

Lola Wind Tunnel Specifications



Maximum model scale	Typically 50% for open wheel (e.g. F1, Champ Car)
Maximum model elevation	600 millimetre gap above rolling road surface
Maximum wind speed	65metres/second (145mph)
Maximum road speed	80 metres/second
Turbulence intensity	<0.08%
Average wind temperature	20°C (70°F)
Wind temperature stability	<1°C during test
Rolling road temperature	14°C (58°F) ± 0.5°C
Test section configuration	2.70 metres wide x 2.47 metres high
Diffuser configuration	7:1 contraction ratio
Fan configuration	Lola-designed and built 5-blade carbon composite unit
Main fan drive motor	650kW (872hp)
Overhead balance	6-component unit with accuracy >0.04% of range
Model attitude control	Pitch, heave, roll, yaw, wheel steering
Rolling road area	2.0 metres wide x 4.0 metres long
Rolling road motor	200 kW (268hp)
Rolling road yaw angle	±10°
Rolling road sensors	4 pressure and 4 temperature

Flow Quality

The test section accommodates 50% models for maximum accuracy. A combination of flow conditioning screens and high contraction ratio provides turbulence control second to none for a wind tunnel of this size and type, yielding superior quality, accuracy, and repeatability of results.

Air Management

The high top wind speed yields test results with excellent correlation to full-size performance. Heat generated by the main fan is dissipated through a large heat exchanger positioned in the air stream and a 520kW chiller unit, preventing temperature build-up and 'hot spots'.

Balance System

A six-component overhead balance is at the heart of the wind tunnel's data gathering system. It facilitates precise measurement of lift, drag, and lateral forces, along with their associated moments of yaw, roll, and pitch. The balance is mounted on an independent piled foundation to eliminate the influence of external vibrations. Accuracy is maintained by a self-correcting calibration system.

Model Control

Control of the model's attitude is fully computerised, with adjustability during runs including yaw and roll plus front wheel steering up to ± 10°. A unique feature of the system is the ability to change the wheelbase and track from the control room, increasing the flexibility and productivity of testing.

Rolling Road Control

The entire rolling road section can be yawed with, or separately from, the model to simulate the aerodynamic effects of slip angles and crosswinds. This data is especially useful for vehicles with less downforce and/or more frontal area, such as touring cars.

Computer System

The wind tunnel is controlled by Lola proprietary software, with data handling configured for easy and rapid interfacing with customers' own data reporting and analysis software. Multiple backup systems ensure continuity of operation and availability of results.