360Carla Training & Experience Thursday 2026-09-17

360 CARLA Training and Experience in Sweden:

From Solar Cell Research to Sustainable Solar Solutions

We are excited to invite students to a unique **360 CARLA** Training in Sweden, organised by **PhotonicSweden** and hosted by **Midsummer AB**.

Join us for an interactive full-day programme combining a hands-on training session with an exclusive on-site industry experience. Discover how advanced photonics, materials science and manufacturing come together to develop innovative and sustainable solar energy solutions — from solar cell research and production technology to finished solar roofs.

Midsummer AB is a Swedish solar energy company developing and manufacturing lightweight, silicon-free solar cells and solar roofs in Järfälla, outside Stockholm in Sweden.

Midsummer manufactures solar cells and production systems for flexible thin-film solar cells. Its solar roofs are designed with a significantly lower carbon footprint than traditional solar panels, while the company's production systems enable the development and manufacturing of next-generation solar technology.

With its own technology development and manufacturing capabilities, Midsummer covers a large part of the value chain — from research and development to production and installation.

- During the morning training session, Midsummer experts will introduce participants to the technology, the company and the journey from research to commercial products.
- The afternoon offers an exclusive opportunity to go behind the scenes and experience Midsummer's technology and manufacturing environment first-hand.

This visit provides a rare opportunity to connect **research, photonics, engineering and industrial production** in one setting. Participants will gain insight into how a deep-tech company develops technology, moves from research to manufacturing and creates sustainable products for real-world applications.

You will also have the opportunity to **network directly with professionals at Midsummer**, learn about different career paths and discover what a future in **sustainable energy technologies, industrial photonics and deep tech** can look like.

Whether you are interested in photonics, materials, solar cells, manufacturing, sustainability, engineering or innovation, this is an opportunity to see how science and technology can make a real-world impact.

Join us at Midsummer and discover the journey from solar cell research to the sustainable solar solutions of tomorrow!

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To participate, register your interest here:
https://forms.cloud.microsoft/r/bG52xQxdty?origin=lprLink

VENUE
Elektronikhöjden - Postnord Logistics Veddesta Midsummer AB
Elektronikhöjden 6
175 43 Järfälla
Sweden
Map: https://maps.app.goo.gl/bgXk8aL7JfhGPCBK6

Preliminary Speakerlist:

- Klara Takei
- Johan Oliv
- Eric Jaremalm
- Peter Carlsson
- Richard Jordberg
- Malin Sohlmér
- Esko Niemi

AGENDA

1) Training 09.00-12.00

- Midsummer's technology development and history
- What makes Midsummer's solar cells unique compared to competitors
- How the DUO machine is used for research work of solar cells
- What are the different application areas
- Midsummer's works to be Climate Smart and thereby reduce environmental impact.
- How Midsummer's work with customers and how to market the company's products

2) Lunch 12.00-13.00

3) Experience 13.00-16.00

- Production of machines for solar cells
- Manufacturing of solar cells
- Demonstration of Midsummer's solar cells products
- Midsummer's generic research tool Midsummer UNO.
- Summary of the day and discussion

About 360 CARLA https://carlahub.eu/about-360-carla/
360 CARLA is an EU-funded project which aims to increase interest in careers in photonics, particularly among students and early-career researchers. The initiative is designed to provide them with an in-depth understanding of the photonics ecosystem integrating symposia, mentorship, innovation and entrepreneurship experiences and trainings.

360 CARLA creates **round-up career development programs** focused on photonics application verticals:

- Health: Biotech and Medical Photonics
- Quantum Technologies and Communications
- Energy, Environment and Sustainability
- Manufacturing / Industry 4.0

About us

Midsummer is a Swedish solar energy company that installs discrete solar roofs that we manufacture in Järfälla with 90% lower carbon footprint than traditional solar panels. We have a high-tech, Swedish product and own the entire value chain from development and production to installation. Under the Midsummer Machinery brand, we supply production systems for flexible thin-film solar cells. https://midsummer.se/en/

From machines to solar roofs

Midsummer was founded in 2004 with the desire to transform the world's most climate-friendly energy source into usable energy for everyone.

The background of our founders is in the manufacture of machinery for CD readers and flat screen displays – a technology and production method that is very similar to the technology used in our solar cell manufacture.

Through a constant focus on further development and our vision of accelerating the transition to renewable energy, Midsummer has developed the most sustainable solar roof. Our products Midsummer SLIM, Midsummer WAVE and Midsummer BOLD are currently our main focus and sales area, while we continue to supply advanced production systems. Midsummer SLIM, Midsummer WAVE and Midsummer BOLD are today Midsummer's main focus and sales area, while we continue to deliver advanced production systems.

