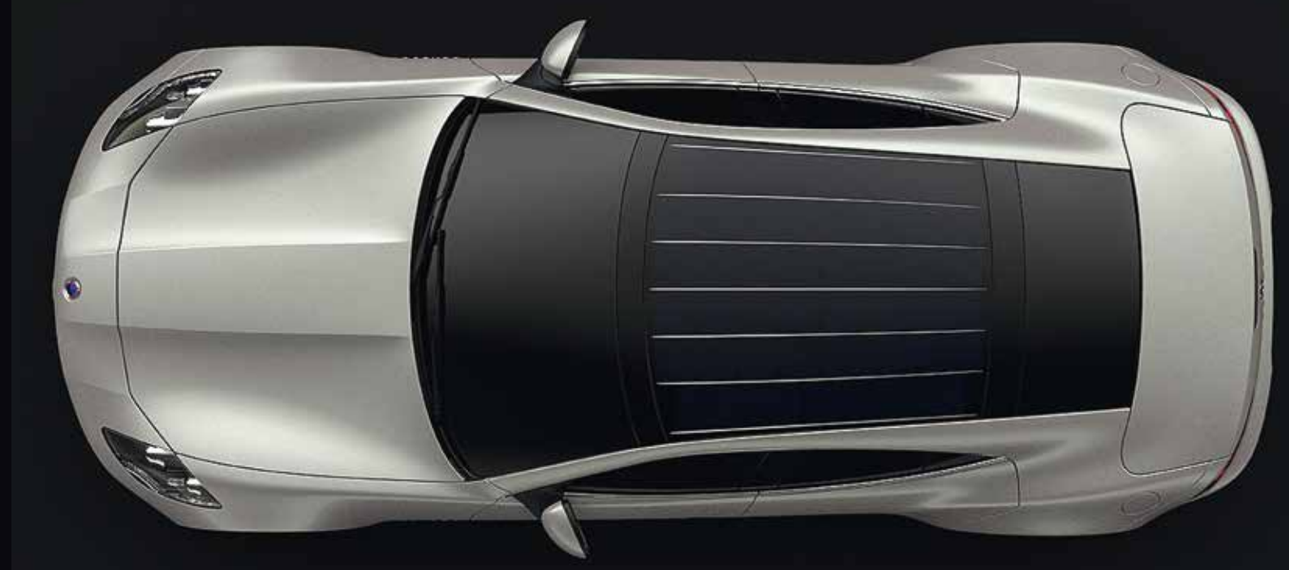
a2 solar | advanced & automotive

WHEN DESIGN MEETS FUNCTIONALITY

30 years of expertise in spherically curved solar modules.

Highest German Quality and Experience

Fisher KARMA (SOP 2011)



KARMA Revero (SOP 2016)

Spherically curved solar car roof modules:

Highest level of technical sophistication.

Between 2010 and 2012 already, the team members of a2-solar had developed and produced the largest, spherically most curved and with 120 Watts the most powerful solar car roof module of its kind for the American sports car Fisker KARMA – one of the world-wide most advanced vehicles. Integrated directly into the chassis architecture, the solar module also forms the roof of the sporty hybrid car combining environment friendly construction with elegant design.

As pioneers in the field of "automotive" solar modules, we're proud to be able to offer our customers trend-setting technologies:

- Solar modules for sliding roofs and roof systems for parking ventilation of vehicles
- Integral solar roof systems with top efficiency and performance in the shape of transparent or semi-transparent roofs to charge traction batteries of hybrid or electric vehicles.
- Modular versions as a "double thin glass solar module" or with single pane safety glass or in combination with light-weight composite materials

The synthesis of design and function:

Pure elegance with greatest performance.

In early 2015, a2-solar has received the nomination for the solar roof of the new KARMA. In September 2016, a2-solar has finalized the nearly 2 years of developments and launched the new solar roof for the New KARMA Revero - symbolizing a lighthouse shining worldwide for new and innovative ways of renewable energy use and sustainability. And again, the solar roof module is the biggest in size, with 200 Watts the most powerful and most spherically curved solar car roof module in existence.

The KARMA Revero is a visionary "Grand Tourismo" equipped with a "plug-in-hybrid" drive train. Its overall range is 500 km without recharging and refuelling. On pure electric mode, it is even up to 80 km. The new solar roof has been perfectly adapted to the car and charges the vehicle for about 2.000 km per year for pure solar driving fun – all free of costs and CO_2 emissions.

Additional benefits

- Aesthetic and futuristic modules with highest efficiency
- Charging of large traction batteries with very high performance modules
- Self-sufficient battery charging for power systems, climatisation and traction
- CO_2-Credits granted in Europe and the U.S.

Volvo SuperTruck (2016)

Solar-powered SOlOS SunShuttle (www.soios.nl)

Set in motion by a2-solar:

Solar systems for trucks.

