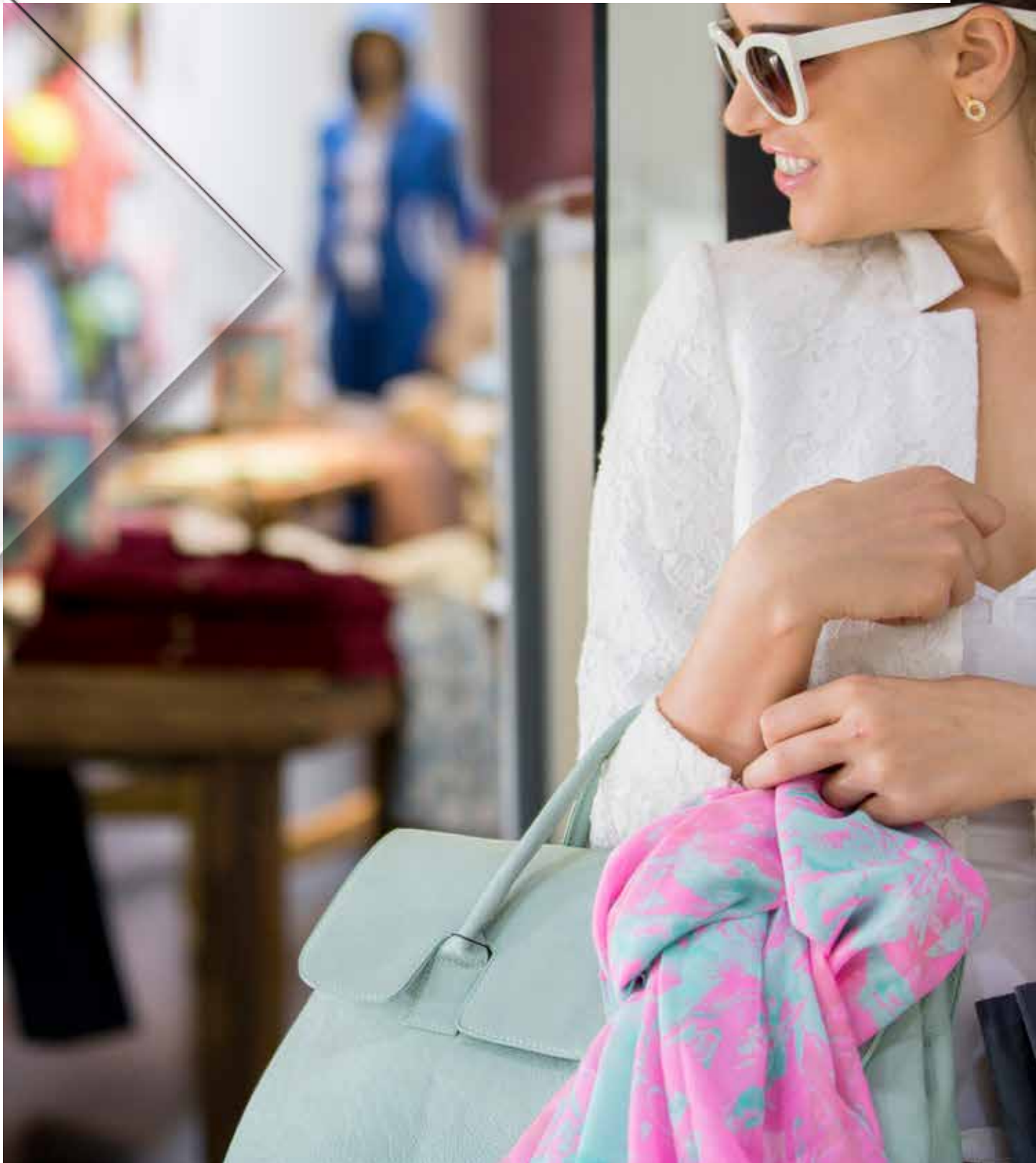


Guardian Clarity™ Double-sided anti-reflective glass



**GUARDIAN
INGLASS®**

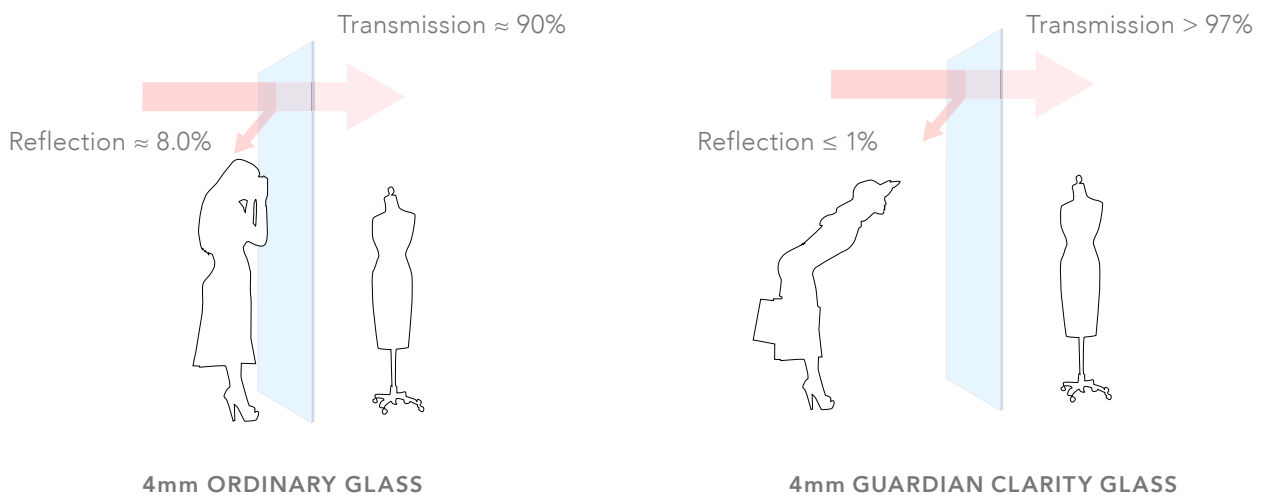
ADVANCED INTERIOR GLASS



Unlike ordinary glass, Guardian Clarity provides a pristine view, bringing materials and objects to life.

SEEING - CLEARLY AND SHARPLY -

IS MORE IMPORTANT THAN EVER
IN A WORLD FILLED WITH INCREASINGLY
DENSE AND INTENSE IMAGERY.



Performance comparison of Ordinary vs. Guardian Clarity Glass

The most simple concept behind the use of glass, our ability to see through the substrate clearly, can often be a paradox. While the glass itself is clear, the world around provides obstacles to a perfect view in the way of glare and reflection. A display case positioned so that light reflects from its surface, a shop window on a sunny day; these distractions keep us from a clear view of the object behind the glass.

Guardian Clarity™ is the solution to unwanted glare and unobstructed views. Created using the most advanced magnetron sputtering glass coating technology, Clarity leads the way in applications where reflection and glare can spoil the benefit of clear sight and pristine views.