Our vision

With the most sustainable solar panel we transform the conventional roof and accelerate the transition towards renewable energy.

With a clear focus on sustainability

Sustainability is at the core of Midsummer, and this is something that permeates throughout all levels of the organisation. Midsummer's sustainability efforts are based on our desire to reduce the environmental impact of the production of solar roofs. A third-party-reviewed lifecycle analysis shows that Midsummer's solar roofs generate almost 90% lower carbon footprints than traditional solar panels thanks to our efficient production systems. We're extremely proud of being part of the global switch to renewable energy.

How do we achieve this? The solar panels are manufactured in our own production facility in Järfälla, which is powered by 100% renewable energy. The solar panels do not contain any heavy glass or aluminium element, significantly reducing materials consumption. In addition, the light-absorbent CIGS layer is extremely thin, contributing to a fast production process. However, we're not stopping there, working every day to improve our products, processes and CO2 emissions.

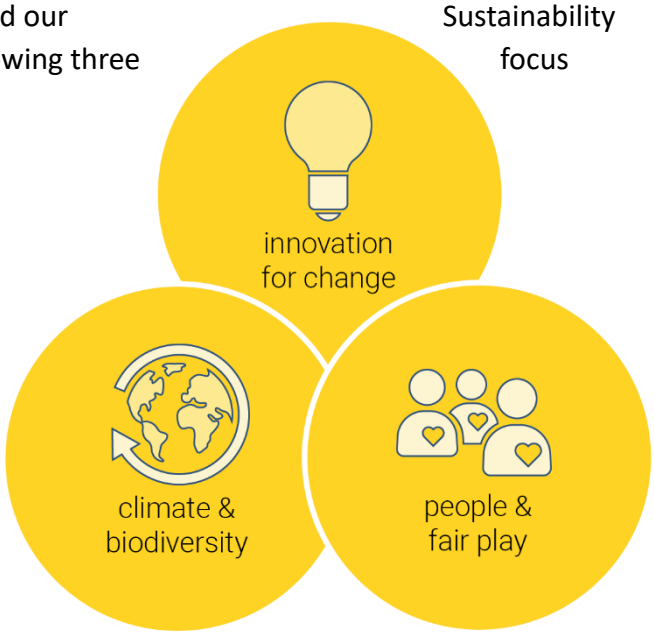
The global market for solar power

The global market for solar power has grown tremendously, with 70% of installations having taken place since 2017. Solar power is increasingly contributing to countries' energy mixes and plays a key role in the energy transition. Not only does solar power contribute to job creation and to the global economy, but it is also presenting a way forward to reduce for carbon dioxide emissions. However, most solar panels are currently manufactured using a carbon-intense, silicon-based method and contain cadmium, which is a highly toxic metal. At Midsummer, we produce solar cells that are cadmium-free and use a process that decreases the carbon footprint by up to 90% compared to silicon solar cells. This means that we are uniquely positioned for a truly sustainable energy transition.

