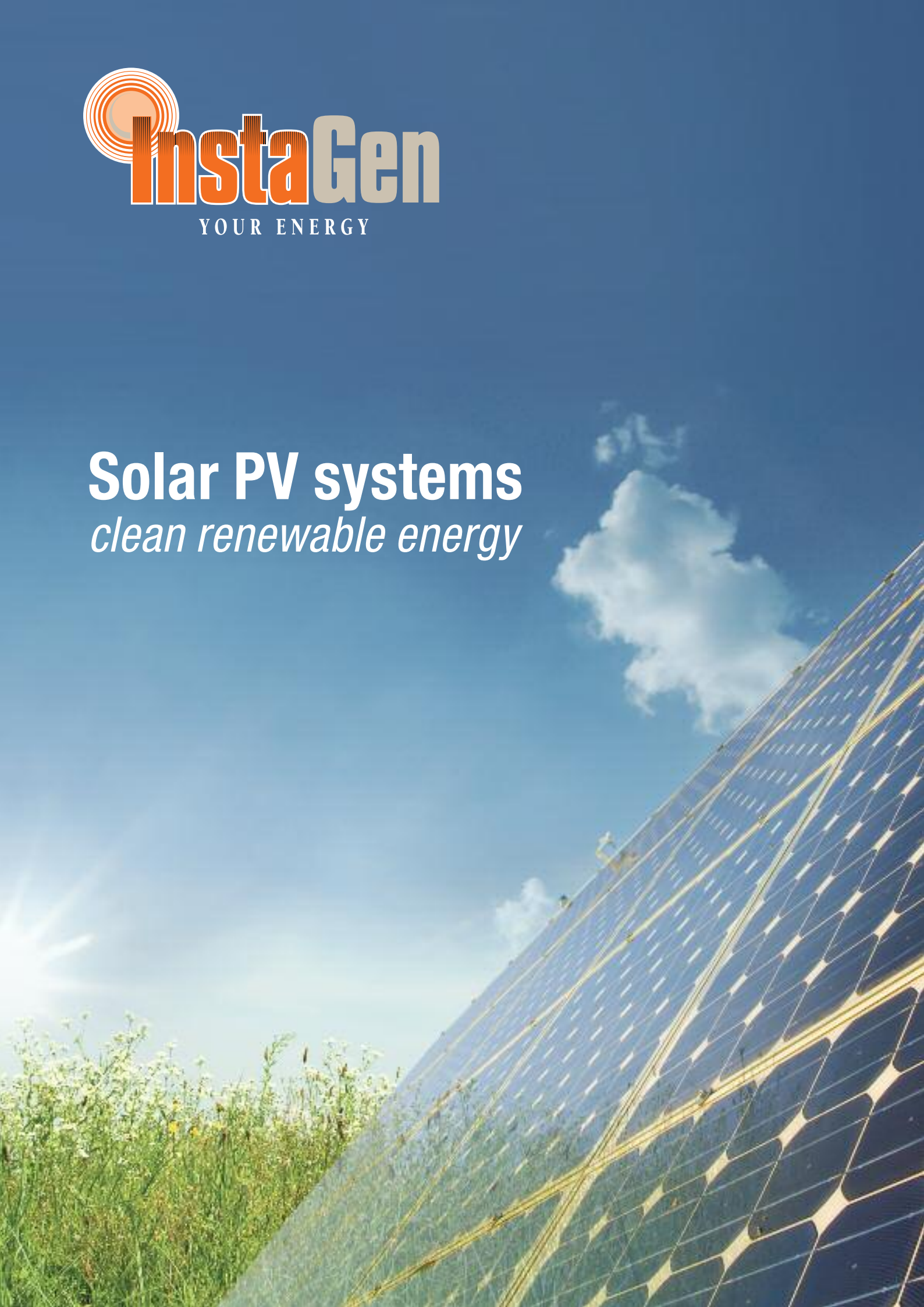




Solar PV systems
clean renewable energy



What is Solar Photovoltaic (PV)?



Solar electricity systems capture the sun's energy using photovoltaic (PV) cells. The cells convert the sunlight into electricity, which can be used to run household appliances and lighting.

How do Photovoltaic (PV) cells work?

PV cells are panels you can attach to your roof or walls. Each cell is made from one or two layers of semiconducting material, usually silicon. When light shines on the cell it creates an electric field across the layers. This electricity is then transferred to the house where it is plugged into the property's electrical supply, supporting or replacing external electricity. PV cells come in a variety of shapes and colours, from grey "solar tiles" that look like roof tiles, to panels and transparent cells that you can use on conservatories and glass.

The strength of a PV cell is measured in kilowatt peak (kWp) – which is the amount of energy the cell generates in daylight.

