EVAMERICA | USDOE

1995 SOLECTRIA FORCE

VEHICLE SPECIFICATIONS

CONVERTED VEHICLE
Base Vehicle: 1995 Geo Metro
VIN:2C1MR529XS6783464
Seatbelt Positions: **Three**
Standard Features:
- Power Brakes
- Front Disk Brakes
- Front Wheel Drive
- Dual Air Bags
- AM/FM Stereo Radio w/Cassette
- Electric Heater

Options as Tested:
- None

BATTERY
Manufacturer: GM Ovonic
Type: 13.2EV85 Nickel Metal Hydride
Number of Modules: 14
Weight of Module: 18 kg
Weight of Pack(s): 254 kg
Pack Locations: Undertrunk/Underhood
Nominal Module Voltage: 13.2 V
Nominal System Voltage: 185 V
Nominal Capacity (1C): 85 Ah

WEIGHTS
Design Curb Weight: 2246 lbs
Delivered Curb Weight: 2304 lbs
Distribution F/R: 50/50 %
GVWR: 2755 lbs
GAWR F/R: 1432/1366 lbs
Payload: 451 lbs
Performance Goal: 664 lbs

DIMENSIONS
Wheelbase: 93.5 inches
Track F/R: 53.9/53.9 inches
Length: 164.1 inches
Width: 62.5 inches
Height: 54.6 inches
Ground Clearance: > 5 inches

CHARGER
Location: Trunk
Type: Solectria 3 kW Conductive
Input Voltages: 208-240 VAC

TIRES
Tire Mfg: Goodyear
Tire Model: Invicta GL Radial
Tire Size: P165/70R13
Tire Pressure F/R: 44/44 psi
Spare Installed: Yes - behind driver seat

TEST NOTES:
1. Full charge may not occur when charging in ambient temperatures of >100°F
2. To charge in less than 12 hour, charging should occur in ambient temperatures <100°F
3. When operating on wet surfaces,(rain, standing water, ice, snow, etc.) the regenerative braking selector must be set in the "Snow & Ice" position
4. The vehicle cannot be parked or operated in standing water with a depth greater than six (6) inches.
5. The left rear passenger door would not open, and was repaired by the manufacturer.
6. The left rear seat is not a designated seating position (may not be used for seating).
7. The vehicle exhibited front end shudder at high speeds and was repaired by the manufacturer.
8. The vehicle's amp-hour meter required repair during the Test Program.
9. Charger Test was completed with ambient temperatures of 94°F < temp < 98°F.
10. Vehicle was removed from the Test Program for repair for one 24-hour period.

Values in red indicate the Performance Goal was not met.
All Power and Energy values are DC unless otherwise specified.
Vehicle meets all EV America Minimum Requirements listed on back.

PERFORMANCE STATISTICS

ACCELERATION 0-50 mph
At 100% SOC: 18.3 sec
At 50% SOC: 18.5 sec
Max. Power: 34.4 kW
Performance Goal: 13.5 sec at 50% SOC

MAXIMUM SPEED @ 50% SOC
At 1/4 Mile: 57.8 mph
At 1 Mile: 69.9 mph
Performance Goal: 70 mph in one mile

CONSTANT SPEED RANGE @ 45 mph
Range: 105.9 miles
Energy Used: 14.53 kWh
Average Power: 6.13 kW
Efficiency: 137 Wh/mile
Specific Energy: 57.2 Wh/kg

CONSTANT SPEED RANGE @ 60 mph
Range: 70.9 miles
Energy Used: 14.07 kWh
Average Power: 11.72 kW
Efficiency: 199 Wh/mile
Specific Energy: 55.4 Wh/kg

DRIVING CYCLE RANGE
Range per SAE J1634: 84.5 miles
Energy Used: 14.59 kWh
Average Power: 4.26 kW
Efficiency: 173 Wh/mile
Specific Energy: 57.4 Wh/kg
Performance Goal: 60 miles

BRAKING FROM 60 mph
Controlled Dry: 180.3 feet
Controlled Wet: 318.8 feet
Panic Wet: 287.4 feet
Course Deviation: 0.0 feet

HANDLING
Avg Time @ 90% SOC: 58.5 sec
Avg Time @ 50% SOC: 58.0 sec
Avg Time @ 20% SOC: 60.5 sec
Avg Dodge Neon Time: 54.6 sec