Three focus areas

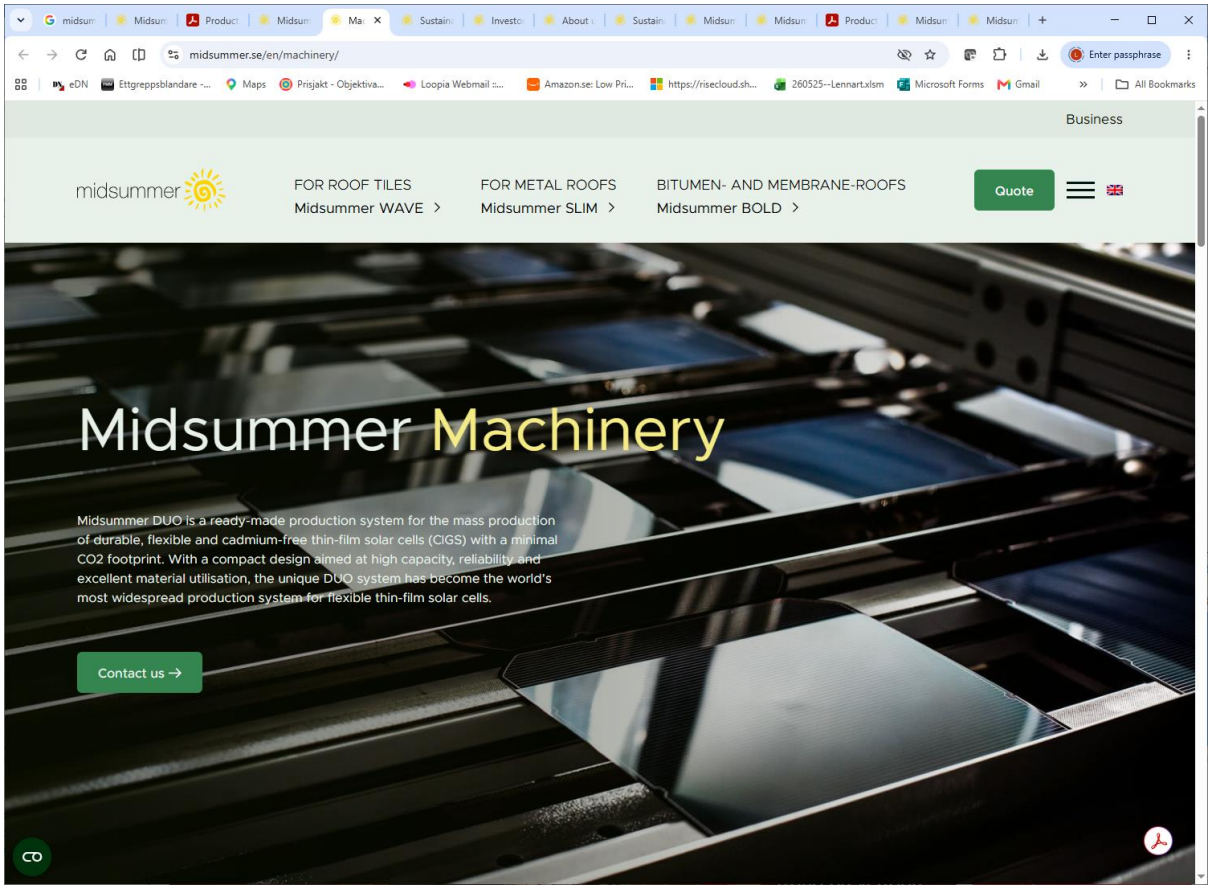
We aim to have an open and continuous dialogue with our stakeholders, ensuring we meet requirements and expectations. The stakeholder dialogue serves as a foundation for steering in the right direction and making the best priorities on our sustainability journey. Through a materiality assessment, we have developed