





SMARTGLASS® is a revelation.

This is a range of intelligent glazing solutions for the next generation of conservatories, atriums, garden rooms, orangeries and lantern roofs..

With a four tier performance range for your roof, SMARTGLASS offers a completely tailored solution, whatever your colour preference, location and design of conservatory. Complementing the technical performance of the roof, is a full range of tailored wall glass in the form of SMARTGLASS W, the industry's first ever dedicated range of glass for conservatory windows and doors and also bifolding doors, where excessive solar heat gain is a real issue.

One of our most exciting developments to date is the launch of SMARTGLASS® Dynamic in January 2017, the introduction of the industry's first self-tinting glass technology that darkens gradually and dynamically when heated by direct sunlight and is available on a 2-week leadtime in any shape. And finally, we have just raised the bar again with the introduction of SMARTGLASS Ultra 86, which sets new performance standards as technically, the best conservatory roof glass in the sector. We are after all pioneers in advanced glass technologies, with a number of major industry and business awards behind us.



Smartglass Dynamic

This is a revolutionary and innovative self-tinting glass technology that darkens gradually and dynamically when heated by direct sunlight.

See pages 14-15

SMARTGLASS®

Proven Performance

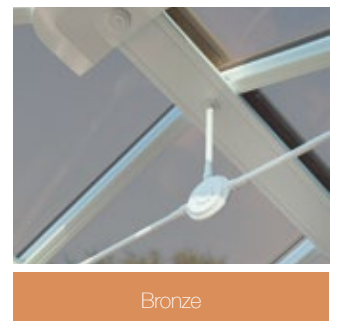
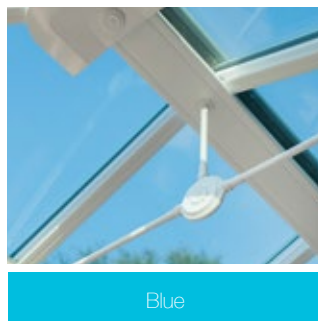
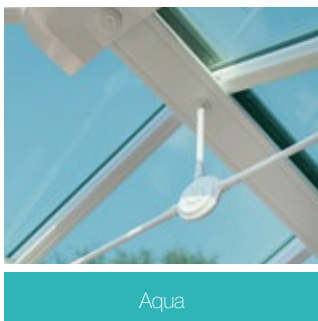


Standard SMARTGLASS® remains our most popular roof product and has been continually developed, enhanced and upgraded over the last decade.

With a U-value of 1.2 W/m²K SMARTGLASS® helps minimise heat loss in the winter months. With a good degree of light transmittance, conservatories feel light and airy, yet benefit from the anti-glare properties

inherent in SMARTGLASS®. There's also true self-cleaning and warm edge technologies built in to all our roof glass products.

Choice of Tints

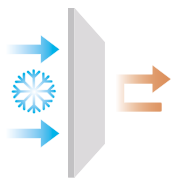


Technical Specifications

The table below highlights the key performance characteristics of the standard SMARTGLASS® range.

Product	G-Value	Light Transmission	U-Value	True Self Clean	Argon filled Low E	Warm Edge Technology
SMARTGLASS® Aqua	24%	33%	1.2	Yes	Yes	Yes
SMARTGLASS® Blue	40%	52%	1.2	Yes	Yes	Yes
SMARTGLASS® Neutral	40%	45%	1.2	Yes	Yes	Yes
SMARTGLASS® Bronze	49%	52%	1.2	Yes	Yes	Yes

SMARTGLASS® Key Features



Cuts Heat Loss

U-Value
1.2

U-Value - Measures heat loss through the unit in winter months. The lower the U-Value, the warmer in winter the room will be.



Reduces Heat Gain

G-Value
40%*

G-Value - Shows the percentage of the sun's heat able to pass through the unit. A G-Value of 40% means that 60% of the sun's heat is reflected back or absorbed by the glass, reducing heat build up in the summer months.



