VEHICLE SPECIFICATIONS

Weights
Delivered Curb Weight: 3941 lbs
Vehicle Test Weight: 4280 lbs
Distribution F/R: 55.4%/44.6%
GVWR: 4720 lbs
GAWR F/R: 2440/2400 lbs
Payload: 779 lbs
Performance Goal: 400 lbs

Engine
Model: 2.5 L Atkinson I-4
Output: 155 hp @ 6000rpm
Configuration: Inline 4
Displacement: 2.5 L
Fuel Tank Capacity: 15 gal
Fuel Types: Gasoline and E-85
(All vehicle testing was done using E-85)

Electric Drive System
Battery Manufacturer: Johnson Controls-Saft
Battery Type: Lithium-Ion
Number of Cells: 84
Nominal Cell Voltage: ~3.6V
Nominal System Voltage: 302V
Nominal Pack Energy: 12 kWh
Electric Motor: 94hp @ 5000rpm

Charge System:
Input Voltages: 120V
Required Breaker Current: 15 Amp
Max Charger Power Output: 1.5 kW
Charger Plug Type: NEMA #5-15
80% Charge Time: 4-5 Hrs
100% Charge Time: 6-8 Hrs

Charge Depleting:
Acceleration 0-60 MPH
Time: 10.5 seconds
Acceleration 1/4 Mile
Time: 18.6 seconds
Maximum Speed: 83.2 MPH
Acceleration 1 Mile
Maximum Speed: 100.6 MPH

Charge Sustaining:
Acceleration 0-60 MPH
Time: 10.6 seconds
Acceleration 1/4 Mile
Time: 18.6 seconds
Maximum Speed: 82.8 MPH
Acceleration 1 Mile
Maximum Speed: 101.9 MPH

Brake Test @ 60 MPH
Distance Required: 145.1 ft

Fuel Economy with A/C Off:
Fuel Economy: 119.7 MPG
AC kWh Consumed: 0.282 kWh/mi

Charge Depleting:
Average Fuel Economy: 119.2 MPG
AC kWh Consumed: 0.253 kWh/mi

Charge Sustaining:
Fuel Economy: 33.8 MPG

Fuel Economy with A/C On:
Fuel Economy: 20.5 MPG
AC kWh Consumed: 0.122 kWh/mi

UDDS Fuel Economy:

<table>
<thead>
<tr>
<th>Distance (miles)</th>
<th>Fuel Economy (mpg)</th>
<th>AC Energy Consumed (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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HWFET Fuel Economy:

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<th>Fuel Economy (mpg)</th>
<th>AC Energy Consumed (kWh)</th>
</tr>
</thead>
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<td>47.2</td>
<td>11.13</td>
</tr>
<tr>
<td>200</td>
<td>38.7</td>
<td>11.13</td>
</tr>
</tbody>
</table>

TEST
1. Cumulative fuel economy over EPA standard urban drive (UDDS) cycle.
2. Vehicle soaked at ambient temperature while off for a minimum of 12 hours prior to testing.
3. Average non-cold start, charge-depleting fuel economy.
4. Value determined from average charge-sustaining fuel economy tests with appropriate energy correction calculations.
5. A/C on coldest setting with full blower power. Engine-driven A/C compressor.
6. Calculated cumulative fuel economy values without A/C, includes cold start.
7. Cumulative AC energy based on measured charge efficiency: 74%.
8. As measured from delivered curb weight.
9. Not including driver.
10. Cumulative fuel economy over EPA standard highway (HWFET) drive cycle.

This vehicle meets all HEV America Minimum Requirements listed on back of this sheet.

Values in red indicate the Performance Goal was not met. All Power and Energy Values are DC unless otherwise specified.
This vehicle meets the following PHEVAmerica minimum requirements:

(1) Vehicles shall comply with Federal Motor Vehicle Safety Standards applicable on the date of manufacture and such compliance shall be certified by the manufacturer in accordance with 49 CFR 567. Suppliers shall provide a complete copy of Appendix A and Appendix B with their proposal, providing vehicle specifications and the method of compliance with each required section of 49 CFR 571. If certification includes exemption, the exemption number issued by the National Highway Transportation Safety Administration (NHTSA), the date of it’s publication in the Federal Register and the page number(s) of the Federal Register acknowledging issuance of the exemption shall be provided along with Appendix B. Exemptions for any reason other than non-applicability shall not be allowed.

