

# GEMINI



**MIT**  
SEVT

## **Wheels (4):**

**Aluminum  
95/80 R16**

## **Battery:**

**Lithium Ion  
NCR18650GA**

## **Motors (2):**

**Mitsuba 2096 D3  
5 kW Peak Power (each)**

## **Infotainment/Interior:**

**RGB Light Customization  
AI Voice Assistant  
Apple Carplay  
Speaker Audio  
Phone Chargers  
Cup Holders**

## **Safety:**

**4130 Steel Roll Cage  
5 Point Racing Harness**

## **Solar Array:**

**Mono-crystalline Silicon Solar Cells  
1265 W Peak Wattage**

## **Chassis:**

**Monocoque Carbon Fiber Composite**

## **Weight:**

**440 kg**



**17.54 kWh**



**176 L of Cargo**



**1187 W  
Solar Array**



**350 Miles  
at 30 MPH**



**Carbon Fiber +  
Nomex Panels**



**Composite  
Suspension Mounts**



**Up to 55 MPH**



**1049 lbs  
476 kg**



**Android Auto &  
Apple CarPlay**



**2 Rear Motors**



**JBL Stereo Speakers**



**Push Button Hatch**

# GAIA

University of Minnesota Solar Vehicle Project

## Solar-Electric Vehicle

A spacious two-seat cruiser built with style and convenience in mind.

**2** person capacity

**1300** watt solar array

**550** mile range

Battery Cells	21700 Lithium-ion
Solar Cells	SunPower Maxeon Silicon
Motors	Dual In-House Permanent Magnet
Chassis	Carbon Fiber Monocoque

### Safety Features

- Composite side impact structure
- Steel roll cage
- 5-point harness seat belts
- Shatter-proof windows
- Side turn indicators



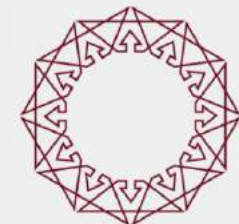
### Interior Features

- Infotainment system
- Ergonomic steering wheel
- Mirrorless vision system
- Luxury interior
- Cup holders
- Passenger cooling system
- Push to talk radio system

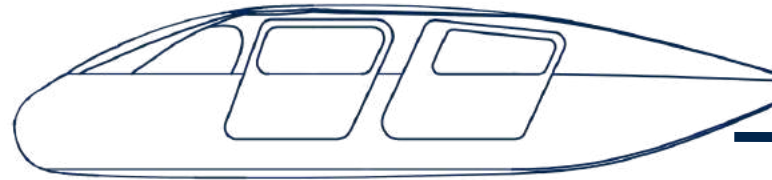
### Exterior Features

- LED headlights
- Normalizing array
- Daytime running lights
- Protective vinyl wrap
- Aerodynamic tunnel

Fueled by the Sun, Powered by the Mind! • [UMNSVP.org](http://UMNSVP.org)



# SR-4 AURORA



# #49



**4 Passengers**



**14.05 kWh**



**1233W Array**



**940 kg**



**400 mile Range**



**35 Wh/mile**

## VEHICLE OVERVIEW

**Chassis:** Semi-monocoque carbon fiber

**Motors:** 2 GEM G2.4 in-hub radial flux

**Battery cells:** Molicel 18650 Lithium-ion

**Solar cells:** SunPower Maxeon Silicon

**Dimensions:** 4.98m x 2.16m x 1.25m

**Charging time:**

- Regular (120 Volts): 5h
- Fast (240 Volts): 3h
- Solar: 11h

## FEATURES

- Direct RWD
- Regenerative braking
- Cruise control
- Infotainment system
- Live telemetry
- Rear-view camera
- LED headlights
- EV Charging Port

Want to learn more?



[solarracing.gatech.edu](http://solarracing.gatech.edu) | [@gtsolarracing](https://www.instagram.com/gtsolarracing)





# ESTEBAN 11

## Solar car



- 2024 CRUISER GT
- 2 PASSENGERS SPORTS CAR
- 10 kW MITSUBA MOTORS
- DIRECT FRONT WHEEL DRIVE
- 330 kg



### EXTERIOR

- ELEGANT CUSTOM VINYL WRAP
- SIGNATURE LED HEADLIGHTS
- TAILLAMPS-LED WITH SEQUENTIAL TURN SIGNAL

### INTERIOR

- 10.1" INFOTAINMENT
- ANDROID AUTO + GPS
- DUAL VANITY MIRRORS
- LEATHER TRIMMED SEATS
- FI STYLE STEERING WHEEL WITH CRUISE CONTROL