Reduces Glare

Light Transmittance
52%*

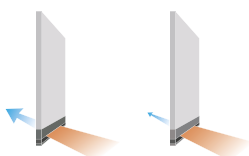
Light Transmittance - Percentage of visible light able to pass through the unit. The lower the light transmittance, the lower the glare within the room.



Stays Cleaner

True Self Clean
Yes

True Self Clean - Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt.



Decreases Condensation

Warm Edge Technology
Yes

Warm Edge Technology - The use of a spacer bar that is up to 950 times less conductive than aluminium, thereby increasing internal temperatures around the edges and vastly reducing condensation.

* Figures stated are based on SMARTGLASS® Blue Tint.

SMARTGLASS® Plus+

Enhanced Performance



SMARTGLASS® Plus+ is becoming increasingly popular as consumers look to increase the performance and versatility of their conservatories all year round.

For those consumers looking for enhanced performance, SMARTGLASS® Plus+ is the perfect choice, offering a class-leading U-value of just 1.0 W/m²K and reflecting 72%* of the sun's heat, a particular benefit for South facing and

exposed elevations. Like our standard SMARTGLASS® range, this enhanced version benefits from true self-cleaning and warm edge technologies, along with four subtle tint options.

Choice of Tints



Aqua



Blue



Neutral



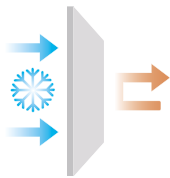
Bronze

Technical Specifications

The table below highlights the key performance characteristics of the full SMARTGLASS® Plus+ range.

Product	G-Value	Light Transmission	U-Value	True Self Clean	Argon filled Low E	Warm Edge Technology
SMARTGLASS® Plus+ Aqua	18%	30%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Blue	28%	41%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Neutral	29%	37%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Bronze	34%	42%	1.0	Yes	Yes	Yes

SMARTGLASS® Plus+ Key Features



Cuts Heat Loss

U-Value
1.0

U-Value - Measures heat loss through the unit in winter months. The lower the U-Value, the warmer in winter the room will be.



Reduces Heat Gain

G-Value
28%*

G-Value - Shows the percentage of the sun's heat able to pass through the unit. A G-Value of 28% means that 72% of the sun's heat is reflected back or absorbed by the glass, reducing heat build up in the summer months.



Reduces Glare

Light Transmittance
41%*

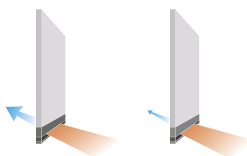
Light Transmittance - Percentage of visible light able to pass through the unit. The lower the light transmittance, the lower the glare within the room.



Stays Cleaner

True Self Clean
Yes

True Self Clean - Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt.



Decreases Condensation

Warm Edge Technology
Yes

Warm Edge Technology - The use of a spacer bar that is up to 950 times less conductive than aluminium, thereby increasing internal temperatures around the edges and vastly reducing condensation.

* Figures stated are based on SMARTGLASS® Plus+ Blue Tint.

SMARTGLASS® Ultimate

A Technological Benchmark



SMARTGLASS® Ultimate is a new generation of conservatory glass, using the latest glass technologies and offering both impressive levels of solar control and visible light transmittance.

This market-leading glass boasts a U-value of 1.0 W/m²K, the ability to reflect 80% of the sun's rays and yet still provides a visible light transmittance of 27%, ensuring the spacious and open feel isn't compromised in the search for solar control. SMARTGLASS® Ultimate naturally comes with true

self-cleaning and warm edge technologies, and is exclusively available in our popular cool blue tint. There's also a dedicated SMARTGLASS®-W Ultimate glass for your doors and windows to offer exceptional technical properties throughout your conservatory.

Cool Blue Tint



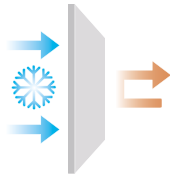
Due to the advanced nature of SMARTGLASS® Ultimate it is only available in our ever popular cool blue tint.

Technical Specifications

The table below highlights the key performance characteristics of our class leading SMARTGLASS® Ultimate product.

