Identification of the installation/facility:

Country: the Netherlands
Location (city): Marknesse
Name of the facility: DNW-LLF
Date of construction or of acquisition or of main refurbishment: 1980
Owner: DNW
Contact point: H.B.Vos
Internet site: www.dnw.aero

Technical characteristics:

1 - Type of infrastructure

Wind tunnel	X
Propulsion bench	
Structures facility	
Material facility	
Simulator (ex. Flight simulator, tower, …)	
Flight test bed (aircraft, embedded facilities, …)	
Supercomputers	
Other	

2 - Main technical characteristics

Closed circuit, atmospheric, continuous low-speed wind tunnel with one closed wall and one configurable (slotted) wall test section and an open jet.

Main features

Closed wall test sections

Fixed section

- 9.5 m x 9.5 m: $0 \leq V \leq 62$ m/s

Configurable section with the following two configurations

- 8 m x 6 m: $0 \leq V \leq 116$ m/s
- 6 m x 6 m: $0 \leq V \leq 152$ m/s

Open jet

- 8 m x 6 m: $0 < V < 80$ m/s

Model support

- Remotely controlled sting support system with four degrees of freedom for models with internal balance
- External six-component balance

- Floor-based model support system for open jet testing with three degrees of freedom

Auxiliary systems

- Compressed air supply with a capacity of 5 kg/s continuously at 80 bar
- Vacuum system
- Moving belt ground plane for ground simulation
- Microphone traversing system
- Microphone wall arrays

Typical tests

- Configuration studies, database creation (civil and military transport aircraft, fighters, helicopters, spacecraft, cars and trucks)
- Engine integration studies with air-powered simulators
  - turbofan-powered aircraft by means of TPS
  - propeller-driven aircraft
- Air exhaust simulation with compressed air
- Air intake surveys for fighters and helicopters
- Aeroacoustic and performance testing on rotorcraft models
- Aeroacoustic testing on full-scale aircraft components (landing gears, wings)
- Aeroacoustic investigations on scaled turbofans
- Full-scale cars and trucks (drag and aeroacoustics)

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

1. Flight Physics
   a. Aeronautical Propulsion Integration
   b. Airflow Control
   c. High Lift Devices
   d. External Noise Prediction
2. Aerostructures
   a. Helicopter Acoustics
   b. Noise reduction
   c. Acoustic Measurements and Test Technology
3. Propulsion
   a. Performance (Nacelle/Thrust reverser/nozzle design)

10. Innovative Concepts and Scenarios
    a. Unconventional configurations and new aircraft concepts

4 - *Main (or specific) associated measurement techniques*

Load measurement (strain gauge balances)
Pressure measurements (static and dynamic)

Particle Image Velocimetry (PIV)
Stereo Pattern Recognition (SPR)
Acoustics (microphone arrays)

5 - Operational status
- Fully operational 1200 hrs available per year

6 - Picture:

Financial elements:

Replacement cost (M€uros)

Less than 10	☐
10 to 30	☐
30 to 60	☐
60 to 100	☐
More than 100	☒

Practices concerning:

Access policy : contract

Support : national

Comments:
For propulsion integration, the engine simulator calibration facility is available on site.

Origin of information ('signature'): author and date

Georg Eitelberg, Director DNW,
7 December 2011