A black and white photograph showing a series of white smoke rings or vortices trailing from left to right across the top of the page. Below this, a white aerodynamic model of a wing or airfoil is shown in profile, with a thin layer of smoke or vapor adhering to its surface, illustrating the boundary layer concept.

Boundary Layer and Subsonic Wind Tunnel (BLAST)

The University of Texas at Dallas
Department of Mechanical Engineering

About Us

The Boundary Layer and Subsonic wind Tunnel (BLAST) is a closed-return facility consisting of two test sections: one for reproducing high Reynolds-number boundary layer flows, and a second test section for subsonic aeronautical applications. The dual test-section wind tunnel enables tests for a wide range of applications, such as boundary-layer flows, transport phenomena, wind engineering, wind energy, urban flows, aerodynamics, aeronautics, aeroelasticity, and sport aerodynamics. Full optical access to the test sections and state-of-the-art instrumentation are available for highly accurate experiments.



Contact Information

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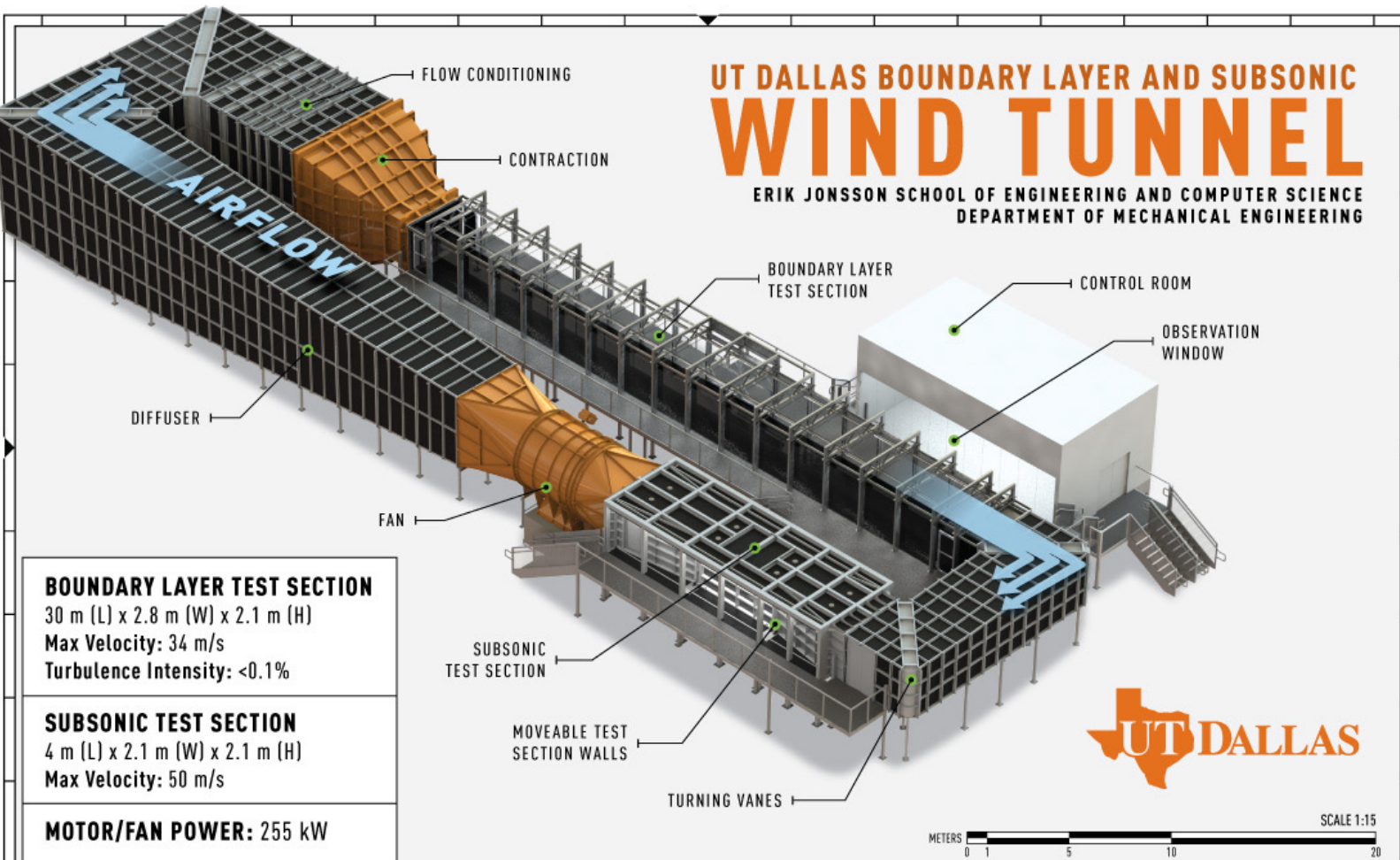
Testing Capabilities

- Temperature Controlled Operation
- Complete Optical Access
- Whole-Field 3D-3C Flow Velocimetry
- Automated Turntable & 4-DOF Traversing System
- High Speed Data Acquisition
- Direct Force Measurement
- High Speed 3-Component Anemometry



Instrumentation

- Pressure Scanners
- Temperature Instrumentation
- Hotwire Anemometry
- Multi-hole Pressure Probe
- Stereo PIV System
- Six-Axis Force/Torque Transducer
- Optical Particle Counter
- Shadowgraph System



UT DALLAS BOUNDARY LAYER AND SUBSONIC WIND TUNNEL

ERIK JONSSON SCHOOL OF ENGINEERING AND COMPUTER SCIENCE
DEPARTMENT OF MECHANICAL ENGINEERING

BOUNDARY LAYER TEST SECTION
30 m (L) x 2.8 m (W) x 2.1 m (H)
Max Velocity: 34 m/s
Turbulence Intensity: <0.1%

SUBSONIC TEST SECTION
4 m (L) x 2.1 m (W) x 2.1 m (H)
Max Velocity: 50 m/s

MOTOR/FAN POWER: 255 kW



SCALE 1:15
METERS 0 1 5 10 20