Danish solar energy

Exclusive modules for building integration -

Made in Denmark

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www.danishsolarenergy.com

Dansk Soenergi ApS
Danish Solar Energy Ltd.

Solar energy gives architectural freedom

COLORED SOLAR CELL MODULES WITHOUT LIMITATIONS

Danish Solar Energy Ltd. offers a revolutionary breakthrough with their patent: CFR - Colored photovoltaic modules that exceed all previous restrictions.

Due to the aesthetic and architectural possibilities represented by the colored solar roofs and facades, a whole new and very energy efficient architecture has been proposed, which knows no limits.

All types of facades and roofs can be an active element of the energy supply, while the architecture is completely free.

This innovation will change the paradigma to choose between green energy or beauty; there is a symbiosis between technique and aesthetics, provinding completely new and unimagined dimensions.

ADVANTAGES:

- Light transparency of up to 85-98% and thus a unique high efficiency.
- New aesthetic design options
- Economic production
- Completely expands the applications of the solar roof and facades.

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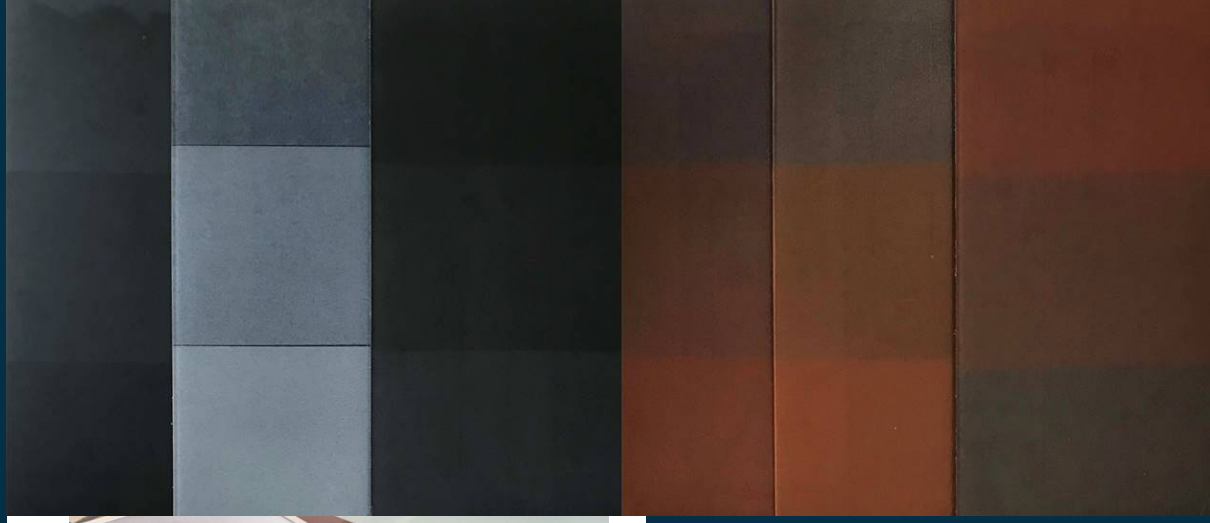

HEM CFR-module

Unique design - Choose:

Shape & size

Module color/colors

Light reflection

Efficiency

Design your own exclusive sustainable building

Danish Solar Energy provides our partners the opportunity to design their own solar modules to roofs or facades etc., from the color/s, to shape, size, the degree of reflection of the modules. It is also possible to accord the module´s patterns to the surrounding environments.

When designing the photovoltaic module, it must be decided whether it should be integrated into the building, this minimizes the visibility or whether the design of the building, that should be based on a futuristic appearance, and the photovoltaic modules, should be the „face“ of the building exterior.

The architect‘s name will be be settle in the industry, and into the building‘s green profile, implementing green energy in the construction.

We will jointly design the desired roof or facade etc., in the meantime we will be an active sparring partner, who can advise on technical and aesthetic possibilities, and make all the necessary calculations, so that the plant it will not only have a beautiful aspect, also It will still provide optimal energy production.

Building-integrated solar cells are an ideal solution in terms of reducing CO2 emissions from buildings and

be an active player in reducing climate problems we face, having a roof or facade with CO2-free energy production without being looking visible.

We can provide complete systems if desired. We contact installers, professionals and suppliers. We thus simplify our partners‘ communication path.