our Sustainability focus Agenda where we have identified the following three areas:

- Climate & Biodiversity
- People & Fair play
- Innovation for Change



A sustainable energy solution

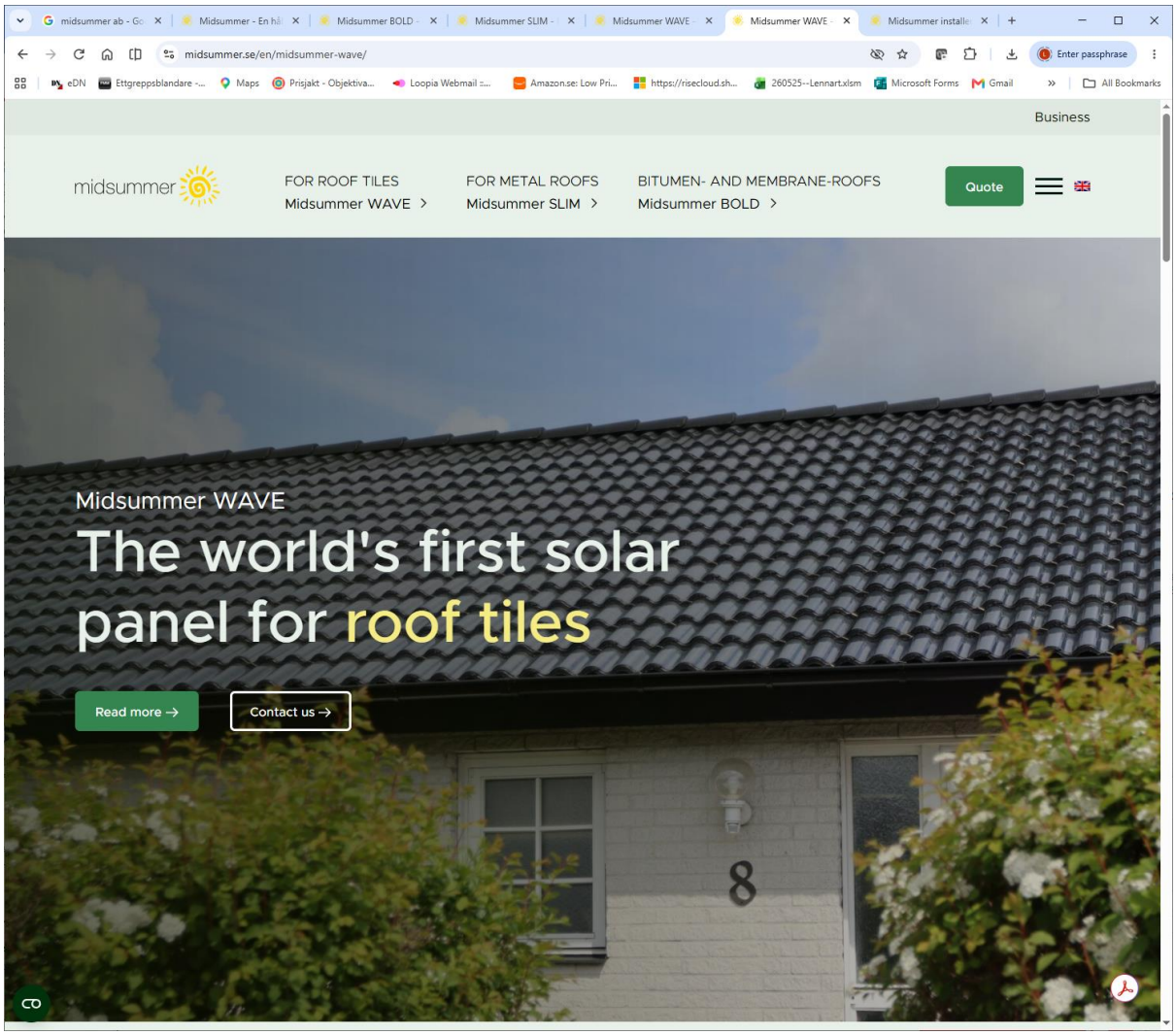
Midsummer manufactures silicon-free solar cells that are 90% lighter and have 90% lower CO2 emissions than traditional silicon-based solar panels.



