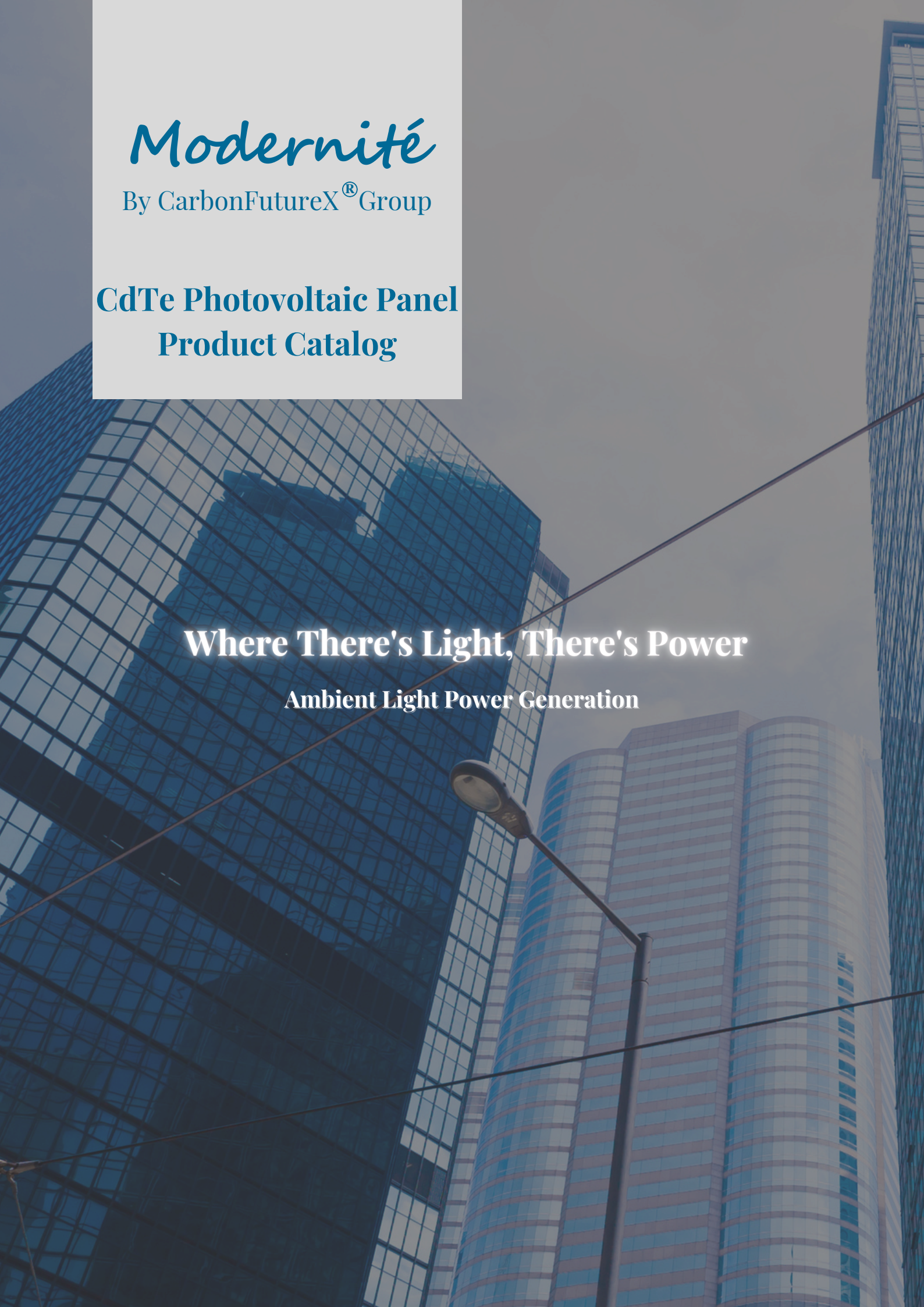