With over 25 years of experience in the industry, we have built up a ‚know-how‘ beyond the ordinary, we have faced challenges that for most people seem to be impossible.

All photovoltaic modules are produced at our factory in Denmark, which is built so that CO2 emissions are minimal during production. Despite having Denmark‘s largest solar production facility, we are very flexible in terms of wishes and specifications.

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Dansk Solenergi ApS
Danish Solar Energy Ltd.

Solar energy gives architectural freedom

Solar cells in all colors, textures and patterns - All types of facades, roofs and more, can be an active element of the energy supply, while the architecture is completely free.

- The benefits of the new product are many. In addition to providing new exclusive aesthetic design options and the opportunity for more ways to integrate solar cells, they have outstanding high efficiency and quality while.

Contact us at:

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Exclusive solar modules for red environments

An example of a project Danish Solar Energy has carried out, is an exclusive building in Svendborg Denmark, which has our CFR brick red solar roof modules installed.

The solar modules are selected in a slightly darker tone than the bricks, which in this case will darken over time and thus will get the same color as the solar modules. With the colored solar cells, a symbiosis between technology and aesthetics is thus envisaged, which we foresee will be widely used worldwide - and which is one of the solutions to the climate challenges we face.

The module could also be selected in other shades adapted to the surrounding environment that would almost make them invisible. We can produce modules up to Lx W 2.7x 1.7 m.
The modules come with a built-in mounting system for facades and roofs and with the same degree of sealing as traditional bricks and slate tiles.

With over 25 years of experience in the industry, Danish Solar Energy has built up a ‘know-how’ beyond the ordinary and has managed challenges that for most people seemed impossible.

All solar modules are produced at our own factory, which is Denmark’s largest production facility for solar modules. The factory is also built so that there is minimal CO2 emissions during production.

Technical specifications:

Module type: CFR HEM-HHV80.3xR110GG6
Plant power: 6.4 kWp.
Degree of reflection: RHEM600
Mounting bracket: * Yes
Mounting solution: Yes

Dansk Solenergi ApS
DANISH SOLAR ENERGY LDT

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DANISH SOLAR ENERGY LDT

Customized solutions

The customer determines the color and tone of the “solar slate”

We develop and produce the solar module in the color and size an surface that fits your requirement to your project.

* KEEP AESTHETICS
Our photovoltaic modules integrate with the roof and preserve the appearance of the building.

* HIGH PERFORMANCE
We use the highest per fomance solar cells on the market to achieve the best quality

* REFERENCE
Rander

See them in our website. reference Rander.

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Exclusiv gray slate modules
Top quality, design and performance

Reference Project in Rander, Denmark, the integration of slate, and the solar cells are invisible!

Solar cells are 100% integrated at the roof an replace the roof slates.

You can change a part of the roof or exchange all of slates; it can be easily purchased for replacing your roof or new constructions.

It is significantly cost effective knowing that the roof will pay for itself over time.

Our solar cells modules integrate at the slate roof are the optimal solution, if you want to reduce your electricity consumption and CO2 emissions.

It can be customize to the slates or design your own architectural expression of the building.

They are easy to install with our built in mounting system.

Options:

1. Module
   - color
   - Dimension/Form
   - Pattern/texture
2. Built in mounting system
3. Glass, level of reflection.

The standard module size is:
1600 x (350-410) x 7mm.

Modules can also be produced in others.
Sizes and shapes by request

Dansk Solenergi ApS
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Exclusiv slate modules
Top quality, design and performance

Our customers can't believe it! It is a solarplant, they are almost invisible and flat recessed and flush completely with the vertical lines, and replaces fully the slate roof where they are installed.

With this solution, not only do roofs repay themselves over a short period of time, but also achieve a beautiful and sustainable building that does not detract from the aesthetics of the buildings and without compromising technological or environmental, makes the product leader in exclusive solar solutions

Technology "made in Denmark": proof that Europe is innovative and technologically leading.

The product can be customized to suit all colors and patterns.

Ideal for:

- Listed buildings
- Churches
- Architectural projects
- New constructions
- Residential projects
- Reducing CO2
- and much more...