In cooperation with Volvo Group North America (Greensboro, NC, U.S.A.), a2-solar has developed a novel solar system especially adapted for the Volvo Supertruck, which was unveiled in September 2016. The pictures below show the new components. With a spherical curvature of more than 40 cm on a surface of 2.5 m x 1.3 m, it is the biggest and most powerful rigid solar module ever developed for a truck.

Within the solar module, a battery charging system was connected in parallel with a parking ventilation system. Both electrical systems are "directly interconnected" without requiring additional components – another worldwide unique innovation. Volvo's SuperTruck concept vehicle achieved a freight efficiency improvement of 88 percent, boosted fuel efficiency by 70 percent - exceeding 12 miles per gallon with some test runs showing more than 13 miles per gallon – in road tests.

"Movin´ on sunshine":

Solar systems for passenger trailers.

With the environment-friendly solar-powered SunShuttle, SOlOS responds to the growing awareness of the pollution caused by contemporary means of transport.

The passenger trailers designed and build by the Dutch company SOlOS are all equipped with a2-solar's special flat semi-transparent solar roof modules which allows the shuttle to run with the inexhaustible energy of the sun – a perfect solution to move up to 90 people or mass cargo goods in an environmentally responsible manner even in hilly areas. If necessary, batteries can be further supplemented using green AC power. The result: a surprisingly large daily range of up to 300 km (187 miles).

Being virtually maintenance-free (which applies to their engines, batteries, chassis, bodywork and interior) with excellent handling both on the road as well as off-road, these vehicles are perfect for application in amusement and holiday parks, zoos, open air museums, beach boulevards, airports and parking lots.

Complying with all technical requirements and safety regulations for use on public roads, these SOlOS trains are in use already all over Europe.

Additional benefits

- Action radius up to 300 km (187 miles)
- 1 hour of solar power = 10 km (6 miles) additional range
- Transportation of up to 90 persons
- Silent, clean and emission free
- Low energy costs
- Very low maintenance

Audi e-tron quattro concept (presented at the IAA 2015)

Design atelier for prototypes:

Flagship innovations for discerning e-mobility concepts.

The automotive industry shows a tremendous pace in designing and advancing green mobility vehicle concepts. Thus, the interest for integrating solar systems into cars, trucks busses and boats has risen as well. With more than 30 years of firsthand expertise in the field of spherically curved "bubble" modules, we have realized already several distinguished prototypes for some of the most renown OEMs on national and international level.

For the car concepts presented by Audi and VW at the IAA 2015, we have designed and manufactured the solar car roof systems. With 400 Watts, the solar roof developed for Audi directly feeds the power into the battery and perfectly blends with the vehicle chassis and design. The solar roof system integrated into the VW Tiguan's sliding roof provides a total power of 110 Watts. Driven by our culture of innovation, we keep re-inventing to set future wheels in motion.

VW Tiguan GTE (presented at the IAA 2015)

a2-solar engineering art:

Driven by the Spirit of Invention.

Another solar challenge has lately started: decision makers and facility managers of the automotive sector are more and more considering sustainable energy solutions not only for their fleet but also for their related premises: In addition to standard solar roof-top systems on factory buildings, also administration buildings and local sale centers are to set visible signs of sustainability. Apart from façade integrations, also carport solutions and special solar applications are in discussion to further foster and promote the "green consciousness" of the automotive industry.

In Berlin Adlershof, the new solar Porsche pylon represents such a lighthouse project: In front of the new Porsche center, a steel tower of 25 m height and 270 sqm of surface has been equipped with 172 frameless glass-glass modules made by a2-solar. With up to 30.000 kWh of electricity a year, this unique solar pylon contributes significantly to ensure the center's self-sufficient energy supply.

True to our slogan: "Never say never, everything is possible", we will develop your idea from the scratch to up to the final product.

New City Hall of Freiburg (Germany)

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a2-solar - Highest German Quality and Experience in Advanced ans Automotive Solar Systems

a2-solar draws back on more than 30 years of proven knowhow and technological expertise for innovative solar solutions in the field of building-integrated (BiPV) and "automotive" solar systems.

Our team incubates trend-setting module technologies for all kinds of solar applications. Flat, bent and spherically curved solar modules for any vehicle such as cars, boats, trucks and trains belong to our core markets. Our experience ranges from the Audi A8 (SOP 1993) equipped with a 30 W solar sliding roof, the Fisker KARMA PHEV (SOP 2011) with a 120 W solar module roof up to the new KARMA (SOP in 2016) with 200 W. As a high-performance innovator in the industry our automotive solar systems have been integrated into the Volvo SuperTruck cab (2016) as well as into numerous solar passenger trailers which are running throughout Europe's touristic attraction parks.

This project has been co-financed by the European Regional Development Fund.

Revision: November 2016