



1997 Chevrolet S-10 Electric

VEHICLE SPECIFICATIONS

PURPOSE-BUILT VEHICLE

Base Vehicle: 1997 Chevrolet S-10

VIN: 1GCDE14H4V80003EX

Seatbelt Positions: Three

Standard Features:

- Heat Pump Climate Control System
- Auxillary Diesel Fuel Fired Heater (Only operates Below 40 F)
- Cruise Control
- Tilt Steering Wheel
- Front Wheel Drive
- Power Steering
- Power Brakes
- Anti-Lock Brakes
- Front Disk Brakes
- Regenerative Braking
- Drivers Side Air Bags
- AM/FM Stereo Radio
- Half-Bed Tonneau Cover

BATTERY

Manufacturer: Delphi Energy

Type: Valve Regulated Lead Acid

Number of Modules: 26

Weight of Module: 19 kg

Weight of Pack(s): 575 kg

Pack Locations: Underbody

Nominal Module Voltage: 12 V

Nominal System Voltage: 312 V

Nominal Capacity (C/2): 48 Ah

WEIGHTS

Design Curb Weight: 4300 lbs

Delivered Curb Weight: 4199 lbs

Distribution F/R: 48/52 %

GVWR: 5150 lbs

GAWR F/R: 2700/2900 lbs

Payload: 951 lbs

Performance Goal: 600 lbs

DIMENSIONS

Wheelbase: 108.3 inches

Track F/R: 57.2/54.9 inches

Length: 188.9 inches

Width: 67.8 inches

Height: 62.4 inches

Ground Clearance: 5.0 inches at

GVWR

Performance Goal: 5.0 inches at

GVWR

CHARGER

Location: Off-Board

Type: Delco Electronics Inductive 6.6 kW

Input Voltages: 165 to 260 VAC

TIRES

Tire Mfg: Uniroyal

Tire Model: Tigerpaw AWP Radial

Tire Size: P205/75R15

Tire Pressure F/R: 51/51 psi

Spare Installed: No

TEST NOTES:

1. Vehicle maximum speed is software limited. Chevrolet will be issuing a software modification to allow a maximum speed greater than 70 mph subsequent to completion of EV America Testing.
2. ICE Vehicle tested was a 1992 rear wheel drive with a 4.3 liter V-6 engine.
3. Vehicle complete 21 minutes 3 seconds from 100% SOC.
4. Cruise control failed to engage on two occasions. Vehicle required restart before cruise control could be engaged.
5. The battery pack data collection voltage signal was reduced 100:1 through a voltage divider installed by Chevrolet. This was for personnel protection.

[This Vehicle meets all EV America Minimum Requirements listed on back.](#)

Values in **red** indicate the Performance Goal was not met.

All Power and Energy values are DC unless otherwise specified.

ACCELERATION 0-50 mph

At 100% SOC: 9.75 sec

At 50% SOC: 10.35 sec

Max. Power: 104.3 kW

Performance Goal: 13.5 sec at 50% SOC

MAXIMUM SPEED @ 50% SOC¹

At 1/4 Mile: 67.6 mph

At 1 Mile: **69.3 mph**

Performance Goal: 70 mph in one mile

CONSTANT SPEED RANGE @ 45 mph

Range: 60.4 miles

Energy Used: 12.99 kWh

Average Power: 9.70 kW

Efficiency: 215 Wh/mile

Specific Energy: 22.2 Wh/kg

CONSTANT SPEED RANGE @ 60 mph

Range: 38.8 miles

Energy Used: 11.93 kWh

Average Power: 18.30 kW

Efficiency: 307 Wh/mile

Specific Energy: 20.7 Wh/kg

DRIVING CYCLE RANGE

Range per SAE J1634: **43.8 miles**

Energy Used: 12.81 kWh

Average Power: 6.98 kW

Efficiency: 292 Wh/mile

Specific Energy: 22.3 Wh/kg

Performance Goal: 60 miles

BRAKING FROM 60 mph

Controlled Dry: 182.2 feet

Controlled Wet: 216.3 feet

Panic Wet: 192.1 feet

Course Deviation: 0.0 feet

HANDLING

Avg Time @ 90% SOC: 56.2 sec

Avg Time @ 50% SOC: 55.8 sec

Avg Time @ 20% SOC: 55.5 sec

Avg S-10 ICE Time: 58.3 sec²

GRADEABILITY (Calculated)

Maximum Speed @ 3%: 68.0 mph

Maximum Speed @ 6%: 66.5 mph

Maximum Grade: 36.4%

Time on 3% Grade: **10 min 3 sec³**

Performance Goal: 15 Min from 50% SOC

CHARGING EFFICIENCY

Efficiency: 470 Wh-AC/mile

Energy Cost @ 10 ¢/kWh: 4.70 ¢/mile

CHARGER

Max Charger Ground Current: <0.01 mA

Max Battery Leakage Current: <0.01 mA

Max DC Charge Current: 16.9 Amps

Max AC Charge Current: 19.4 Amps

Pwr Factor @ Max Current: 0.97

THD(I) @ Max Current: 7.70 %

Peak Demand: 6.59 kW

Time to Recharge: 5 Hrs 15 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 OEM GVWR has not been increased.
3. The OEM GAWRs have not been increased.
4. Seating capacity is a minimum of (2) occupants.
5. A battery recycling plan has been submitted.
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 will not intrude into the passenger compartment during or following a frontal barrier, rear barrier and side impact collision and roll-over.
11. Batteries comply with requirements of SAE J1718, and are so labeled.
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 shall be capable of recharging the main propulsion battery to a state of full charge from any possible state of discharge in less than 12.
14. The vehicle manufacturer has certified the charger is capable of accepting input voltages of 208V and 240V single phase 60 Hertz alternating current service, with a tolerance of -13% +6% of rated voltage. Charger input current is compatible with 40 ampere circuit breakers, and complies with requirements of SAE J1773.
15. The charger has a true power factor of .95 or greater and a harmonic distortion rated at $\leq 20\%$ (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 it, if continuously left on charge.
17. The vehicle does 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. The vehicle is accompanied by non-proprietary 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. Propulsion power is isolated from the vehicle chassis and battery leakage current is less than 0.5 MIU under static conditions.
21. Charging circuits are isolated from the vehicle chassis such that ground current from the grounded chassis any time the vehicle connected to a charger does not exceed 5 mA.
22. Replacement tires are commercially available to the end user.
23. The vehicle is interlocked such that:
 - a). The controller does not energize to move the vehicle with the gear selector in any position other than "Park" or "Neutral".
 - b). The start key is removable only when the "ignition key" is in the "Off" position, with the drive selector in "Park".
 - c). The controller does not initially energize or excite with a pre-existing accelerator input, such that the vehicle can be moved under its own power from this condition.
24. 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."
25. The vehicle manufacturer has certified failure of a battery or battery pack has deemed to have occurred if the actual battery capacity is not at least 80% of the nominal ampere hour capacity.
26. The vehicle is equipped with an automatic disconnect and a manual service disconnect which are clearly labeled.
27. The charging system is compatible with Personnel Protection Systems per SAE J1773.
28. Material Safety Data Sheets (MSDS) have been supplied for all on-board batteries.
29. 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.
30. The vehicle manufacturer has verified that the method(s) of charging the propulsion batteries and the charging algorithm have been reviewed and approved by the battery manufacturer.
31. The charger is capable of meeting the requirements of Section 625 of the National Electric Code(NEC).
32. The vehicle complies with the requirements of 49 CFR 571.301 for fuel fired heaters.
33. The vehicle has an on-board Battery Energy Management System(BMS).