https://midsummer.se/en/machinery/

Midsummer Machinery

Midsummer DUO is a ready-made production system for the mass production of durable, flexible and cadmium-free thin-film solar cells (CIGS) with a minimal CO2 footprint. With a compact design aimed at high capacity, reliability and excellent material utilisation, the unique DUO system has become the world’s most widespread production system for flexible thin-film solar cells.



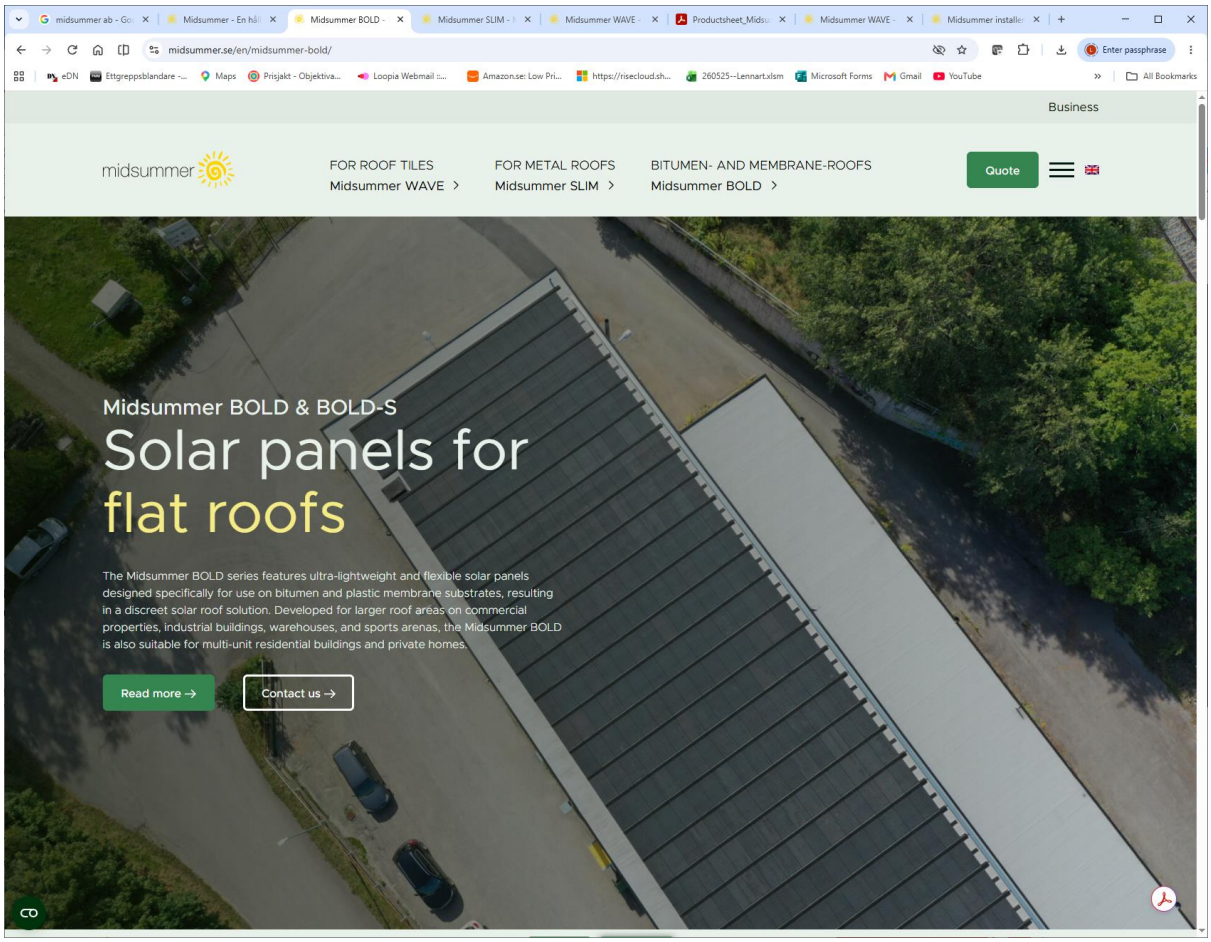
https://midsummer.se/en/midsummer-wave/

Midsummer WAVE

With Midsummer's solar roof, you no longer have to compromise between solar energy and aesthetics. Midsummer WAVE is a wave-shaped solar panel that follows the shape of your roof tiles.

The product is suitable for Sweden's most popular roof tiles Palema from Benders, Jönåker from Monier and Mjöbäck/Ekeby from S: t Eriks and is either sold as a retrofit on existing roof tiles or as a complete roof renovation. The solar panel covers five roof tiles in a row and the cables are hidden under the tiles for both protection and aesthetics.

For you who think that aesthetics and sustainability belong together.

