



glaströsch

LUXAR[®]

Anti-reflective glass



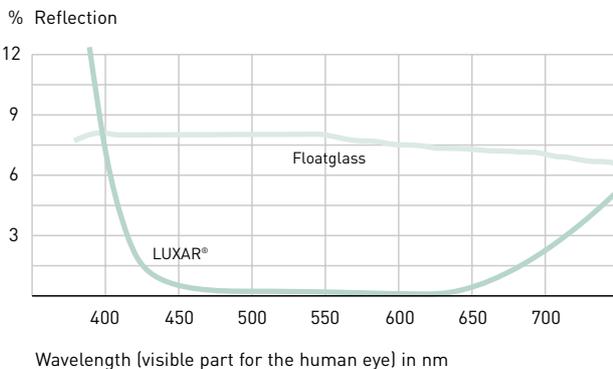
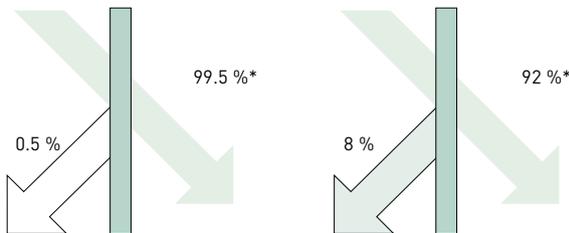
LUXAR® anti-reflective glass.

A new dimension for anti-reflective glass

LUXAR® Magnetron Sputtered anti-reflective glass with almost no reflectance, is an innovative product of Glas Trösch. With a reflection of less than 0.5 %, mirror-like effects will be prohibited and therefore LUXAR® is almost invisible.

LUXAR® is used for applications where a partition is needed, but should not be visible:

- Facades
- Storefronts
- Information Displays
- Picture Frames
- Video walls
- Control and Surveillance Rooms
- Vitrines, Showcases
- Display Cases
- Architecture
- Interior Design
- Stadiums
- Museums
- Residential Homes
- View Restaurants



Amount of reflection of LUXAR® and Clear Floatglass
*absorption not considered

Residual Reflection*

Single glass (LUXAR® both sides coated)	< 0.5 %
Double glazing (2x LUXAR both sides coated)	< 1.0 %
Double glazing with Low E (u-value < 1.1 W/m ² K)	< 2.0 %

Thickness and Size

Thickness 3–12 mm (1/8" – 1/2")
Max. Size 3005 x 1900 mm (118" x 75")

Options

- LUXAR® one side coated
(for laminated glass or in combination with functional coatings)
- LUXAR® both sides coated
(standard for «invisible» appearance)

Available on the following float glass substrates

- Clear float glass
- Low iron float glass
- Tinted float glass (green, grey etc.)

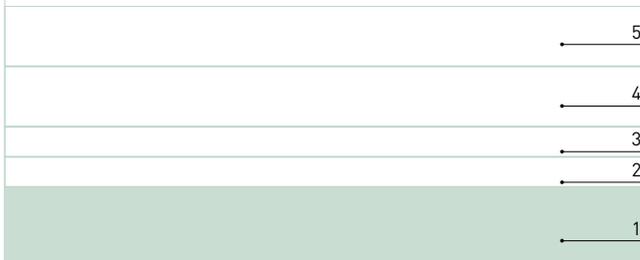
Reflection varies with viewing angle

LUXAR® is an interference optical coated glass and reduces glare, mirror-like effects and reflections to a minimum. The non reflective properties are optimised for direct viewing of the glass. However if the angle of view changes so does the amount of reflection from the glass. Up to a viewing angle of about 45 degrees the non reflective («invisible») properties of the glass remain. Beyond that, reflections become visible in a bluish/purplish color. The amount of reflection however is significantly lower than the reflection of regular uncoated glass.

* Typical values

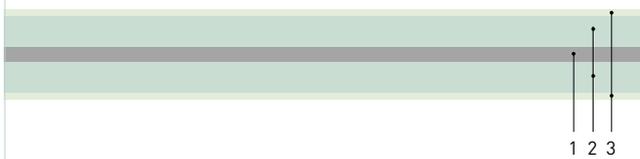
Oxides

LUXAR® uses a multi layer optical thin film coating which is applied to the glass in a vacuum atmosphere with Magnetron Sputtering technology. The individual layers are metal oxides and therefore do not corrode, are hard and durable. The top layer is a quartz-like protective layer, which allows the glass to be handled easily. It also makes it ideal for exterior and high maintenance areas.



Laminated Security Glass

The production of laminated security glass requires one (1) side coated LUXAR®. The uncoated surface will be towards the inter-layer or resin, while the anti-reflective coated surface will be towards the «outside» (or air). The result is «a» laminated glass – double side coated.



LUXAR® as tempered or heat strengthened Glass

LUXAR® can be processed and tempered or heat strengthened by a certified processing partner. The standard glass thicknesses in which LUXAR® is tempered or heat strengthened are 3 to 12 mm (1/8”-1/2”).



LUXAR® as curved glass (annealed, tempered or laminated)

LUXAR® can be processed and bent by a certified processing partner. The curved glass can be annealed, tempered or laminated. The available Radii of curvatures (ROC) and individual glass thicknesses are dependent on the LUXAR® partners equipment and have to be enquired on a case by case basis.