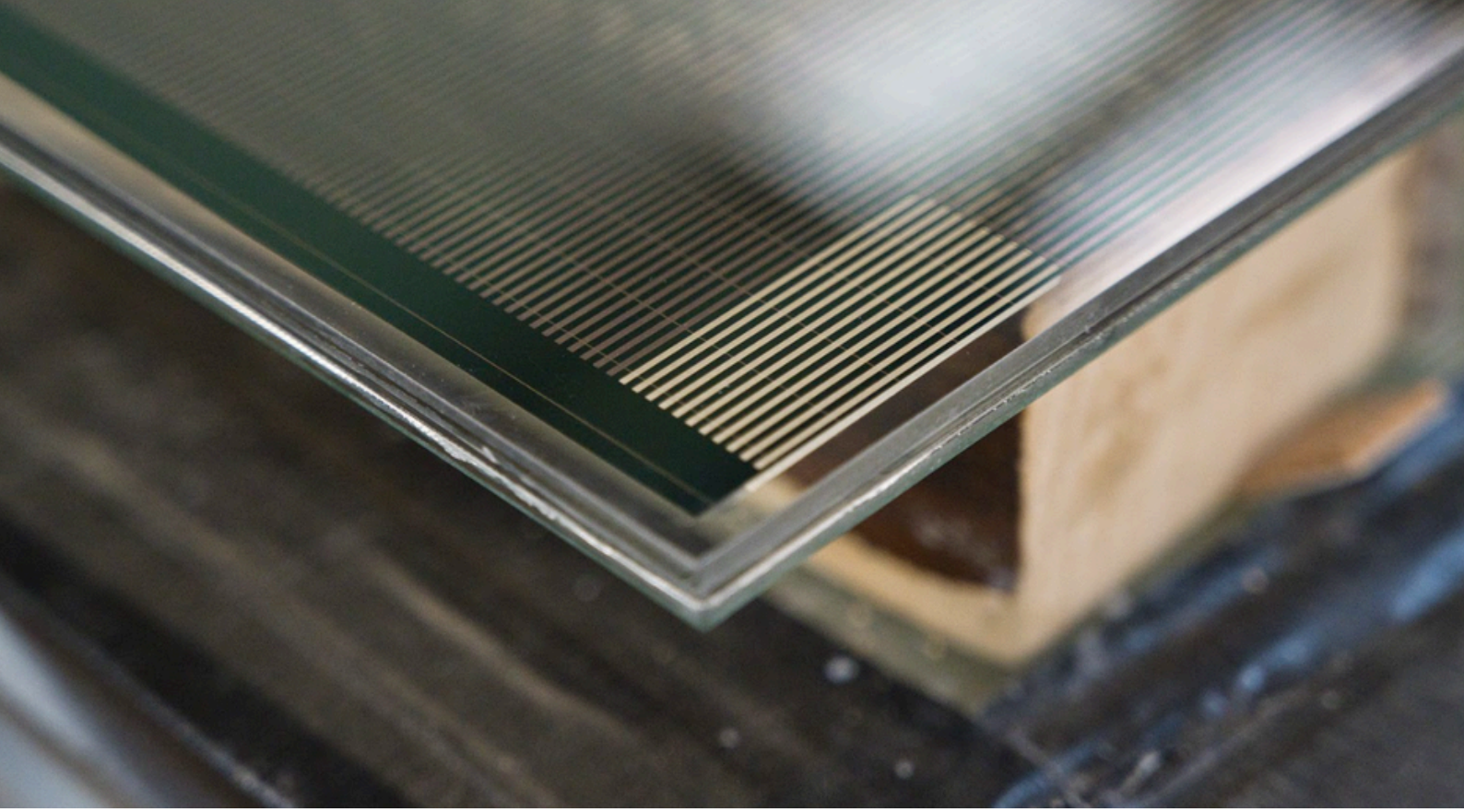
Modernité

