

## **The solar modules that make a difference for your business.**

Develop your activity and reputation with our premium solar modules.

**aleo**



## **We make your customers love you. And your business thrive.**

You want your business to be as successful as possible, and so do we. At also we think solar panels define customers' satisfaction and enhance business reputation. That's why we focus on making solar panels reliable and going solar an easy experience for end customers. Because there is nothing they desire more when going solar. They want it to work perfectly. Give them what they want, they will love you, and your business will thrive.

**This is what we help you achieve. Let us tell you how.**

## We provide the centerpiece of a reliable PV system. A solar module made to last. MADE IN GERMANY.

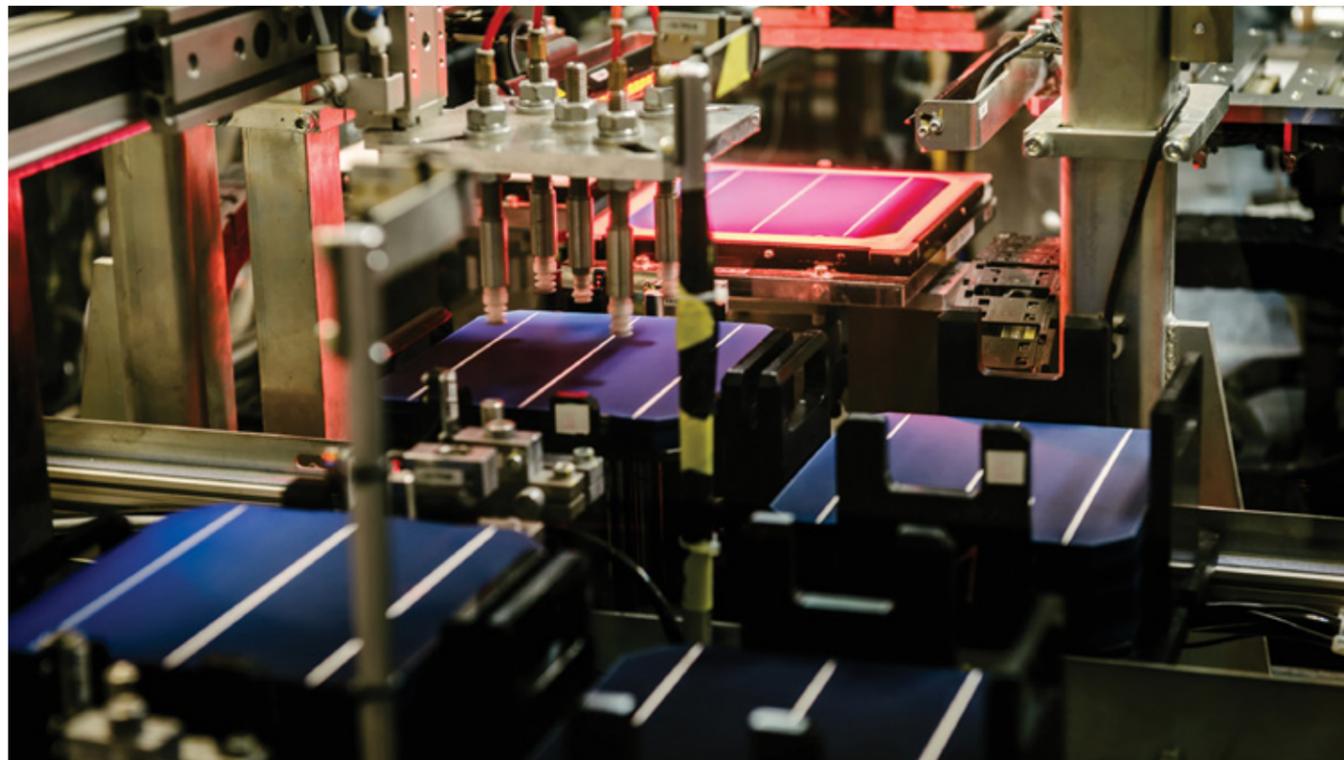
There is one simple rule to make your business successful and your customers thankful. Choose a module made to last.

