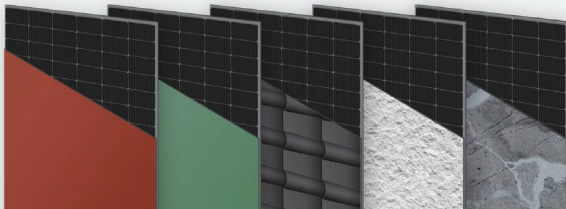


# Building

## Integrated PV Solutions

Project-specific module dimensions and colors for aesthetic facade claddings.



Module Type	S	H	V	Q
Maximum power [Wp]	180	90	90	45
Nominal voltage $U_{mmp}$ [V]	20.5	10.6	10.6	5.2
Maximum current [A]	6.63			
Open circuit voltage [V]	25.5	12.8	12.8	7.2
Short circuit Current [A]	7.19			
Number of cells	36	18	18	9

Glass facades are a proven technology for providing comfortable and aesthetically pleasing building envelopes. With the advancement of technology, glass facades can now also produce electricity. According to conservative estimates by the Swiss Federal Office of Energy, Building Integrated Photovoltaic (BIPV) systems, including roof and facade systems, will be able to produce over 50% of the electricity demand and ideally achieve a positive energy balance. Invitaic's glass-glass modules are frameless, based on monocrystalline cells with maximum efficiency and a long lifetime. They offer excellent anti-PID values, high salt fog and ammonia resistance, ensuring high performance stability beyond the warranty of 25 years. The futuristic glass surface texture enables efficient energy production even in weak and diffuse lighting conditions, and does not cause reflection. The BIPV standard modules enable inexpensive installation of an energy facade, with project-specific module sizes available if necessary. The invisible fastening of individual modules is similar to that of a curtain ventilated facade with a well-tried substructure.

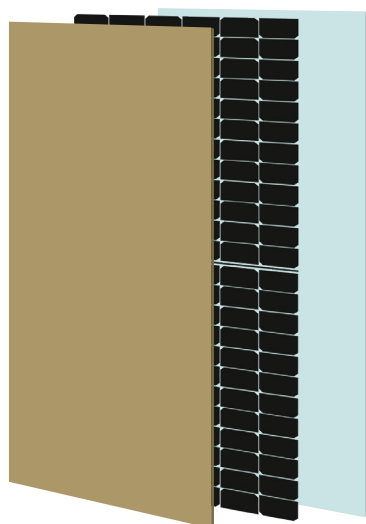
### Thermal module values

Nominal operating cell temp.	$45 \pm 2^\circ\text{C}$ (NOCT)
Temperature coefficient of $V_{oc}$	$-0.29\% / ^\circ\text{C}$
Temperature coefficient of $I_{sc}$	$+0.048\% / ^\circ\text{C}$
Temperature coefficient of $P_{max}$	$-0.35\% / ^\circ\text{C}$



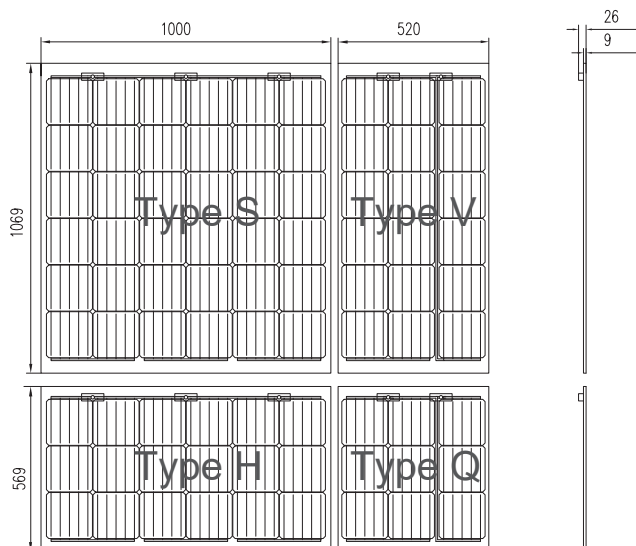
Laminates structure	Glass-glass frameless module	Application area	- 40 °C ~ + 85 °C
Cells technology	Mono-crystalline 158 mm	System voltage	1000V / 1500 V
Glass	2~12 mm of multi-types	String protection	20 A+
Encapsulation material	PVB / EVA / POE	Snow load	Up to 8200 N/m <sup>2</sup>
Fire protection	DIN 4102 / EN 13501-1 A (IEC/EN 61730)	Hailstorm	Distance 1m, Hail stone Diameter 25mm, Speed 23m/s
Application classes	Class A	Junction box	IP 68, MC4 connector Plug connections with 4mm <sup>2</sup> solar cable 800 mm or customised length
Power sorting	± 3%		
Standard norms	IEC/EN 61215, 61730		
Salt spray test	IEC/EN 61701 I + II		

## Dimensions [mm]

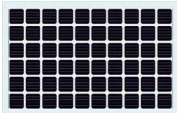






**15** years  
Product warranty

**25** years  
Linear performance warranty



## Design / Colors

Transparent	Ultra Black	Solid Color	Texture	Pattern
				
<ul style="list-style-type: none"> <li>Flexible density on cell</li> <li>Bifacial power generation</li> <li>High mechanical strength</li> <li>Tempered glass</li> </ul>	<ul style="list-style-type: none"> <li>Busbar invisible</li> <li>Matte mirror</li> <li>Anti-glare</li> <li>Efficient power generation</li> </ul>	<ul style="list-style-type: none"> <li>Homogeneous Color</li> <li>Architected Aesthetics</li> <li>Native building simulation</li> <li>Solar cell invisibilit</li> </ul>	<ul style="list-style-type: none"> <li>Multiple selection</li> <li>Flawless stitching</li> <li>Alternative facade material</li> <li>Invisible installation bracket</li> </ul>	<ul style="list-style-type: none"> <li>Natural architectural</li> <li>lanscape realistic image</li> <li>High customized design</li> <li>Flexible installation scenario</li> </ul>

Relative efficiency level in relation to the minimal output (%). At least 97% of the minimum output during the first year. Afterwards, max. 0.5% degradation per annum. At least 92.5% of the minimum output after 15 years. At least 87.5% of the minimum output after 20 years. At least 82.5% of the minimum output after 25 years. All data within the measuring tolerances.