(2) Vehicles shall be certified under current California Air Resources Board (CARB) or Environmental Protection Agency (EPA) regulations.

(3) Suppliers shall supply Material Safety Data Sheets (MSDS) for all unique hazardous materials the vehicle is equipped with, including RESS batteries or capacitors, and auxiliary batteries.

(4) Suppliers shall provide recycling plans for batteries and other vehicle hazardous materials including how the plan has been implemented.

(5) All vehicles shall comply with the FCC requirements for unintentional emitted electromagnetic radiation, as identified in 47 CFR 15, Subpart B, "Unintentional Radiators."

(6) Vehicles shall have a minimum payload of at least 400 pounds.

(7) For conversions, OEM Gross Vehicle Axle Weight Ratings (GAWR) shall not be increased. For conversion vehicles, Suppliers shall specify the OEMs gross vehicle weight rating (GVWIR).

(8) For conversions, OEM Gross Vehicle Axle Weight Ratings (GAWR) shall not be increased. Suppliers shall provide axle weights for the vehicle as delivered, and at full rated payload.

(9) Tires shall be subject to the following requirements:
   • Tires provided with the vehicle shall be the standard tire offered by the HEV Supplier for the vehicle being proposed.
   • Tires shall correspond to the requirements of the placard installed in accordance with 49 CFR 571.109, 110, 119 and 120, as applicable.
   • Suppliers shall specify manufacturer, model and size of the standard tire.
   • Replacement tires shall be in accordance with the requirements of the placard.
   • At no time shall the tire’s inflation pressure exceed the maximum pressure imprinted upon that tire’s sidewall.
   • The tire shall be operable across the entire operation/load range of that vehicle.
   • Replacement tires shall be commercially available to the end user in sufficient quantities to support the purchaser’s needs.
   • Tires provided as original equipment by the HEV manufacturer shall not have warranty restrictions in excess of those of the tire’s manufacturer, unless the Supplier is the sole warrantor for the tires.

(10) Seating capacity shall be a minimum of 1 driver and 1 passenger. Suppliers shall specify seating capacity (available seat belt positions) for their vehicle. For conversion vehicles, if the vehicle’s seating capacity is changed from that specified by the OEM on their FMVSS placard, the seat(s) being added or abandoned shall be modified as required by 49 CFR 571.207, et al, and a new FMVSS placard installed as required by 49 CFR 567, 568 or 571, as applicable.

(11) For conversion vehicles, the OEM passenger space shall not be impinged upon by the Rechargeable Energy Storage System (RESS) or other conversion materials.

(12) The vehicle shall have a parking mechanism.

(13) The controller/inverter shall limit the minimum RESS discharge battery voltage to prevent degradation of battery life, and should limit the maximum regeneration voltage to prevent external gassing of the batteries.

(14) Vehicles shall comply with the requirements of 49 CFR 571.105.S5.2.1, or alternatively, 49 CFR 571.105.S5.2.2 for parking mechanisms.

(15) Vehicles performing rough test according to (ETA-HTP-005) including (1) driving through standing water without damage and without battery to chassis leakage current exceeding 0.5 MIU per UL Standard 2020, and (2) standing for extended periods in extreme temperatures without damage to or failure of the vehicle or its systems.

(16) The RESS charger shall have a true power factor of 95 or greater and a harmonic current distortion of ≤20% (at rated load).

(17) For vehicles using fuels other than gasoline, manufacturers shall indicate compliance with appropriate and applicable standards from SAE, NFPA, etc. [e.g., for vehicles using Compressed Natural Gas as fuel, manufacturers should indicate compliance with NFPA 52, "Compressed Natural Gas (CNG) Vehicular Fuel Systems Code," as well as 49 CFR 571.303 and 304.]