### FUNCTIONALITIES

- 4 WHEELS INDEPENDENT SUSPENSION
- REAR VIEW CAMERAS
- AM/FM BLUETOOTH
- EV CHARGING PORT
- REGENERATIVE BREAKING

### SAFETY

- CARBON FIBER MONOCOQUE
- STEEL ROLL CAGE
- DUAL HIGH PERFORMANCE BMS
- 5 POINTS SFI 16.1 HARNESS



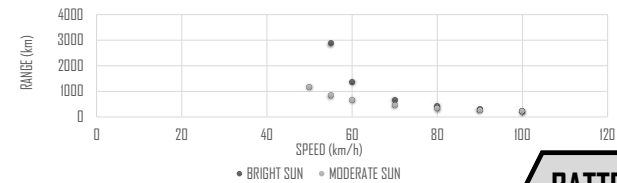
 <b>Battery Cell Chemistry</b>	BAK 21700CG-50
 <b>Solar Cell Chemistry</b>	Maxeon Gen III Solar Cells (Silicium)
 <b>Peak Solar Array Power Estimate</b>	1217 W
 <b>Motor Type</b>	M2096D-III Mitsuba hub motors
 <b>Wheels Type</b>	Nomura carbon fiber rims
 <b>Chassis Type</b>	Composite sandwich panels
 <b>Roll Cage Type</b>	AINSI 4130 steel tubular frame
 <b>Seat Belt Type</b>	5-points harness
 <b>Braking System</b>	2 independent hydraulic systems
 <b>Parking Brake</b>	Independent hydraulic system



### CHARGING TIME

Regular charge (120 volts)	5,76 hrs
Fast charge (240 volts)	2,8 hrs
Solar charge	7,5 hrs

### DRIVING RANGE



### BATTERY SPECS

Voltage : 115.2 V  
 Configuration : 32s16p  
 Capacity : 9.216 kWh  
 Weight : 35.84 kg

Estimates are based on the data from tests. Vehicule's actual energy consumption will vary.

For more information please visit [esteban.polymtl.ca](http://esteban.polymtl.ca)



### SPEED STATISTICS

<b>PEAK SPEED</b> Maximum speed the car can reach	70 mph
<b>OPTIMAL SPEED</b> Speed that allows the highest driving range and best consumption statistics	31 mph
<b>CRUISING SPEED</b> Average speed driven during competitions and rallies	40 mph



FACEBOOK



INSTAGRAM



**POLYTECHNIQUE  
MONTRÉAL**

# TEAM APPSTATE SUNERGY 828

## 2024 SUNERGY R.O.S.E

### Exterior:

- 19" Aluminium Wheels
- Full Electric Direct Drive
- Signature LED Daytime Running Lights
- Signature LED Tail Lights
- Signature LED Turn Signals
- Custom Vinyl Wrap
- Aerodynamic Fairing Doors
- Flush Doors Handles
- Full Carbon Fiber Aeroshell

### Interior:


- 10" Infotainment System
- Center Console w/ 2 Cupholders
- Lightweight Racing Bucket Seats
- Leather Wrapped Steering Wheel
- Carpeted Floors
- Live Telemetry
- Centermounted Camera Mirrors
- Rear View Camera



### Functional:

- 22.5 kWh Battery
- 1212 Watt Solar Array
- Regenerative Braking System
- Dual 7hp Mutsuba Hub Motors
- 4-Wheel Unassisted Disk Brakes
- 4-Wheel Independent Suspension
- Easy-Open Charging Door

### Safety:

- 5 - Point Harness
- BMS w/ Fault Indicator
- Steel Roll Cage
- Exterior Kill Switch



**EPA DOT Fuel Economy and Environment**  **Electric Vehicle**

**Fuel Economy**  
 **438** MPGe  
 combined city/hwy  
**Driving Range**  
 When fully charged, vehicle can travel about...  
 0 50 100 150 200 250 **350** miles 

**You save \$12,600**  
 in fuel costs over 5 years compared to the average new vehicle  
\*when exclusively solar charging

**Annual fuel cost**  
if wall charging  
**\$145**





**Fuel Economy & Greenhouse Gas Rating (tailpipe only)** **Smog Rating (tailpipe only)**

**1**  **10** **10**  **10**  
Best Best

This vehicle emits 0 grams CO<sub>2</sub> per mile. The best emits 0 grams per mile (tailpipe only). Does not include emissions from generating electricity; learn more at [fuelconomy.gov](http://fuelconomy.gov)

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 22 MPG and costs \$12,600 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$0.12 per kW-hr. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

**fuelconomy.gov**  
calculate personalized estimates and compare vehicles

**Top Speed..... 80 mph**  
**Range..... 350 miles**

**Scan here to learn more about the car and the team:**



  **@appstatesvt**