By CarbonFutureX®Group

CdTe Photovoltaic Panel Product Catalog





ABOUT US

Modernite is the luxury glazing brand under CarbonFutureX® Group. Established in 2023, we are dedicated to transforming your living spaces into energy-efficient marvels.

Our comprehensive services encompass building energy retrofit design, investment consultation, implementation, qualification, and warranty and maintenance services. Particularly, we take pride in offering cutting-edge PV Vacuum glazing technology series (VacShield® , SolarInn®, SolarMaxi®, VacPrivacy® and SolHeat ®) to meet various application conditions, delivering unparalleled thermal comfort, noise reduction, UV protection, enhanced security, and maximizing power generation while enhancing the aesthetic appeal of your spaces.

COLLABORATIONS

University of Nottingham
UK | CHINA | MALAYSIA

Loughborough University

University of Salford MANCHESTER

1495 UNIVERSITY OF ABERDEEN

Ring

CALLING BRIDGE TECHNOLOGY

UNICE

BERARI

INDUSTRIAL ACCREDITATIONS

ift ROSENHEIM

CE

BBA

TÜV NORD CERT GmbH Type Tested

MCS CERTIFIED

ISO 19916-1:2018
IEC 61215
IEC 61730
BS EN 673
BS EN 12567

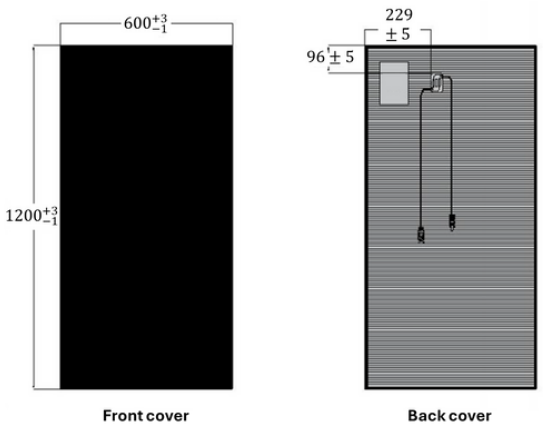
CdTe Photovoltaic Panel

Transforming Buidlings into Powerhouses

Key Features

High Power Generation

- Outstanding power generation capacity
- Low temperature coefficient
- Quick response time for ambient light
- Reduced hot-spot effect
- Frameless thin-film solar module



Frontside
(Light-receiving surface)

Backside

Highly Customized

- Various color, pattern and size
- Matt, very homogeneous surface in terms of color
- Widely applied in building facade, roof and tile

Certification

- Safety Qualification: IEC 61730:216
- Salt Mist Corrosion: IEC 61701:2011
- Testing thin-film CdTe-based PV modules: BS EN 61215-1:2022
- Certification of photovoltaic (PV) modules for use on the ground: IEC 61215-1:2021
- Special requirements for thin-film Cu(In,Ga)(S,Se) modules: IEC 61215-1-4:2021
- Safety qualification of PV modules, Part 1: Structural requirements: IEC 61730-1:2016
- Part 2: Test requirements: IEC 61730-2:2016

Mechanical Specification

Characteristic	Value
Dimensions	1,200 mm*600 mm
Thickness	6.9 mm
Weight	12 kg
Cell Type	CdTe
Frame	Without
Front Cover	3.2 mm single-pane safety glass
Design Load	upward 2,400 Pa downward 3,600 Pa
Junction box protection class	IP68
Dimensions of junction box	229 mm*96 mm*20 mm
Cable lenghts (plug/socket)	580 mm/580 mm (customizable)
Connector Type	MC4
Fire Classification	Class A (for envelope and roof)

Resistance & Recycle

- Laminated structure ensures high robustness against various weather influences
- Low carbon footprint: only 11 g CO2 eq/W
- Offers recycling services for discarded modules, ensuring full lifecycle utilization of materials.

CE TÜV NORD Type Tested MCS CERTIFIED

CdTe Photovoltaic Panel

Transforming Buidlings into Powerhouses

Transforming Buildings into Powerhouses

Our CdTe thin-film solar solutions outperform traditional silicon panels, offering superior efficiency in low light and seamless integration of performance and design for sustainable modern architecture.

Why Choose Our CdTe Solar Technology?

