

Guardian Clarity™

Anti-reflective glass in architectural applications



GUARDIAN®

Glass • Automotive • Building Products

PERFECT VIEW

Guardian Clarity™ delivers an outstanding viewing experience

Glass has the ability to combine function, strength and beauty. It has many roles to play in modern architecture where the benefits of advanced technology enhance the timeless quality of glass. With glass as the medium for design and construction, there are fewer technical barriers to creativity than ever before, giving architects and designers the freedom to utilise this incredibly flexible and versatile material.

However, while the glass itself may be clear, the perfect view and transparency are often obstructed by glare, reflection or filtering of the original colours. These distractions keep us from having a clear view.

Made to help you create buildings that stand out

Guardian Clarity anti-reflective glass can help you to achieve **higher light transmission and lower reflection**. Whether you want to increase visibility at ground level or create a stand-out feature as part of your façade, Clarity can help you achieve the desired effect as well as deliver outstanding functionality.

Guardian Clarity offers eye-popping optical properties for premium façade applications in which a stunning view can be an advantage.

In short, Guardian Clarity can make a difference anywhere – helping your building to stand out in the urban landscape.

The perfect solution

Guardian Clarity anti-reflective glass is the ideal product for any application in which excessive reflection creates an obstruction: from a shop window which loses impact due to distracting reflections, to a viewing platform which loses visual accuracy due to distracting glare, to a restaurant with a breathtaking view which becomes completely hidden as soon as the sun goes down. Guardian Clarity anti-reflective glass provides the perfect solution for

- *Retail storefronts*
- *Architectural entryways*
- *Airports and control towers*
- *Stadiums and arenas*
- *Petrol stations*
- *Car showrooms*
- *Hotel lobbies*
- *Restaurants, cafés*
- *Banks*
- *Any residential or commercial building with a stunning view*





**SEE
AND
BE SEEN**

GROUND


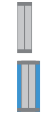


FLOOR

Show and impress: Guardian Clarity delivers the wow factor

Guardian Clarity anti-reflective glass meets the need to maximise **visibility** with minimum light reflection and maximum light transmission.

The use of **Guardian UltraClear™ low-iron glass** in combination with Clarity increases light transmission and neutralizes the green colour of standard glass leaving a **crystal-clear appearance**. Additionally, the use of laminated glass eliminates the harmful UV rays, thus avoiding the fading of the goods behind the glass. Moreover, it enhances the overall **safety and security** and you will benefit from increased sound reduction and better indoor comfort.

The desired **“no reflection” effect** can be created only when all glass surfaces of a monolithic or insulated glass unit are coated with Guardian Clarity. The table below compares the main values of various typical ground floor glass units, with and without Clarity. (Units with Clarity are based on UltraClear float glass – units without Clarity are based on ExtraClear® float glass).





Glazing structure (outside pane - spacer - inside pane)	Light Transmission [%]	Light Reflection outside [%]	Light Reflection inside [%]	Colour rendering index (D65)	Solar Factor [%]	UV Tr [%]	Ug-value 90% Argon [W/(m²K)]	Selectivity
 Clarity  LamiGlass 66.2 Clarity double sided Lami 66.2 on UC	88.7 96.1	8.2 0.7	8.2 0.7	98 98	77 78	0.9 2.0	5.5 5.5	1.15 1.23
 LamiGlass 66.2 – 16 mm – LamiGlass 44.2 Clarity double sided Lami 66.2 on UC – 16 mm – Clarity double sided Lami 44.2 on UC	80.1 93.2	14.8 1.3	15.0 1.3	96 97	67 69	0.1 0.4	2.5 2.5	1.20 1.35
 Float 8 mm – 16 mm – Float 8 mm Clarity double sided 8 mm on UC – 16 mm – Clarity double sided 8 mm on UC	80.9 94.3	15.6 1.3	15.6 1.3	97 97	75 74	50.6 32.4	2.6 2.6	1.08 1.28

The performance values shown are nominal and subject to variations due to manufacturing tolerances. Values according to EN 410 & EN 673. UC stands for Guardian UltraClear™.

Transparency & Performance – above the limits

You want to achieve the desired combination of maximum transparency and minimum reflection. At the same time you need to meet local regulations in terms of energy performance, while making a rational and feasible specification with minimum compromise. Used in combination with other Guardian state-of-the-art products. Clarity's low reflection and higher light transmission can help you to meet these challenges.

The following insulating glass units are recommended for combinations with and without Guardian Clarity at ground level areas of buildings with various reflection rates. (Units with Clarity are based on UltraClear float glass – units without Clarity are based on ExtraClear float glass).

Glazing structure (outside pane - spacer - inside pane)	Light Transmission [%]	Light Reflection outside [%]	Light Reflection inside [%]	Colour rendering index (D65)	Solar Factor [%]	UV Tr [%]	Ug-value 90% Argon [W/(m²K)]	Selectivity
 Clarity  ClimaGuard®  SunGuard® For a superior thermal insulation LamiGlass 66.2 – 16 mm – ClimaGuard Premium2 Lami 44.2 Clarity double sided Lami 66.2 on UC – 16 mm – ClimaGuard Premium2 Lami 44.2 on UC Clarity double sided Lami 66.2 on UC – 16 mm – ClimaGuard Premium2 & Clarity on Lami UC 44.2*	79.2 85.9 89.2	12.0 5.1 1.9	12.3 6.3 2.4	96 98 97	56 60 61	0.1 0.3 0.3	1.1 1.1 1.1	1.40 1.43 1.46
 SunGuard SN70/37 Lami 66.2 – 16 mm – LamiGlass 44.2 SunGuard SN 70/37 Lami 66.2 on UC – 16 mm – Clarity double sided Lami 44.2 on UC Clarity & SunGuard SN 70/37 on Lami 66.2 UC* – 16 mm – Clarity double sided Lami 44.2 on UC	68.2 74.0 76.8	10.9 6.5 2.7	12.0 5.0 2.6	92 93 93	35 38 38	0.0 0.0 0.0	1.0 1.0 1.0	1.95 1.97 2.01

The performance values shown are nominal and subject to variations due to manufacturing tolerances. Values according to EN 410 & EN 673. UC stands for Guardian UltraClear™. * When Clarity is combined with ClimaGuard or SunGuard into one single pane, both monolithic coated glass have to be processed into laminated glass by a certified processor.