Product	G-Value	Light Transmission	U-Value	True Self Clean	Argon filled Low E	Warm Edge Technology
SMARTGLASS® Ultimate	20%	27%	1.0	Yes	Yes	Yes

SMARTGLASS® Ultimate Key Features



Cuts Heat Loss

U-Value
1.0

U-Value - Measures heat loss through the unit in winter months. The lower the U-Value, the warmer in winter the room will be.



Reduces Heat Gain

G-Value
20%*

G-Value - Shows the percentage of the sun's heat able to pass through the unit. A G-Value of 20% means that 80% of the sun's heat is reflected back or absorbed by the glass, reducing heat build up in the summer months.



Reduces Glare

Light Transmission
27%*

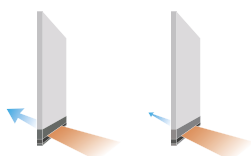
Light Transmittance - Percentage of visible light able to pass through the unit. The lower the light transmittance, the lower the glare within the room.



Stays Cleaner

True Self Clean
Yes

True Self Clean - Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt.



Decreases Condensation

Warm Edge Technology
Yes

Warm Edge Technology - The use of a spacer bar that is up to 950 times less conductive than aluminium, thereby increasing internal temperatures around the edges and vastly reducing condensation.



SMARTGLASS®-W

Designed to block out 50% of the sun's rays in conservatory wall glass and bi-folding doors, offering 240% more solar protection than standard glass



Picture courtesy of Origin Global.

SMARTGLASS® Ultra 86

For Unsurpassed Performance



SMARTGLASS® Ultra 86 has been exclusively developed by Clayton Glass to offer totally unsurpassed solar control and thermal performance, making it the best product in its class.

Reflecting 86% of the sun's rays, no other conservatory roof glass can compete with the performance level of our new SMARTGLASS® Ultra 86. Thanks to its characteristic ultra-blue tint, light transmission is kept at an optimum 15% and with true self clean as standard this glass is as aesthetically pleasing as it is performance wise.

For those consumers with a South facing conservatory or looking to block a greater amount of solar radiation, Ultra 86 represents the very best glass on the market with a G-value some 18% better than the latest Celsius Elite*. Designed in house by a multi-award winning glass unit manufacturer, SMARTGLASS® Ultra 86 is yet another pioneering innovation to add to our long list of achievements.

Ultra-Blue Tint



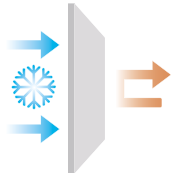
Due to the advanced nature of SMARTGLASS® Ultra 86, it is only available in a deep, ultra-blue tint.

Technical Specifications

The table below highlights the key performance characteristics of our class leading SMARTGLASS® Ultra 86 product.

Product	G-Value	Light Transmission	U-Value	True Self Clean	Argon filled Low E	Warm Edge Technology
SMARTGLASS® Ultra 86	14%	15%	1.0	Yes	Yes	Yes

SMARTGLASS® Ultra 86 Key Features



Cuts Heat Loss

U-Value
1.0

U-Value - Measures heat loss through the unit in winter months. The lower the U-Value, the warmer in winter the room will be.



Reduces Heat Gain

G-Value
14%*

G-Value - Shows the percentage of the sun's heat able to pass through the unit. A G-Value of 14% means that 86% of the sun's heat is reflected back or absorbed by the glass, reducing heat build up in the summer months.



Reduces Glare

Light Transmittance
15%*

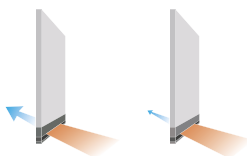
Light Transmittance - Percentage of visible light able to pass through the unit. The lower the light transmittance, the lower the glare within the room.



Stays Cleaner

True Self Clean
Yes

True Self Clean - Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt.