The benefits of solar electricity

Cut your carbon footprint: solar electricity is a green, renewable energy and does not produce any harmful carbon dioxide or other pollutants. A typical home PV system could save around 1200kg of carbon dioxide per year – around 30 tonnes over its lifetime.

Cut your electricity bills: sunlight is free, so once you have paid for the initial installation your electricity costs will be greatly reduced. A typical home PV system can produce around 40% of the electricity a household uses in a year.

Sell electricity back to the Grid: if your system is producing more electricity than you need, or when you are not using it, someone else can use it – and you can earn income from it. See the Feed-in Tariff page for more information.

Store electricity for a cloudy day: if your home is not connected to the national grid, you can store excess electricity in batteries to use when you need it.

Planning Permission not required: PV systems do not usually require planning permission when they are fitted to existing buildings.

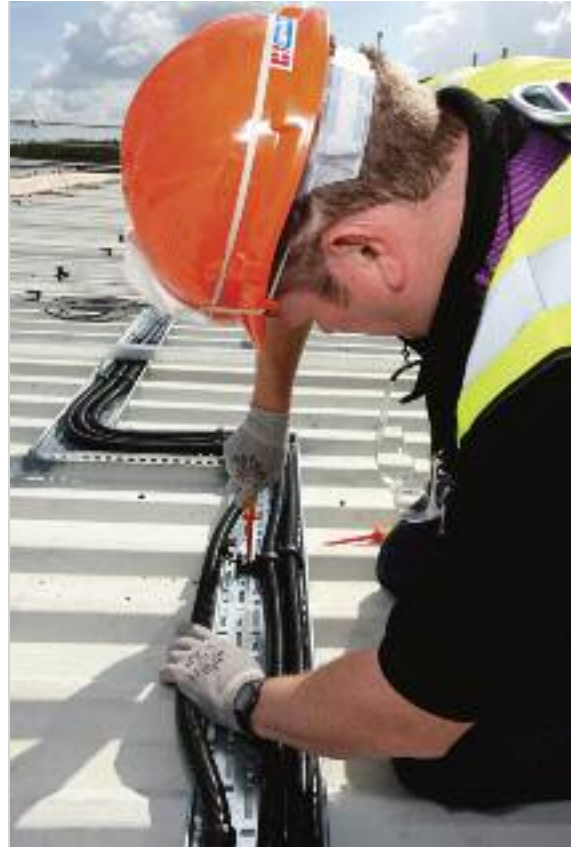
Earn extra income... while being kind to the planet

With electricity prices continually rising, solar panels are a sound investment, and the environmentally friendly way to generate your own electricity, reduce energy bills and CO₂ emissions and earn tax free income. We can help you calculate how much you stand to save and how quickly you can expect your installation to pay for itself.

The Government's Feed In Tariff scheme rewards homeowners and organisations for generating their own electricity from renewable sources and for any excess electricity they 'export' to the National Grid. The rate you receive will be set for 25 years, increasing annually to account for inflation. This incentive only covers installations of MCS certified equipment carried out by MCS accredited installers like ours.

- The Government Feed in Tariff is currently 43.3p per kWh*
- This rate is guaranteed for 25 years
- The tariff figure increases annually in line with inflation
- The income you earn is tax free
- A typical installation will earn around £1,000 a year
- Your solar panels will pay for themselves in 8 -10 years

* This is due to be reduced by up to 20% in April 2012. Systems installed before this date will not be affected.



Property Size	System Size (kWp)	Total Electricity generation pa*	Income from generation tariff pa*	Income from export pa*	Fuel bill savings pa*	Total income and savings pa*	Total over 25 years
1 bed	6 panel (1.0)	901 kWh	£390	£7	£84	£482	£12,038
1-2 bed	8 panel (1.4)	1261 kWh	£546	£10	£118	£674	£16,853
2-3 bed	12 panel (2.1)	1892 kWh	£819	£15	£177	£1,011	£25,279
3-4 bed	18 panel (3.2)	2883 kWh	£1,248	£22	£270	£1,541	£38,521
4+ bed	24 panel (4.2)	3784 kWh	£1,430	£29	£355	£1,814	£45,356

Source: Energy Saving Trust Calculator. System retro-fitted to existing property before April 2012. Location of property Guildford, Surrey. 25% of electricity exported. All figures as at June 2011.



A sound investment

Generating your own energy from renewable sources will:

- reduce your energy costs
- protect you against rising fuel prices
- cut your carbon emissions
- help protect the environment
- pay for itself within 8 – 10 years



Why chose InstaGen?