Glass is traditionally used to create a barrier which protects its encased environment from damage or distress. However, circumstances such as glare, reflection, light transmission and overall aesthetic quality are key factors in choosing the right type of glass. Normal, clear float glass will reflect light on both the front and back viewing surfaces by around 8% in total (around 4% from each surface). While these numbers may not mean a lot to the average person, they can create a problem in our ability to see clearly through the glass.

Guardian Clarity drastically reduces this problem and allows virtually distortion and reflection free vision.

CLARITY PRODUCT ATTRIBUTES

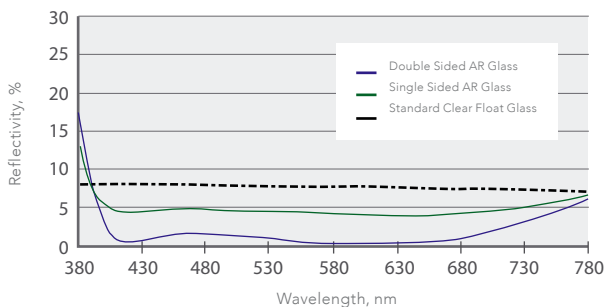
- › Greater contrast
- › Temperable, laminatable, printable
- › Colour-neutrality
- › Available in various glass types, sizes and thicknesses
- › Long lifetime
- › Low reflection
- › High transmission
- › Enhanced impact

