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# E-GLAS®

V1.5

A FREEDOM IN TERMS OF VISUAL  
AND THERMAL COMFORT

- \_ ANTI-CONDENSATION
- \_ HEATING
- \_ SNOW MELTING

E-GLAS® is a glazing unit which emits electronically controlled radiant heat. E-GLAS® is an integrated and invisible heating solution. It allows for increased visual and thermal indoor comfort. At the same time, it resolves structural problems of maintenance and visibility linked to condensation or snow. It is available as double or triple glazing, as well as a laminated safety glass.

E-GLAS® was created, and has been tested, in Finland since 1986. Since then, E-GLAS® applications have become more popular across Scandinavia and Northern Europe. Today, more than 100,000 m<sup>2</sup> have been installed.

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## INTEGRATED INVISIBLE HEATER



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## REGULATED ANTI CONDENSATION



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## AUTOMATIC SNOW REMOVAL



# E-GLAS® FEATURES

## TECHNOLOGICAL PRINCIPLE

E-GLAS® is an active glazing, which converts electrical power into heat.

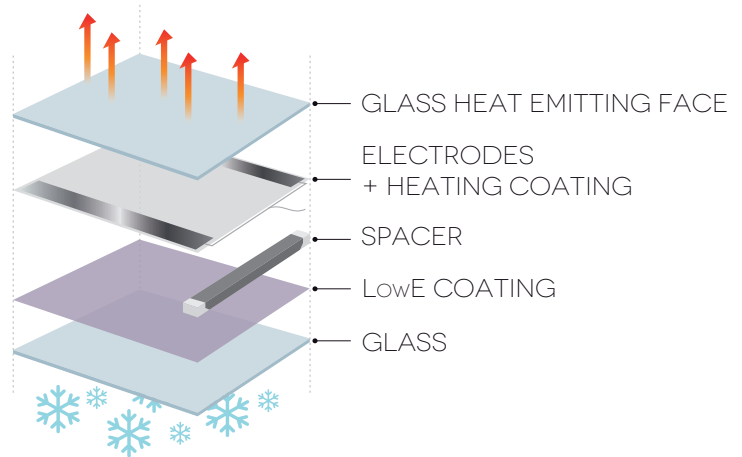
The heating surface of the glazing is low-emissivity glass: when stimulated by electrodes, the thin oxide coating over the inner face on the side of the vacuum (filled with Argon) radiates heat towards the opposite face.

Depending on its composition, it can heat outward or inward, and can melt snow, prevents condensation, and constitutes a source of heat itself.

The power of E-GLAS® is controlled by a different electrical features like thermostats or snow-detectors.

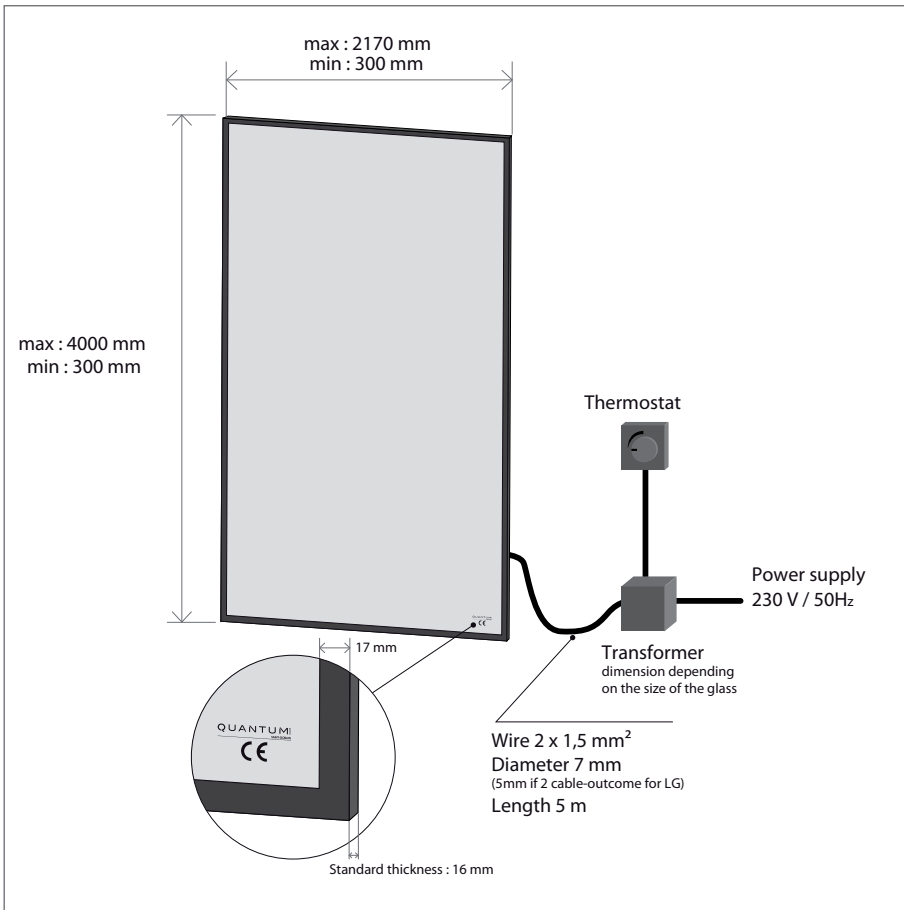
The laminated version is often used for interior applications like glass separation-walls that heat to both sides and gives comfort or replaces the main heating system.

PICTOGRAM SHOWS E-GLAS® AS A DOUBLE GLAZING UNIT



## GLASS DESCRIPTION

This diagram is based on a double glazed panel.