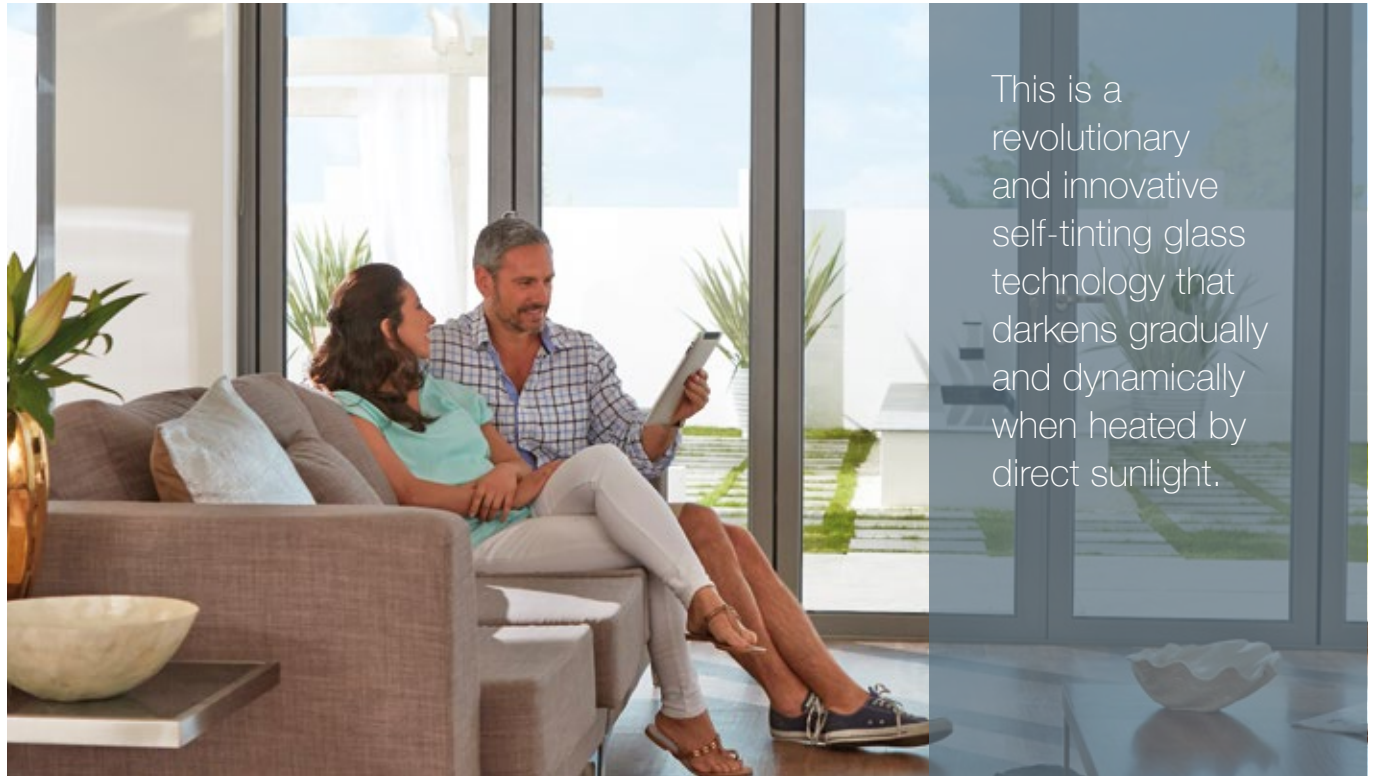
Decreases Condensation

Warm Edge Technology
Yes

Warm Edge Technology - The use of a spacer bar that is up to 950 times less conductive than aluminium, thereby increasing internal temperatures around the edges and vastly reducing condensation.

SMARTGLASS® Dynamic

A Revelation in Self Tinting Glass Technology



This is a revolutionary and innovative self-tinting glass technology that darkens gradually and dynamically when heated by direct sunlight.

Designed with all types of glazing in mind, automatically and without wires or controls, this glass has the unique ability to change colour from clear to dark blue as the hot summer sun shines on it. In its darkest state it can reflect up to 90% of solar energy, yet in the colder months remains almost

as clear as standard glass, making the most of the winter sun and also benefitting from true self-cleaning technology.