Unmatched Energy Performance

- Boost annual energy output **by 30%-40%**, with **over 53%** gains in peak months. Stable power generation even on north-facing façades

Adaptable to Any Climate

- Proven across the UK, delivering **29%-50%** higher output in cities like London, Manchester, and Edinburgh

Versatile and Aesthetic Design

- Ideal for rooftops and façades, seamlessly blending into architecture

Green Across the Lifecycle

- Fully recyclable CdTe materials minimize waste for a greener future.

Proven Results You Can Trust

- South-facing rooftops achieve **a 40% increase** in annual energy yield
- South-facing façades outperform monocrystalline panels by **over 30%**
- East and west façades see energy output improvements of **79%** and **73%**, respectively

Electrical Specification

CdTe Photovoltaic Panel		
Nominal power Pnom	105 W	108 W
Sorting -0/+5 W		
Module efficiency η	14.6%	15.0%
Open circuit voltage Voc	116 V	120 V
Short circuit current Isc	1.39 A	1.40 A
Voltage at mpp Vmpp	86.37 V	87.45 V
Current at mpp Impp	1.22 A	1.24 A
Max. over-current protection IR 2.0 A		
Max. system voltage Vsys 1000V		
Temperature coefficient (at STC)		
Short circuit temperature coefficient T_kα (%/°C) +0.06		
Open circuit voltage temperature coefficient T_kβ (%/°C) -0.321		
Peak power temperature coefficient T_kγ (%/°C) -0.214		
Product operating temperature range (°C) -40 to +85		

Note: STC values are valid after stabilization with light according to IEC 61215
STC: Irradiance 1,000 W/m2, module temperature 25 °C, spectral light distribution according to atmospheric mass (AM) 1.5

Guarantees

10-year material and workmanship warranty, with power output guaranteed at 90% of peak within 10 years and 80% within 25 years. Zero-cost recycling ensures end-of-life products are sustainably reused.

CdTe Photovoltaic Roof

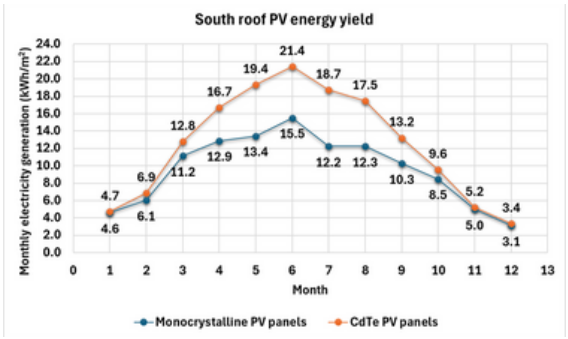
Transforming Buidlings into Powerhouses

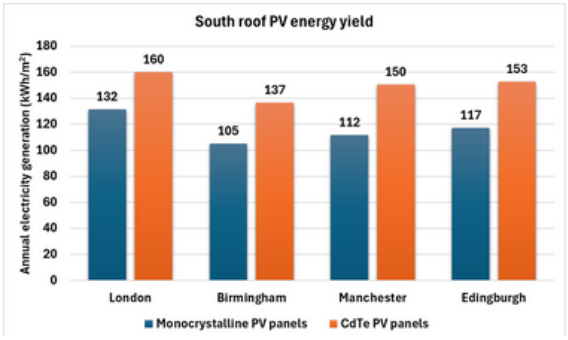
Transforming Rooftops into Energy Generators

Our CdTe photovoltaic roof solutions deliver superior efficiency in low-light conditions, surpassing traditional silicon panels for sustainable architecture.

