

## SAM (Cree AG)

### Product Fact Sheet

<b>General Information</b>	
Class	Three-wheeled vehicle (2 front, 1 rear wheel)
Number of seats	2, one behind the other
Drive	Electric, via real-wheel synchronous belt

<b>Driving motor</b>	
Manufacturer	Landert Bülach (developed by Cree AG)
Rated voltage	168 V
Max. phase current	250 A
Output	15 kW from 1,800 RPM
Recuperation	Max. 10 kW
Torque, max.	80 Nm regulated from 1,800 RPM
Type	Permanent magnet brushless
Number of terminals	12
Phases	3
Gear reduction, synchronous belt drive	5.54:1

<b>Batteries</b>	
Type	Hawker Genesis G12 26 Ah 10EP pure lead-tin
C1 capacity	21 Ah
Number per vehicle	14 in series / 168 V
Weight per battery	10 kg

<b>Power electronics</b>	
Manufacturer	Cree AG
Type	PWM with IGBT technology
IGBT type	Mitsubishi IPM 400 DAS 060

<b>Charging equipment</b>	
Manufacturer	Zivan
Output	2.1 kW
Charge time	Full charge 6 h (40% in 1 h / 70% in 2 h)

<b>Driving performance</b>	
Current consumption from batteries	Approx. 5 kWh / 100 km city
Range	50 to 70 km
Top speed	85 km/h
Acceleration from 0 to 50 km/h	7 seconds with 2 passengers

<b>Weight, dimensions</b>	
Tare weight, with batteries	545 kg
Battery weight	140 kg
Laden weight	695 kg
Vehicle length	3,162 mm
Width	1,553 mm
Height	1,583 mm
Wheel gauge	1,493 mm
Wheel base	2,392 mm

<b>Materials</b>	
Chassis	Aluminum (≥90% recyclable)
Batteries	Lead (≥90% recyclable)
Passenger seats	Polyethylene (≥90% recyclable)

<b>Chassis, body, frame, steering</b>	
Chassis	Central warp-resistant extruded aluminum frame. Hollow space to accommodate the batteries. Cast aluminum module, front and rear, to accommodate the suspension.
Front suspension	Upper suspension arms, lower transverse epoxy leaf spring
Rear suspension	2 MacPherson strut units on rocker arm
3-wheel concept	Stability and good performance with 1 rear wheel, 2 front wheels
Steering	Rack and pinion steering
Body	Double-walled, air-filled thermoplastic (PE) body to protect the driver and passenger. Rotational molding process.
Seats	Front and rear seats arranged one behind the other, and equipped with 3-point safety belts and integrated roll bar.

<b>Brakes</b>	Front	Rear
Disk	2 cast iron D = 240 mm	Stainless steel D = 240 mm
Calipers	Fixed yoke	Floating yoke
Main brake cylinder	Cast iron, two circuits	
Rear brake pressure reducer	Max. 25 bar	
Hand brake	Mechanical on rear caliper	

<b>Wheels, tires</b>	Front	Rear
Rims	3 ½ J 15H 2A-4-6	5 ½ J 15H 2-4-18
Tires	Continental 135/70 R15	Michelin 175/65 R15 XT1 TL

<b>Costs</b>	
Target price	6'600.-- €
Target battery leasing, per month	65.-- €
Insurance cost, per year	Annual mandatory insurance cost in Switzerland approx. CHF 80.-
Vehicle registration fee, per year	Dependent on national or local legislation. Most places have low or even no fees for ZEVs.

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