

# Climatic Engineering Facility

The Climatic engineering facility evaluates the performance of commercial and military equipment, vehicles, and components under severe climatic conditions (-51°C to +55°C).



**This large climatic chamber with railway access accommodates the largest and heaviest single-unit railway vehicles, highway or off-road transport vehicles, prototypes and commercial products.**

## **Features**

- full range of North American climate simulations (-51°C to +55°C)
- snow, rain, freezing rain, ice, fog
- full instrumentation and data facilities
- chamber divisible into smaller chambers for economical testing
- time shifting of weather conditions permits accurate and reproducible pre-testing for the next season

### Applications and benefits

- climatic evaluation of full-size rail and road vehicles and components to improve performance
- performance evaluation for compliance to specification of heating, ventilating, and air-conditioning systems
- miscellaneous evaluations: engine cold-starting aids; problems created by snow; icing, anti-icing and de-icing to improve product acceptance and reliability

### Climatic Engineering Facility Specifications

- chamber size: 30 m (100') long x 6 m (20') wide x 6 m (20') high
- rail access doorway: 4.6 m (15') wide x 6.0 m (19'-10") high
- temperature range: -51°C to +55°C (-49°F to +131°F)
- electrical: up to 600 VAC and 900 VDC
- services: compressed air, refrigerated fresh air, water, steam, engine exhaust extraction, monitoring of hazardous gases
- data acquisition: 190 channels

### Some recent/current uses

- railway track switch hot-air blower performance
- signal circuit shunt performance of railroad wheelsets in snow and ice
- diesel fuel low-temperature filterability
- HVAC compliance testing of rail passenger cars for export markets
- thermal performance of insulated rail cars
- radiator cooling fan performance evaluation on a locomotive at full load for export to the Middle East
- military tent performance in wind and rain
- military tank traction on ice
- climatic performance evaluation of military vehicles
- snow and ice problems of high voltage power system components
- aircraft icing, de-icing, anti-icing

### For further information, please contact:

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