APPLICATIONS

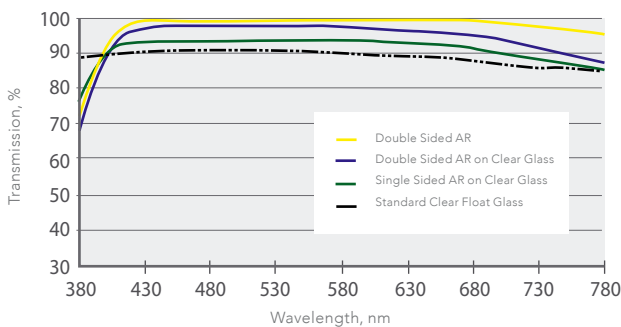
Guardian Clarity, an anti-reflective glass is the ideal product for any application where excessive glare of reflection creates an obstruction: whether it's a shop window which loses impact due to distracting reflections, a viewing platform which loses visual accuracy due to distracting glare, or a restaurant with a breathtaking view which becomes completely hidden as soon as the sun goes down, anti-reflective glass provides the perfect solution. Common applications range from museum vitrines, display cases, shop fronts, car showrooms, restaurants, control towers, sporting facilities, zoos & aquariums.

PRODUCT AVAILABILITY

Clarity is available in thicknesses of 3 to 15 mm and various standard sizes. Moreover, it is also available in combination with functional glass types (such as thermal or solar protection coatings).



Reflectance vs. Wavelength:
Typical Rvis < 0.4% per coated side*



Increased transmission equals more lumens and higher efficiency*

THE CLEAR ADVANTAGE

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.

In applications which require safety glass, Clarity can be tempered or heat strengthened by a Guardian certified glass processor. For more details in the certification process please send an email to: inglassoroshaza@guardian.com

Multiple sizes to maximize production capability

In addition to the standard stock sheet sizes, Clarity is also available in sizes of 3210x6000, a real advantage in large viewing areas.

Double sided.

Clarity is offered on one or both surfaces of the glass substrate, making it highly flexible for any application or purpose.

With TPF.

Temporary Protective Film is applied to ensure proper handling and protection of the coated surface during processing.

Technical and Specification Support.

Our GUARDIAN Sales and Technical Support Team is ready to help answer questions related to the technical aspects of the product and its functions, as well as to the processing of the glass.

Flexibility with other products.

Clarity is available on various substrate types like Guardian UltraClear low iron glass, Guardian LamiGlass®, and can be combined with several thermal or solar protective coatings.

* Performance defined herein is typical for 3mm glass. Anti-reflective glass performance is subject to variations due to manufacturing tolerances, glass thickness and glass types. To obtain detailed specifications for particular product options please send an email to inglassoroshaza@guardian.com



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 specific natural and artificial lighting conditions and in some specific viewing angles, a slight reflection may be seen by 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.

GUARDIAN CLARITY PERFORMANCE DATA

Surface Reflectance	- Single Sided AR: Rvis 4.9% - Double Sided AR: Rvis < 1.0%
Transmission	Tvis will vary based on glass thickness and type - Tvis > 97%, Double Sided AR on 4 mm Float ExtraClear Glass - Tvis > 98%, Double Sided AR on 4 mm Guardian UltraClear™ Glass
Adhesion	No damage or delamination after snap tape test.
Abrasion resistance	No degradation after eraser abrasion as per ISO-9211-4-01-04. No degradation after abrasive felt pad tests for 500 stokes as per EN 1096
Humidity	No deterioration after 48 hr exposure to 49°C and 95% relative humidity.
Salt fog	No deterioration after 24 hr exposure to 5% NaCl in water at 35°C.

PRODUCT OPTIONS

Glass substrate	Guardian Float Clear or Guardian UltraClear™ low iron glass.
Coating protection	Temporary Protective Film (TPF) on coated side.
Glass thickness	3-15 mm LamiGlass 3.3.1-8.8.2
Stock sheet dimensions	Standard size: 3.21 x 2.25 m and 3.21 x 6.0 m Other dimensions upon request

GUARDIAN CLARITY GLASS

ORDINARY GLASS



Comparison of
Guardian Clarity vs. Ordinary glass

HERE TO HELP

There's a lot to know about Guardian Clarity glass.
And above all, we are here to help.

We'd love to learn about your project and
collaborate on a solution. Our GUARDIAN Sales
and Technical Support Team stand ready to
support you from concept to completion.

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Guardian Clarity™ is a featured product from Guardian InGlass®, forward-thinking interior glass solutions. To learn more about the breadth of Guardian InGlass products and services, visit guardianinglass.com, a comprehensive glass resource for interior architects and designers.

Headquartered in Auburn Hills, Michigan, Guardian Industries is a global leader in float glass, fabricated glass, fiberglass insulation and other building materials for commercial, residential, interior and automotive applications. To learn more, visit Guardian.com.



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