Simple, versatile, beautiful.

Technical Specifications

The specifications highlight the key performance characteristics of SMARTGLASS® Dynamic.

Visible Light Transmission



Solar Heat Gain Coefficient



Blocks 99% of UV light



Blocks up to 90% of the sun's heat



No wires or controls



Reduces glare

SMARTGLASS® Dynamic In Action



Full Tint State

On a hot summers day, glare and overheating can be a big problem. This revolutionary glass can sense these temperature increases and automatically tints to block up to 90% of the sun's heat.



Clear State

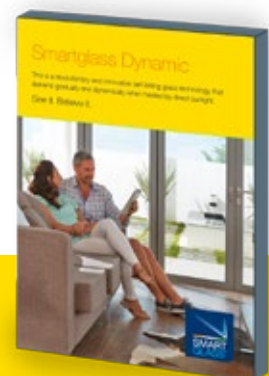
On a more gloomy or winter's day, you really need to maximise the available solar energy and light. By moving to its clear state, SMARTGLASS Dynamic offers light levels more similar to standard glass, whilst dramatically reducing heat loss from within the room.



Semi Tint State

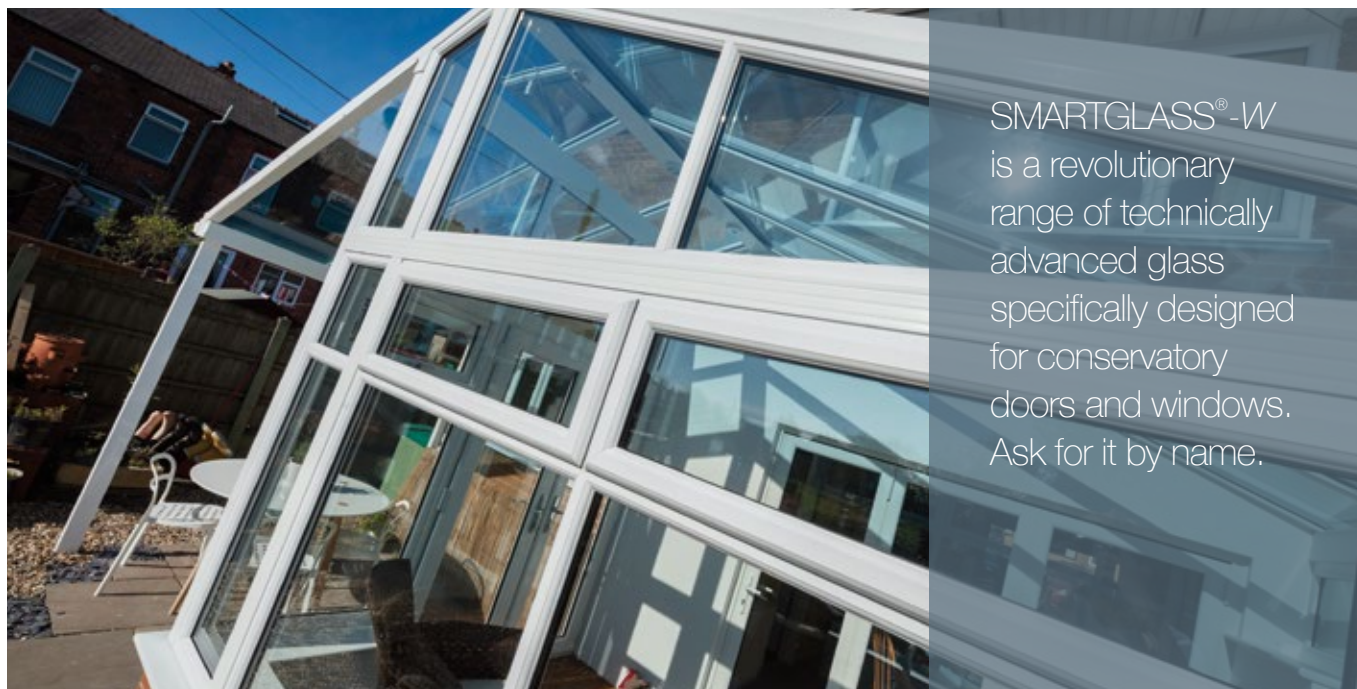
And for every day in between this amazing glass technology remains adaptive to your environment, constantly regulating levels of temperature and light for the ultimate in dynamic living.

