

Electric Drive and Advanced Battery and Components Testbed (EDAB)

March 5 2012 - Feb 25 2013

Description / Specification

Vehicle

APU

Configuration Series PHEV

Traction Motor UQM 145 kW / single-speed gearbox

UQM 145 kW / 5.3L gasoline engine

Battery Pack

Manufacturer EnerDel

Model Type I EV Pack (A306)

Chemistry Li-ion

Cathode Mixed Oxide (Modified NMC)

Anode Amorphous Hard Carbon

Configuration 4 parallel strings of 96 cells

Rated Capacity (Ah) 70 Nominal Voltage (V) 345 Pack mass (kg) 285

Cooling Type Passive (sealed enclosure)

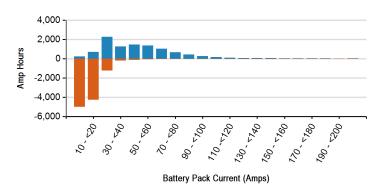
ESS Reference Performance Testing Results

| Initial Measured Capacity (BOL) (Ah) | 63.2 |
|--------------------------------------|------|
| Present Measured Capacity (Ah) | 54.0 |

ESS On-road Testing Results

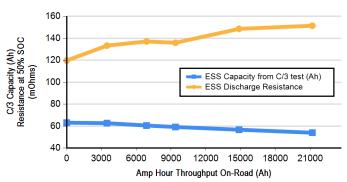
| Miles driven | 12,021.5 |
|------------------------------------|----------|
| City % of miles | 52% |
| Hwy % of miles | 48% |
| Amp Hours throughput lifetime | 21,281.1 |
| Avg. energy consumption (DC Wh/mi) | 240.5 |

Lifetime Ah throughput On-road

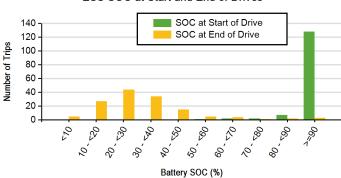




ESS Capacity and Resistance from RPT



ESS SOC at Start and End of Drives



Lifetime Ah throughput On-road

