Imperial College 10x5 Low Speed Wind Tunnel

LS6

Location: London

Designation: Low Speed
Closed Return

Owner(s):
Imperial College Aeronautics,
Exhibition Road,
London SW7 2AZ

Performance:
Mach Number: 0.14 (max)
Maximum Flow Speed: 41 m/s
Reynolds No: 3.1×10^6/m (max)
Total Pressure: Ambient
Dynamic Pressure: up to 1.2 kN/m^2
Total Temperature: Ambient
Turbulence intensity: 0.15% or better
Run Time: Continuous
Typical Recharge Time: n/a.

Test Section 1 Size: 3.04m x 1.52m x 20 m
3.41:1 contraction ratio. Max speed: 41 m/s.

Test Section 2 (Return) Size: 5.7 m x 2.8 m x 18 m
Max. speed: 12 m/s.

Operational Status: Active

Testing Capabilities:
Model Support: internal 6-component sting mounted balance (20° yaw range turntable). Underfloor turntable +20deg yaw
Rolling Road: 2.1m x 1.8m rubber/fabric belt, 41m/s, water cooled, variable profile belt suction system, twin variable speed boundary layer flow-control ahead of road.
Data Acquisition: National Instruments multichannel ADC, 64 channel Pressure scanning.
Outputs: Forces & moments, pressure, velocity (LDA, LDV, PIV).
Flow visualisation: Video, surface fluorescent oilflow, smoke wand.

Number and Type of Staff:
Scientific: n/k
Technical Support: 1 – 5 technicians

Test support:
Fully equipped workshop for wind tunnel model design, CNC 4-axis mill, CNC 3-axis mill, CNC Lathe, CNC etching and cutting, a range of rapid prototyping manufacture and modification capability, 3D CAD support and drafting.

Specialist Rigs:
- **Air blowing**: 10 bar max pressure.
- **Fully automated Road Vehicle testing to 50% scale models.**
- **Automated Traverse system**
- **Model motion control system (automated pitch, manual roll and yaw)**
- **Full atmospheric boundary layer simulation capability.**