Ask your local trade partner for your **FREE** sample kit.
Or request one at enquiries@smart-glass.co.uk



SMARTGLASS®-W

For Side Frames, Patio and Bi-folding Doors



SMARTGLASS®-W is a revolutionary range of technically advanced glass specifically designed for conservatory doors and windows. Ask for it by name.

As we all know, most glass units in domestic dwellings are primarily designed to retain heat in the winter. However, as a secondary function and in order to help reduce the load on our heating systems, they are also specifically designed to allow as much free solar energy *into* the building as possible. That's great in a window, but because of the large glazing areas in bi-folding doors and conservatory walls, and the strong heating effect of the summer sun, the wall glass needs to do the exact opposite of this. Yet whilst most offer a high performance roof, many installers still use standard or 'A rated' products in the walls which are inappropriate for the job, letting too much of the sun's heat in and leading to overheating in summer.

SMARTGLASS®-W is a revolutionary range of glass products, designed and dedicated for use in a conservatory, or other large glazed areas such as bifolding doors. It blocks out over 50% of the summer sun's radiant heat, whilst being 20% better than A rated glazing at retaining warmth in the winter. Our three tier structure includes other key features such as increased security, better acoustics and almost total blocking of damaging UV light.

Technical Specifications

The table below highlights the key performance characteristics of the full SMARTGLASS®-W range.

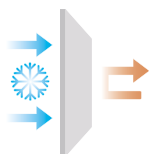
Product	Argon filled Low E	Warm edge	Solar control	Anti Fade	Enhanced Acoustic	Enhanced Security	Self Clean
SMARTGLASS®-W Ultimate	✓	✓	✓	✓	✓	✓	✓
SMARTGLASS®-W Plus+	✓	✓	✓	✓	✓	✓	
SMARTGLASS®-W	✓	✓	✓				

The SMARTGLASS®-W range comes in a variety of specifications, with all variants featuring Low E and solar control glass, warm edge spacer and argon gas filling – AS STANDARD. Our mid range Plus+ product adds enhanced protection from break-in or accidental damage and enhanced

acoustic control, as well as almost complete protection for furnishings from the damaging effects of UV light. Our SMARTGLASS®-W Ultimate package adds the same self cleaning technology we use in all of our roofs, ensuring your wall panels stay cleaner, for longer.

Don't forget
the wall glass!

SMARTGLASS®-W Key features



Cuts Heat Loss

U-Value
1.0

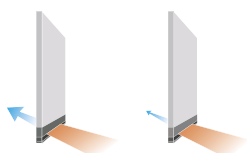
U-Value - Measures heat loss through the glass unit in winter months. The lower the U-Value, the warmer in winter the room will be and with a 1.0 W/m²K U-Value, this is almost 3 times better than a standard clear unit and 20% better than the UK's best selling low E glass.



Reduces Heat Gain

Solar Control
Yes

Solar Control - Helps reduce the build up of heat in the summer months, SMARTGLASS®-W typically blocks out 50% of the sun's rays and offers 240% more solar protection than standard glass.

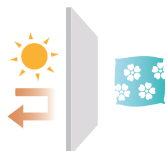


Decreases Condensation

Warm Edge Technology
Yes

Warm Edge Spacer - Avoids heat loss at the edge of the unit, reducing internal condensation especially at the glass edge. Warm edge spacer is typically up to 950 times less conductive than standard aluminium.

