



Identification of the installation/facility:

Country : France

Location (city) : DGA EP Center 91400 SACLAY

Name of the facility : CEPRA19 anechoic windtunnel

Date of construction-: 1975

Owner: ONERA/French MoD

Contact point : jean-pierre.foucault@onera.fr / stephen.wolf@onera.fr

Internet site: <http://windtunnel.onera.fr/>

Technical characteristics:

1 - *Type of infrastructure*: Wind tunnel for aero-acoustic tests

2 - *Main technical characteristics*

For wind tunnels :

- ¼ sphere, 9.5 m radius, anechoic test chamber. Free jet, continuous flow, generated by one of the two following convergents : 2 m dia. or 3 m dia.
- max velocity (or Mach number) :
 - 2 m dia. convergent : 130 m/s ($M_0 = 0.38$)
 - 3 m dia. convergent : 60 m/s ($M_0 = 0.16$)
- special features :
 - jet noise investigations : the 2 m convergent can be fitted with a 3-flows nozzle rig to simulate actual engine running points :
 - max. cumulated massflow : 12kg/s
 - max. pressure : 7 bar
 - temperature range:
 - primary flow : 500 K < TT1 < 1150 K
 - secondary flow : 300 K < TT2 < 470 K
 - fan noise investigation : usually using a TPS (turbine powered simulator) as a fan noise generator
 - aerodynamic noise capacities (high lift device noise, landing gear noise, ...)
 - PIV rig
- For aerobly propulsion bench: air mass flow, temperature, pressure, type of fuel,...

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*: PIV, acoustics

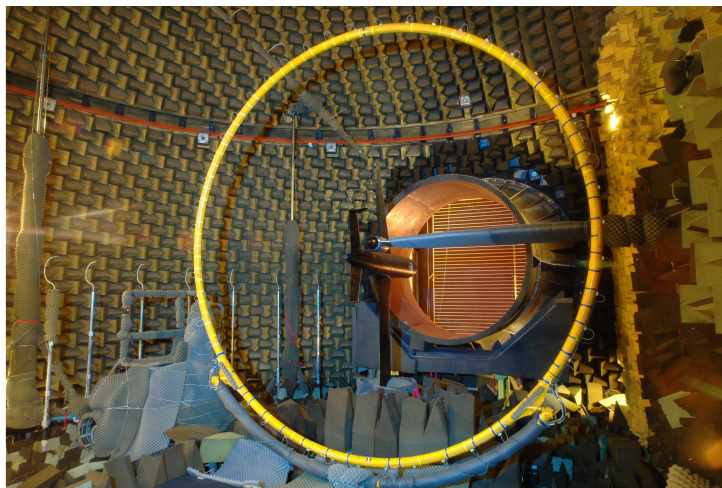
5 - *Operational status* - Fully operational



6 - Pictures:



Building



Test section

Financial elements:

Replacement cost (M€uros): 30 to 40

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