

Address	<b>Almaden Europe GmbH</b> Hanauerstraße 1 80992 München
Country	Germany
Phone	0049 89 21963215
Internet	www.almaden-europe.eu

## CONTACT PERSONS

Contact 1.	Mr. Dr. Erich Merkle Geschäftsführer Phone: 0049 89 21963215
------------	--

## PRODUCTS OR MACHINERY ALMADEN WORLD MODULE® FOR ALL CLIMATES!



## COLD CLIMATE WITH SNOW:

Low temperatures are prevailing in countries of the Northern hemisphere but also during the night in desert areas. All materials have to withstand temperatures below 30 ° Cel. and fast changes to high temperatures up to 85°cel..



## DESERT CLIMATE:

Desert climate with very high temperatures of up to 85 ° inside the module (heat and electrical current being responsible). Also temperatures change in fast cycles when the sun come out and after sunset.

Many materials don't withstand these changes over their lifespan of 30 - 40 years. Also cells should loose as little power as possible through temperatures



## COLD CLIMATE WITH SNOW:

Sand storms are a threat to all surfaces and especially transparent ones.

The TUV sand storm corrosion test EN 60068-2-68 is a test of a full size module which is turned around so that all parts are exposed to the sand with different sand types at speeds of 20 and 30 m/sec.



## HOT AND HUMIDE CLIMATE:

In large areas of the world the climate is very hot and humide. This is a special threat to modules. Small H<sub>2</sub>O molecules leak into the modules.

A chemical reaction with must foils like EVA takes place and as a result, citric acid builds up.

The temperature rises and the acid boils, thus destroying modules over months and years. Also algues and other plants grow fast in hot and humid climate. Modules with frames are especially in danger.



## SALT WATER:

Salt and also air-borne chemicals are very aggressive and a threat to the modules materials. Glass is the first choice to withstand these threats.

**Please have a look at our videos with different applications:**

Carports: <http://www.youtube.com/watch?v=BoEmlagrUlo>

Solar Roof Systems: <http://www.youtube.com/watch?v=ThU2piUCIWM>

Pool: <http://www.youtube.com/watch?v=wL0k-YqQjwg>

Winter garden: <http://www.youtube.com/watch?v=TZWnPgbghgc>

Gas station: <http://www.youtube.com/watch?v=uYNepPXiKSY>

AgriPV: <http://www.youtube.com/watch?v=nqrBIX1t1BY>

All videos: <http://www.youtube.com/watch?v=l0Hg45P1VuM>

## COMPANY BACKGROUND / HISTORY

In particular for applications in photovoltaic (solar glass). More than 120 million square meters of solar glass have been delivered in recent years to the solar industry .

More than 15 percent of the world´s installed solar modules produced with solar glass of Almaden.

The Almaden technology guarantees more than three percent more light output over a wide spectral range.

This is the key reason why the world´s leading producer of solar modules mainly use the ARC glass of Almaden for your premium modules.

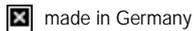
The company has been awarded several national and international awards for their innovative developments.

In 2011 the company installed the first industrial production line for simultaneous anti-reflective coating with a hardening process for extra thin solar glass with a thickness of only two millimeters.

The line has been jointly developed with the global market leader in Austria LISEC.

The ultrathin glass is more stable and durable than significantly thicker glasses with four to six millimeters.

The thin glass has a higher light transmission , saves energy and material costs and allows the construction of very light modules.



Along with German Engineers, the company developed a new generation of innovative glass - glass modules in terms of significantly improved properties with respect to power, life, Applications (semi - transparent ) and weight:

The company manufactures in China, covering an area of over 400,000 square meters, as well as in Taiwan. Company milestones

2006: Foundation

2009: sales over \$ 32 million

world market share at 38 per cent ARC solar glass

2010: sales over \$ 90 million

world market share of 56 per cent ARC solar glass

2011: IPO in China

2012: Diversification :

ultra-thin solar glass with anti-reflective coating

ultra-thin glass-glass PV modules without frame

BIPV modules for building-integrated applications

2013: International diversification : USA, Australia , Europe, Africa

### Company Profile of **Almaden Europe GmbH**

A service of glassglobal.com, an affiliate of glassglobal group.

The address material you printed out is copyright and belongs to the Company or to its third party Marketing Agency, and all rights are reserved. Any User who accesses such material may do so only for its own personal use, and the use of such material is at the sole risk of the User. Redistribution or other commercial exploitation of such address material is expressly prohibited. Where such address material is provided by a third party, each User agrees to observe and be bound by the specific terms of use applying to such news material. Glass Global does not represent or endorse the accuracy or reliability of any of the info contained in any address or external websites referred to in this printout. www.glassglobal.com - The International Portal to the Glass Industry - OGIS GmbH