Reynolds numbers in excess of 100 million per foot. The tunnel can operate continuously at Mach numbers from about 0.1 to above 1.2, maintained within +/-0.001. The adaptive walls, floor and ceiling in the 13- by 13-inch test section, can be moved to the computed freestream streamline shape, eliminating or reducing the wall effects on the model. Drag coefficient data with repeatability of +/-0.001 can be obtained. The facility can also use a heavy gas (SF6) or air as the test medium.

## Facility Capability:

- aero-/aerothermo-dynamics
- cryogenic test
- fluid test
- wind tunnel/transonic
- High Reynolds Number Test Facility

## Parameters:

Name	Unit of Measure	Values		Type
<u>dynamic pressure</u>	psia	36.0	36.0	Maximum
<u>mach #</u>	unitless	0.1	1.3	Range
<u>noise level</u>	delta p/p, rms	0.0	0.007	Maximum
<u>reynolds #</u>	millions per foot	100.0	100.0	Maximum
<u>stagnation pressure</u>	psia	14.7	88.0	Range
<u>temperature range - fahrenheit</u>	degrees-fahrenheit	-320.0	130.0	Range
<u>test section height</u>	inches	13.0	13.0	Maximum
<u>test section width</u>	inches	13.0	13.0	Maximum

**Programs Supported:**

Program	Customer	Start	End
<u>Airfoil Development</u>	<u>NASA/Industry</u>	1973	2000
<u>Heavy Gas Testing</u>	<u>National Aeronautics and Space Administration</u>	1991	1997
<u>Test Techniques</u>	<u>National Aeronautics and Space Administration</u>	1973	2000

**Status:**

**Percent Utilization:** 100%

**Based On:**

**Occupancy Year:** 1973

**Current Status:** Active

**Condition:** Good

**Non Owner Use:** Yes

**Military:** Yes

**Civilian Government:** Yes

**Commercial:** Yes

**Contact:**

*For information concerning the facility described on this page contact:*