### SIZE

From 300 x 300 mm  
to 2170 x 4000 mm  
(2470 x 4800 mm on demand)

### THICKNESS

Minimum thickness :  
16 mm for insulated version  
10 mm for laminated version

### GLASS CUTTING

The glass is supplied with the required size. Further cutting or drilling is not allowed.

### ELECTRICAL CONNECTION

The power supply wire is pulled out from one of the edges, at least 150 mm away from an end. In case of laminated E-GLAS®, there are two cable-outcomes in the middle of the side where the bus-bars are located.

## PERFORMANCE

EXAMPLES FOR	DOUBLE COMPOSITION	TRIPLE GLAZED COMPOSITION	LAMINATED E-GLAS®
Light transmission*	68 %	61 %	70 %
Light reflection*	15 %	19 %	16 %
Solar factor*	54 %	50 %	-
Ug (W/m²K)	1,1	0,7	-
Power per m² of glass	From 0 to 600 W/m²		From 0 to 700 W/m²

Even without the heating element, E-GLAS® is one of the best insulating glass units on the market.

\*spectrophotometric data are given with a + - 2 % tolerance.

## E-GLAS® IMPLEMENTATION

### APPLICATIONS

Facades, roofing, bay-windows, awning, internal partitions, verandas, security glazing, glass floor...

Depending on the application and the required functionality (heating, snow removal, anti-condensation), the power intensity and the glass dimensions are determined.

As a rough guide :

- **Main heating:** in a typical residence about 25 W/m³ (60 W/m²) are required.  
So 3 m² of glass producing 600W/m² account for a main heating source for a 30 m² room.
- **Anti condensation:** power from 50 to 150 W/m² required.
- **Snow removal:** power from 250 to 600 W/m² advised.

### CUSTOMISATION OF THE GLAZING

#### COMPOSITION

Double or triple glazing as well as single laminated glass.

**Heating surface :** 4 or 6 mm toughened glass.

**Other glass types :** clear, solar control, printed, silkscreen printed...

E-GLAS® can be combined with other QUANTUM GLASS™ technologies such as PRIVA-LITE.

#### TYPE OF FRAME / FIXING

- Fixed, opening or sliding frame.
- E-GLAS® is compatible with almost all window and facades frames (aluminum, PVC, wood).
- The mechanical installation is the same as for a standard double glazing, taking into account the electrical wire.  
Rebate needed: 17 mm (+ installing blocks).

**To guarantee the quality and durability of the installation, it's strongly recommended to entrust the installation to an installer trained by QUANTUM GLASS™.**

#### SHAPES

STANDARD:  
RECTANGLE, SQUARE, TRAPEZOID



SPECIAL :  
ROUND, OVAL, TRIANGLE...



Drillings are also possible! (min. 95 mm distance to edges)  
So we can offer solutions for structural glazing.

#### MAIN PRECAUTIONS FOR USE AND IMPLEMENTATION

- The installation has to respect the current electrical regulations and must be performed by a certified electrician.
- The use of shielded wires and filters would be advisable in a disrupted electrical environment.
- To regulate the glass temperature, an on/off control regulator without thyristor is recommended. The thermostat can be provided by QUANTUM GLASS™.

## TECHNICAL DATA

<b>Operating voltage</b>	230 V
<b>Load</b>	Anti-condensation : from 50 to 150 W/m <sup>2</sup> Comfort: 80 to 250 W/m <sup>2</sup> Main heating: 200 to 600 W/m <sup>2</sup> Snow removal : up to 600 W/m <sup>2</sup> , only during the transient phase
<b>Surface temperature</b>	from 20°C to 65°C max
<b>IP</b>	IP34 and on demand IP67 or D611
<b>Electrical classification</b>	Type II
<b>Standards and certification</b>	CE, SGS, VDE... – Certification list on demand

## GUARANTEE

5 years of functioning guarantee. The guarantee is granted upon respect of the implementation instructions and if a certified QUANTUM GLASS™ installer has conducted the installation.

## E-GLAS® BENEFITS

### E-GLAS®, A HIGH-PERFORMANCE AND TESTED MULTI-USE SOLUTION

#### HEATING AND COMFORT

Spatious and aesthetic made as radiators simply disappear. Performance and thermal comfort of radiating heat. Absence of “cold wall” nor draft.

#### ANTI-CONDENSATION

No need of ventilation system. Glazing is clean and always transparent. Reduction of mould on the frame.

#### SNOW REMOVAL

Reduction of structural load. Conceptual freedom to increase or alter glazing surfaces. No chemical use for melting snow. Reduction in the risks of damage from snowfall and ice from roofs.

- Positive ecological impact: energy optimization, reduction in building upkeep and maintenance
- Significant economic impact: lightened architectural structure and reduction in the cost of operation
- An unfailing experience for more than 20 years with extreme climates
- International certifications
- A 5 years guarantee

# QUANTUM GLASS™ AN ORGANISATION AT YOUR SERVICE

**Our mission is to facilitate the creation of cutting-edge architectural projects and products that excite emotion and push back the boundaries of creativity.**

- A dedicated, international commercial network
- Places for reflection and information sharing
- An international network of local, certified installers
- A technical engineering office at your disposal to enhance your creativity and concept of your choice
- Training at your disposal on request
- A Glass House – a 400 m<sup>2</sup> showroom in Paris
- The Saint-Gobain guarantee, a world leader in the glass industry



VILLA OVERBY (SWEDEN)



GOSTINYI DVOR (RUSSIA)

## SELECTED REFERENCES

- GOSTINY DVOR CULTURE & COMMERCIAL CENTRE IN MOSCOW
- MAIN TRAIN STATION IN HELSINKI & IN DONETSK
- GLASS IGLOOS OF THE HOTEL KAKSLAUTTANEN IN FINLAND
- FAIR CENTER IN HELSINKI
- PFIZER HOUSE IN HELSINKI

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