# VEHICLE SPECIFICATIONS

## PURPOSE-BUILT VEHICLE

**Base Vehicle:** 2002 Global Electric Motorcars E825 2-Passenger  
**VIN:** TEST10012P03  
**Seatbelt Positions:** Two  
**Standard Features:**  
- Front Wheel Drive  
- Four-Wheel Drum Brakes  
- Regenerative Braking With Coast Down and Over Speed  
- Three-Point Safety Belts  
- Speedometer  
- Odometer\(^1\)  
- State-Of-Charge Meter\(^2\)  
- Back-up Alarm  
- Traction Control  
- On Board Battery Charger

## BATTERY

**Manufacturer:** Trojan  
**Type:** 30XHS Flooded Lead Acid  
**Number of Modules:** 6  
**Weight of Modules:** 30.0 kg  
**Weight of Pack(s):** 180.0 kg  
**Pack(s) Location:** Under Seat and Under Front Hood  
**Nominal Module Voltage:** 12V  
**Nominal System Voltage:** 72V  
**Nominal Capacity (C/2):** 79 Ah

## WEIGHTS

- **Design Curb Weight:** 1100 lb  
- **Delivered Curb Weight:** 1103 lb  
- **Distribution F/R:** 60/40 %  
- **GVWR:** 1540 lb  
- **GAWR F/R:** 924/616 lb  
- **Payload:** 443 lb  
- **Performance Goal:** 400 lb

## DIMENSIONS

- **Wheelbase:** 71.1 inches  
- **Track F/R:** 52.5/52.5 inches  
- **Length:** 96.5 inches  
- **Width:** 55.0 inches  
- **Height:** 69.5 inches  
- **Ground Clearance:** 3.8 inches  
- **Performance Goal:** 5.0 inches

## CHARGER

- **Location:** On-board  
- **Type:** Conductive  
- **Input Voltages:** 115/230 VAC

## TIRES

- **Tire Mfg:** Goodyear  
- **Tire Model:** Double Eagle  
- **Tire Size:** 205/50-10  
- **Tire Pressure:** 30 psi  
- **Spare Installed:** No

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### PERFORMANCE STATISTICS

**ACCELERATION (0-20 mph)**  
- @ 100% SOC: 7.3 seconds  
- @ 50% SOC: 8.5 seconds  
- **Performance Goal:** 6.0 seconds

**MAXIMUM SPEED @ 170 LBS PAYLOAD (FMVSS 49 CFR 571.500 S5.a)**  
- At 100%: 23.7 mph  
- **Performance Goal:** ≤ 25 mph

**MAXIMUM SPEED @ 332 LBS PAYLOAD**  
- At 100% SOC: 23.3 mph  
- At 50% SOC: 22.9 mph

**RANGE:**  
- At Maximum Speed Range\(^1\): 33.4 miles

**ENERGY USED:**  
- 3.71 kWh  
- **Average Power:** 2.53 kW  
- **Efficiency:** 111.2 Wh-DC/mile  
- **Specific Energy:** 20.6 Wh/kg

**CHARGING EFFICIENCY:**  
- 124.9 Wh-Ac/mi  
- **Energy Cost:** @ $0.10/kWh: $0.012/mi

**CHARGER MAXIMUM GROUND CURRENT:** <0.01 mA  
**CHARGER MAXIMUM BATTERY LEAKAGE:** <0.01 MIU  
**MAX DC CHARGE CURRENT:** 11.5 A  
**MAX AC CHARGE CURRENT:** 11.6 A  
**PEAK DEMAND:** 971 W  
**TIME TO RECHARGE:** 9.4 Hours  
**Performance Goal:** 100% SOC within 12 hours

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**TEST NOTES:**

1. Vehicle was operated at maximum attainable speed until 18 mph could no longer be maintained.  
2. SOC Meter accuracy did not meet NEV America performance goal. Modifications to be performed by manufacturer. (NCR NTP-007-12P03-002).  
3. As delivered payload was 440 Lbs.  
4. Rough Road testing showed minor damage to front shocks. Modifications to be performed by manufacturer. (NCR NTP-007-12P03-001).  
5. Rough Road testing showed signs of water seepage. Modifications to be performed by manufacturer. (NCR NTP-007-12P03-003).  
6. Average handling time was determined by comparing 10 NEVS that were enrolled during the first NEV America Program  
7. Odometer accuracy did not meet NEV America performance goal. Modifications to be performed by manufacturer. (NCR NTP-007-12P03-004).

Values in red indicate the Performance Goal was not met. • All Power and Energy Values are DC unless otherwise specified.
This vehicle complies with the mandatory requirements of NEV America Technical Specifications, Revision 0 as follows.

1. Vehicles shall comply with Federal Motor Vehicle Safety Standard 500 as promulgated on the date of manufacture. Such compliance shall be certified by the Supplier in accordance with 49 CFR 567.

2. Suppliers shall provide a completed copy of Appendix B with their proposal, indicating the method of compliance with each required section of 49 CFR 571.500.

3. Vehicles shall be certifiable under current California Air Resources Board (CARB) regulations as vehicles that meet ZEV emission requirements and qualify for ZEV credits. If the vehicle is equipped with a fuel-fired heater, the heater shall also comply with this requirement.

