PORFYRIOS

POWER GLASS

BIPV Building Intergrated PhotoVoltaics

Innovative Transparent Photovoltaic glass technologies for applications withing the built environment.

Plant Roof of CdTe Power Glass
Mirror on the Sky – Generate Electric Energy

CdTe power glass paved on the plant roof not only provides green and clean electric energy for the industrial park, but also beautifies the environment of the industrial park. Like a mirror on the sky, the power glass substitutes the conventional color steel tiles on the roof and provides an effective way for the industrial park to realize the purposes of energy conservation, emission reduction, peak carbon dioxide emissions, and carbon neutralization.

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Panzhihua Graphite Carbon Industrial Park

High efficiency in non-optimal positions
Greater potential for installation on all building surfaces, such as the vertical façade, flat roofs, roof lights and structures.

More consistent energy yield
Efficiency at low light levels and ambient light means energy is generated more consistently throughout the day and year to better match demand.

Initial installation costs similar to conventional building materials
Marginal extra-over costs and additional thermal glazing benefits as a building material makes photovoltaic glass economically competitive.

Solar shading
BIPV glass significantly reduces the solar gain into a building, negating the need for external structures whilst also reducing glare.

Fire Safety
Our BIPV panels are tested according to IEC standards and have Fire Classiffication A.

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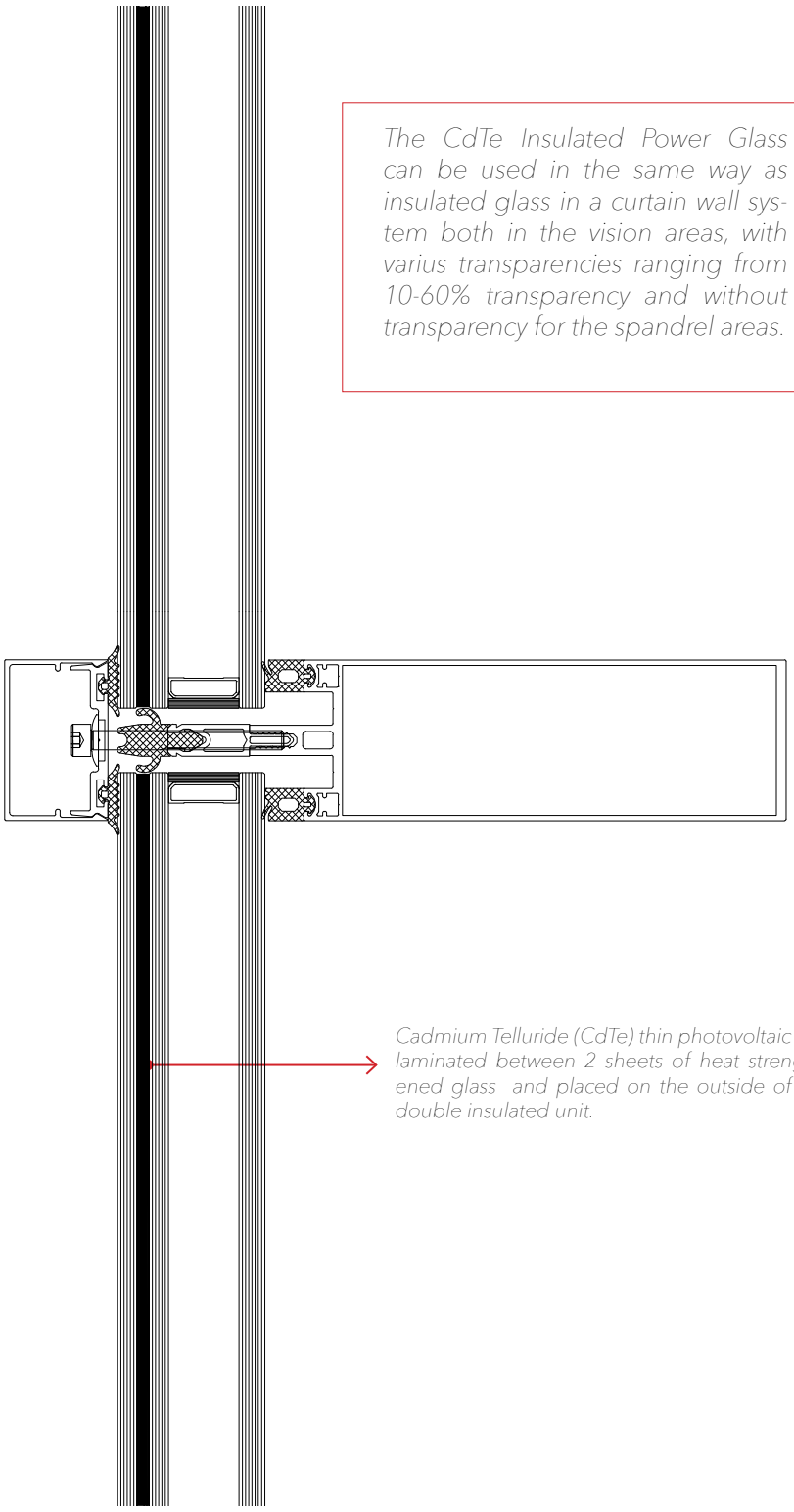
CdTe Insulated Power Glass

Typical Curtain Wall Detail



The CdTe Insulated Power Glass can be used in the same way as insulated glass in a curtain wall system both in the vision areas, with varius transparencies ranging from 10-60% transparency and without transparency for the spandrel areas.

