Products and systems

Building-integrated photovoltaic solutions

"At 3S, we see solar energy as the key to a more sustainable architecture. Our aim is the seamless integration of our robust high-tech solution into the building envelope."

DR. PATRICK HOFER-NOSER

Dear friends of 3S,
Our tried and tested, building-integrated 3S solar energy systems for roofs, facades and balconies effectively generate power from solar energy and provide a protective, sturdy building envelope at the same time. 3S solutions are particularly sustainable, durable and lowmaintenance.
They can withstand extreme weather conditions and provide building owners with long-term self-sufficiency. Development and production in Switzerland as well as our proven expertise and many years of experience ensure their highest quality, which is demonstrated by over 25 000 completed projects.

With pioneering spirit, passion and perseverance, we are constantly working on technical innovations, as well as on services and digital tools, so that our specialist partners can accompany and support their clients from their initial ideas and throughout the entire service life of their products. Our goal is to contribute to a more ecological future.
We would be delighted if you would accompany us on this journey!

Kind regards,

Dr. Patrick Hofer-Noser
Founder and CEO of 3S Swiss Solar Solutions AG

Successful for over 20 years

2001 Foundation of 3S Swiss Solar Systems AG in Bern. Market launch of MegaSlate®

2005 3S Swiss Solar Systems AG is listed on the stock exchange

2010 3S Swiss Solar Systems AG and Meyer Burger Technologies merge to become a leading global supplier for the photovoltaics industry

2018 A team led by Patrick Hofer-Noser transfers the area of building-integrated solar solutions with MegaSlate® manufacturing in Thun to 3S Solar Plus AG

2021 The production line in Thun is expanded

2022 3S solar Plus AG is renamed 3S Swiss Solar Solutions AG

2023 The next product generation of TeraSlate® with the latest cell technology is unveiled

2024 The Worb manufacturing facility near Bern, which is unique in Europe, opened as an extension of the plant in Thun

MADE SWISS

That's what makes us stand out

3S Swiss made

We are a Swiss company that produces to Swiss quality standards and according to the strict Swiss labelling guidelines. Our customers benefit from our central location in Europe, where we have our own production facilities and provide technical services as well as comprehensive advice and training.

3S Innovation

Our mission is to make solar power not only more efficient but an integral part of the architectural design. We develop with special passion and with indefatigable curiosity. As an owner-managed company, we benefit from the extensive experience and visionary ideas of a Swiss solar energy pioneer.

