



THE COMPANY



NATURAL ENERGY



## TIME TO CARE

## COMMITMENT

SWISSWATT offers components and systems for the sustainable and natural production of energy. From high efficient solar cells to complete solar systems we deliver customized solutions for our clients. Products range from monocrystalline to polycrystalline modules known as MONOWATT and POLYWATT. Besides these common modules we provide an all black series and laminates without back sheet for the seamless building integration (BIPV). BIPVs offer novel ways in designing green high tech systems matching the design requirements of tomorrow's architecture.

Against this background SWISSWATT offers the best quality and service levels for competitive pricing. Our products are certified by TÜV Süd and others and come with long term warranties. MONOWATT and POLYWATT are distributed all over Europe and are suitable from roof top up to Megawatt installations. Our choice of raw material, our SWISS production technology, consequent quality control and performance testing demonstrates the corporate skills and consequently leads to an over industry average customer benefit:

- + Wattpeak tolerance is granted between 0 and +3%. Business objectives and calculations can be met, value for money is given. You get what you have ordered.
- + A minimum of 90% module efficiency is guaranteed two years over industry standard up to 12 years.
- + Arising claims are re-secured by an re-insurance venture over the guaranteed lifespan.
- + Advanced product details and options to customize to meet roof or building requirements make SWISSWATT to your choice for the next 25 years.





# HERITAGE

As a Swiss venture we are dedicated to the local values:

## Precision

Everything we offer was planned or produced with the highest precision. Not only the raw materials or products but also our services and value creating processes are checked against our commitment on a daily basis. This for the highest efficiency of your energy generation and the return of your investment.

## Exclusivity

Efficiency, product design of cells and connectors with multiple options to combine and customize will meet your individual requirements will truly comfort you over the 25 years. Not only the function and efficiency of your system is our core interest but the combination of form and function.

