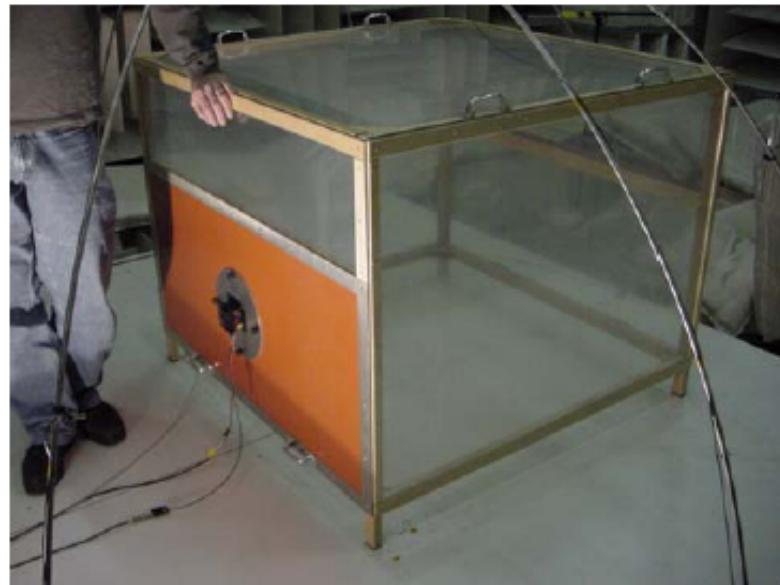


NASA Ames Research Center- Capabilities for Quiet Fan Research



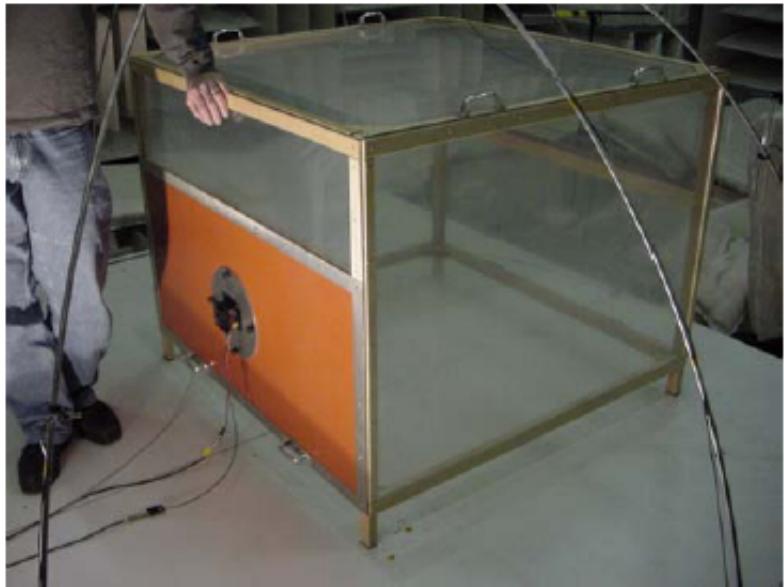
POC: Clifton Horne (650)604-4571
Experimental Aerophysics Branch(AOX)
William.C.Horne@nasa.gov

NASA Ames Anechoic Wind Tunnel



- Chamber size: 18' x 25' x 11' H
- Anechoic response above 250 Hz
- Low turbulence jet to 6 lbm/s
6" nozzle to $M = 0.4$,
4" nozzle to $M = 0.8$
- Low background noise < 25dBA
- Advanced data acquisition system
> 120 channels to 76 kHz
- Recent uses:
flight qualification of ISS
research payloads,
quiet cooling/ventilation fan
research

Sound Power Measurement System



- ANSI standard S21.11-1987 mylar box
 - 4x4x3 ft
- 1.5 meter radius measurement hemisphere over 3M x 3M ground plane
- Ten 4133 B&K 1/2" microphones, with 126AC GRASS preamps and 12AB GRASS power supplies

- Fully automated measurement system controls backpressure, motor voltage and data acquisition
- 10 Torr BaroCell (120 AD-0001REB) measures backpressure and flow rate using system calibration, 0.25% measurement accuracy
- Approx. 3.5 hours to acquire 4 voltages with 52 points for each voltage
- ~ 50 commercial fan models tested thus far

Typical Fan Performance and Noise Data