When investing in a solar system, there are only two ways to decide. Either looking for the smallest investment or looking for the smallest Total Cost of Ownership. Of course, the second option leads to the highest profitability. The centerpiece of such an approach is a module whose performances and behavior are stable during more than two decades. This will allow you to keep your promises when it comes to product reliability and to save money. When comes the time to choose a supplier, relying on datasheets and IEC certifications won't bring you far as none of them can ensure a

module will last for two decades. And in an industry so prompt to cut corners at the expense of quality, what remains is trust. Who can you trust? Who will have the values and processes to ensure reliable behavior and performances? Since our inception in 2001 in Germany, we have assembled a team of passionate people, who constantly strive for excellence and care for customers by building the most durable modules. You can trust us for being a partner that will help grow your business, not the other way around.

# 100%

of independent tests proved that our modules were among the most reliable of the solar industry. It includes the Fraunhofer PVDI and Sgurr Energy.



## PREMIUM CRAFTSMANSHIP IS OUR CULTURE.

### WE COMBINE THE BEST COMPONENTS

The know-how behind the selection and association of raw materials makes the difference between modules. Selecting the right Bill of Materials will ensure the stability and performances of our products. It takes time and dedication to make those decisions. But it is for the sake of your business and your customers.

In order to simulate the expected lifetime of modules, international standards are not stringent enough. That's why, over the years, we have set our own standards that go much further than any official requirement. We test at least every new material twice as much the IEC standards and even much beyond when we consider it necessary.

### WE TEST WAY BEYOND STANDARDS

### OUR PLANT IS UNDER CONTROL

All our modules are produced in our unique plant in Germany. Well established processes, recognized as state of the art by independent auditors over and over again, as well as severe internal tests designed to provide you with homogeneous and repeatable high quality which you won't have from a supplier managing complex supply chains, ensure that all modules leaving our plant are defect free.

- + 100% diodes tested
- + 100% snail trail free
- + Salt mist corrosion resistance
- + Ammonia corrosion resistance
- + Sand and dust resistance
- + ISO 9001
- + ISO 14001
- + ISO 50001
- + OHSAS compliant
- + PID free

### OUR QUALITY IS CERTIFIED

## Our trademark? High yields.

The virtue of a solar panel is to produce as much electricity as possible. This is what our leading PERC technology does. In our business, there is no getting away from the fact that high yields = customer satisfaction=success for you.

Solar technology evolves. Like in any other industry. New and more performing technologies replace old ones. Now is time for you to work with what is steadily becoming the new standard: PERC technology. Based on an improved solar cell architecture, it allows higher efficiency, higher power classes and higher yields.

At aleo, we are industry leaders in this field. We can in particular rely on the know-how of our mother company, Sino-American Silicon Products, which was the first to bring PERC technology to commercial scale in 2007 and is still recognized as the technological leader.

## A LONG HISTORY IN HIGH-EFFICIENCY TECHNOLOGIES

Drs. Szpitalak, Beilby and Tjahjono are solar pioneers. Esteemed alumni of the Center of Excellence for Photovoltaics and Photonics at the University of New South Wales in Australia, they have been spearheading PERC technology for over 30 years and set multiple world records. Responsible not only for implementing CELCO® technology at SAS, but for introducing groundbreaking new developments to the industry at large, we're proud to call them the driving force behind our solar science.

## ALEO HE TEC. DESIGNED TO PERFORM.

aleo produces among the most powerful 60 cells modules of the market. We rely on our HE Tec platform to achieve such performances. HE Tec is based on the association of high performance and highly reliable components.

# 98%

of the nominal power guaranteed after the first two years.

