

DUOMAX

A REVOLUTION IN PHOTOVOLTAIC SOLUTIONS



RELIABILITY



FEATURES



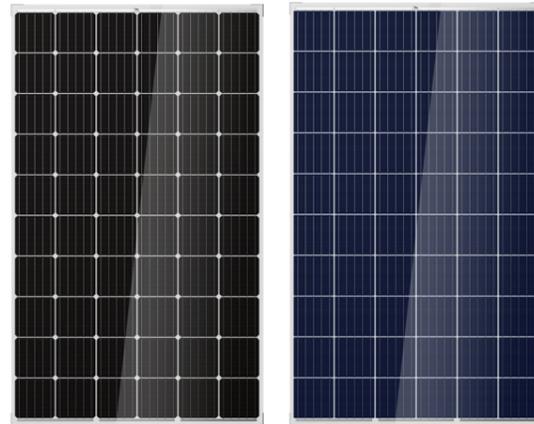
RACKING SYSTEM/INSTALLATION



WHAT IS DUOMAX?

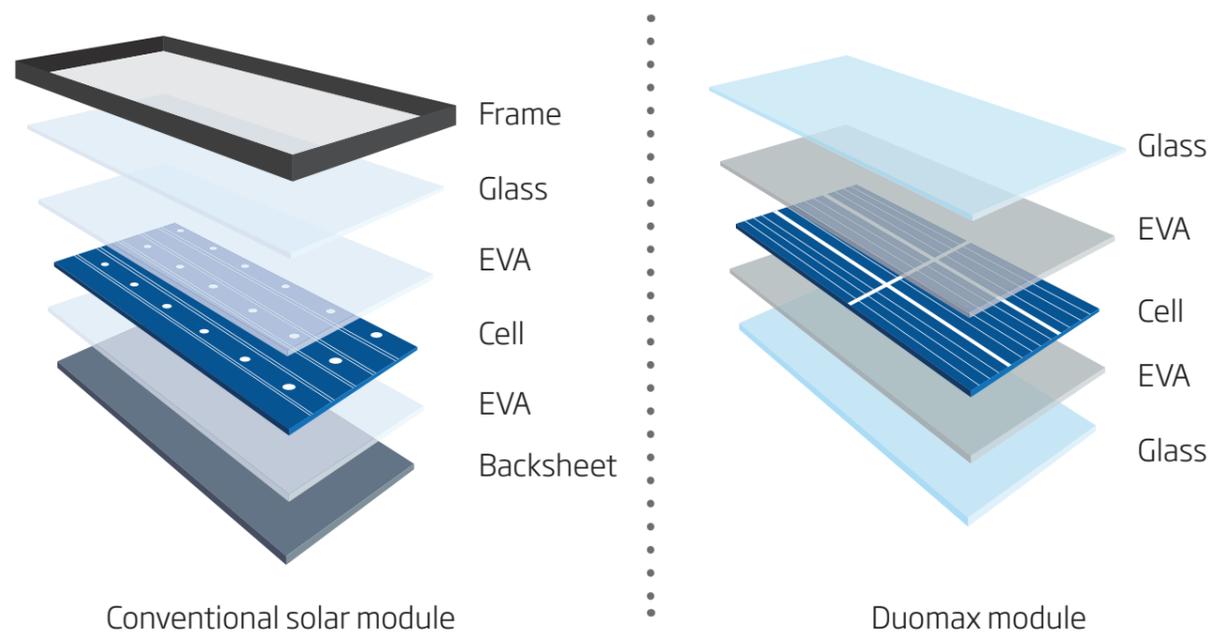
ADVANCED GLASS-ON-GLASS COMPOSITION

In our Duomax series, the traditional backsheet material gets replaced by a heat-strengthened glass to improve the durability and lifetime.



Duomax PV modules consist of two heat-strengthened glass layers to meet exacting environmental requirements, resulting in an extended 30-year performance warranty.

The frameless Duomax module comes in 60-cell and 72-cell versions and is suitable for both utility-scale power plants and distributed generation PV systems.



WHAT ARE DUOMAX'S KEY ADVANTAGES?

