



University of Oxford High Density Tunnel

HS4

Location: Oxford	Designation: Supersonic/Hypersonic intermittent blowdown
Owner(s): Osney Thermofluids Laboratory Department of Engineering Science University of Oxford Parks Road, Oxford, OX1 3PJ United Kingdom	Performance Working gas: Air Mach Number 3,4,5,6,7 and 9 Maximum Flow Speed: 3 km/s Max unit Reynolds No: $5 \times 10^8 / m$ Total Pressure: 27.5 MPa (max) Total Temperature: up to 2000 K Turbulence intensity: not known Run Time: up to 70 ms Typical Turn Around Time: 10 mins.
Test flow size: 0.25-0.35 m (diameter). Test section size: 2.m diameter, 1.4 m long	
Operational Status: Under installation	
Number and Type of Staff: Scientific: 3 Technical Support: 2	
Test support: Workshop for wind tunnel model design, manufacture and modification capability. Test Controller	
Testing Capabilities: Model Support: Remote actuated support (+/- 20 degree AoA and +/-10 degree BoA) Data Acquisition: NI PXI –128 channels @ 2 MHz/channel. 4 Channel Oscilloscope up 5 GHz. Freeflight DAQ up to 6 channels, 20 kHz Data Ports: 3 x 35 channel Measurement hardware: Megahertz Schlieren at full HD resolution, laser based optics, high response pressure transducers, high response bespoke thin film heat transfer gauges, hot wire anemometer, FLDI, high current and voltage power supplies	
Specialist Rigs: Boundary Layer Stability and Transition Supersonic/Hypersonic Intake Boundary layer separation studies Freeflight testing Aerodynamic testing Thin Film Gauge sensitivity and frequency response calibration Pressure transducer sensitivity and frequency response calibration	