### CELCO® TECHNOLOGY

Our HE Tec modules embark the CELCO® PERC technology developed by our mother company Sino-American Silicon Products.

### LOW LIGHT INDUCED DEGRADATION



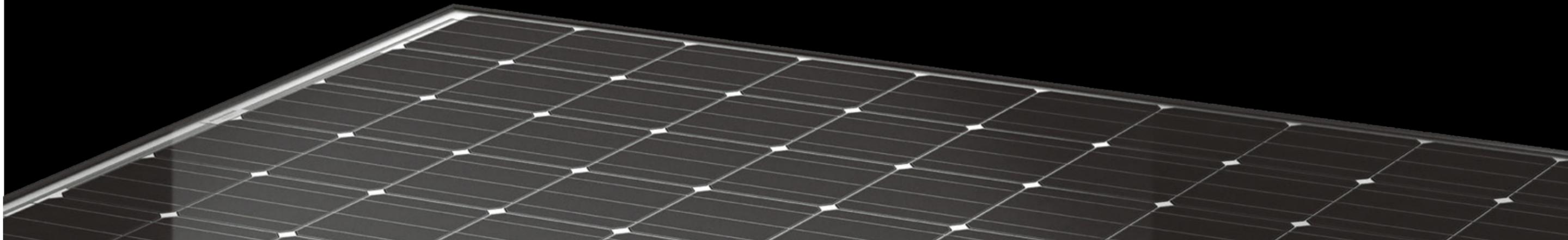
With superior efficiency and LID behavior, CELCO® cells are the best guarantee for above average yields in operation.

### HIGHLY STABLE FRAME

We don't compromise on mechanical resistance. Our 50 mm frame is designed to resist 550 kg/m<sup>2</sup> in pressure and suction with flexibility in clamping.

### LHS TECHNOLOGY

Solar modules look the same and it is often difficult to perceive their differences. HE Tec modules feature exclusive LHS busbars technology. They reflect incident light towards the solar cells for increased output. Take a laser and observe by yourself premium technology and know-how that make a difference.



# We make solar energy rhyme with serenity.

We care for your customers to never regret their choice to go solar. First, by manufacturing reliable products. Second, by standing behind our craft. Whatever happens. That's why you and your customers can rely on industry-leading warranties and the reliability of an established group.

When going solar, your customers want to take their autonomy and produce their own electricity while contributing to create a cleaner world. They have simple yet challenging expectations. As they are told solar panels work for decades, they expect their solar system to work properly over the years. Even if we always

strive for excellence, we are aware failures might occur. That's why we design the most durable solar panels that come together with up to 25 years product guarantee. Just in case. And we cover all the costs related to an after sales case under guarantee.



### UP TO 25 YEARS PRODUCT GUARANTEE

Our solar modules have a standard 12 years product guarantee that can be extended to 25 years for HE Tec modules.



### 100% OF COSTS COVERED IN CASE OF FAILURE

If our modules should ever fail because of internal defects, we cover the costs of modules replacement, transportation and labor costs.



### 25 YEARS PERFORMANCE GUARANTEE

Our solar modules have a linear 25 years performance guarantee.