Contact Us:

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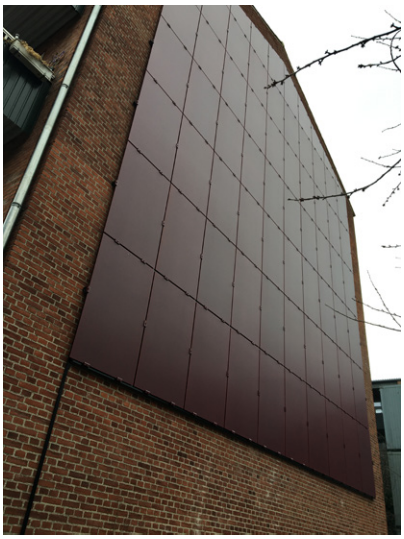
Facade in Copenhagen



A clean energy Solution

CFR modules on the facade send a strong green signal that sustainability is thought into the building

UNLIMITED OPPORTUNITIES

The new modules offers architects many innovative options

HIGH PERFORMANCE

Our CFR modules always use highest performance solar technology to ensure as the best performance and as much climate friendly energy as possible for our customers

REFERENCER

We have provided many facade solutions. See more on our website.

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Together we can design the future - Made in Denmark

A beautiful facade solution with red high-efficiency CFR solar modules to one of Copenhagen's many red stone properties.
The first red solar facade solution in Copenhagen, and probably the first in the world. The facade can produce approx. 13.000 kWh pr. year, climate-friendly energy and at the same time insulate the façade by shielding the façade from wind cooling.

This project shows how Dansk Solenergi's CFR technology can be integrated into all surfaces, without damaging the building's architecture.

Our CFR modules offer many opportunities to implement climate friendly energy.

Project data:
CFR Module: HV802XR200
Area aprox. 100 m2
Power: 14,27 kWp
Colour::TERA Dark Red
Reflection: Ultra low, no beam
Production: 13.000 kWh/year

Adress. Copenhagen N

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Danish Solar Energy Ltd.

Facade integration

Rockpanel

Rockpanel

Customized solutions

GREEN PROFILE

Exclusive CFR Solar modules on the facade send a strong green signal that sustainability is thought into the building

UNLIMITED OPPORTUNITIES

The new modules offers architects many innovative options

HIGH PERFORMANCE

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Together we can design the future - Made in Denmark

Solar modules naturally integrated into facades are the future. With our new technology, we can create invisible solar modules, in almost any color, and we can even insert fonts and images and at the same time get a unique high energy output.

Our CFR modules offer many opportunities to implement climate friendly energy, on all facades and areas with solar radiation, without damaging the architectural design.

Solar modules had two major restrictions on propagation. The first has been the price, which has dropped sharply, which now makes solar modules fully competitive compared to other energy sources.

The second limitation has been the ability to implement them in the existing architecture, without any architectural constraints.

With our new patented technology. there is no such limitation anymore.

Solar Energy is now ready to bee part to make difference, to keep the global temperature down, witch is required if we want a sustainable future for ourselves and our children.

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Dansk Solenergi ApS
Danish Solar Energy Ltd.

ZINC - COPPER - ALUMINUM - STEEL

Integrated

Customized solutions

- FOR ZINC, COPPER, STEEL ROOF
  The CFR modules from Danish Solar Energy are fully integrated and the color matches the choice of material

- Produced in Denmark
  All CFR modules are produced at Dansk Solenergi ApS's own factory in Holeby, Denmark

- Suitable for putting on older roofs
  For example, on top of an older Asphalt roof is obtained, additional protection against condensation from the metal is obtained

- FLEXIBILITY
  Danish Solar Energy is flexible in terms of size, material and color choice

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We focus on quality and design - Made in Denmark

Protects against rain and wind like ordinary roof modules and at the same time roof modules produce electricity.
CFR roof modules are laid as a regular roof and can be used on all constructions. This profile solution is also suitable for renovation tasks.

The modules are based on a folded metal roof covering which provides an absolute windproof, weatherproof and waterproof roof, due to the complete diffusion density of the roofing material.

A light roof that fits all roof structures. Fully integrated into the metal profile, with a unique fastening method that ensures the solar modules optimum performance and fastening to the profiles, under the harsh environmental conditions to which they are exposed.

The CFR modules are available in the desired color and can be delivered both finished modules integrated and laminated in the same roof panels or as independent modules.

These modules can fit into any roof or facade profile that have and flat area to laminate the CFR modles on.