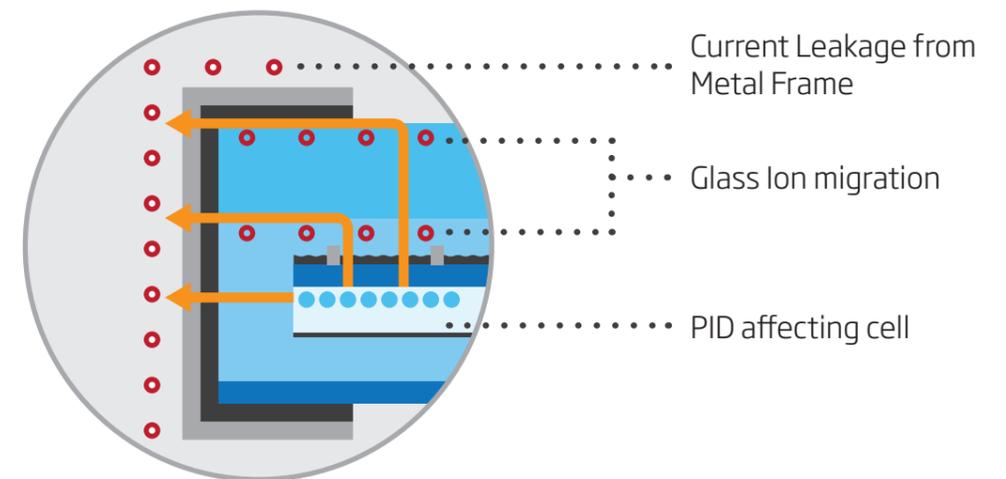
ROBUSTNESS AND RELIABILITY

The double-glass design results in reduced degradation. The symmetric construction leads to a reduced risk of micro-cracks. It improves against potential induced degradation (PID), degradation from UV rays, sand, alkalis, acids and salt mist.

SLIM, FRAMELESS DESIGN

The transmission of the front glass improves by 2.5% by reducing the glass thickness from the industry standard 3.2 to 2.5mm, and applying an antireflective coating.

The split junction box reduces the hot spots on the backside of the PV module by separating the diodes. Optimize your cable management by selecting portrait or landscape version with different cable lengths.



Frameless Duomax does not experience current leakage, unlike conventional photovoltaic panels.

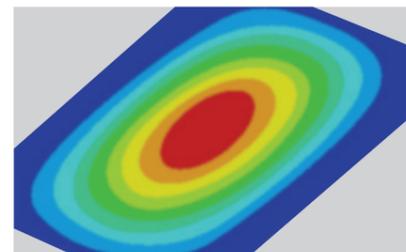
REDUCED CABLING EFFORT

The modules are designed for higher system voltages, 1,500V IEC and 1,000V UL. The increased system voltage enables Balance of System (BoS) savings due to increased string length, resulting in a lower number of parallel connections. This saves DC cables, combiner boxes, installation time and maintenance costs. The frameless design reduces the grounding effort for the whole system.

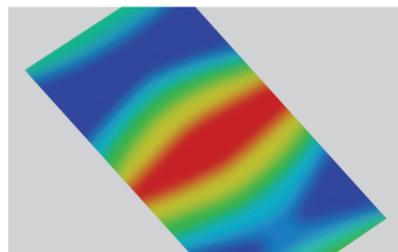
SUITABILITY FOR HARSH ENVIRONMENTS

The Duomax module is designed to perform in challenging environmental conditions like deserts, tropical and mountainous areas. It also helps improve the EL performance under different mechanical load tests, with deformation at just 16mm compared to 31mm for conventional modules.*

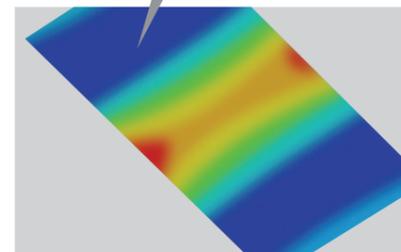
Trina Solar is the first PV manufacturer to offer a product that meets the most stringent PID testing conditions for 1,500V system voltage under relative humidity of 85% and a temperature of 85°C for 192 hours.