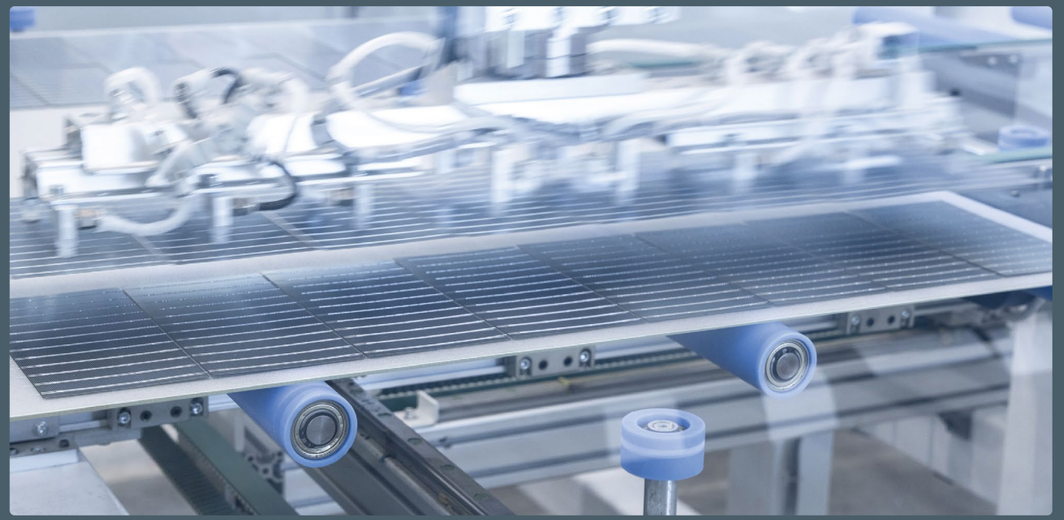
3S Solar aesthetics

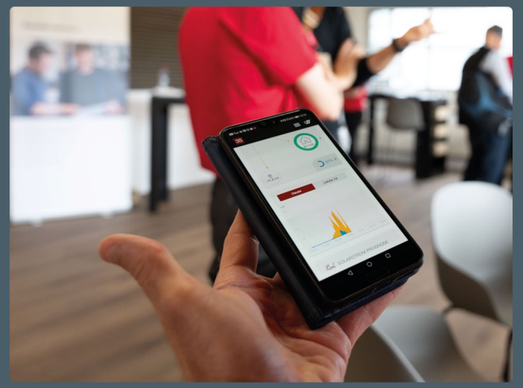
The uniform surfaces of our solar roofs, solar facades and solar balcony railings shape and emphasise historic and modern architecture alike. Coloured and satin-finished modules provide a wide variety of options for individual building design.

3S Sustainability

Sustainability is the focus of our actions. We are always considering where we can reduce the use of materials or further simplify assembly solutions. Not only do we manufacture our modules using carbonneutral electricity, we also ensure short transport routes and use reusable packaging. It goes without saying that our solutions are particularly durable and that we support them with our services throughout their entire service life. 3S solutions are a more than worthwhile investment - they stand for future-proof buildings with superior environmental performance that generate electricity from solar energy.

In 2023, 3S invested over 10 million Swiss francs in a second production site in Worb near Bern.





Our services are diverse and also include digital solutions – from the efficient planning of the 3S solar roof in the 3S Designer to the monitoring of the system's performance over its entire service life.

That's what makes us stand out

3S Academy

Our training formats have one thing in common – they are very practical. We offer full flexibility for our specialist partners: Our online training is available anytime, anywhere. In particular, we train new specialist partners with our in-house training courses at our academy centre near Bern. If necessary, we will be happy to come to your construction site to support the team on site with advice on efficient and accurate installation. We always focus on quality assurance and warranty services of our 3S product range.

3S Services

We have decades of experience in the field of building-integrated photovoltaics and comprehensive know-how from development through to installation. This constitutes the basis for our portfolio that includes various services: From professional, site-specific system planning and planning the electrical installation through to system monitoring for optimising own consumption. If necessary, we can assist in determining the state of individual modules, carry out analyses after hail events and assess the overall state of a system.

We are particularly proud of this

Our award collection

3S Solar Solutions has been a regular participant for many years when it comes to awards for innovation and architecturally outstanding photovoltaic solutions.

The Swiss Solar Prize, for example, recognises the most energy-efficient new buildings and building renovations as well as the best renewable energy systems. The Norman Foster Solar Award recognises energy-efficient buildings that stand out due to their particularly aesthetic integration.

The Watt d'Or stands for energy excellence: Since 2006, this seal of quality has recognised innovative achievements in the energy sector. The award particularly highlights projects, companies and organisations that develop pioneering energy technologies and bring innovative solutions to the market.

SWISS SOLAR PRIZE 2018

SWISS SOLAR PRIZE 2019

SWISS SOLAR PRIZE 2019

SWISS SOLAR PRIZE 2023

WATT D'OR 2023

NORMAN FOSTER SOLAR AWARD 2023

SOLAR PRIZE 2023

That's what makes us stand out

Seamless integration into any architecture

- Uniform appearance thanks to ample modules and complete surface coverage
- Customised solutions, with the option of individual dimensions and colour
- Sleek design with frameless finish
- Optionally with satin, anti-glare glass finish

A robust solution from a single source

- System solution consisting of solar modules and components
- Maximum resistance to hail (hail resistance class 5 for solar roofs)
- Designed for extreme requirements such as increased wind and snow loads