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Customized solutions

- CHOOSE GLASS
  We produce our CFR module in the size, shape and with a surface for the desired reflection, that fits your project

- DETERMINE LIGHT RADIATION
  Choose how transparent the module should be and as something brand new now they are also available with a color tone, for example in red, blue or yellow, or any other color.

- HIGH PERFORMANCE
  Our CFR modules always use the high-performance solar cells to ensure as much climate-friendly energy as possible for our customers

- REFERENCE
  We have delivered a complete glass integrated system to Herlev Hospital

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We focus on quality and design - Made in Denmark

Transparent CFR skylights open a world of architects and offer a wealth of aesthetic options.
By integrating the transparent modules in the building, a futuristic expression is achieved, while at the same time reducing the light penetration and at the same time giving the modules a color shade can create completely unique light environments, all while helping the modules comply with the energy frame of the building and produce CO2 free energy.
By integrating the CFR modules into windows, the constellation can also be used for solar shading. By using our transparent bifacial CFR modules, further energy production can be obtained by reflections.

Since we always use the best raw materials on the market, optimal energy production is achieved.
Our CFR modules are manufactured according to international certifications: IEC 61215 and IEC EN 730. UL.

Dansk Solenergi ApS, has more than 25 years of experience, with the production of solar modules..

Dansk Solenergi ApS
Danish Solar Energy Ltd.

From idea to Realization

CUSTOM DESIGN

We can help you with

Aesthetics
- Color or colors
- Patterns
- Surfaces (Reflection degree)

Mechanics
- Dimensions (LxWxH)
- Frame
- Fastening
- Water seal

Electrical
- Configuration
- Junction box
- Cables and connectors

Performance
- Energy production
- Orientation and angles
- Shadows

Certifications
- IEC62115
- IECEN730
- UL

We have been consulting small Design customer to some of the biggest companies in Denmark . as the UN buildings in Copenhagen.

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Profesional Consultancy with more than 25 years experience

Architects and builders want an individual color choice of solar modules, saturated colors, a homogeneous appearance from every possible point of view and at the same time a high module efficiency.

The demand is growing a lot for these products. Builders from all over the world are increasingly asking for the sustainability and self-sufficiency of their buildings.

When designing the solar module, it must be decided whether it should be integrated into the building so that it minimizes visibility and blends in with the surrounding materials. Or whether the design of the building should be based on a futuristic appearance, and the solar modules should be the building's "face" on the outside.

Implementing green energy in the construction in this way can rightly cement the architect's or suppliers name in the industry, and the building's green profile.

Our team jointly design the desired module, where we will be an active sparring partner who can advise on aesthetic possibilities, and make all the necessary calculations so that the plant is not only beautiful to look at, but also have optimal performance.

Building-integrated solar modules are an ideal solution in terms of reducing the carbon footprint and reducing its cost of electricity.

We don't just supply the solar modules and stop there. We can supply complete systems if desired. We contact installers, professionals and suppliers. We thus simplify the communication path of our partners.