Regular framed module
Deformation @ 31mm



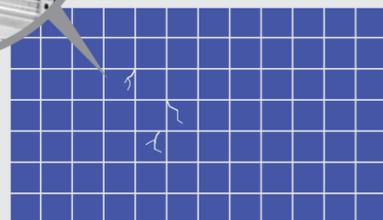
Duomax module-Clamp
Deformation @ 20mm



Duomax module-Integrated Rail
Deformation @ 20mm

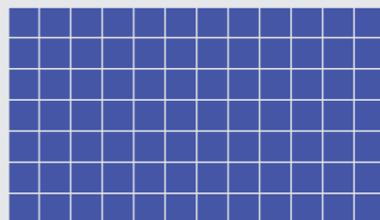


EL Comparison after ML Testing



Regular Framed Module

VS



Duomax Module

SUPERIOR DURABILITY

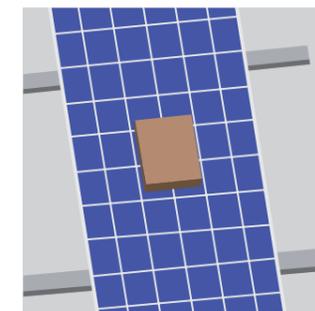
Different reliability tests from state laboratories show that Duomax has a 30% lower degradation rate than conventional frame-and-backsheet modules, which sustain a 30-year linear performance warranty with a maximum 0.5% degradation per year.

The Duomax module is highly resistant to degradation caused by thermal cycling, moisture ingress, mechanical loading, micro-cracking, PID, module warping, UV aging, as well as corrosion from ammonia, acids, alkalis, salt mist, and sand abrasion.

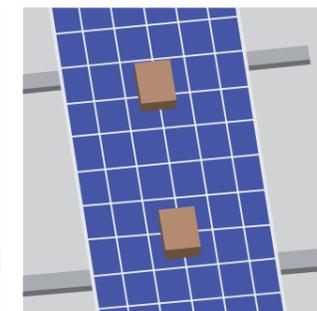
Duomax has no back sheet. Its back glass effectively prevents the infiltration of moisture and vapor in high-humidity environments, thus ensuring the reliability of the module. If needed, the encapsulating material can be changed from EVA to POE. The moisture-vapor transmission rate of POE is 1/10 of EVA, further enhancing the capability to obstruct moisture & vapor ingress.

FIRE SAFETY STANDARDS

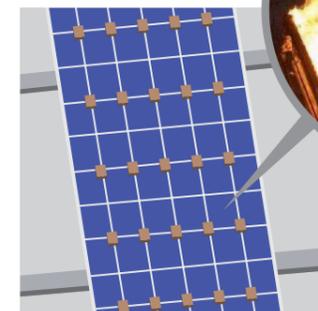
The Duomax module also meets UL's Fire Class A safety standards.



Class A



Class B

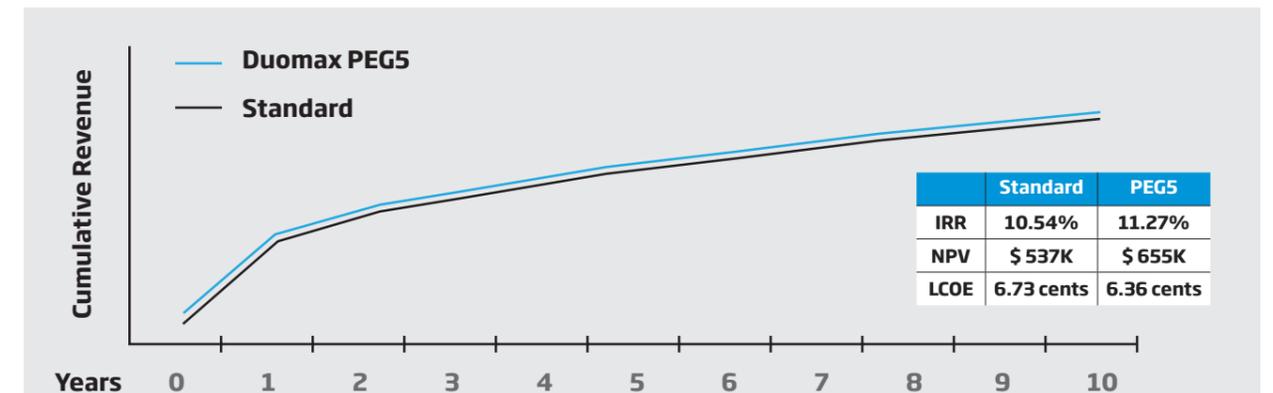


Class C



GROUNDING NOT REQUIRED

Unlike conventional framed solar panels, frameless Duomax modules do not require grounding.



