### VEHICLE SPECIFICATIONS

**VEHICLE FEATURES**
Base Vehicle: 2006 Lexus RX 400h  
VIN: JTJHW31U160002575  
Seatbelt Positions: Five  
Standard Features:
- CARB Certified as a SULEV
- AM/FM Stereo with 6 Disk CD
- All Wheel Drive
- Front/Rear Disk Brakes
- Regenerative Braking
- CVT Transmission
- Air Bags
- Anti-lock Brakes
- Power Windows
- Power Locks
- Keyless Entry
- GPS System
- Seat Warmer
- Dual Zone Air Conditioning
- State-Of-Charge Meter

**WEIGHTS**
- Design Curb Weight: 4365 lbs  
- Delivered Curb Weight: 4510 lbs  
- Distribution F/R: 57/43 %  
- GVWR: 5520 lbs  
- GAWR F/R: 2865/2865 lbs  
- Payload: 1010 lbs  
- Performance Goal: 400 lbs

**DIMENSIONS**
- Wheelbase: 107.0 inches  
- Track F/R: 62/61.2 inches  
- Length: 187.2 inches  
- Width: 72.6 inches  
- Height: 66.4 inches  
- Ground Clearance: 7.1 inches  
- Performance Goal: 5.0 inches

**TIRES**
- Tire Mfg: Goodyear  
- Tire Model: Eagle RS-A  
- Tire Size: P215/55R18  
- Tire Pressure F/R: 30/30 psi  
- Spare Installed: Yes  

**BATTERY**
Manufacturer: Panasonic EV  
Type: Nickel Metal Hydride (NiMH)  
Number of Cells: 30  
Pack(s) Location: Under Rear Seat  
Nominal Cell Voltage: 9.6VDC  
Nominal System Voltage: 288 VDC  
Nominal Pack Capacity: 6.5 Ah  
Front Electric Motor: 123 kW  
Rear Electric Motor: 50 kW

**ENGINE**
- Model: 3MZ-FE  
- Output: 208 hp @ 5600 rpm  
- Configuration: DOHC V6  
- Displacement: 3.3 L  
- Fuel Tank Capacity: 17.2 Gallons  
- Fuel Type: Unleaded Gasoline

### PERFORMANCE STATISTICS

**Acceleration 0-60 mph**
- Measured: 8.8 seconds  
- Performance Goal: 13.5 seconds

**Maximum Speed**
- At 1/4 Mile: 97.4 mph  
- In 1 Mile: 115.0 mph  
- Performance goal: 70 mph in one mile

**Driving Cycle Range w/o Accessories**
- Amp-Hours Out: 8.74 Ah\(^1\)  
- Amp Hours In: 8.71 Ah\(^1\)  
- Cycle Fuel Economy: 32.4 mpg  
- Driving Range: 558 miles\(^2\)

**Driving Cycle Range w/Accessories**\(^3\)
- Amp-Hours Out: 8.69 Ah\(^1\)  
- Amp-Hours In: 9.01 Ah\(^1\)  
- Cycle Fuel Economy: 25.1 mpg  
- Driving Range: 432 miles\(^2\)

**Braking From 60 mph**
- Controlled Dry: 141.1 feet

**Gradeability (Calculated)**
- Maximum Speed @ 3%: > 100 mph  
- Maximum Speed @ 6%: > 100 mph  
- Maximum Grade: 44%
This vehicle meets the requirements of HEVAmerica vehicle Technical Specification (R1) as follows:

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 completed 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 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. 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.

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

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

5. Vehicles shall have a minimum payload of at least 400 pounds.

6. For conversions, OEM GVWR shall not be increased. For conversion vehicles, Suppliers shall specify the OEMs gross vehicle weight rating (GVWR).

7. 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.

8. 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.
   - Suppliers shall provide a completed 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 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.

9. 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 571, 506, 557 or 557, as applicable.

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

11. The vehicle may utilize a single speed, multi-speed automatic, manual transmission, or a Continuously Variable Transmission (CVT), and shall have a parking mechanism.

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

13. Vehicles shall comply with the requirements of 49 CFR 571.105.55.2.1, or alternatively, 49 CFR 571.105.55.2.2 for parking mechanisms.

14. If different, customer available and battery available DOD ratings shall both be provided.

15. Batteries shall comply with the requirements of SAE J1718. Vehicles shall not auto-start the engine to charge the batteries while the vehicle is parked and the key switch is in the OFF position.

16. For vehicles with RESS system voltages of 48 volts and higher, batteries or capacitors and their enclosures shall be designed and constructed in a manner that complies with 49 CFR 571.305. For vehicles with RESS system voltages below 48VDC, 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, and 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 conformance to this requirement.

