



Identification of the installation/facility:

Country France
City Le Fauga
Name of the facility F1
Date of construction or of acquisition or of main refurbishment ~ 1974
Owner Onera/French MOD
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Internet site <http://windtunnel.onera.fr>

Technical characteristics:

1 - Type of infrastructure : Wind tunnel

2 - Main technical characteristics

Subsonic continuous pressurized wind tunnel, variable pressure from 1 to 3.85 bars, Mach number: from 0.05 to 0.36. A large, high Reynolds number, low speed wind tunnel with high productivity. Wind tunnel designed for high productivity and test confidentiality. Rectangular test section:

- length: 11 m
- width: 4.5 m
- height: 3.5 m

The test section is movable and can be fitted with any of the pallets forming the test section floor.

Each pallet includes the model support and a data acquisition unit. This arrangement enables a full preparation of the test in separate cells.

3 - Research domains which can be addressed (refer to ACARE taxonomy <http://www.acare4europe.com/docs/ASD-Annex-final-211004-out-asd.pdf>) : aircraft design, aircraft optimization, aerodynamic research

4 - Main (or specific) associated measurement techniques :

- Model deformation measurements (MDM) over the entire operating envelope of F1, up to 3.85 bar stagnation pressure
- Particle Image Velocimetry (PIV) over the entire operating envelope of F1, up to 3.85 bar stagnation pressure
- Pressure Sensitive Paint (PSP) over the entire operating envelope of F1, up to 3.85 bar stagnation pressure
- Load measurement

5 - Operational status - Fully operational - Has been extensively used over the last decade for A400M, A380, A350 and other programs.



6 - Pictures:



Building



Test section

Financial elements:

Replacement cost (MEuros): 100 Meuros

Practices concerning:

Access policy (contract, voucher, free access for research, etc...) : contractual relationships with customers based on a quotation of a test matrix

Support (regional, national, European, private, ...) : self-sustaining facility for operation purposes. Investments and upgrades partially funded by national and local supports.

Origin of information: Patrick Wagner, Director Wind Tunnel Division at ONERA – March 2011