Additional features for SMARTGLASS®-W Plus+



Protects Furnishings

UV Reduction
Yes

Anti Fade - Blocks out 98% of the harmful UV rays that cause damage to soft furnishings.



Better Security

Enhanced Security
Yes

Enhanced Security - An additional security interlayer within the glass holds the fragments together in case of impact, making it significantly harder to gain entry this way.



Reduces Noise

Sound Reduction
Yes

Enhanced Acoustics - For a quieter conservatory this option reduces audible sound by 40% more than standard glass.

SMARTGLASS® Ultimate offers all of the above features and...



Stays Cleaner

True Self Clean
Yes

Self Clean - Uses the same coating as the roof, to prevent the build up of dirt and grime, reducing the frequency of cleaning.

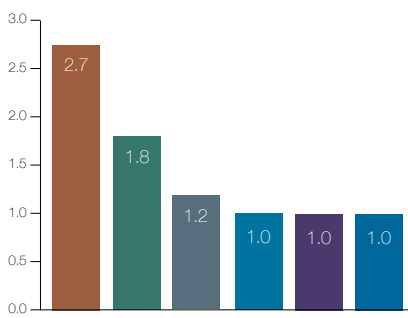
Technical Specifications

The tables below highlight the key performance characteristics of the full SMARTGLASS® range.

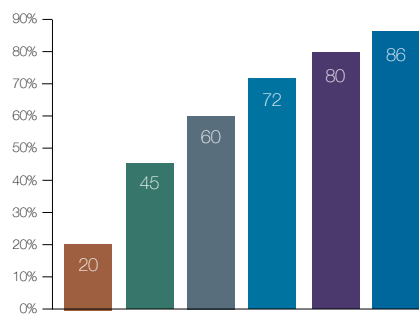
SMARTGLASS® Conservatory and Glazed Roof Glass Specifications.

Product	Solar Factor	Light Transmission	U-Value	True Self Clean	Argon filled Low E Glass	Warm Edge Technology
SMARTGLASS® Ultra 86	14%	15%	1.0	Yes	Yes	Yes
SMARTGLASS® Ultimate	20%	27%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Aqua	18%	30%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Blue	28%	41%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Neutral	29%	37%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Bronze	34%	42%	1.0	Yes	Yes	Yes
SMARTGLASS® Aqua	24%	33%	1.2	Yes	Yes	Yes
SMARTGLASS® Blue	40%	52%	1.2	Yes	Yes	Yes
SMARTGLASS® Neutral	40%	45%	1.2	Yes	Yes	Yes
SMARTGLASS® Bronze	49%	52%	1.2	Yes	Yes	Yes
Standard Clear (Toughened Glass)	80%	83%	2.7	No	No	No

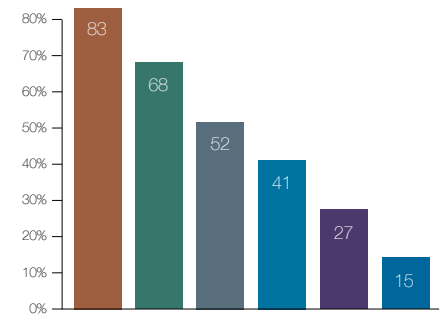
Insulation U-values (W/m²K)



Heat Reflectance %



Light Transmission %



Figures quoted are based on SMARTGLASS® Blue, SMARTGLASS® Plus+ Blue.

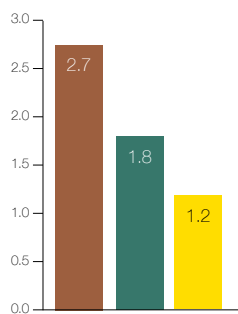
SMARTGLASS®-W Side Frame (windows and doors) Glass Specifications.