Cadmium Telluride (CdTe) thin photovoltaic film laminated between 2 sheets of heat strenghtened glass and placed on the outside of the double insulated unit.

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- With a structure composed of Low–E + hollow layer + CdTe laminated solar power glass and an equally refined appearance, the Low–E glass features adjustable color, adjustable air layer thickness, excellent sound insulation, thermal insulation, heat preservation, and air tightness.
- Excellent thermal performance and adjustable visible light transmittance.
- Conforming to green building material standards, green building subsidies can be applied according to the site occupied for projects.

PRODUCT SPECIFICATION

Model		POR - T20	POR - T30	POR - T40
Film removal rate	%	20	30	40
Nominal Power	Pmax (W)	200	175	150
Maximum power Voltage	Vmpp (V)	129.3	129.3	129.3
Maximum power Current	Impp (A)	1.67	1.46	1.25
Open Circuit Voltage	Voc (V)	173.8	173.8	173.8
Short Circuit Current	Isc (A)	1.9	1.66	1.42
Power tolerance	%		±3	

Size	L1600*W1200*D45.3mm(junction box included)	Thickness	28mm
Weight	75kg	Front Glass	10mm laminated POWER GLASS
Air–layer thicknesses	12mm (12A)	Back Glass	6mm Low–E tempered glass
Encapsulation	PVB/POE	Temperature Coefficient of Pmax	–0.189%/℃
Temperature Coefficient of Voc	–0.396%/℃	Temperature Coefficient of Isc	+0.061%/℃
Anti–UV property	Passed	Gas tightness	Passed
Dew point test(–60℃, 5min)	Passed	Transmittance (Solar factor)	Customizable
Thermal conductivity(U value)	Not more than1.7W/(m^2*k)	Shading coefficient	Customizable
Sound insulation	>40dB		

STC (standard test conditions): irradiance 1000W/m^2, battery temperature 25℃, air quality AM1.5

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CdTe Power Glass

Single Laminated Glass Applications

With and without transparency CdTe Power Glass is ideal for use in skylights, glass-houses, canopies, walkways, corridors, bus shelters, car ports and more.

As part of the buildings facade system this glass is used as spandrel, in the non-vission areas of the building. Full coverage CdTe Power glass used in spadrel also yields the maximum energy production.

The project is located in in the Channel L1 of Terminal T2 of Chengdu Shuangliu International Airport. It is designed as a whole with sky-blue transparent CdTe power glass (First Rainbow Generation) and the marble dual-base CdTe power glass (Basic Model), with the functions of beautification, sunshade and power generation. The project adopts an off-grid system, and the electricity generated by CdTe power glass is used for passage lighting, vending machines and elevator shaft operation, helping Shuangliu International Airport to realize the purpose of energy conservation and emission reduction and foster the image of Chengdu as a "park city".

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PRODUCT SPECIFICATION

Model		POR-M1-290W	POR-M1-280W	POR-M1-270W	POR-M1-260W	POR-M1-250W
Nominal Power	Pmax (W)	290	280	270	260	250
Maximum power Voltage	Vmpp (V)	137.2	133.1	129.3	127.5	125.0
Maximum power Current	Impp (A)	2.12	2.11	2.09	2.04	2.00
Open Circuit Voltage	Voc (V)	179.0	178.0	173.8	171.4	167
Short Circuit Current	Isc (A)	2.39	2.38	2.38	2.31	2.23
Power tolerance	%	±3	±3	±3	±3	±3

Size	L1600*W1200*D26.9mm(junction box included)	Temperature Coefficient of Isc	+0.061%/℃
Thickness	6.9mm	Maximum System Voltage	1500V
Weight	30kg	Operating Temperature Range	-40℃~+85℃
Encapsulation	POE/EVA	Load Rating	2400Pa
Temperature Coefficient of Pmax	-0.189%/℃	Hail Test	Passed
Temperature Coefficient of Voc	-0.396%/℃	Waterproof Rating	IP67

STC (standard test conditions): irradiance 1000W/m^2, battery temperature 25℃, air quality AM1.5

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CdTe Power Glass
Sunlight Corridor

External view

Inside view

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