Proven Results

- South-facing CdTe rooftops achieve **40%** higher annual energy yield compared to monocrystalline panels
- Peak summer months see output increases of **over 53%**, making our panels ideal for year-round operation





Key Benefits

Year-Round Efficiency

- **Up to 40%** higher annual energy yield, with **over 53%** gains during peak months

All-Climate Performance

- **29%-50%** more energy in UK cities like Manchester and Edinburgh

Sleek Design

- Combines efficiency with seamless rooftop integration

Sustainability

- Fully recyclable materials for a greener future

Your Roof, Your Power

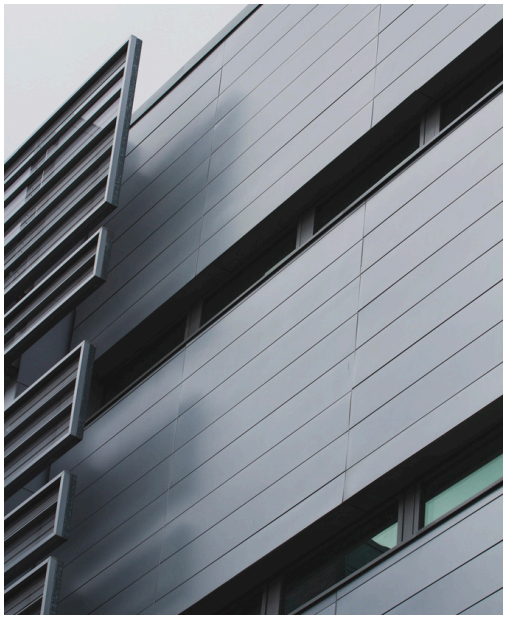
With CdTe photovoltaic roofs, every rooftop becomes a powerhouse. Experience sustainable, high-performance energy generation tailored for your architectural vision

CdTe Photovoltaic Facade

Transforming Buidlings into Powerhouses

Elevating Facades to New Heights

Our CdTe photovoltaic facades transform exteriors into efficient energy generators, outperforming traditional panels even on north-facing surfaces.



Key Benefits

Enhanced Energy Output

- **Up to 30%** more on south-facing, 79% on east, 73% on west, and 68 kWh/m² on north-facing façades (vs. 10 kWh/m² for traditional panels)

Versatile Design

- Seamlessly blends aesthetics and performance

All-Climate Performance

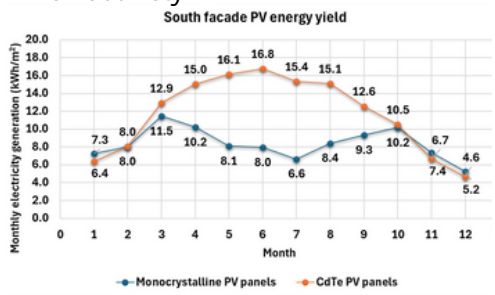
- **30%-50%** more energy in diverse UK locations

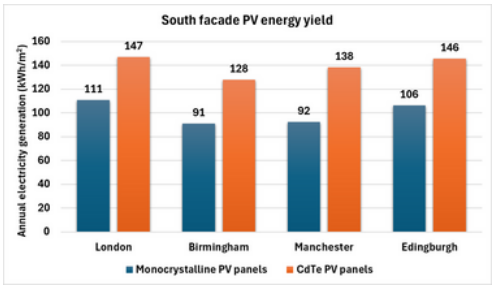
Sustainability

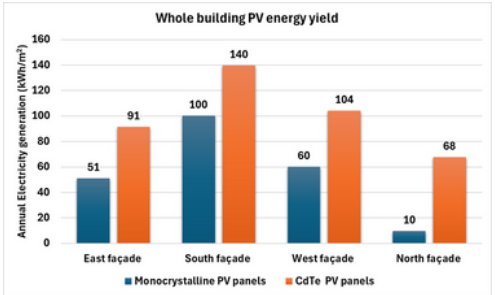
- Recyclable materials support a low-carbon economy

Proven Results

- South-facing facades: **30% higher** annual energy yield than traditional PV
- East and west-facing facades: Energy outputs improved by **up to 79% and 73%**, respectively
- North-facing facades: Generates 68 kWh/m² annually, showcasing CdTe's ability to harness diffuse light effectively







Empower Your Facade

Transform your building with CdTe photovoltaic facades—where cutting-edge energy efficiency meets sleek design. Power your future sustainably while elevating architectural elegance.

Transforming Buildings into Powerhouses

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