As high-quality as a Swiss watch

- High performance thanks to the latest cell technology
- Maximum yield due to individually rear-ventilated solar modules
- Self-cleaning due to frameless construction
- Up to three bypass diodes protect against cell defects when the modules are partly in the shade
- Easy assembly and individually replaceable modules

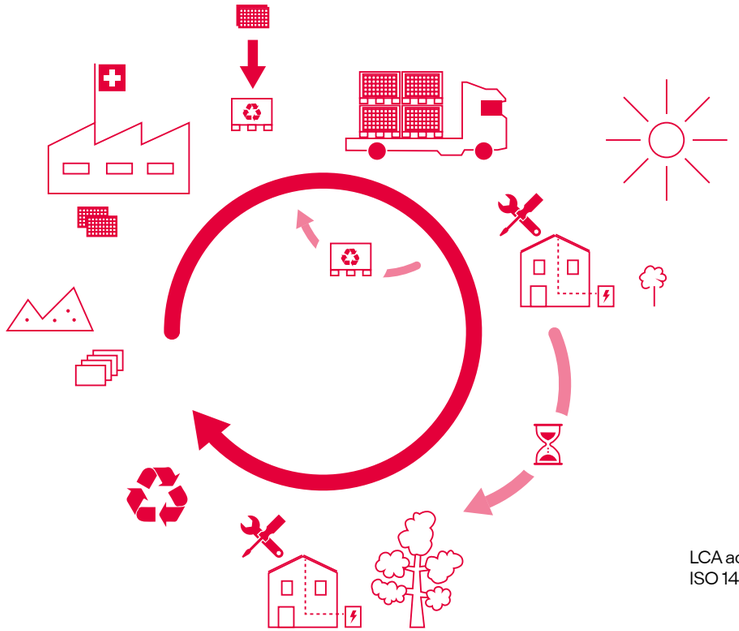
Tested and awarded

- Technically mature, designed for extreme requirements
- Multi-award winning
- Particularly low carbonfootprint

The original from Switzerland

Environmentally friendly throughout the life cycle

Sustainability is our top focus: All modules are manufactured in Switzerland in conformity with Swiss environmental regulations, using stateof-the-art plant engineering and carbon -neutral electricity. To objectively assess the environmental impact of our products, we have analysed their life cycle and produced a life cycle assessment and an EPD (Environmental Product Declaration). The EPD provides standardised and verified information on the environmental impact of construction products and it forms an important basis for the assessment and certification of buildings (e.g. according to DGNB, LEED or BREEAM). Architects and planners can use the EPD to compare the environmental properties of different construction products and make informed decisions for creating sustainable building concepts.



LCA according to ISO 14040 and ISO 14044

What is the carbon-footprint for a 3S solar roof?

The carbonfootprint over the 30-year life cycle is 130 kg CO_2 eq/m2. This comprises all stages of the life of the module components and the substructure, including installation and disposal.

How long does a 3S solar roof take to offset the energy used to produce it?

The energy required to produce a module is offset after less than two years.* For other European countries, this figure is around 1.5 years due to the energy mix used there.

* Assumption: average annual power generation 191 kWh/module

PV CYCLE®

DE 19437387

SENS eRecycling

For comprehensive information on the recycling solution, please refer to www. erecycling.ch and www.pvcycle.org

What happens to the solar modules at the end of their service life?

At the end of their life, 85% of the system weight can be recycled. This is financed through an advance recycling fee. Nonrecyclable components are incinerated with energy recovery following the sorting process, and intact system components are reused.

3S system solutions

3S SOLAR ROOF

3S SOLAR FACADE

3S SOLAR BALCONY RAILINGS

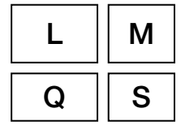
The 3S solar roof

Secure roof covering with added value

The 3S solar roof system is suitable for full and partial surface roof coverings. It replaces conventional roofing materials and can be used from a roof pitch of 3°. The solar modules are laid in a scalloped pattern. Available in four module sizes, they enable optimal design for virtually any roof area. 3S has various options for complete, homogeneous roof covering, from fully integrated skylights in a wide variety of designs to customised modules or roof panels for mating surfaces.