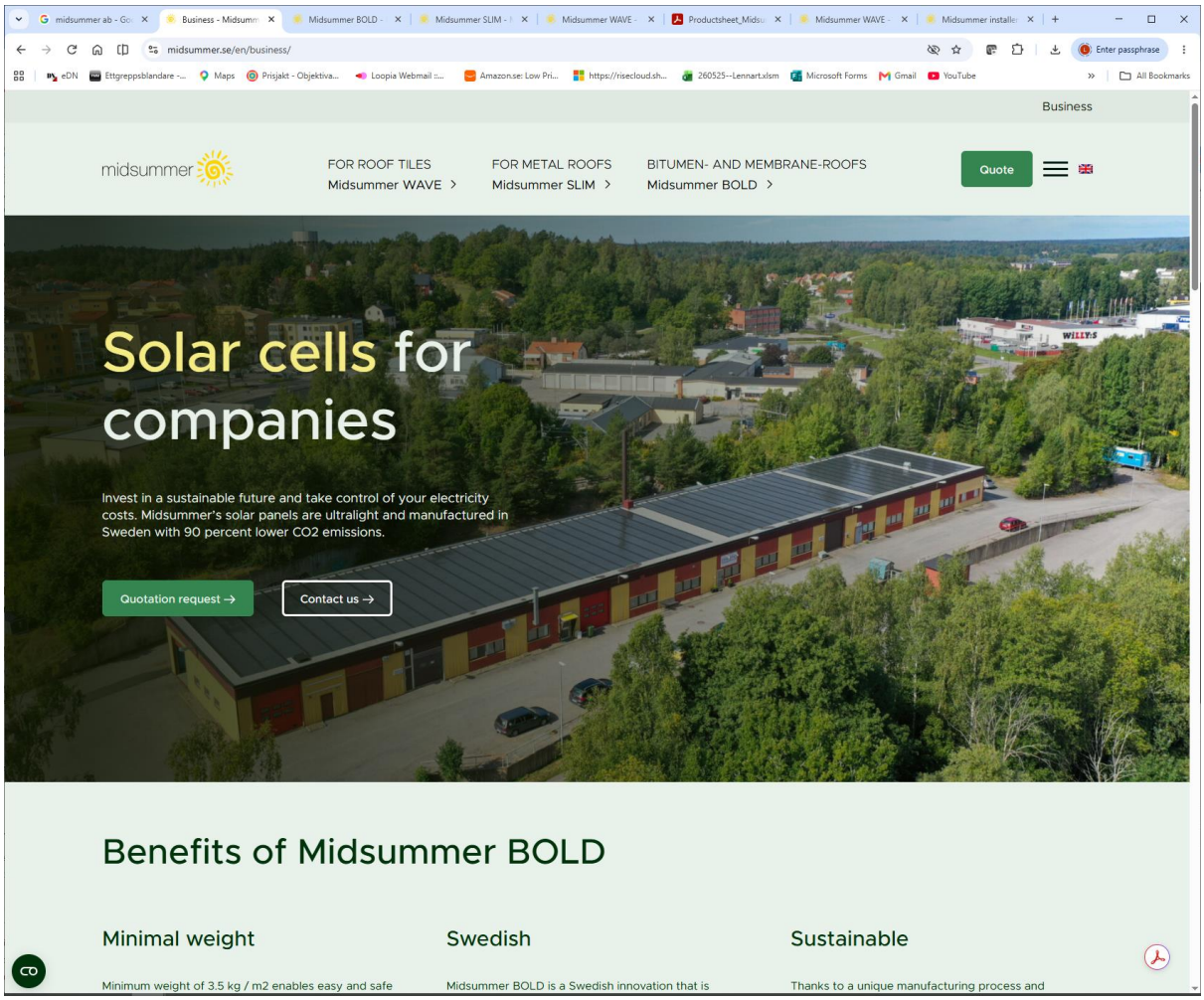


https://midsummer.se/en/midsummer-bold/

Midsummer BOLD & BOLD-S

Solar panels for flat roofs

The Midsummer BOLD series features ultra-lightweight and flexible solar panels designed specifically for use on bitumen and plastic membrane substrates, resulting in a discreet solar roof solution. Developed for larger roof areas on commercial properties, industrial buildings, warehouses, and sports arenas, the Midsummer BOLD is also suitable for multi-unit residential buildings and private homes.



https://midsummer.se/en/business/

Minimal weight
Minimum weight of 3.5 kg / m2 enables easy and safe installation without penetrating the roof sealing layer. High efficiency of 39 W / kg. With its low weight, Midsummer BOLD is a new alternative for roofs with weight restrictions. This means less cost of strengthening the roof structure.

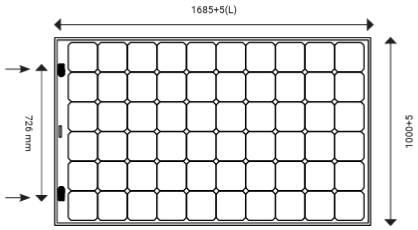
Swedish
Midsummer BOLD is a Swedish innovation that is manufactured from scratch in our production facility in Järfälla outside Stockholm – from input materials for solar cells to finished solar panels. Through this we ensure a transparent production..

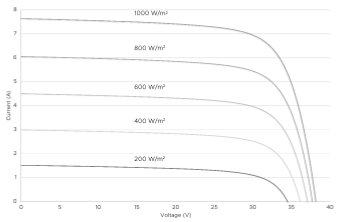
Sustainable
Thanks to a unique manufacturing process and production in Sweden, Midsummer BOLD has a carbon dioxide footprint that is 90% lower compared to traditional solar panels.

Description

Solar modules consisting of serial connected thin film cells (CIGS) on ultra thin 15 micron stainless steel substrate. The cells are protected and encapsulated by several film layers to ensure a long time durabillity. The module is delivered with IP68 rated junction boxes to endure a durable and weather resistant electrical connection.

Midsummer BOLD can be retrofitted to an existing roof or mounted at the same time as a complete roof replacement, without drilling holes in the roof's waterproofing layer.





ARTICLE INFORMATION	
Number of cells (1 bypass diode between each cell)	**60**
Weight	**5 kg/panel**
Width	**1000 mm**
Length	**1685 mm**
Thickness	**2 mm**
Roof pitch	**min 2°**
Minimum bend radius	**0,25 m**
Cell type thin film	**CIGS (Cu (In, Ga) Se_2)**
Product warranty	**10 years**
Power guarantee after 10 years	**90%**
Power guarantee after 25 years	**80%**
Certifications	**IEC 61730 | IEC 61215 | TÜV Rheinland certified**
Fire Safety	**BROOF (t2)*** **
Color of the panel	**Black**

TECHNICAL DATA	
Nominal Power, P_{MAX}*	**200 W**
Power/m^2	**119 W**
Power/kg	**40 W**
Maximum Power Voltage, V_{MPP}	**31,2 V**
Maximum Power Current, I_{MPP}	**6,6 A**
Open Circuit Voltage, V_{OC}*	**37,9 V**
Short Circuit Current, I_{SC}*	**7,5 A**
Maximum Series Fuse Rating	**10 A**
Maximum System Voltage, V_{DC}	**1000 V**
Protection class against electrical shock	**II**
Design Load**	**± 3600 Pa**
Module operating range	**-40 to +85 °C**
Temperature coefficient, P_{MAX} (W), γ	**-0,3992 % / C**
Temperature coefficient, V_{OC} (V), β	**-0,3279 % / C**
Temperature coefficient, I_{SC} (A), α	**0,0099 % / C**

MADE IN SWEDEN

Consult Midsummer for a technical assessment of your roof.

