CMT-380
Microturbine Supercar

Go fast. Go clean. Go far.

The CMT-380 is the world's first microturbine-powered supercar. This sleek hybrid-electric sports car draws its power from lithium polymer batteries and a Capstone C30 microturbine. The CMT-380 proves that a plug-in hybrid can deliver the driving experience of a high-performance supercar and achieve extremely high fuel economy, reduced greenhouse gas emissions and ultra-clean vehicle emissions.

CMT-380 Concept Car

Driving Performance[1]

- 0-60 mph in 3.9 seconds
- 150 mph top speed (electronically limited)
- 80 mile battery range
- 500 mile total range

Fuel Economy

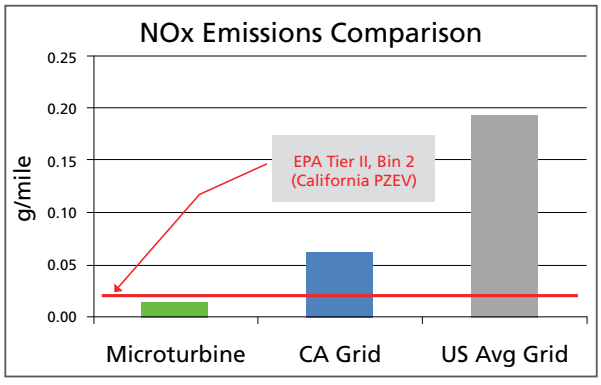
Standards for reporting fuel economy or energy consumption for plug-in hybrid electric vehicles are still being developed by the US Environmental Protection Agency, the Society of Automotive Engineers and others. Following are preliminary energy consumption estimates for the CMT-380, which reflect the dual-fuel capability of such hybrids. Actual mileage will depend on how you drive and when you recharge.

Operating Mode	City[2]	Highway[2]
Battery-Only (charge depleting)	190 Wh/mile	220 Wh/mile
	65 miles/gallon[3]	56 miles/gallon[3]
Full Performance (charge sustaining)	44 miles/gallon	38 miles/gallon

Blended Modes	Vehicle Fuel
50/50 Highway/City Range[4]	75 miles/gallon
SAE J1711 Proposed Method[5]	210 miles/gallon

Emissions

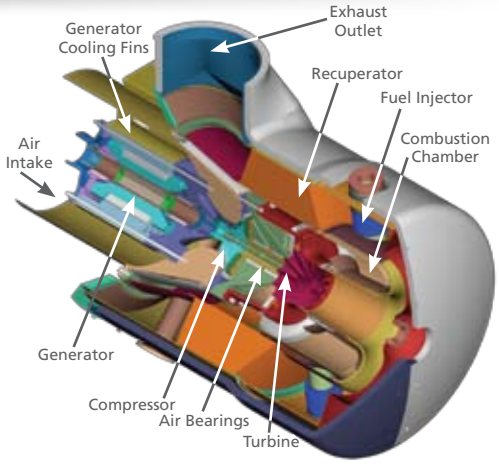
The CMT-380 meets the most stringent exhaust emissions requirements of the US EPA Tier II, Bin 2 and the California Advanced Technology – Partial Zero Emissions Vehicle (PZEV) categories. The bar graph shows the microturbine NOx emissions (in grams per mile) compared with the EPA and CA requirements, as well as the emissions from the California and average US grid. Note that the CMT-380 has less net emissions of NOx, and other criteria pollutants even when it is operating in charge sustaining mode with the microturbine ON.



Reliable power when and where you need it. Clean and simple.

Clean Microturbine Power

What makes the CMT-380 Supercar unique is its microturbine. The Capstone microturbine is a small gas turbine or miniature jet engine. The electric generator and turbine components are mounted on a single shaft, which is supported by air bearings – so there are never any oil changes. It uses a patented combustion system to achieve extremely low exhaust emissions, and its patented recuperator recycles exhaust energy to get high fuel efficiency.



Driving Modes

The CMT-380 can operate in three driving modes. The selection of these modes can be done at any time, and the vehicle control system will automatically take care of the rest:

- Battery Only – in Battery Only Mode, the microturbine is left in the off mode and power comes solely from the energy stored in the vehicle's battery system. The microturbine will automatically start when a minimum battery state of charge is reached.
- Full Performance – in Full Performance Mode, the microturbine is started to sustain the battery state of charge and maintain optimal vehicle performance. This preserves the full regenerative braking capability for highest fuel economy, and simultaneously assures that maximum power is available to the drive motor.
- Max Range – the Max Range Mode provides the user the option to automatically determine when the microturbine should start based on the calculated energy to reach the planned destination. Using input from a GPS Navigation system, the vehicle control system ensures there will be sufficient battery energy remaining. This minimizes use of on-board fuel, while eliminating driver "electric range anxiety."

Stationary Modes

When parked, the CMT-380 can be connected to an electrical system through its charging port. While connected to an electrical distribution system, several operating modes are possible:

- Immediate Recharge – plug it in, and tell the system to charge immediately.
- Time-of-Use Recharge – delay recharging to when the electric rates are most economic.
- User Power – the CMT-380 can also output power to an electric distribution system or critical load. Now your car becomes emergency power for your home or office.
- Utility Coordinated (future) – as more plug-in hybrid electric vehicles get into service, there will be standards established that will allow local electric utilities and/or recharge providers to provide added value to both the vehicle user and the electric distribution system.

(1) Performance and fuel economy are preliminary estimates based on calculations and similar electric vehicles.
(2) Refers to EPA City and Highway Drive Cycles.
(3) Based on published gasoline equivalent of 12,307 Wh/gallon when using electric utility power.
(4) Using 50% Highway Charge Sustaining plus 50% City Charge Depleting Operating Modes.
(5) Proposed SAE J1711 Method using utility factor of .82 based on 80 mile battery-only range.
Specifications are not warranted and are subject to change without notice.

Capstone®

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