The installation of a 3S solar roof is quick and easy, requiring only a few different components. Specially developed accessories enable the roof to be used even in extreme weather conditions and in Alpine regions.

Individual components are not available in all countries where we offer 3S solar solutions.



Solar module

The four combinable module sizes in the 3S system make it possible to optimise use of the roof area.

Fall protection

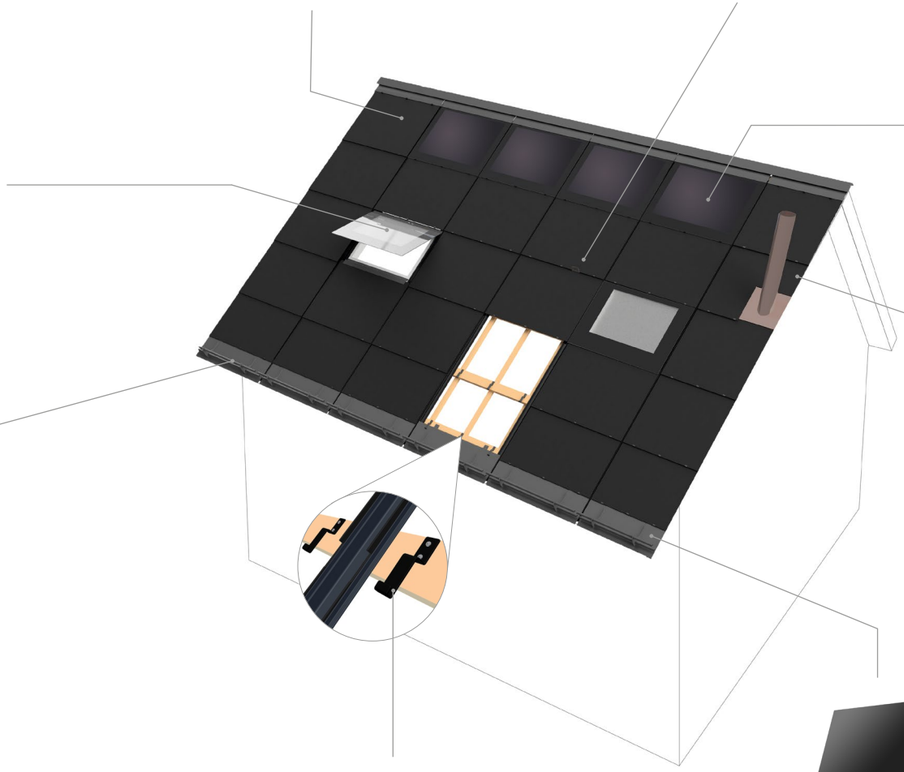
The 3S single anchor point is considered to provide complete fall protection in accordance with EN795:2012.

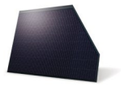
Skylights

The high-end skylights, developed specially for the 3S system, are elegant and blend in perfectly with the characteristics of the entire roof.

Thermal module

3S thermal panels allow the integration of hot water heating or central heating backup.





Crea module

Custom-made solar modules cater to even the most challenging of roof shapes, allowing you to maximise output.

Snow guard

With snow guard or snow hooks, the 3S solar roof can also be deployed in Alpine regions.

System components

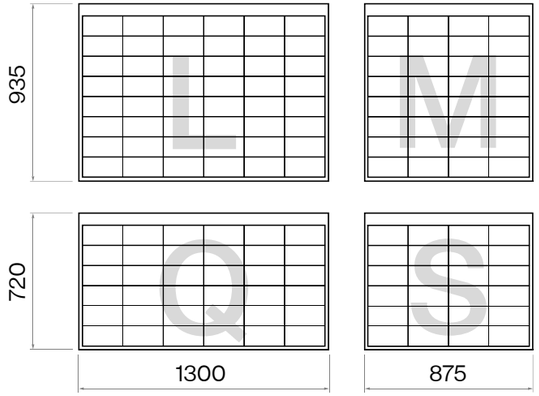
The 3S solar roof offers a quick and easy installation with just two core elements for the substructure (hooks and water drainage channels).

