

# University of Oxford Low Density Tunnel

HS3

<b>Location:</b> Oxford	<b>Designation:</b> Hypersonic Rarefied Flow,
<b>Owner(s):</b> Department of Engineering Science University of Oxford Parks Road, Oxford, OX1 3PJ United Kingdom	<b>Performance</b> <b>Working gas:</b> Air (Knudsen No: 0.001-0.3) <b>Mach Number:</b> 5.5 – 9 <b>Maximum Flow Speed:</b> n/a <b>Reynolds No:</b> $60 \times 10^3/\text{m}$ – $120 \times 10^3/\text{m}$ <b>Total Pressure:</b> n/k <b>Dynamic Pressure:</b> n/a <b>Total Temperature:</b> n/k <b>Turbulence intensity:</b> n/k <b>Run Time:</b> Continuous <b>Typical Recharge Time:</b> n/a.
<b>Test Section Size:</b> 0.18m (diameter).	<b>Testing Capabilities:</b> <b>Model Support:</b> Magnetic suspension and balance system. <b>Data Acquisition:</b> Multiple channel high speed data acquisition system. <b>Outputs:</b> Forces and Moments, pressure, temperature. <b>Flow visualisation:</b> high speed Schlieren, hot films, thermographic liquid crystal.
<b>Operational Status:</b> Operational	
<b>Number and Type of Staff:</b> <b>Scientific:</b> n/k <b>Technical Support:</b> n/k	
<b>Test support:</b> Workshop for wind tunnel model design, manufacture and modification capability.	<b>Specialist Rigs:</b> <ul style="list-style-type: none"> <li>• Large diffusion pump drive system</li> <li>• Three-dimensional traverse for docking and stage separation simulation.</li> </ul>