OEM customers around the globe recognize the value of a HVAC supplier with advanced technologies. T/CCI’s Climatic Wind Tunnel complements our compressor design and manufacturing capabilities for optimum performance and durability while being mindful of your testing budget. Our custom LabVIEW based acquisition system is designed to protect the quality and accuracy of your data. We can custom simulate virtually any programmed test cycle including extreme climate and road conditions.

**CLIMATIC WIND TUNNEL**

**TYPES OF TESTING**
- Air Conditioning Cool-down
- Heater Warm-up
- Defrosting (according to legal standards)
- Defogging (All windows)
- Engine and Transmission Cooling
- Road Loads, Inclines, and Trailer Towing
- City Traffic Simulation (cold and hot)
- Front End Airflow Development

**TEST ELEMENTS**
- Passenger Cars
- Vans (cargo and passenger)
- Recreational Vehicles
- Light Trucks
- Class 6, 7, and 8 Trucks
- A/C and Heater subsystems
- Off-Road Vehicles
- Vocational Equipment
- Non-transportation applications
- Hot or Cold Soak Evaluations
- Custom Test Development

217.422.0055 tel | 217.422.4323 fax
Climatic Wind Tunnel Key Attributes

**TEMPERATURE CONTROL**
- -30°C to 50°C (0.5°C steady state and 1.0°C during transition) with proven repeatability
- Cooling System: 600HP Direct expansion R-22 refrigerant
- Heating System: Electric, sheathed tubular heaters
- Control System: LabVIEW Host with AB RS Logix PLC PID closed loop

**HUMIDITY RANGE**
- 10% to 95% from 4.4°C to 50°C with 2% with wet bulb/dry bulb air sampler
- Steam Injection with atomized water injection if needed
- Closed loop PID

**AIRFLOW**
- 0 to 160 kph and aerodynamic equivalent back to the “A” pillar passenger vehicles with 3 nozzles
- Construction: Centrifugal Aluminum wheel
- Drive: Allen Bradley DC 500 hp

**DYNAMOMETER**
- 0 to 160 kph (200 HP each @ 400 RPM DC Driven motors) Burke E. Porter –
  D3 controller twin axle, twin drive 48” dia. movable rolls
- Front wheel, rear wheel, all wheel, and tandem Axle capability
- Control: Absorbing, motoring, road load simulation, city traffic cycles, and transient modes

**SOLAR SIMULATION**
- Type: Infrared array with a size of 24’ Long 10’ Wide
- Bulbs: 375 watt, 240 total bulbs
- 100 to 1400 W/m² with closed loop PID control

**TEST CELL DIMENSIONS**
- Door opening-13 feet wide, 13 feet 11 inches tall
- Dynamometer width – 8 ft 6 inches
- Maximum length vehicle with dynamometer and idle door use – 21 feet
- Test chamber – 23 feet 9 inches wide, 39 feet 8 inches long

In addition to the Climatic Wind Tunnel

T/CCI’s multi-million dollar R & D lab and engineering test facility offer advanced product design and validation capability. Test equipment include a calorimeter with 10 performance test points, 5 Ransco climatic chambers, 8 modern durability stands, thermal shock, noise, dust, and liquid slugging equipment.