VIEWING

For high-impact uninterrupted views

The Guardian Clarity combinations can also be used in viewing areas and other locations which offer **amazing views**. When it comes to watching an exciting game through glass balustrades, Guardian Clarity ensures that you see every detail clearly.

The table below shows the typical monolithic structure of a balustrade and a glazing unit with and without Guardian Clarity. (Units with Clarity are based on UltraClear float glass – units without Clarity are based on ExtraClear float glass).

Glazing structure	Light Transmission [%]	Light Reflection outside [%]	Light Reflection inside [%]	Colour rendering index (D65)	Solar Factor [%]	UV Tr [%]	Ug-value 90% Argon [W/(m²K)]	Selectivity
 LamiGlass 88.4	87.7	8.4	8.4	97	74	0.0	5.3	1.19
 Clarity double sided Lami 88.4 on UC	95.2	0.7	0.7	98	76	0.0	5.3	1.26

The performance values shown are nominal and subject to variations due to manufacturing tolerances. Values according to EN 410 & EN 673. UC stands for Guardian UltraClear™.







Façade experience from different perspective

The use of Guardian Clarity in combination with Guardian SunGuard® solar control glass makes it possible to create façade parts that meet the demanding requirements of any project.

Using Guardian Clarity as inside pane of the insulating glass unit, will considerably reduce the inside reflection and increase the amount of visible light amount which passes through the unit.

Unique optical effects – such as eliminating the inside pane – can help to create an exclusive experience for special locations, including control towers, skylounges or for bent insulation glass for façade corners.

The table below compares typical façade glazing structures with and without Guardian Clarity. (Units with Clarity are based on UltraClear float glass - units without Clarity are based on ExtraClear float glass).

Glazing structure (outside pane - spacer - inside pane)	Light Transmission [%]	Light Reflection outside [%]	Light Reflection inside [%]	Colour rendering index (D65)	Solar Factor [%]	UV Tr [%]	Ug-value 90% Argon [W/(m²K)]	Selectivity
 For a superior thermal insulation and an outstanding selectivity SunGuard SNX 60/28 8 mm – 16 mm – Float 8 mm	59.0	12.3	14.6	92	28	5.0	1.0	2.12
 SunGuard SNX 60/28 8 mm on UC – 16 mm – Clarity double sided 8 mm on UC	64.0	8.9	7.6	92	30	4.4	1.0	2.17
 For a superior thermal insulation and an outstanding selectivity SunGuard SN 70/35 8 mm – 16 mm – LamiGlass 44.2	68.9	13.4	15.2	94	34	0.2	1.0	2.02
 SunGuard SN 70/35 8 mm on UC – 16 mm – Clarity double sided Lami 44.2 on UC	74.6	8.9	8.6	93	36	0.4	1.0	2.08

The performance values shown are nominal and subject to variations due to manufacturing tolerances. Values according to EN 410 & EN 673. UC stands for Guardian UltraClear™.



CLEAR GAIN

The clear advantages

- **Excellent optical properties**
The residual reflection colour of Guardian Clarity is a soft neutral blue, in combination with Guardian UltraClear™ substrate it achieves maximum transparency and incredible aesthetic appeal.
- **Temperable for safety**
In applications which require safety glass, Guardian Clarity can be tempered or heat strengthened by an independent Guardian certified glass processor.
- **Multiple sizes for maximum productivity**
In addition to the standard stock sheet sizes, Guardian Clarity is also available in 3210 x 6000 mm, a real advantage in cutting optimisation.
- **Double-sided when you need it**
Guardian Clarity is offered either one-sided for further lamination processing into double-sided, or already applied to both surfaces of the glass substrate, making it highly flexible for any application or purpose.
- **Complete with TPF**
Temporary Protective Film is applied to ensure proper handling and protection of the coated surface during processing.
- **Expert technical and specification support**
The Guardian Sales and Technical Support Team is ready to help answer questions on any technical aspects of the product and its functions, as well as on the processing of the glass.

Product availability

Guardian Clarity is available in the industry's widest range with **thicknesses of 3 to 15 mm** and as **double-sided laminated glass from 33.1 to 88.2**.

Please note

Guardian Clarity provides a residual reflection of less than 1 % (exact number depends on glass configuration and/or thickness) and a viewing experience through the glass that is virtually distortion free. However, under certain natural and artificial light conditions, and depending on the viewing angles, some reflection may be visible to the naked eye. It is recommended that a sample is viewed in the actual location to understand which of these factors may be present in your particular application.





The products in this publication are sold subject to Guardian's standard terms and conditions of sale and any applicable written warranties. It is the responsibility of the purchaser to confirm that the products are suitable for their intended application in compliance with the applicable laws and regulations. Please contact your local Guardian representative to obtain any applicable handling and fabrication guides and for the most current product information.
Cover picture: Frank Weber.
Guardian Clarity may be used in similar projects as shown on this brochure's pictures.



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