Product	Argon Filled Low E Glass	Warm Edge Spacer	Solar Control	Anti Fade	Enhanced Acoustics	Enhanced Security	Self Clean
SMARTGLASS® -W Ultimate	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SMARTGLASS® -W Plus	Yes	Yes	Yes	Yes	Yes	Yes	-
SMARTGLASS® -W	Yes	Yes	Yes	-	-	-	-
Standard (Wall) Glass	-	-	-	-	-	-	-

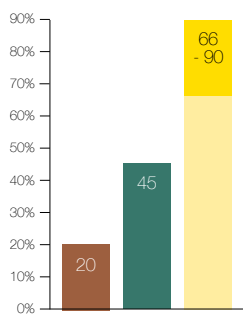
SMARTGLASS Dynamic^v Glass Specifications

Product	Solar Factor	Light Transmission	U-Value	True Self Clean	Argon filled Low E Glass	Warm Edge Technology
SMARTGLASS Dynamic [®]	10-34%	6-60%	1.2	Yes	Yes	Yes

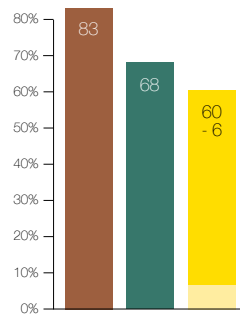
Insulation U-values (W/m²K)



Heat Reflectance %



Light Transmission %



- Clear Toughened
- Typical Polycarbonate
- SMARTGLASS Dynamic[®]

Light Transmittance

Percentage of visible light passing through the unit. The lower the light transmission, the lower the glare within the room.

U-Value

Heat transmitted through the unit, measured in Watts per m² per Kelvin. The lower the U-Value, the warmer in winter the room will be.

Solar Factor

Total transmittance of radiant heat through the unit, as a percentage. The lower the solar factor, the cooler and more comfortable in summer the room will be.

Your Questions Answered

My old conservatory used to overheat terribly in the summer, will SMARTGLASS® help?

Yes. Older conservatories may either have a basic plain glass roof or a polycarbonate roof, neither of these have any great effect in controlling the sun's heating effect. A basic glass roof would only reflect about 20% of the sun's heat, but by contrast a SMARTGLASS® roof would reflect up to 86%, meaning the room stays considerably cooler during hot weather.

I've heard about 'easy clean coatings' is that the same as self-cleaning?

No. Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt. A so called 'easy clean' roof simply does not have these properties.

In winter I'm concerned about my conservatory being cold, what type of roof should I consider?

One of the key properties of a SMARTGLASS® roof is its ability to retain warmth in winter. In fact SMARTGLASS® is probably a better insulator than any other form of glazing in the home, including the latest A+ rated windows. With a super low U-value down to 1.0 W/m²K, you can be assured that heat loss is kept to an absolute minimum, keeping the conservatory warmer in winter and thereby helping to reduce the cost of heating.

Will my furniture still fade under a SMARTGLASS® roof?

Harmful UV rays increase the risk of damage to soft furnishings, yet we can block over 75% of these in the roof and an impressive 98%, when SMARTGLASS-W is specified in the windows and doors. Standard clear glass offers little protection to valued furnishings.

What guarantees do I get with SMARTGLASS®?

Every SMARTGLASS® roof is manufactured to BS EN 1279 for seal quality and BS EN 12150 for toughened glass safety. With this we offer a 10 year warranty against seal failure with all of our products.

If I don't specifically choose SMARTGLASS®-W in my walls, what is the default option?

Our research suggests that at best you will get a low E unit which will help retain heat in winter. SMARTGLASS®-W also helps retain heat in winter - but unlike standard glass it can keep it out in summer too. It also can also help keep unwanted sound out, keep burglars out and keep UV light out. It can even clean itself too, making it the perfect all round choice for the modern conservatory.

What's the difference between standard and Dynamic type glass?

Put simple the performance of standard glass is static in that it doesn't adapt to the environment or the time of year. SMARTGLASS Dynamic® harnesses self-tinting technology without the need for wires or controls and darkens gradually and dynamically when heated by direct sunlight. In the summer months it reduces unwanted glare and solar heat gain when you need it most during the day, while in winter it remains clear and helps keep the warmth in. For all other occasions the glass will transform into a semi-tinted state.

