

Protoscar LAMPO

pure battery EV - technical information

Prototype

Developed & manufactured by Protoscar, CH 6821 Rovio
single exemplar, not for sale

Motorization

Electric vehicle (2 electric motors and Li-ion batteries),
single gear

Electric motor

Type: Brusa HSM 6.17.12 Hybridsynchron with transaxle
gearbox associated with a Brusa DMC524 inverter

Quantity: 2, one on front axle, one on rear axle

Max. power kW (HP)	200 (268)
Max. torque (Nm): 0 – 5'000 rpm	440
Cooling	water

Batteries

Type: Brusa EVB1 Li battery packs based on prismatic
Kokam cells (Li-ion with polymeric electrolyte); **quantity: 2**
Total rated energy (kWh) 33,6

Characteristics of each battery pack:

Rated energy (kWh)	16,8
Capacity 0.5C (Ah)	40
Open circuit voltage (V)	400
Max. continuous discharge current (A)	200
Max. peak discharge current (A)	400
Max. charging current (A)	80
Number of cells	108
Weight (kg)	140
Full charge at 32A (h)	7
Cost of energy (CHF/100km)	ca. 2.40
Cooling	water
Estimated life time @ 80% DOD (cycles/km):	>800 / >160'000

Battery chargers (on board)

Type: Brusa NLG513; quantity: 2
Power (kW) 2x3,3
Cooling air

DC/DC converter for the on board devices

Type: Brusa BSC624-12V

Structure

Tubular steel chassis, composite material body

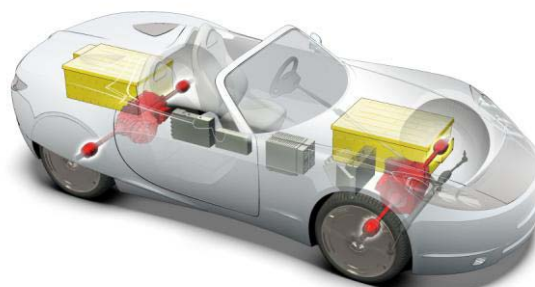
Unique features

Four wheels drive designed in order to allow the maximum
regeneration and to ensure more driving safety

Intelligent charging system: some charging parameters like
the earliest charging time/last charging stop, max. charging
yield and charging status to be achieved by the end of charging
will influence the on board chargers

External charging status LED, Integrated charging cable

Range estimator: GPS based device calculating different
parameters like the remaining range (considering elevations
etc.) and the notification of the closest charging stations



Consumption and emissions

Energy consumption (Wh/km)	150
WtW emissions (g CO ₂)	0

Performances

Max. speed (km/h)	ca. 200
Acceleration: 0 – 100 km/h (sec.)	ca. 5
Range (km)	200

More information:

Protoscar

CLEANCAR SHAPERS

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pure battery EV - model information

Dimensions

Length (mm)	4'315
Width (mm)	1'865
Height (mm)	1'203
Wheelbase (mm)	2'415

Seats

Number of seats:	2
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Weight

Weight (empty, kg)	1'380
Load (kg)	270
Weight (full load, kg)	1'650

Wheels

Tires	245/45 R18
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Interior equipment

- Multifunction touch screen for the control of the car functions
- Driving style settings
- Sport steering wheel
- Electrically heated and cooled seats
- Electric heating
- Cruise control
- Power windows and lock
- Electric brake button on steering wheel
- GPS based range estimator
- Intelligent charging system
- Range estimator
- GPS navigation system

Remote photovoltaic plant

Type: photovoltaic laminate by United Solar
Ovonic with amorphous silicon cells

Surface (m ²)	260
Rated power (kW)	16
Energy per year (kWh/year)	16'800



Published by:



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Supported by

swiss energy

Electricity management



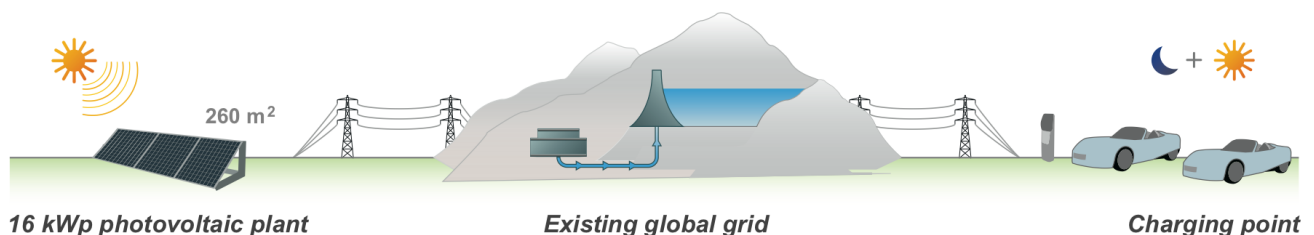
Remote energy production

Daily sun cycle

"Energy Buffer"

Global energy charging

24/7 availability



16 kWp photovoltaic plant

Existing global grid

Charging point

16'800 kWh/year / 108'000 km/year

→ 2 Lampo x 250 working days x 200 km/day (max daily Lampo range)

→ 8 Lampo x 12'800 km/year (european average mileage) saving
3.2 tons CO₂/year per vehicle (compared to a same size gasoline car)

→ ...