InstaGen is part of the InstaGroup which has been dedicated to insulation systems, energy efficiency and environmentally friendly solutions for over 30 years. The solar PV systems that InstaGen supplies and installs are high performance roof top or ground based installations for all sizes of residential properties, public and commercial buildings and agricultural locations.

InstaGen high quality monocrystalline photovoltaic modules deliver exceptional performance and, even on cloudy days, produce significant levels of electricity. InstaGen solar panels are of the highest quality and are combined with inverters from reputable, MCS-accredited suppliers. This ensures that your system will generate the maximum levels of electricity possible from the available daylight, even on dull or cloudy days and in early mornings and late evenings.

Exceptional product backing

InstaGen provides outstanding product warranties and performance guarantees that match or exceed any others offered throughout the industry.

Warranty and Guarantees

- 12 year product warranty
- 25 years guarantee on minimum power output
- 12 year performance guarantee on 90% power output
- 25 year performance guarantee on 80% power output

All InstaGen products are also covered by appropriate certification and quality assured standards.

Certification and Quality Assurance

- MCS certification
- CE
- IEC 61215, IEC 61730
- ISO9001 Standards for quality management systems
- ISO14001 Standards for environmental management systems



InstaGen PV Panels Outshine the Competition

How does **efficiency** compare to other well-known brands?

Kyocera	240w	16.0%
Samsung	245w	15.2%
Yingli Solar	245w	15.0%
InstaGen	245w	14.9%
LG	240w	14.8%
Mitsubishi	245w	14.8%
Suntech	245w	14.8%
Tianwei	240w	14.6%
Axitec	235w	14.5%
Canadian Solar	245w	14.4%
Romag	235w	14.4%
Schott	240w	14.3%
Schuco	235w	14.3%
Sharp	245w	14.1%
BP	230w	13.8%

How does the **Power Tolerance** compare to other well-known brands?

InstaGen	245w	0/+5%
Axitec	235w	0/+5%
Schott	245w	0/+5%
Schuco	235w	0/+5%
Sharp	245w	0/+5%
Canadian Solar	245w	0/+5%
Suntech	250w	0/+5%
Yingli Solar	245w	0/+5%
Tianwei	240w	0/+3%
Samsung	245w	0/+3%
LG	245w	0/+3%
Romag	235w	0/+3%
Sanyo	245w	-5/+10%
BP	230w	-3/+3%
Mitsubishi	250w	-3/+3%
Kyocera	240w	-3/+3%

How does the **warranty** of InstaGen panels compare to other brands on the market?

InstaGen	12 year product warranty
Suntech	10 year product warranty
Schott	10 year product warranty
Axitec	10 year product warranty
LG	10 year product warranty
Mitsubishi	10 year product warranty
Romag	10 year product warranty
Yingli Solar	10 year product warranty
Canadian Solar	6 year product warranty
Sanyo	5 year product warranty
Samsung	5 year product warranty
Kyocera	5 year product warranty
Sharp	5 year product warranty
Schuco	5 year product warranty
BP	5 year product warranty
Tianwei	5 year product warranty

InstaGen Solar PV panels come with a choice of a Black or Silver frame, depending on your preference, with an output of either 185w or 245w.

They are designed to perform well even in low light conditions. They have a power tolerance of 0/+5, which ensures that the system will never under perform its 185w or 245w output, unlike some other modules on the market.





The InstaGen comprehensive solution

Consultation: Whether you are a private homeowner or a commercial business, we will start with a consultation to discuss your particular requirements and expectations. Our head office technical support team will help to facilitate your project and, if you are a commercial client, oversee the planning applications and any appeals and contract negotiation work.

We also work in partnership with Waldon Energy to offer a full package of survey, planning and installation services for building and landowners in the commercial and public sectors.

Survey and Quotation: Once we have carried out a site survey to assess the potential of your property and the opportunities it presents, we will provide you with a clear, decision.

System Design: If you decide to go ahead, we will design a microgeneration installation to meet your specific needs. We can also provide advice on energy efficiency and, if necessary, install additional insulation in your premises, to ensure you will benefit fully from the energy you generate.

Installation: We provide full installation by trained operatives who have also undergone instruction at the Renewable Training Academy to ensure their skills are up to the highest standard.

Our PV installers are members of our nationwide consortium, the Snug Network, are MCS-certified and signed up to a self-regulation initiative such as the REAL Assurance Scheme. They are able to install both rooftop and ground-based solar PV systems and some have experience working with other renewable energy and low carbon heating technologies.

Aftercare Service: We will ensure your microgeneration equipment continues to work efficiently, making the most of your investment. All installations are quality assured and fully guaranteed.



If you are interested in generating your own green energy, or just curious to find out more about how you or your organisation could benefit, please contact us on 0845 607 6415 to arrange a FREE initial consultation.