4. Suppliers shall provide Material Safety Data Sheets (MSDS) for all unique hazardous materials supplied with the vehicle.

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

6. All vehicles shall comply with the FCC requirements for unintentional emitted electromagnetic radiation, as identified in 47 CFR 15, Subpart B, “Unintentional Radiators” over all anticipated operating and charging conditions.

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

8. Suppliers shall provide the curb weight and rated payloads of their vehicles.

9. For conversion vehicles, Suppliers shall specify the OEMs gross vehicle weight rating (GVWR) and shall not exceed such rating.

10. For conversions, OEM Gross Vehicle Axle Weight Ratings (GAWR) shall not be increased.

11. Suppliers shall provide axle weights for the vehicle as delivered, and at full rated payload.

12. Odometers shall be provided as standard equipment or as an option and shall have an accuracy of at least ± 5%.

13. The Supplier shall offer a standard or an optional tire conforming to the following requirements:
   - Tires provided shall conform to the requirements of the tire placard installed in accordance with 49 CFR 571.109, and 110, as applicable.
   - Suppliers shall specify manufacturer, model and size of the standard tire for the vehicle and for the tire provided.
   - Tire size and inflation pressure for the tire provided shall be in accordance with the requirements of the placard.
   - At no time shall the tire’s inflation pressure exceed the maximum pressure molded into that tire’s sidewall.
   - The tire provided shall be capable across the entire operation/load range of that vehicle.
   - Replacements for the tire provided shall be commercially available to the end user in sufficient quantities to support the purchaser’s needs.
   - Tires provided as original equipment by the Supplier shall not have warranty restrictions in excess of those of the tire’s manufacturer, unless the Supplier provides the warranty for the tires.

14. Seating capacity shall be a minimum of 1 driver. Suppliers shall specify seating capacity (available seat belt positions) for their vehicle. If a conversion 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 507, 568 or 571, as applicable.

15. The controller/inverter shall limit the minimum battery discharge to prevent degradation of battery life.

16. Regenerative braking shall not adversely impact the vehicle’s service brake capability on varying road surfaces.

17. Vehicles shall comply with the requirements of 49 CFR 571.500.s.(b).(7).

18. The vehicle top speed shall not exceed 25 mph in any configuration.

19. Suppliers shall provide a description of areas of non-compliance (if any) with the requirements of Section 6.5.

20. Concentrations of explosive gases in the battery box shall not be allowed to exceed 25% of the LEI (Lower Explosive Limit).

21. Suppliers shall indicate the depth of discharge below which the batteries should not be discharged.

22. Suppliers shall provide a description of areas of non-compliance (if any) with the requirements of SAE J1718 on Battery Gas Evolution.

23. Maintenance requirements for the batteries shall be described and any associated cost(s) to the consumer/end user should be clearly defined.

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

25. Suppliers shall provide Material Safety Data Sheets (MSDS) for all unique hazardous materials supplied with the vehicle.

26. Access to any high voltage components shall require the removal of at least one bolt, screw, cover or latch.

27. Devices considered to be high voltage components shall be clearly marked as HIGH VOLTAGE.

28. Cable and wire marking shall consist of orange wire and/or orange sleeves as identified in SAE-J1127, J1128, et al.

29. Propulsion power system operating at greater than 60 volts shall be isolated from the vehicle chassis such that leakage current does not exceed 0.5 MIU.

30. Charging circuits shall be isolated from the vehicle chassis such that ground current from the grounded chassis does not exceed 5 mA at any time the vehicle is connected to an off-board power supply and shall be compatible with operation using a 5 mA GFCI.

31. Vehicles using HIGH VOLTAGE traction systems shall be equipped with a key operated “master” switch that shall interlock controller propulsion functions and battery contactor(s), if any, to render the propulsion system inoperative. Contact(s) used in conjunction with the master switch shall be capable of interrupting maximum rated controller/inverter current.

32. A manual service disconnect for vehicles using a HIGH VOLTAGE traction system shall also be required. It shall have the following characteristics:
   - Manual action to break the connection
   - The disconnection is physically verifiable
   - The disconnection does not create exposed conductors capable of becoming energized while exposed.

33. The vehicle shall be prevented from being driven with the master switch key turned on and the drive selector in the drive or reverse position while the vehicle’s charge cord is attached.

34. The following controller/inverter interlocks shall be present:
   - The controller shall not initially energize to move the vehicle with the direction selector in any position other than “PARK” or “NEUTRAL.”
   - The master switch key shall be removable only when the switch is in the “OFF” position.
   - With a pre-existing accelerator input, the controller shall not energize such that the vehicle can move under its own power in this condition.
   - Electrically powered windshield wipers shall be provided as standard or optional equipment.
   - An electrically powered warning horn operable by the vehicle driver shall be provided as standard or optional equipment.

35. Vehicles shall be equipped with an on-board or off board battery charger capable of recharging the propulsion battery to a state of full charge from any possible state of discharge in less than 12 hours.

36. On-board and off board chargers shall have the capability of accepting input voltages of 120V (Level 1), 208V or 240V (Level 2) single phase 60 Hertz service, with a tolerance of ±10% of rated voltage.

37. Suppliers shall specify all optional equipment required to meet the requirements of this Vehicle Specification.

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

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