Roof panel

Aluminium composite panels provide a robust and cost-effective system addition for large, irregularly shaped roof areas.

The 3S solar roof

Seamless integration

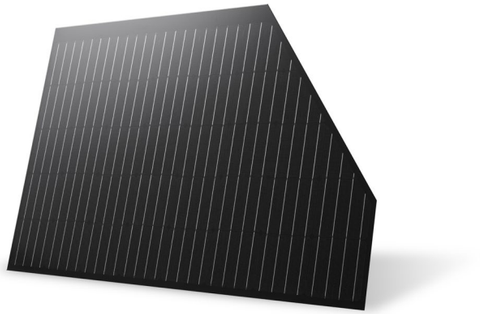


The four combinable module sizes in the 3S system make it possible to maximise use of the roof area. The number of components is kept to a minimum; water drainage channels and hooks are mounted directly on the roof battens. The modules are shingledlike conventional roofing materials. The system construction generates maximum energy yields on each module with optimal rear ventilation.

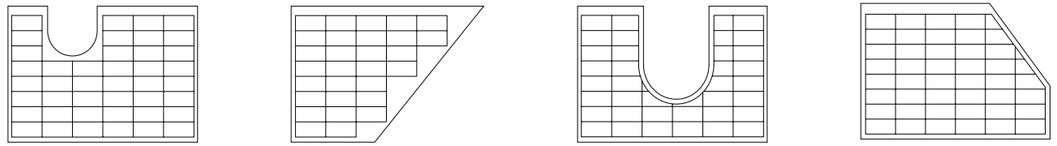
Crea modules

The perfect solution for a uniform roof area

Individually manufactured Crea modules can be used to cover the entire solar roof uniformly, even for the most challenging of roof shapes. A roof's maximum output can be achieved with electrically active Crea modules, while inactive Crea modules are used to enhance the building's overall appearance. Alternatively, Crea modules without cells provide outstanding edging for the system. All Crea modules can be installed using the usual substructure.



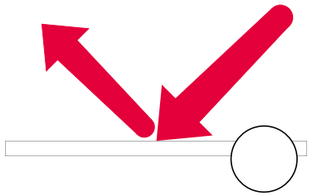
Sample shapes



Satinato

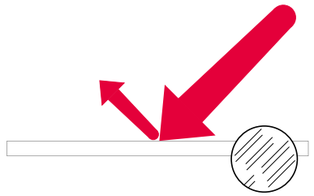
The anti-glare solar module with satin-finished solar glass

In the case of most solar roofs, the glare effect does not impact on the surroundings. Occasionally, however, the interplay of several criteria such as a north-facing roof, hillside situation, the pitch of the roof or the duration of a possible glare can cause a critical situation. To reduce the reflection, 3S has developed the Satinato module variant, which offers a perfect alternative for critical cases.



Window glass

Conventional window glass almost completely reflects the incident light. This makes the reflection of sunlight very intense.



Solar glass

The structured surface of solar glass – as used in 3S's standard modules – reflects less sunlight than conventional window glass.

Satinato

The glass in the 3S Satinato modules diffusely reflectssunlight, i.e. in different directions. This significantly reduces the possible glare for the viewer.