17. Concentrations of explosive gases in the battery box shall not be allowed to exceed 25% of the LEL (Lower Explosive Limit). Suppliers shall describe how battery boxes will be vented, to allow any battery gases to escape safely to atmosphere during and following normal or abnormal charging and operation of the vehicle. Battery gases shall not be allowed to enter the occupant compartment.

18. Batteries shall comply with the requirements of SAE J1718. at and a minimum shall meet the requirements of NEC 625-29% or (d) for charging in enclosed spaces without a vent fan.

19. If a Supplier provides a vehicle with parallel battery packs, the Supplier shall provide detailed information on the charging and charging algorithms required to prevent the parallel strings from becoming unbalanced.

20. Flywheels and their enclosures 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 and constructed such that there is complete containment of the flywheel energy storage system during or following frontal barrier, rear barrier and side impact collisions, and rollover requirements of 49 CFR 571.301. Suppliers shall provide verification of conformance to this requirement.

21. For vehicles capable of off-board recharging of the RESS batteries, suppliers shall ensure that the RESS batteries meet the requirements of NEC 625-29© or (d) for charging in enclosed spaces without a vent fan.

22. Batteries 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 completed 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 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.

23. 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.

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

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

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

27. Vehicles shall comply with the requirements of 49 CFR 571.105.55.2.1, or alternatively, 49 CFR 571.105.55.2.2 for parking mechanisms.

28. If different, customer available and battery available DOD ratings shall both be provided.

29. Batteries shall comply with the requirements of SAE J1718. Vehicles shall not auto-start the engine to charge the batteries while the vehicle is parked and the key switch is in the OFF position.

30. For vehicles with RESS system voltages of 48 volts and higher, batteries or capacitors and their enclosures shall be designed and constructed in a manner that complies with 49 CFR 571.305. For vehicles with RESS system voltages below 48VDC, 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, and 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 conformance to this requirement.

31. Concentrations of explosive gases in the battery box shall not be allowed to exceed 25% of the LEL (Lower Explosive Limit). Suppliers shall describe how battery boxes will be vented, to allow any battery gases to escape safely to atmosphere during and following normal or abnormal charging and operation of the vehicle. Battery gases shall not be allowed to enter the occupant compartment.

32. Batteries shall comply with the requirements of SAE J1718. at and a minimum shall meet the requirements of NEC 625-29% or (d) for charging in enclosed spaces without a vent fan.

33. If a Supplier provides a vehicle with parallel battery packs, the Supplier shall provide detailed information on the charging and charging algorithms required to prevent the parallel strings from becoming unbalanced.

34. Flywheels and their enclosures 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 and constructed such that there is complete containment of the flywheel energy storage system during or following frontal barrier, rear barrier and side impact collisions, and rollover requirements of 49 CFR 571.301. Suppliers shall provide verification of conformance to this requirement.

35. For vehicles capable of off-board recharging of the RESS, the charger shall be capable of recharging the RESS to a state of full charge from any possible state of discharge in less than 4 hours.

36. The vehicle shall be prevented from being driven with the key turned on and the drive selector in the drive or reverse position while the vehicle’s charge cord is attached. Additionally, the following interlocks shall be present:
   - The controller shall not initially energize to move the vehicle with the gear selector in any position other than “PARK” or “NEUTRAL.”
   - The start key shall be removable only when the “ignition switch” is in the “OFF” position, with the drive selector in “PARK.”
   - 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.

37. If the vehicle is capable of off-board recharging of the RESS, the charger shall use 120V or 208/240V single-phase 60-Hertz alternating current service, with an input voltage tolerance of ±10% of rated voltage. Input current for chargers operating at 208V and 240V shall be compatible with 40-ampere circuit breakers.

38. Personnel protection systems shall be in accordance with the requirements of UL Standard 2202 and shall be determined based upon RESS system voltages. All personnel protection systems shall meet the requirements specified in the applicable sections of UL-2233-1 and 2233-2.

39. If the vehicle is capable of off-board recharging of the RESS using a 208/240V charger, chargers shall have a true power factor of .95 or greater and a harmonic distortion rated at ≤ 20% (current at rated load).

40. Regardless of the charger type used, the charger shall conform to the requirements of UL Proposed Standard 2202.

41. The installation of options shall not relieve Suppliers of meeting other “shall” requirements.

42. Vehicles shall be accompanied by non-proprietary manuals for parts, service, operation and maintenance, interconnection wiring diagrams and schematics.

43. Vehicles shall be capable of completing the HEV America Rough Road Test (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 2202, and (2) standing for extended periods in extreme temperatures without damage to or failure of the vehicle or its systems. Vehicle shall be capable of completing all HEV America tests without repairs exceeding a cumulative total of 72 hours.

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