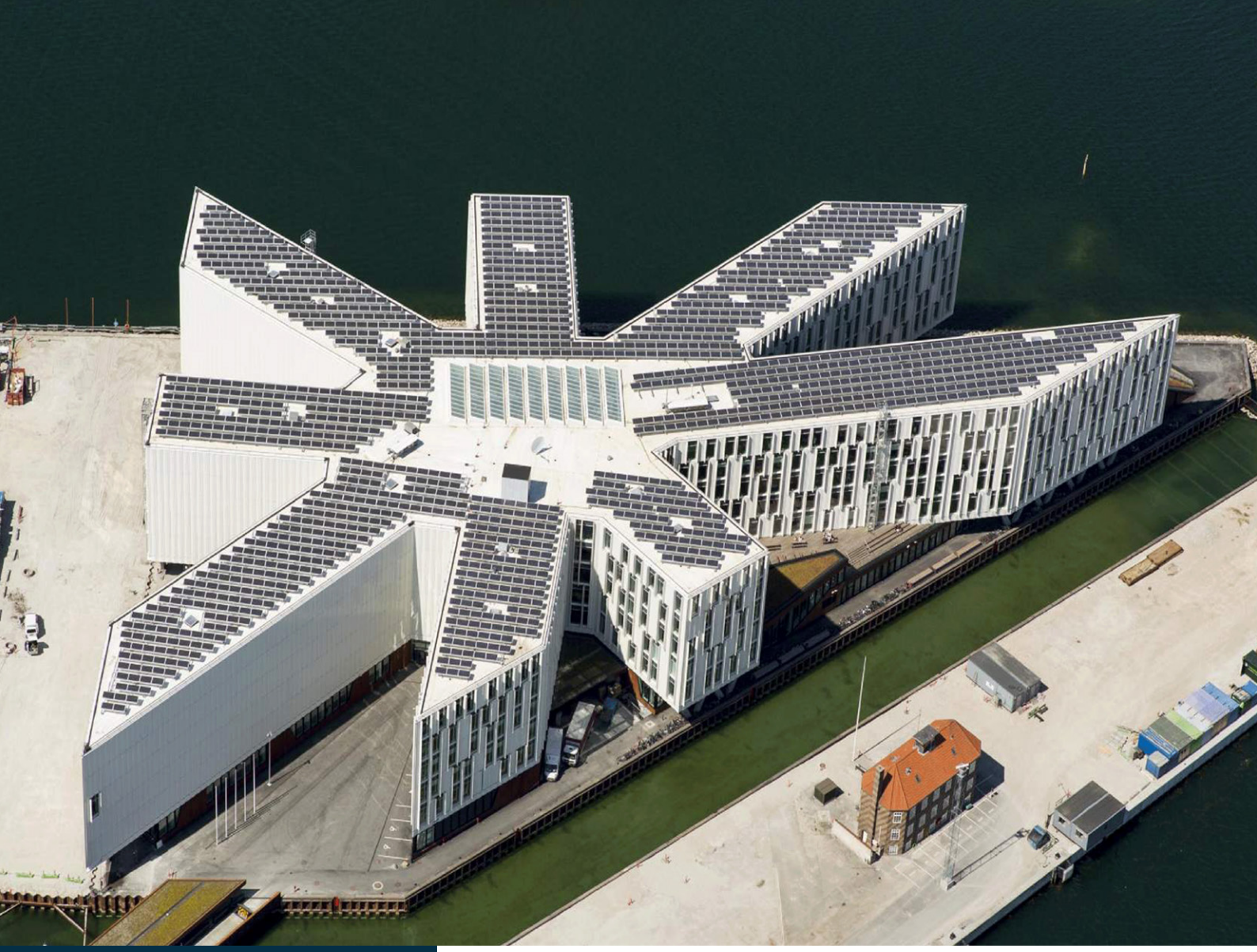
If you are a manufacturer or a distributor of building materials or in the process of building a project and want, an exclusive beautiful solar power hat can reduce electricity costs and contribute to sustainable construction and make a difference in relation to CO_2 emissions.

Contact us:

Let our team of top professional engineers and designers help you create your own CFR solar power module.

www.DanishSolarEnergy.com

Dansk Solenergi ApS
Danish Solar Energy Ltd.



Made in Denmark

Danish Solar Energy module factory is a large full-automated manufacturing plant located in the heart of a green environment in south Denmark.

The factory uses solar energy and employs multiple energy saving approaches, including reusing the wasted energy during the production. Our efficient robot technology and modern finishing process ensures the highest level of precision and quality products with minimal environmental impact.

Our LCA (life cycle analysis) help us to reduce the impact on the environment through its lifetime. The analysis quantifies the energy and raw materials used and are very useful in comparing the environmental impact of our product made by recycling and the same made from virgin materials.

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UN headquarters in Copenhagen

UN city complex, hailed as a Star in Copenhagen's harbor was completed in 2014. This example shows how important it is for the architect to consider the characteristic appearance of standard modules from the start, in order to achieve the desired architecture.

1/3 of the energy comes from climate-friendly CO2-free energy from the sun. The 1,400 HEM-PVsolar modules are top quality and produced by Danish Solar Energy, and cover 30% of the building's energy consumption.

We are proud that we were given the task of delivering a 355 kWp solar power plant to the UN headquarters in Copenhagen. The photovoltaic system was nominated at Intersolar in Munich, whith the Intersolar Prize in 2014 as "the most beautiful solar power plant since 2002" as one of the finest and best integrated systems in architecture. Decisive factors behind the award were the beautiful design of the installation and the high quality of the project

CERTIFICATIONS

All Danish Solar Energy modules are produced according to international certifications IEC61215 IEC EN730, UL

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