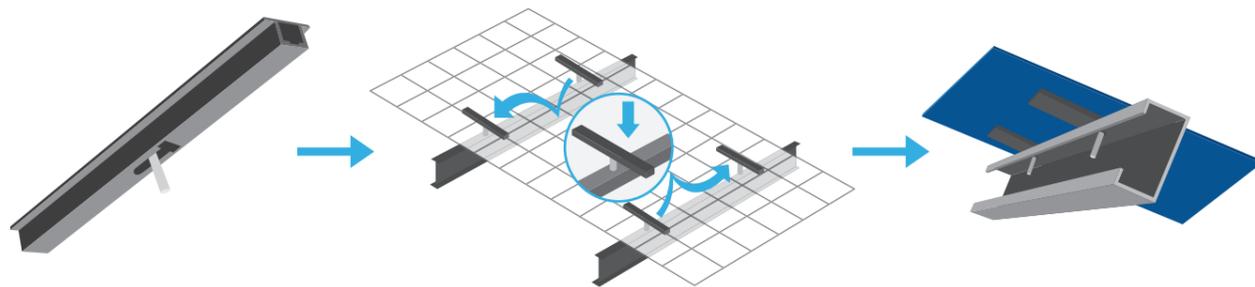
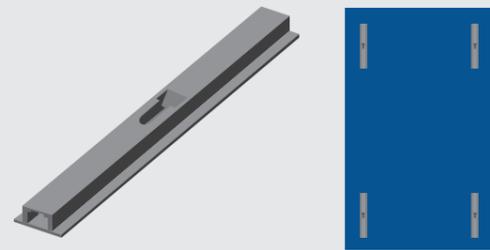
*Static Loading: Front 5400Pa, Back 3600Pa (158km/h wind speed). Dynamic mechanical loading: 1000 times (±1000Pa), 1 to 3 cycles per minute.

HOW IS DUOMAX INSTALLED?

Duomax can be installed in two ways, more flexible or easier to maintain.

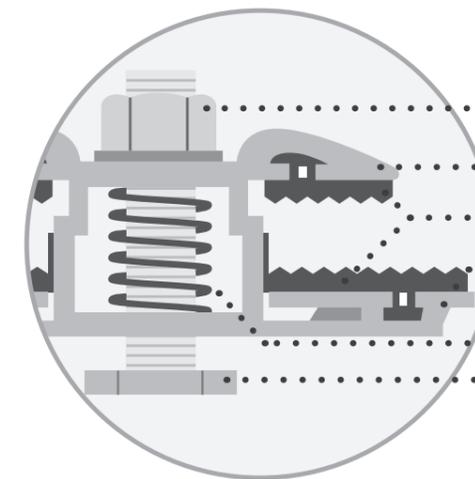
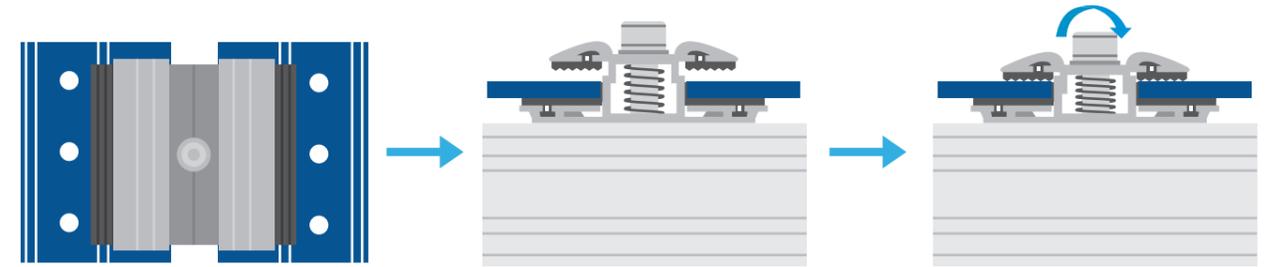
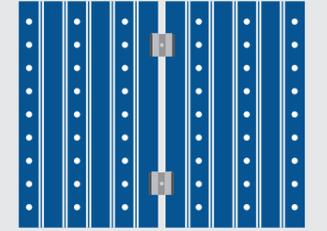
GECKO GRIP INSTALLATION

Duomax can be installed by using the Trina Solar integrated rail solution. Aluminum brackets are bonded on the backside and can be tightened on the substructure with screws. The integrated rail solution offers an advanced load distribution for better durability.