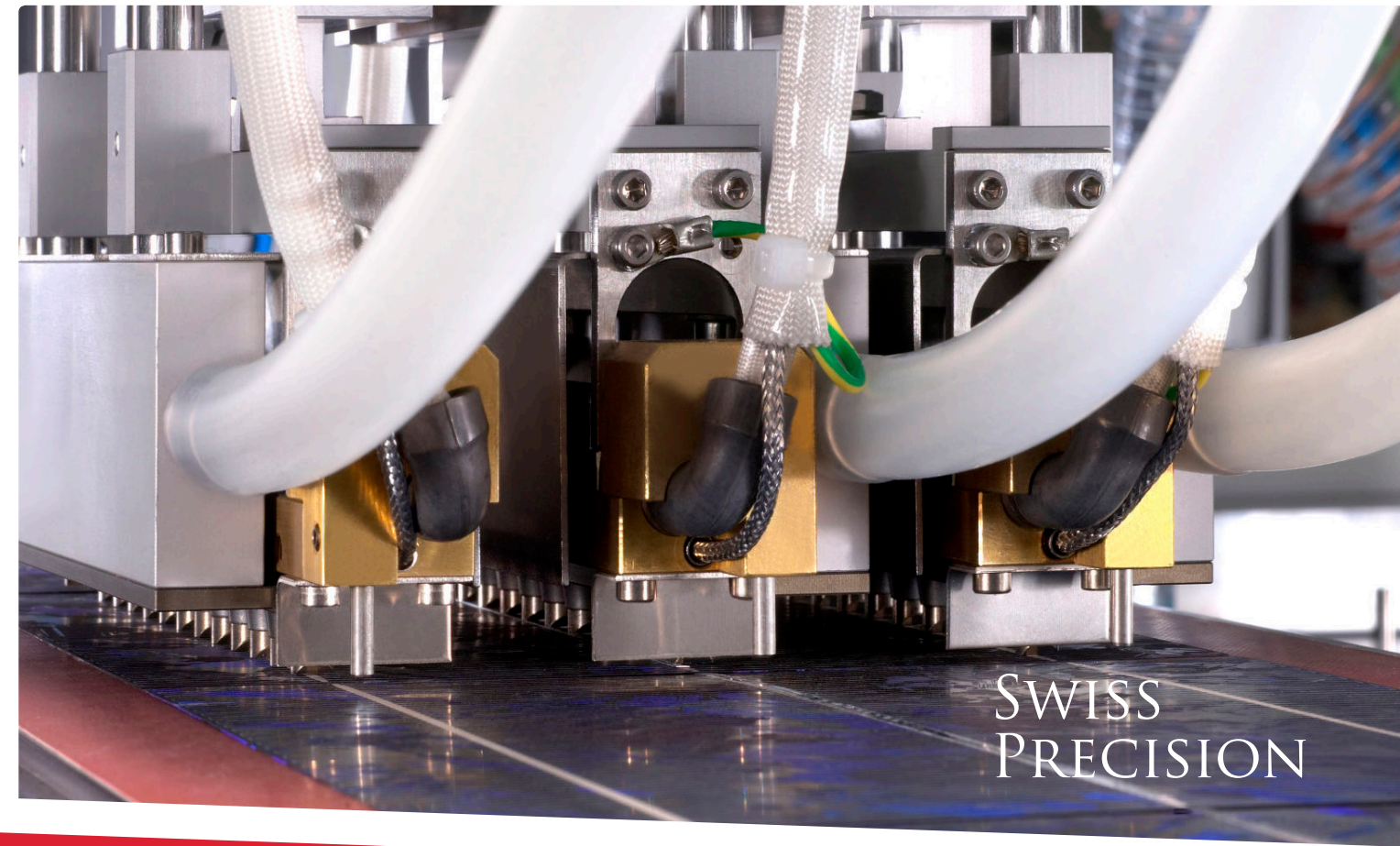
## Highest quality

Our modules are tested regularly inhouse and by independent testing laboratories. Here we test against our competitors to document our position at the top. We produce under clean room conditions. This is the best fundament to maximize your output.

## Reliability





Our products and services are designed for the highest reliability. This reliability is leveraged by automation, standardization and advanced technical details. Details as the lamination of the capsulation, wiring and the quality of our high transmission low iron glass.

*All this is covered and reinsured by extensive warranties.*







# PRODUCTS



Module type	MW190 - MW210	MW255 - MW280	MW245 - MW260 S	MW290 - MW310 S
<b>SHADOW BLACK</b> <i>Basically all modules are also produced in a „Shadow Black“ version. With matt black base foil laminated, matt black powder coated frame, screw or clip attachment optional. Technical data and specifications vary. Datasheets on request.</i>				
Rated output P MPP (W)	190 - 210 Wp	255 - 280 Wp	245 - 260 Wp	290 - 310 Wp
Cell type, Size, Amount	Monocrystal, 125 x 125, 72	Monocrystal, 125 x 125, 96	Monocrystal, 156 x 156, 60	Monocrystal, 156 x 156, 72
Weight	15,5 kg	25 kg	20 kg	24 kg
Dimension (mm)	1580 x 808 x 40	1580 x 1069 x 45	1655 x 992 x 45	1956 x 992 x 45
Cell efficiency (%)	17,00% - 19,40%	17,80% - 19,50%	17,20% - 19,10%	17,60% - 18,90%
Modul efficiency (%)	14,88% - 16,45%	15,10% - 16,60%	14,60% - 16,10%	14,90% - 15,90%

# PRODUCTS



Module type	PW120 - PW140	PW185 - PW210	PW230 - PW250	PW275 - PW300
<b>BIPV</b> <i>BIPV modules are embedded on both sides with low-iron tempered Solar glass. Transparency for design roofs and facades. BIPV is worth twice: savings for building materials and extra return from the power supply. Power rating: 55W-115W / m2, mono or poly, frameless.</i>				
Rated output P MPP (W)	120 - 140 Wp	185 - 210 Wp	230 - 250 Wp	275 - 300 Wp
Cell type, Size, Amount	Polycrystal, 156 x 156, 36	Polycrystal, 156 x 156, 54	Polycrystal, 156 x 156, 60	Polycrystal, 156 x 156, 72
Weight	12 kg	17 kg	22,50 kg	26 kg
Dimension (mm)	1482 x 676 x 45	1482 x 992 x 45	1655 x 992 x 45	1956 x 992 x 45
Cell efficiency (%)	13,70% - 16,00%	14,10% - 16,00%	15,75% - 17,20%	15,70% - 17,40%
Modul efficiency (%)	12,50% - 14,00%	12,60% - 14,30%	14,00% - 15,20%	14,20% - 15,40%

Additional technical information and datasheets for MONO- und POLYWATT modules are available on [www.swiss-watt.com](http://www.swiss-watt.com)



# SWISSWATT EXTREM

All power classes of our MONOWATT & POLYWATT modules can be produced for use in snowy, alpine areas with a special reinforcement. This reinforcement increases the mechanical strength to 10 000 Pa. Altitudes with extremely high irradiation up to 2,000 kWh / kWp, where previously grid-connected photovoltaic systems or stand-alone solutions were not applicable, can now be equipped with SWISSWATT **extrem** modules. Higher snow loads threaten the module integrity. Possible damages, such as glass or frame fractures, increase the maintenance costs and reduce the lifespan of the modules.

