

TitanX Jamestown Vehicle Climatic Wind Tunnel Specifications

Nozzle Velocities and Dimension:

Small Nozzle	4 to 100 mph 8.2 ft wide x 6.9 ft. high	6 to 160 km/hr 2.5 m wide x 2.1 m high
Large Nozzle	4 to 45 mph 9.8 ft wide x 11.4 ft high	6 to 70 km/hr 3.0 m wide x 3.5 m high

Tunnel Dimensions:

Maximum Distance from Roll to Small Nozzle	19.3 ft	5.9 m
Maximum Distance from Roll to Large Nozzle	33.5 ft	10.2 m
Test Section Length	45.5 ft	13.9 m
Entrance Height	12.1 ft	3.7 m

Climatic Simulation:

Temperature Range	-40 to 120°F	-40 to 50°C
Rate of Temperature Change (average)	10°F/hr	5.5°C/hr
Humidity Range	up to 95%RH	up to 95%RH
Solar Simulation	320 BTU/hr ft ² max intensity over a 160 ft ² surface	1.0 kW/m ² max intensity over a 15 m ² surface

Chassis Roll Dynamometer:

Maximum Power	400 hp @ 30 mph	298 kW @ 48 km/hr
Maximum Speed	100 mph	160 km/hr
Maximum Tractive Force	5000 lb	2270 kg
Maximum Axle Load	20000 lb	9080 kg

Rolls move horizontally and vertically to accommodate front or rear wheel drive and tandem axle trucks

Water Brake Dynamometer

Maximum Power

Mounts between truck frame rails and couples to driveshaft

1000 hp

746 kW

Data Acquisition and Instrumentation Specifications

General

- Scan Rate: 20 scans / min
- Log Rate: 2 samples / min (typical), 20 samples / min (maximum)
- Windows-based software for planning tests, for controlling and monitoring the tunnel and vehicle, and for reporting results
- Easy switching between English and metric units on screen and in files/printouts
- Up to 30 calculated "channels", updated every scan and logged with data
- Results provided as hardcopy, and/or in Microsoft Excel format, on CD or via e-mail

Temperature

- Up to 140 thermocouple channels, chosen from selections below in banks of 16
- Up to 140 Type K • Up to 80 Type T
- Grounded or ungrounded junctions

Pressure

- Transducers for measurement of gage, differential, and vacuum
- Twelve ranges from 1 to 5000 psi (7 to 34467 kPa)
- Up to 27 pressures measured simultaneously

Flow

- Turbine flowmeters for measuring flow of coolant, refrigerant and transmission fluid, etc. in lines from 3/8" to 2" (10 to 51 mm) diameter, and flow ranges from 3 to 150 gpm (11.4 to 568 l/min)
- Up to 4 flows measured simultaneously

RPM

- 4 channels of rpm measurement (infrared reflective fiberoptic) for fan(s), engine, driveshaft, etc.

Voltage and Current

- 8 isolated channels, individually configurable to measure DC voltage (to 50 V) or current (to 50 A), for fans, blowers, etc. DC power supplies for vehicle systems up to 60 V

Fuel Flow

- Diesel fuel supply system incorporates mass flow measurement to 200 lb/hr (91 kg/hr) to permit verification of engine operating conditions

Registered to: ISO 14001

The vehicle climatic wind tunnel is located 75 miles southwest of Buffalo, in Jamestown, New York.

TitanX is a global company dedicated to the design, development, and manufacturing of custom engineered cooling solutions for the commercial vehicle, bus, agricultural, and power generation markets.

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