Solar Panel Specifications

Monocrystalline Photovoltaic Modules

- High performance in low light conditions, allowing the module to operate in mornings, evenings and cloudy days
- Positive power tolerance of 0/+5 ensures that the 185w or 245w output is always delivered or exceeded
- High performance module efficiency of:
 - 185w - 14.5% and cell efficiency of 17.3%
 - 245w - 14.9% and cell efficiency of 17.1%

- Pilkington high transparency low tempered glass, with impact resistance
- MC4 connector
- Anodized aluminium alloy frame, which is strengthened to avoid freezing or warping
- InstaGen black or silver frames for a sleek appearance

Electrical Characteristics – 185w

All specified parameters are at STC 25°C ambient, 1000W/m² irradiance and AM 1.5

Type		IG185BL-UK IG185SV-UK
Max-Power	(W)	185
Module Power Range	(W)	190>Pm≥185
Power Tolerance	(W)	+0 ~ +5
Max-Power Voltage	Vm(V)	36.27
Max-Power Current	Im(A)	5.1
Short-Circuit Current	Isc(A)	5.5
Open-Circuit Voltage	Voc(V)	45
Max-System Voltage	(VDC)	1000V
Cell Efficiency	(%)	17.3
Module Efficiency	(%)	14.5
Maximum Series Fuse	(A)	10
Pmax Temperature Coefficients	(W/°C)	-0.9964
Isc Temperature Coefficients	(A/°C)	0.0023
Voc Temperature Coefficients	(V/°C)	-0.1801
Operating Temperature	(°C)	-40 ~ +85
NOCT Nominal Operating Cell Temperature		47±2°C

Electrical Characteristics – 245w

All specified parameters are at STC 25°C ambient, 1000W/m² irradiance and AM 1.5

Type		IG245BL-UK IG245SV-UK
Max-Power	(W)	245
Module Power Range	(W)	250>Pm≥245
Power Tolerance	(W)	+0 ~ +5
Max-Power Voltage	Vm(V)	31.4
Max-Power Current	Im(A)	7.81
Short-Circuit Current	Isc(A)	8.75
Open-Circuit Voltage	Voc(V)	37.3
Max-System Voltage	(VDC)	1000V
Cell Efficiency	(%)	17.1
Module Efficiency	(%)	14.9
Maximum Series Fuse	(A)	15
Pmax Temperature Coefficients	(W/°C)	-0.9964
Isc Temperature Coefficients	(A/°C)	0.0023
Voc Temperature Coefficients	(V/°C)	-0.1801
Operating Temperature	(°C)	-40 ~ +85
NOCT Nominal Operating Cell Temperature		47±2°C

Mechanical Characteristics – 185w

Cable Type, Diameter and Length	4mm ² , 1000mm
Type of Connector	MC4
Number, Type and Arrangement of Cells	72pcs, Monocrystalline Silicon (6 x 12)
Cell Size (mm)	125 x 125 (D150)
Bypass Diodes	3 pcs
Dimensions of Panel (mm)	1580 x 808 x 40
Weight per Panel (kg)	15.5
No. of Drain Holes in Frame	10
Front Glass	Pilkington High Transmission, Low Iron, Tempered Glass 3.2mm
Frame	Anodised Aluminium Frame
Colour of Frame	IG185BL-UK – Black Frame IG185SV-UK – Silver Frame
Wind – Maximum Load Rating	2400Pa
Snow – Maximum Load Rating	5400Pa
Packing Configuration	25 pcs per Box

Mechanical Characteristics – 245w

Cable Type, Diameter and Length	4mm ² , 1000mm
Type of Connector	MC4
Number, Type and Arrangement of Cells	60pcs, Monocrystalline Silicon (6 x 10)
Cell Size (mm)	156 x 156 (D200)
Bypass Diodes	3 pcs
Dimensions of Panel (mm)	1655 x 992 x 40
Weight per Panel (kg)	22.5
No. of Drain Holes in Frame	10
Front Glass	Pilkington High Transmission, Low Iron, Tempered Glass 3.2mm
Frame	Anodised Aluminium Frame
Colour of Frame	IG245BL-UK – Black Frame IG245SV-UK – Silver Frame
Wind – Maximum Load Rating	2400Pa
Snow – Maximum Load Rating	5400Pa
Packing Configuration	24 pcs per Box



InstaGen

YOUR ENERGY

Proud suppliers to the



Insta House, Ivanhoe Road, Hogwood Business Park, Finchampstead, Wokingham, Berkshire. RG40 4PZ. UK
Tel: **0118 932 8811** Fax: **0118 932 8314** Email: sales@instagroup.co.uk www.instagroup.co.uk