- + Extreme enforcement for loads up to 10,000 Pa
- + Extreme yield by high irradiation and low ambient temperature
- + Rugged frame design for insulation and high wind load
- + Automatic clean-room production for a sustained high yield
- + ... all other advantages of our module series

SWISSWATT **extrem** design and construction guarantee the highly efficient and reliable long term output of each and every module and ensure industry leading sustainable performance. Ongoing quality control and performance testing executed by independent testing laboratories grant the maximal benefit of your environmentally friendly energy production - even under extreme conditions.



# RESPONSIBILITY

It is still debated whether climate change is caused by man or not. It is the time to discuss not only, but to act. Global Warming seems to be accelerated by CO2 emissions as a result of energy consumption. The energy consumption is not only induced by population growth but also by the increasing energy intensity of living standard of the developing countries. The sun supplies more energy in three hours than mankind can consume in 1 year. And it's free.

The best part is that solar energy is clean.

- + Photovoltaic systems: for safe & environmental friendly energy.
- + Saving of scarce fossil fuels without carbon dioxide emission.
- + Independence from other natural resources.
- + Your active contribution to environmental protection.
- + Active environmental protection combined with a guaranteed income.
- + Principle maintenance-free operation for the guaranteed lifetime.

The operation of a photovoltaic system generates no exhaust or any other emissions. Each fed kWp prevents the development of up to 7 t CO2. The energy for the production of silicon, the basic building block of the cell reproduces itself in less than one year. In the planned lifetime of the module (assuming 25 years) the energy invested is recovered by up to 50 times.

## SWISSWATT and PV CYCLE:

PV Cycle is a voluntary return and recycle program for modules reaching their end of life. Target is a sustainable solution to consider the influence of the sourcing of raw materials to the reuse of the different materials. Recycling requirements of tomorrow are already implemented today. Used raw materials and the invested energy will be returned to the material cycle. With SWISSWATT you are an active part of a sustainable energy solution and contribute to fight climate change.





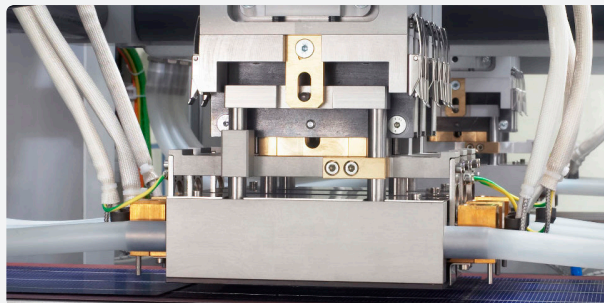
# THE PRODUCTION

SWISSWATT uses Swiss manufacturing technology for the production of Monowatt and Polywatt modules. Unlike other manufacturers SWISS WATT has automated the critical production steps. In particular, the inclusion and placement, an interim test and the brazing processes are

controlled by machines with highest precision. These steps affect the durability, performance and efficiency of the modules, and are therefore the condition for the maximum yield and a maximum life span.

The recording takes place under vacuum, not to harm the thin and fragile structures of the cell. Before the brazing the cell will be preheated by

an advanced temperature-controlled management system. Automatic brazing heads create a permanently stable connection without overloading the cells.



After the brazing of the cells, the compounds are visually and electronically verified. Cell lines are connected to modules, laminated and encapsulated. Primarily to improve the stability under wind and snow load, the frame is assembled. The finished modules are tested in the

6.5-meter-high flash tower and divided into performance categories. With this latest technology we test and document the performance of the final module. A Xenon flash, with a light spectrum, homogeneity and stability closest to the characteristics of the sun generates for the first time measurable and documentable energy.

The precision of the production facilities and Test Facilities in a clean room environment, guarantees outstanding quality of our modules.



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