



Łukasiewicz
Institute
of Aviation



WIND TUNNEL TESTING

Institute of Aviation's Aerodynamic Research Laboratory is a leading facility in the field of aerodynamics, conducting unique and groundbreaking scientific work and research and development on a national and international scale. Equipped with four wind tunnels, including the largest tunnel in central and eastern Europe, the laboratory's infrastructure is among the most advanced facilities in the world

OFFER

LOW SPEED WIND TUNNEL T-3	Value
Test section dimensions	5 m dia x 6,5 m
Max air speed	100 m/s
Secondary flow lines:	
SF400 max flow rate	45 kg/s
SF150 max flow rate	6 kg/s
SF80 max flow rate	2 kg/s
SF50 max flow rate	1 kg/s
IPP (underpressurized)	3 kg/s
SF80, SF50 max air flow temp	270°C

TRISONIC WIND TUNNEL N-3	Value
Test section dimensions	0,6 m x 0,6 m x 1,5 m
Flow range	Ma = 0,2–2,3

WIND TUNNEL T-1	Value
Test section dimensions	1,5 m dia x 2,4 m
Max air speed	45 m/s

LOW TURBULENCE WIND TUNNEL TMT	Value
Rear test section dimensions	0,5 m x 0,65 m x 1,3 m
Rear test section max flow speed	85 m/s
Front test section dimensions	1,75 m x 2,28 m x 1,3 m
Front test section max flow speed	8 m/s
Adjustable turbulence intensity range	[tau]<0.1% [tau]<0.03%



KEY FEATURES

- Wide range of flow regimes (sub-, trans-, and supersonic).
- Wide range of air velocity incidence angles.
- A diverse set of test rigs dedicated to aircraft models and subsystems, rotating components, ground vehicles, civil engineering structures, wind resistance of blunt bodies, and internal flow systems.
- Secondary flow installations for crossflow scenarios.
- A moving belt floor for ground vehicle testing.
- Support in test model design and manufacturing.

MEASUREMENT TECHNIQUES

Aerodynamic loads	Strain gage balances: Forces < 14 000 N Moments < 3 000 N
Pressure distribution	512 points with frequency < 500 Hz
Temperature distribution	80 points
Flow visualization	Particle Image Velocimetry, UV-highlighted mini-tufts, Schlieren, smoke, oil
Flow rate	< 45 kg/s

The Aerodynamic Research Laboratory holds the PN-EN ISO/IEC 17025:2018-02 accreditation certificate granted by the Polish Center of Accreditation and recognized by the International Laboratory Accreditation Cooperation.



The Łukasiewicz Research Network – Institute of Aviation

offers a wide range of specialized research, engineering services and products. We provide comprehensive solutions, ranging from dedicated analyzes, simulations, engineering design, through the selection, testing and certification of materials and structures, to rapid prototyping and additive manufacturing.

at. Krakowska 110/114, 02-256 Warsaw, Poland
e-mail: info@ilot.lukasiewicz.gov.pl / www.ilot.lukasiewicz.gov.pl