Show your true colours

With the Flair series solar modules

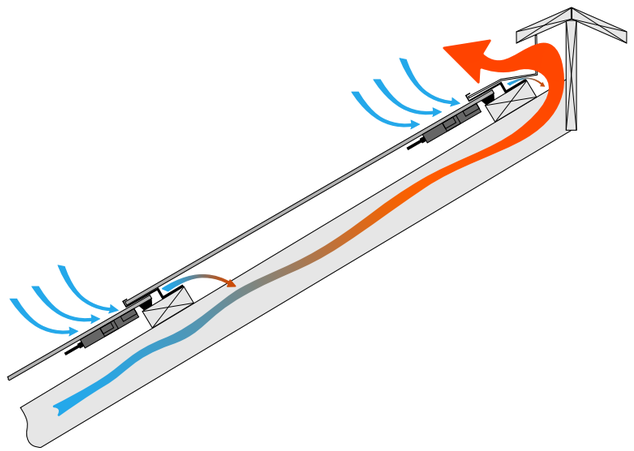
Coloured solar modules open up a multitude of design possibilities, which greatly helps to increase the popularity of photovoltaics. Colours can underpin modern architectural design, but in protected buildings, for example, colour variants can also make it possible to seamlessly integrate the latest solar technology into the historical building. The result is as individual as any building. Especially as regards colour, comprehensive advice and sample production are standard practice at 3S.

The 3S solar roof

Long service life and maximum output

The 3S solar roof has been successfully tested for durability against increased wind and snow loads and provides optimum weather protection. Due to the 5 mm thick solar glass used, the solar roof has been assigned to hail resistance class 5 (hailstone diameter of 50 mm at 30.8 m/s or 111 km/h) and is included in the Swiss Hail Protection Register.

As the mercury rises, the efficiency of solar modules falls; decreasing by about 0.4% per degree Celsius. To prevent this reduction in performance, the 3S design ensures adequate air intake behind each module - all the way up to the ridge. This keeps the modules cool at all times, ensuring maximum energy yields. In addition, condensate can evaporate and is safely removed.



Simple assembly solutions for different requirements

The right solution for every building location

For the standard version of the 3S solar roof, two or three hooks suffice, in which the modules are simply inserted, i.e. shingled. In Alpine regions, reinforced Alpine hooks and a rubber support are used to withstand very high loads. 3S prepares specific evidence for special requirements. Our Alpine+ solution, comprising two to three rubber supports and five Alpine hooks, allows for maximum loads at high altitudes.

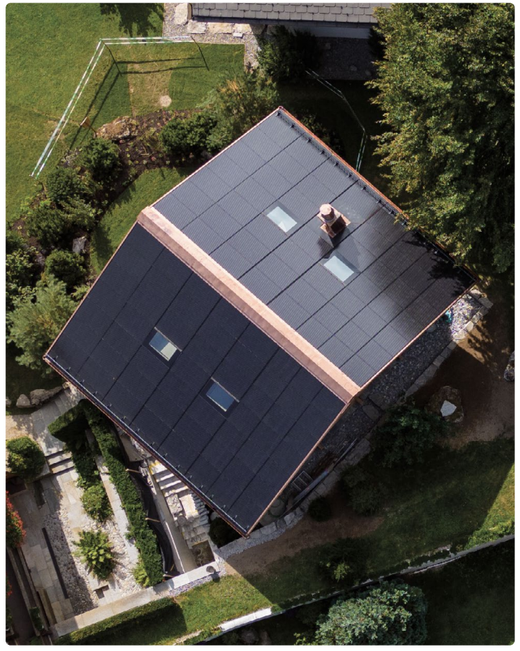
Substructure of the 3S Alpine+ solution: five Alpine hooks and in this case two rubber supports allow the 3S solar roof to be used in high Alpine regions.


umweltarena

The 3S skylight

Fully integrated for perceptible comfort

The matching skylights were developed especially for the 3S solar roof system. Their elegant all-glass appearance makes these high-end, flush-mounted skylights the perfect match for the characteristics of the solar roof. The wooden interior lining can be adapted to your environment with different types of wood, workmanship and colours available. You can choose to open your skylight manually or with a convenient electric drive or to have it installed with a fixed window.



