



Identification of the installation/facility :

Country: UK
Location (city): Farnborough
Name of the facility: 5m Low Speed Wind Tunnel
Date of construction or of acquisition or of main refurbishment:
Owner: QinetiQ PLC
Contact point: Ian Smith
Internet site: <http://www.qinetiq.com/what/capabilities/air/Documents/5M-Windtunnel.pdf>

Technical characteristics:

1 - Type of infrastructure

- | | |
|--|-------------------------------------|
| Wind tunnel | <input checked="" type="checkbox"/> |
| Propulsion bench | <input type="checkbox"/> |
| Structures facility | <input type="checkbox"/> |
| Material facility | <input type="checkbox"/> |
| Simulator (ex. Flight simulator, tower, ...) | <input type="checkbox"/> |
| Flight test bed (aircraft, embedded facilities, ...) | <input type="checkbox"/> |
| Supercomputers | <input type="checkbox"/> |
| Other | <input type="checkbox"/> |

2 - Main technical characteristics

Designation: Low speed, closed return.

Test Section Size:

- Dimensions: 5m x 4.2m
- Length: ~10m
- Contraction ratio: ~4:1

Performance:

- **Mach Number:** 0.33 (max)
- **Maximum Flow Speed:** 133 m/s
- **Reynolds No:** 18×10^6 /m (max)
- **Total Pressure:** 1 to 3 bars
- **Dynamic Pressure:** up to 16 kN/m²
- **Total Temperature:** Ambient to 313K
- **Turbulence intensity:** n/k
- **Run Time:** Continuous
- **Typical Recharge Time:** n/a

3 - Research domains which can be addressed (refer to ACARE taxonomy <http://www.acare4europe.com/sites/acare4europe.org/files/document/ASD-Annex-final-211004-out-asd.pdf>)



4 - Main (or specific) associated measurement techniques

- **Model Support:** internal 6-component sting balance (38° alpha range turntable for beta).
- Underfloor, virtual centre, balance with single or multiple struts.
- **Data Acquisition:** 1000 channel simultaneous data acquisition.
- **Outputs:** Forces & moments, pressure.
- **Flow visualisation:** Video, surface fluorescent oilflow.

Specialist rigs:

- **Air blowing / suction:** 22 bar max pressure plenum for 7.9kg/s max and suction at 4.2m³/s.
- **High alpha rig**
- **Full-scale store drag measurement**
- **Low Drag support system.**

5 - Operational status: Fully operational

6 - Picture available ?

- if yes add the picture (one or two ;external view and internal view) in this questionnaire or as an extra file with the filled questionnaire

Financial elements:

Replacement cost (M€uros)

- | | |
|---------------|--------------------------|
| Less than 10 | <input type="checkbox"/> |
| 10 to 30 | <input type="checkbox"/> |
| 30 to 60 | <input type="checkbox"/> |
| 60 to 100 | <input type="checkbox"/> |
| More than 100 | <input type="checkbox"/> |

Practices concerning:

Access policy (contract, voucher, free access for research, etc...)

Support (regional, national, European, private, ...)