* Testing performed at STC (Standard test conditions): solar radiation of 1000 W/m2 with perpendicular incidence towards the module surface, module temperature 25°C, Air mass 1.5 (AM 1.5 spectrum). The tolerance for the value is ±10%.

** Test load ± 5400 Pa, Max altitude: 2000 m

*** Classification has been carried out by RISE Research Institutes of Sweden AB in accordance with EN 13501-5-2016

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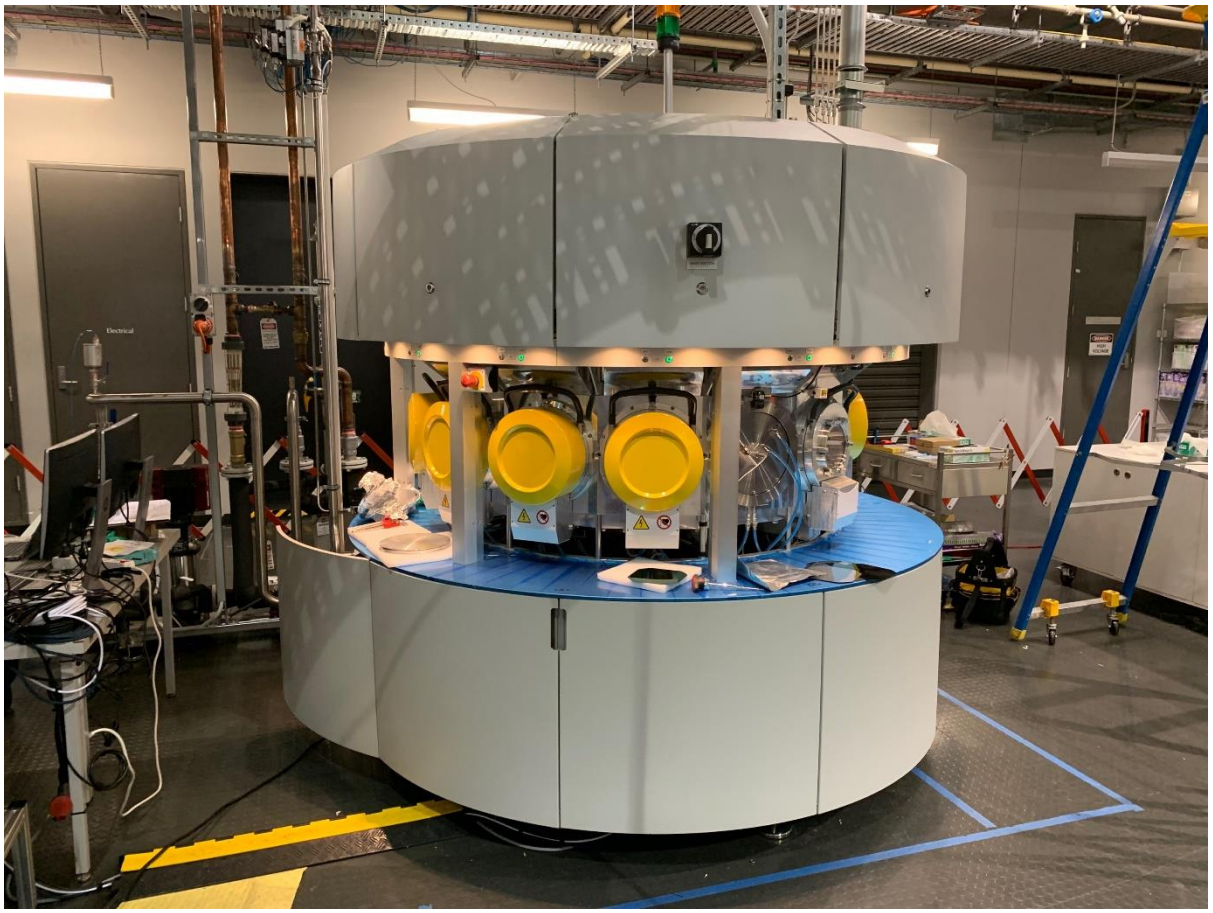