The 3S thermal panel

Solar energy for hot water and heating requirements

The 3S thermal panel enhances the tried and tested 3S solar roof with a highly efficient solar thermal collector system. The frameless design ensures seamless integration into the 3S solar roof while maintaining the high visual appeal. By meeting hot water requirements and acting as a central heating backup, the panels help to keep the building's energy supply sustainable.

The 3S solar facade

The elegant 3S solar facade meets high aesthetic requirements and is sustainable and robust. It supports maximum energy yields, especially in winter, when roofs are covered in snow. Due to the glass-glass design, the 3S facade module offers benefits in terms of fire protection and residual loadbearing capacity.

Due to its frameless construction, the module supports an elegant design, and the imbricated design allows the 3S solar facade to virtually clean itself.

In alternative versions, with centred cell matrix, the 3S module can alternatively be flush-mounted and using various other substructures.

Fibreboard

The robust, cost-effective variant for surfaces that are partly shaded.

System components

The 3S solar facade offers a quick and easy installation with just two elements for the substructure (hooks and water rainage channels).

Aluminium substructure

The substructure made of aluminium profiles provides optimal rear ventilation of the solar modules and the necessary stability even in high Alpine regions.

Adapto

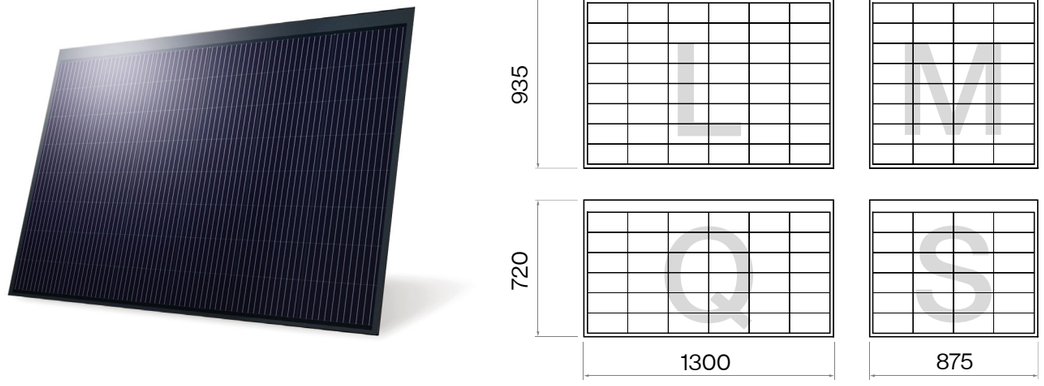
Customised special sizes allow full-surface use, also for leftover areas.

Solar module

The four combinable standard sizes in the 3S system make it possible to maximise the use of a facade area. The glass-glass module ensures maximum safety and durability.

The 3S solar facade

Best facade covering in glass-glass design

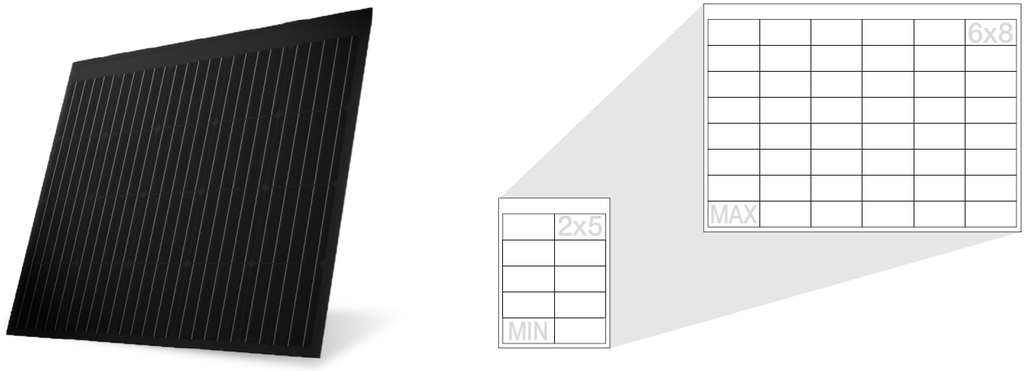


The four combinable module sizes in the 3S system make it possible to maximise the use of a facade area. The facade modules are mounted in a shingled design on an aluminium substructure that ensures optimal rear ventilation, maximising energy yields.