(18) Rechargeable Energy Storage Systems (RESS) shall be battery, capacitor, or electromechanical flywheel technology-based as defined in SAE J1127. Suppliers shall specify the applicable SAE, NFPA, or NFPA.45-2013. Access to any high voltage components shall require the removal of at least one bolt, screw, or latch. Devices considered to be high voltage components shall be clearly marked as HIGH VOLTAGE. These markings shall be clearly visible to be accessed by the end user. Additionally cable and wire marking shall consist of orange wire and/or orange sleeving as identified in SAE J1127.

(19) For propulsion power systems with voltages greater than or equal to 48VDC, the system shall be isolated from the vehicle chassis such that leakage current does not exceed 0.5 MIU. Charging circuits for RESS battery systems with voltages greater than or equal to 48V shall be isolated from the vehicle chassis such that ground current from the grounded chassis does not exceed 5 mA at any time while the vehicle is connected to an off-board power supply.

(20) Charging systems for RESS battery systems with voltages greater than or equal to 48VDC shall include an overcurrent protection device in the circuit and shall be capable of interrupting maximum rated controller/inverter current. The Supplier shall describe the automatic disconnect provided for the main propulsion batteries.

(21) Batteries shall be designed and constructed such that there is complete containment of the flywheel energy storage system during all modes of operation. Additionally, flywheels and their enclosures shall be designed to ensure complete containment of the flywheel energy storage system during or following front or rear and side impact collisions, and rollover requirements of 49 CFR 571.301. Suppliers shall provide verification of containment to this requirement.

(22) For vehicles with RESS system voltages of 48 volts and higher or capacitors and their enclosures shall be designed and constructed in a manner that complies with 49 CFR571.365. For vehicles with RESS system voltages below 48V, batteries or capacitors, and their enclosures shall be designed and constructed in accordance with the requirements of SAE J1766. Further, irrespective of RESS system voltage, batteries or capacitors, or electrolyte will not intrude into the passenger compartment during or following FMVSS frontal barrier, rear barrier and side impact collisions, and rollover requirements of 49 CFR 571.301. Suppliers shall provide verification of containment to this requirement.

(23) Batteries shall comply with the requirements of SAE J1178. Vehicles shall not auto-start the engine to charge the batteries while the vehicle is in the OFF position. RESS batteries shall meet the requirements of NEC 252-26(c) or (d) for charging in enclosed spaces without a vent fan. The vehicle shall be labeled as not requiring ventilation for charging (or have the appropriate classification label from a UL-recognized Testing Laboratory).

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(27) Rechargeable Energy Storage Systems (RESS) shall be battery, capacitor, or electromechanical flywheel technology-based as defined in SAE J1127. Suppliers shall specify the applicable SAE, NFPA, or NFPA.45-2013. Access to any high voltage components shall require the removal of at least one bolt, screw, or latch. Devices considered to be high voltage components shall be clearly marked as HIGH VOLTAGE. These markings shall be clearly visible to be accessed by the end user. Additionally cable and wire marking shall consist of orange wire and/or orange sleeving as identified in SAE J1127.

(28) For propulsion power systems with voltages greater than or equal to 48VDC, the system shall be isolated from the vehicle chassis such that leakage current does not exceed 0.5 MIU. Charging circuits for RESS battery systems with voltages greater than or equal to 48V shall be isolated from the vehicle chassis such that ground current from the grounded chassis does not exceed 5 mA at any time while the vehicle is connected to an off-board power supply.

(29) The automatic disconnect for the RESS batteries shall be capable of interrupting maximum rated controller/inverter current. The Supplier shall describe the automatic disconnect provided for the main propulsion batteries.

(30) The start key shall be removable only when the “ignition switch” is in the “OFF” position, with the drive selector in “PARK.”

(31) With a pre-existing accelerator input, the controller shall not energize or excite such that the vehicle can move under its own power from this condition.

(32) The grid-connected charger shall be capable of discharging the RESS to a state of full charge from any possible state of discharge in less than 12 hours, at temperatures noted in Section 5.5, as applicable. The preferred recharge time should be less than eight (8) hours.

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