LUXAR® as laminated security glass (Interlayer or resin)

LUXAR® can be processed into laminated or bullet resistant glass. Either interlayers like PVB, EVA etc. or resin can be used. One (1) side coated LUXAR® is used for the outer lites (anti-reflective coating towards outside or air, uncoated surface towards interlayer or resin), while the inner glass lites are uncoated. Usually laminated glass (interlayer) is kept in stock for thicknesses between 4.4 and 12.8 mm (3/16”-1/2”); custom made thicker laminated glass is also possible.

LUXAR® and silk screen printing

Both a ceramic silkscreen print as well as a dual component silkscreen print can be applied to a LUXAR® surface.

LUXAR® as double glazing

LUXAR® can be double glazed. The best results will be achieved if all surfaces are anti-reflective coated or if one (1) surface has a low E coating instead in order to get good energy conservation or solar reflective performance. More information is available on page 6.

Environmental durability and Abrasion resistance

The multilayer coating of metal oxides and especially the quartz-like protective layer are the basis for the durability and environmental resistance of LUXAR®. In terms of abrasion resistance LUXAR® is comparable to regular clear float glass.

References.

Applications

Using LUXAR® for waiting rooms, display units, artwork, architectural interiors, etc. allows presentation without unwanted light reflections, mirror-like effects or glare. The whole portfolio of insulation glass can be ordered in LUXAR® quality. Looking into and looking through glass is not only an influence of aesthetics but is also important when security is a consideration. Thanks to Glas Trösch, there is now a process to create anti-reflective glass that is affordable. LUXAR® provides anti-reflective views where total clarity is needed.



Our partners

LUXAR® is distributed worldwide and is available in many countries around the globe from one of our agents or processing partners either as stock sheets or as processed product to your needs. LUXAR® partners are located in Europe, North and South America, Middle East, Asia and Australia.



 Flexible partition walls in living area – free of reflections.

 Soldier Field Stadium, Chicago

 Yanlord Garden Apartments, Shanghai

 Louis Vuitton Storefront, Hong Kong

 Volvo Cardealership, Hamburg



Abegg-Stiftung Museum,
Riggisberg, CH

LUXAR® in show- and displaycases.

LUXAR® in automotive
and transportation appli-
cations.

Toys'R'us Flagship Store at Time Square, New York City,
uses LUXAR® anti-reflective Glass for the facade.

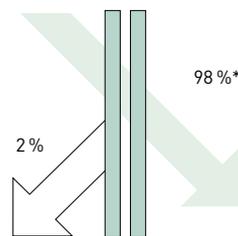
Insulated Glazing.

Since mankind has been building structural coverings and therefore defining space to create privacy, he is also using the exchange of radiation with the environment in different ways. With the expansion of computers, ways to eliminate virtual reflections of artificial lighting on partially reflecting low E coatings are needed as well as new solutions or systems for efficient shading and heat-free transparency. Windows should create exterior contact, provide no glare, let daylight enter interior space and support the energy transfer between interior and exterior by zones, functions and times.

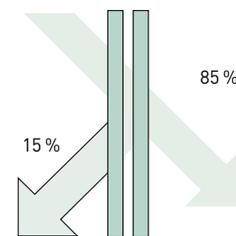
State of the art highly selective anti-reflective and low E coated windows, don't address just perfection of the physical criteria but go for a broadband functionality. Similar to a decathlon athlete, very good results are achieved in many disciplines without compromise. The future will be the anti-reflective and low E coated windows with high selectivity and neutral color.

The newly designed comfort

- Combination of anti-reflective and energy conserving / solar reflective performance
- Improved transparency
- Maximum transparency and unhindered view for LUXAR® double glazing – no more mirrorlike effects
- Excellent energy conservation in combination with SILVERSTAR Low E coatings while increasing the light transmission 10–15 %
- Reduced reflection for Low E / Solar reflective glazing down to 2 %
- High Selectivity – low g-value or shading coefficient and high light transmission
- Hard and durable coatings



LUXAR® Silverstar 1.1.N
Insulated glazing
 $U_v = 1.1 \text{ W/m}^2\text{K}$



Low E insulated glazing
without LUXAR®
 $U_v = 1.1 \text{ W/m}^2\text{K}$

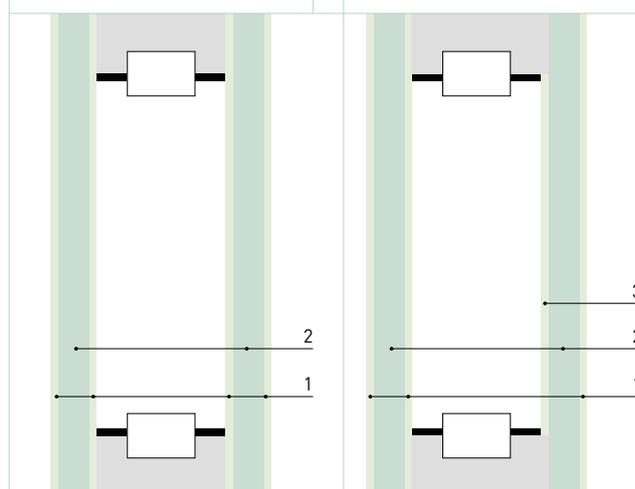
*no absorption considered

(Anti-reflective double glazing)

For best performance insulated glazing use durable anti-reflective coated LUXAR® for all surfaces. No edge deletion needed.

(Anti-reflective double glazing with Low E or Solar reflective properties)

Usually 3 surfaces use anti-reflective coated LUXAR® while either position 3 (for energy conservation) or position 2 (for selective solar performance) use a Low E coating.



1 LUXAR® anti-reflective coating 2 Floatglass 3 Low E coating

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