## CUSTOMER FRIENDLY GUARANTEES

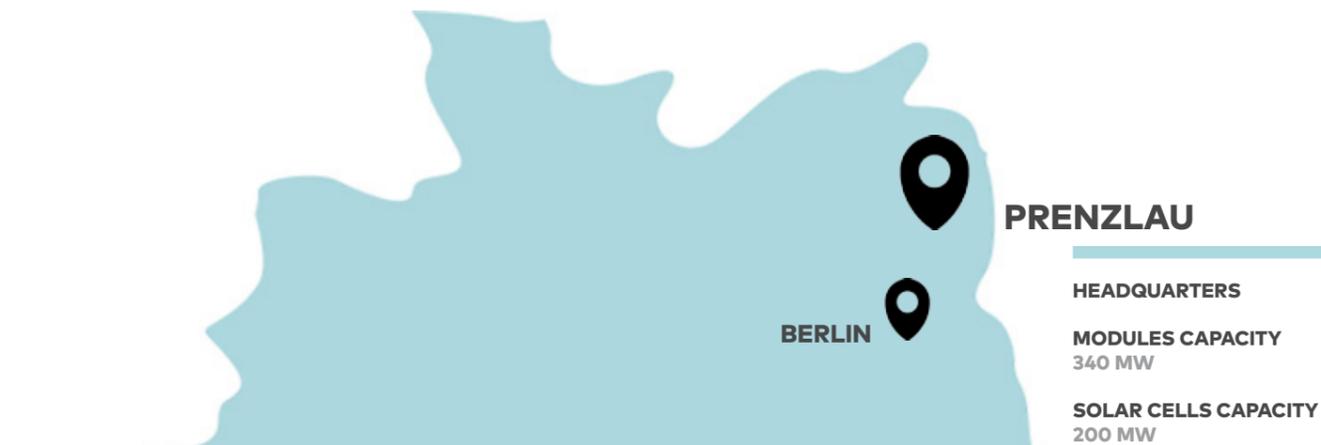
In its May 2017 issue, the German magazine Photon reviewed the guarantees of more than 20 manufacturers and ranked also among the 4 with the most customer friendly. We don't only offer the guarantees. We also care about executing them properly when needed for our customers to have their system always running properly.

# WE MAKE YOUR CUSTOMERS ENJOY THEIR SOLAR POWERED LIFE EASILY



## Know-how Made in Germany. Since 2001.

Incorporated in 2001, aleo is recognized as one of the most trustworthy manufacturer of solar modules. The company produces all its products in its plant in Germany. aleo lives by strong values that pushes the company to pursue industrial excellence to make solar energy always more reliable for citizens to go solar confidently.



## A HISTORY OF EXCELLENCE

### 2016

aleo solar opens its first solar cells plant in Prenzlau, incorporated in Joint Venture with SAS.

### 2015

aleo solar is the first manufacturer in the world to mass produce 60 cells - 300W PERC modules.

### 2014

aleo solar is taken over by Sino-American Silicon (SAS), the third largest manufacturer of wafers for the semiconductor industry.

### 2012

Fraunhofer Institute ranks aleo solar module among the top performers during the first PV Durability Initiative whose tests went much beyond usually required standards.

### 2010

aleo solar S18 module receives the top mark following a test performed by Öko-Test.

### 2009

The BOSCH Group takes a majority stake in the company.

### 2006

aleo solar S16 module receives the best note (1,9) following a test performed by Stiftung Warentest.

### 2001

aleo solar is founded by Marius Eriksen, a German pioneer and a committed citizen, awarded the "Bundesverdienstkreuz" for its social engagement.

## OUR GROUP ALREADY BUILDS YOUR CLIENT'S WORLD. LET IT POWER IT WITH SOLAR ENERGY.



### A WORLDWIDE LEADER IN SEMICONDUCTOR AND SOLAR ENERGY

In 2014, aleo joined the Sino-American Silicon Products (SAS) group as a wholly owned subsidiary. SAS is the third largest manufacturer in the world of silicon wafers. With more than 8500 employees and 900 M\$ turnover in the first semester of 2017, the group manufactures the components used in computers, phones, cars, trains, cameras, connected devices...you use in your everyday life. It is also a recognized technological leader in high-efficiency solar cells and wafers.

**8500**  
employees

**900 M\$**  
Turnover H1 2017

## THEY TRUST THE SAS GROUP. WHY WOULDN'T YOU?

Leading brands trust the SAS Group to supply components used in the electronic devices people use every day all around the world. Then your customers can trust aleo solar modules as well for a reliable production of solar electricity for decades.

# Stay tuned

Follow us on social medias and read our blog to get all our latest news and insights about the solar industry.