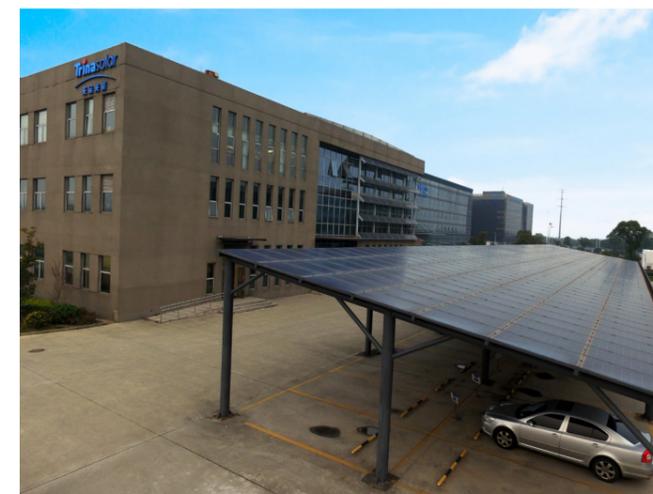


CLAMP INSTALLATION

Alternatively, Duomax uses two-part clamps with EPDM to protect the glass-glass laminate. The PV module will be fixed between the two protected clamp parts. The installation is comparable to framed module clamps.



- Nuts, Washers, Spring washers
- Top Clamp
- EPDM
- Bottom Clamp
- Spring
- T Type Screw



WHAT KINDS OF APPLICATIONS WOULD DUOMAX BE SUITED FOR?

The features of our Duomax PV modules make them a good choice for a wide range of applications.

SHEDS AND BUILDING INTEGRATED PHOTOVOLTAICS (BIPV)

Duomax is available with transparent encapsulation and a reduced number of cells. This allows natural illumination by sunlight passing through the glass-glass PV module.

Duomax with special mounting kits and sealing can be used as a roofing material as a waterproofed layer.

For roofs with low load reserves and low snow load requirements the glass thickness can be further reduced to decrease the weight.