GRADEABILITY (Calculated)
Maximum Speed @ 3%: 65.1 mph
Maximum Speed @ 6%: 54.3 mph
Maximum Grade: 19.3%
Time on 3% Grade: 25 min 25 sec
Performance Goal: 15 Min

CHARGING EFFICIENCY
Efficiency: 318 Wh-AC/mile
Energy Cost @ 10¢/kWh: 3.18 ¢/mile

CHARGER
Max Charger Ground Current: &lt0.01 mA
Max Battery Leakage Current: &lt0.01 mA
Max DC Charge Current: 14.1 Amps
Max AC Charge Current: 14.0 Amps
Pwr Factor @ Max Current: 0.99
THD(V)/(I) @ Max Current: 3.39/3.97%
Peak Demand: 2.84 kW
Time to Recharge: 8 Hrs 57 min
Performance Goal: 8 hours

This vehicle meets the following EV America Minimum Requirements:

1. The vehicle has a payload of-at least 400 pounds.
2. The vehicle does not have a GVWR greater than the OEM GVWR.
3. The OEM GAWRs have not been increased.
4. Seating capacity is a minimum of 2 passengers.
5. A battery recycling plan has been provided.
6. The OEM passenger space has not been intruded upon by the electrical conversion materials.
7. The vehicle has a parking mechanism or parking brake as required by 49 CFR 571.105.
8. The vehicle has a minimum range between charges of at least 50 miles when loaded with two 166-pound occupants and operated at a constant 45 mph.
9. The vehicle manufacturer has certified that this vehicle complies with the Federal Motor Vehicle Safety Standards (FMVSS) applicable on the date of manufacture.
10. The vehicle manufacturer's proposal states that batteries and/or battery enclosures do not intrude into the passenger compartment during or following a frontal barrier, rear barrier and side impact collision and roll-over.
11. Batteries are an advanced design, specifically Nickel-Metal-Hydride (NiMH).
12. The vehicle manufacturer has certified concentrations of explosive gases in the battery box do not exceed 25% of the Lower Explosive Limit (LEL) during and following normal or abnormal charging and operation of the vehicle.
13. The battery charger is capable of recharging the main propulsion battery in less than 12 hours when recharging at 208V single phase 40A maximum.
14. The vehicle manufacturer has certified the charger is capable of accepting input voltages of 208VAC and 240VAC single phase 60 Hertz, with a tolerance of -13% +6% of rated voltage. On-board personnel protection systems are compatible with utility service GFCI protected circuits.
15. The charger has a true power factor of .95 or greater and a harmonic distortion of less than 5% (voltage and current at rated load).
16. The charger is fully automatic, determining when "end of charge" conditions are met and transitioning into a mode that maintains the main propulsion battery at a full state of charge while not overcharging when continuously left on charge.
17. Vehicles do not contain exposed conductors, terminals, contact blocks or devices of any type that create the potential for personnel to be exposed to 50 volts or greater.
18. Vehicles are accompanied with manuals for parts, service, operation and maintenance, interconnection wiring diagrams and schematics.
19. The vehicle has a state of charge indicator for the main propulsion batteries.
20. The vehicle has a battery system voltage indicator.
21. The vehicle has a power or current indicator.
22. Under static conditions, leakage current from propulsion system to vehicle chassis is less than 1 mA.
23. Ground currents from a grounded chassis during charging does not exceed 5 mA.
24. Replacement tires are commercially available to the end user.
25. The vehicle has the following interlocks:
    a). The controller does not energize in any drive selector position other than Park" or "Neutral"
    b). The start key is removable only in the "Off' position, with the drive selector in "Park"
    c). The controller does not initially energize or excite with a preexisting accelerator input.
26. The vehicle manufacturer has certified this vehicle complies with FCC requirements for unintentional emitted electromagnetic radiation, as identified in 47 CFR 15, Subpart B, "Unintentional Radiators."
27. The vehicle manufacturer has certified failure of a battery or battery pack is deemed to have occurred if the actual battery capacity is not at least 80% of the nominal ampere hour capacity.
28. The vehicle is equipped with an automatic disconnect and a manual service disconnect for the main propulsion batteries which are clearly labeled.
29. The charging system is compatible with circuit breaker type GFCI systems.
30. Material Safety Data Sheets (MSDS) for all on-board batteries have been supplied.
31. The level of charge below which the batteries should not be discharged and how the controller automatically limits battery discharge below this level have been identified by the manufacturer.

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