Alternatively, modules with a centered cell matrix are available for a flush-mounted facade design. This enables the realisation of flush-mounted solutions using edge-to-edge modules.

Adapto modules

For flexible facade design



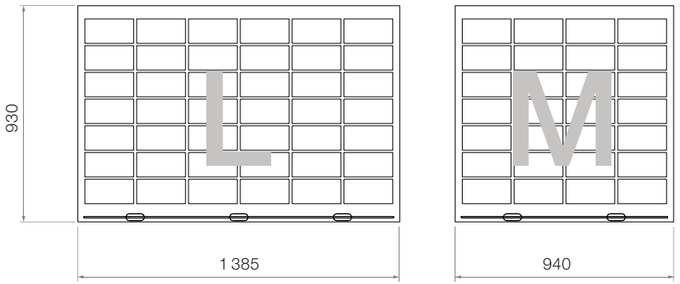
The Adapto variant enables customised facade modules to be produced according to individual architectural requirements. The variable, rectangular module dimension manufactured as an active module gives architects and planners a great deal of leeway. By adding Adapto modules, a solar facade can meet economic as well as aesthetic requirements.

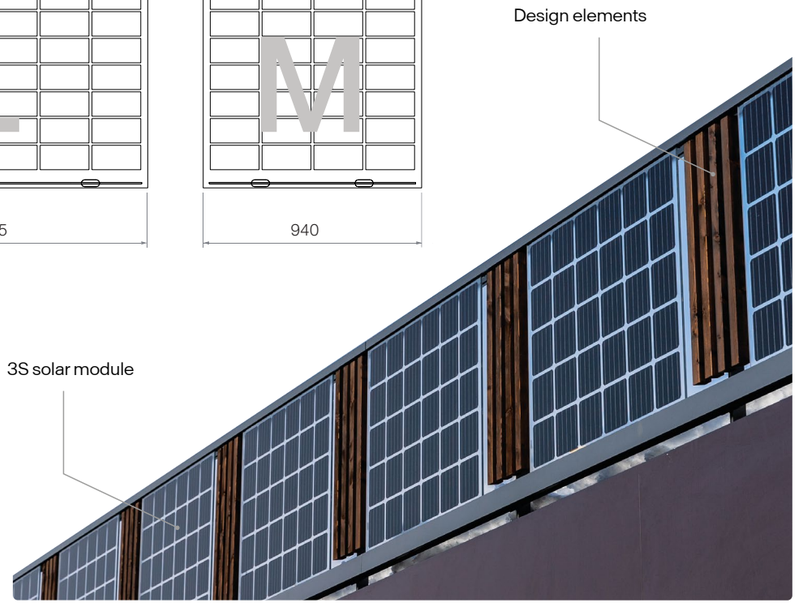
3S solar balcony railings

High energy yield with bifacial modules

The use of variable design elements means that 3S solar balcony railings can be adapted to any balcony or patio. The bifacial solar modules, with active solar cells on both sides, provide a high energy yield. Different colours and designs meet individual needs and adapt harmoniously to a variety of architectures.

The 3S solar balcony railings provide safety tested to the strictest of specifications and combine the expertise and experience gained from cutting edge metalworking with the production of solar components of the highest quality.





3S solar solutions

The benefits for you

- 3S solar aesthetics – uniform, elegant appearance
- Increased performance through use of the world's largest solar cells and optimal rear ventilation
- Resilient, durable and robust
- Suitable for Alpine regions with stringent requirements
- Self-cleaning due to the frameless design
- Recyclable modules
- Easy installation of the modules on the substructure
- Quick and easy to replace individual modules
- Developed and produced in Switzerland

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Designed to Perform

3s-solar.com