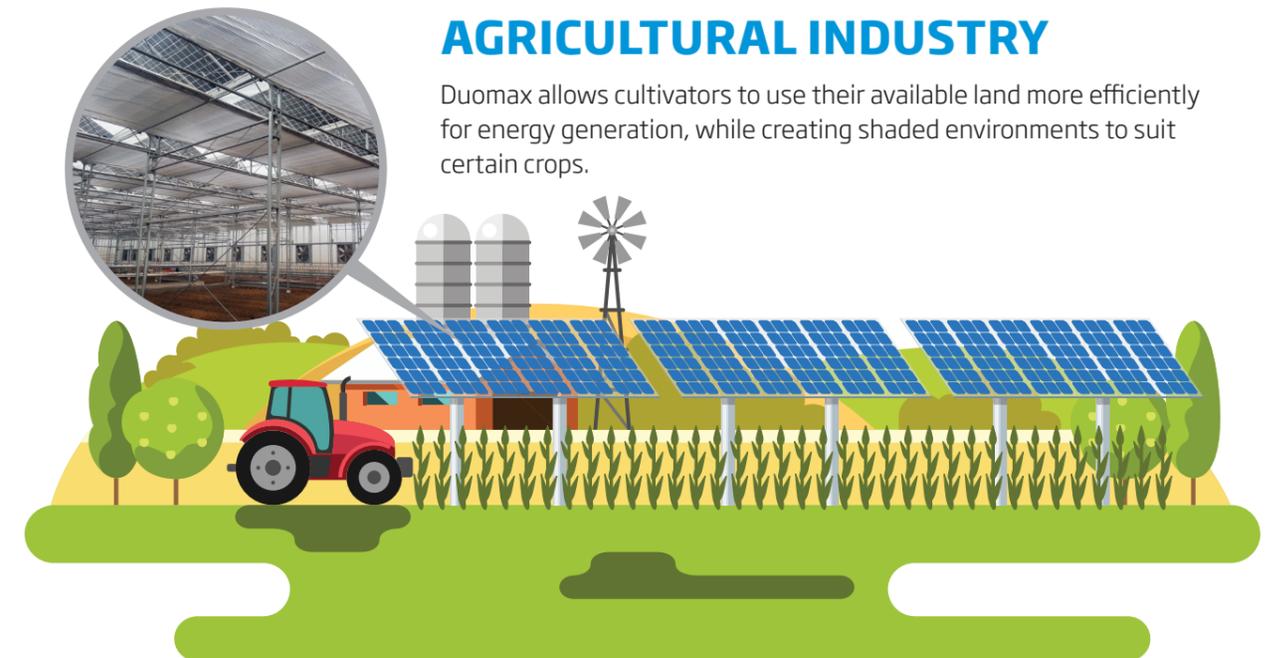
GREENHOUSES

In greenhouse applications, the Duomax with transparent encapsulation can be used to reduce the energy penetrating the building by providing shade and generating electricity. With the different cell layouts you can design your roof according to the needs of your plants.



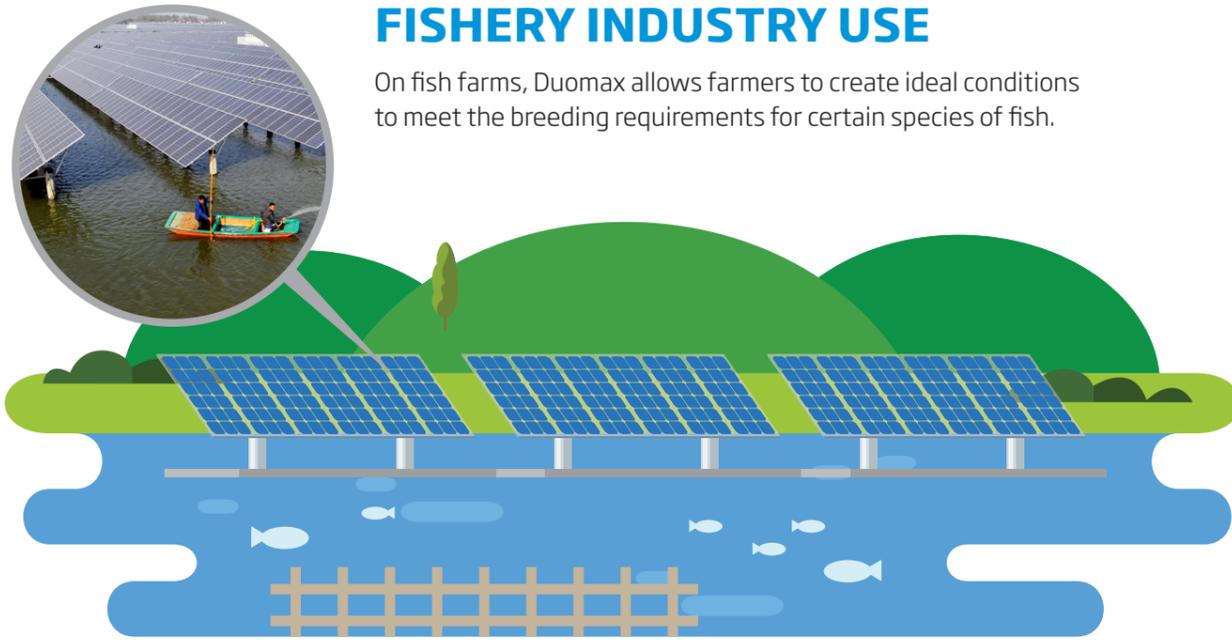
AGRICULTURAL INDUSTRY

Duomax allows cultivators to use their available land more efficiently for energy generation, while creating shaded environments to suit certain crops.



FISHERY INDUSTRY USE

On fish farms, Duomax allows farmers to create ideal conditions to meet the breeding requirements for certain species of fish.



DESERT ENVIRONMENT USE

Our Duomax PV module is available with a high density antireflective coating, with an improved resistance to sand abrasion. Combined with the better self-cleaning ability the long-term power output increases especially under dusty conditions.





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