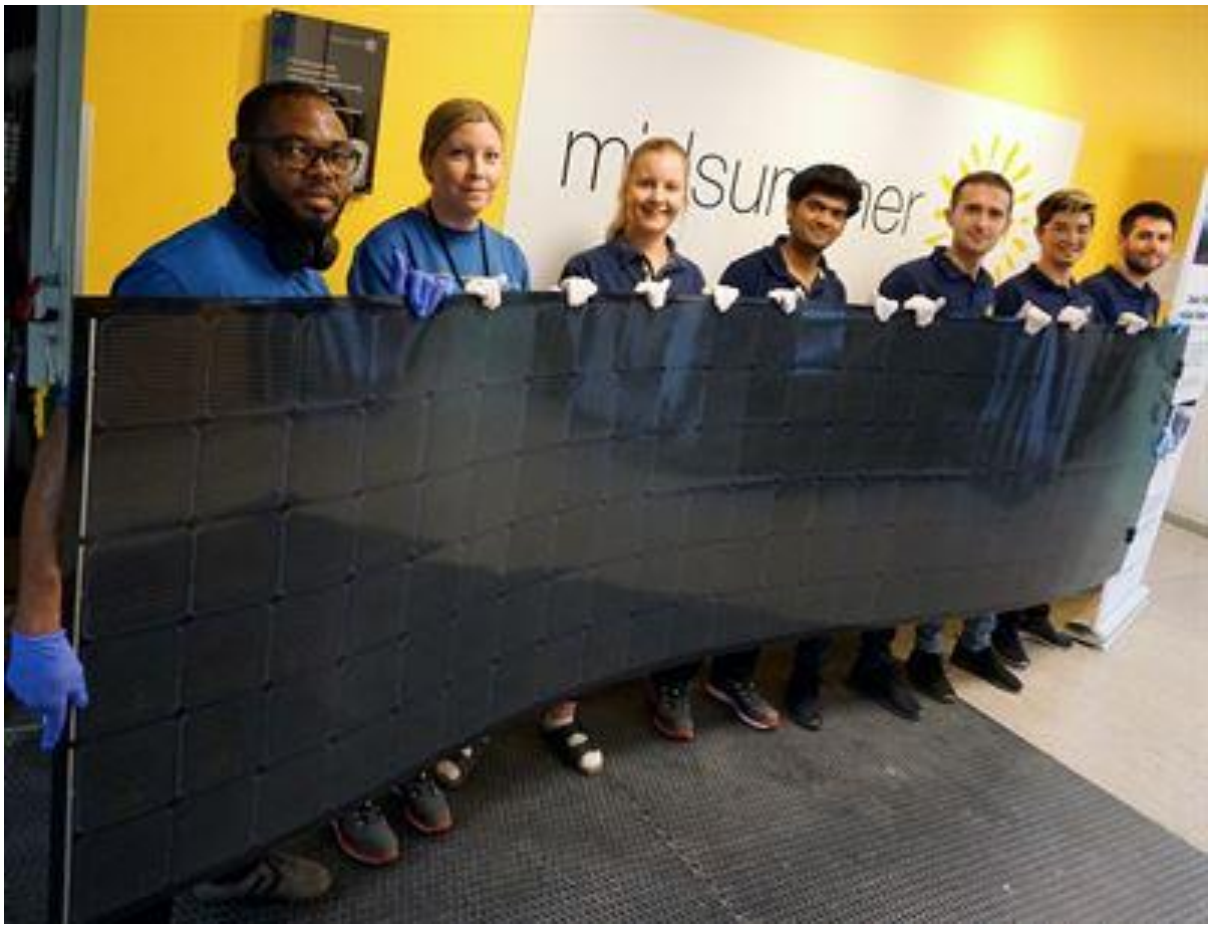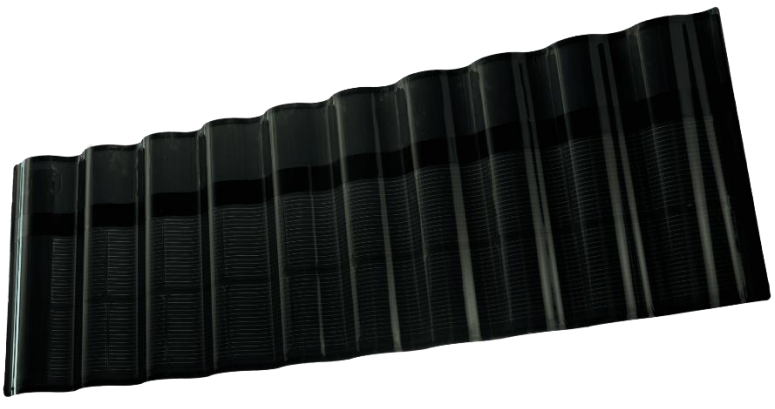
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