



**ISOLAR**  
**NEUTRALUX®**



**THERMAL  
INSULATION AT  
THE HIGHEST LEVEL**

**ISOLAR®**  
**GLAS**

**MEHR AUS GLAS**

**SILVER IS WORTH A MINT. WITH SILVER-COATED NEUTRALUX® THERMAL INSULATION GLASS, YOU ARE NOT ONLY DOING SOMETHING GOOD FOR YOUR WALLET. ESPECIALLY THE ENVIRONMENT IS HAPPY ABOUT THE LOWER ENERGY CONSUMPTION.**

## ■ MORE LIGHT AND WARMTH

In addition to the use of sustainable building materials and regenerative heating systems, the façade design and glazing is an important part of energy-efficient buildings. Our highly insulating glass NEUTRALUX® enables energy savings at the highest level with simultaneous high solar gains and maximum use of daylight: It stays warm and bright inside. The reason for the thermal insulation is a coating of elemental silver, which reflects the heat radiation – the inner pane therefore no longer transports its heat to the cold outer

pane, as it is the case with low performing insulating glass. To prevent the coating from looking like a mirror, the silver layer is hidden in a stack of different layers making it hardly noticeable. In addition, the space between the panes of our NEUTRALUX® insulating glass units is filled with a noble gas – argon or krypton – which further reduces the energy lost. Depending on the gas filling, the optimum cavity width for thermal insulation is then selected.



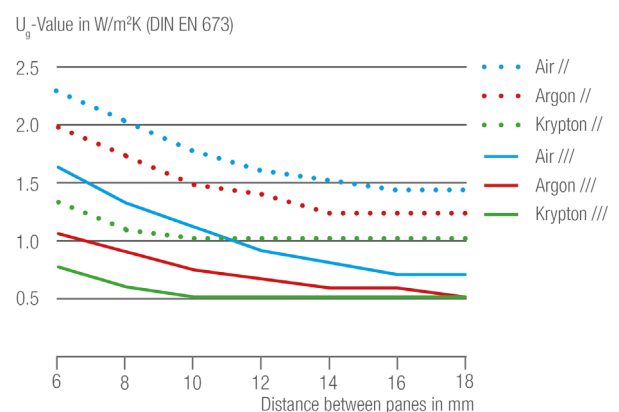
Light-flooded entrance area of the lecture hall building of Saarland University – Homburg campus equipped with NEUTRALUX®.

## ■ ENERGY SAVING AT THE HIGHEST LEVEL

NEUTRALUX® thermal insulation glass consisting of two panes (DGU) contributes significantly to the thermal optimisation of existing buildings. For central Europe the low  $U_g$ -value, the high  $g$ -value and the high light transmission contributes to an annual saving of about 20 litres of heating oil or 3 m<sup>3</sup> of natural gas per square metre of glass surface compared to low performing DGU's without coating. For a single-family house with an average glass surface of around 20 m<sup>2</sup>, this adds up to more than 400 litres of heating oil or 60 m<sup>3</sup> of natural gas every year.

NEUTRALUX® triple glazed units are available for the highest demands on light and heat. The optimised cavity width, gas filled, encoiled by two panes with a highly insulating coating halve the heat loss through the glass surfaces once again. With this type

of glazing the highest requirements for building envelopes can be achieved.



U<sub>g</sub>-values of NEUTRALUX® advance thermal insulation glass.



## NEW: RADIO-TRANSPARENT NEUTRALUX® CONNECT

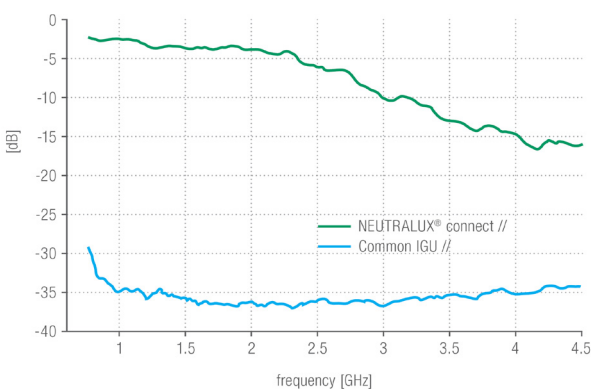
Modern insulation glazing units usually not only ensures energy-efficient buildings, but also shields the majority of the mobile phone signals. The result is poor or no mobile phone reception. Devices such as smartphones increase their transmission power when reception is poor. This leads to increased electrosmog as well as reduced battery life – aspects that often contribute to the deterioration of the well-being of people inside the building. Our radio-transparent insulating glass NEUTRALUX® connect makes conventional thermal insulation glazing in homes, office buildings or public facilities permeable to all common mobile radio frequencies – including the new 5G standard. And the best thing about it is: The heat-insulating properties are almost completely retained.

NEUTRALUX® connect is based on an innovative finishing process that gives the thermal insulation glass a fine structure that is almost invisible to the human eye. The radio-transparent product feature is durable, maintenance-free and can be easily retrofitted to existing window constructions.

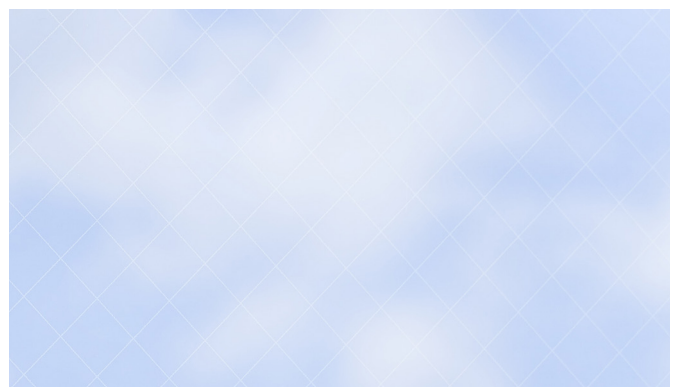
With NEUTRALUX® connect, the transmission of mobile radio signals increases by a factor of approx. 1,000 with a double insulating glass compared to conventional heat-insulating glazing. With triple glazing, the radio transmission is even improved by a factor of 10,000. Unrestricted data reception and telephone calls are possible with modern glass façades.



NEUTRALUX® connect is designed in such a way that the thermal insulating properties of the glass remain almost unchanged.



Exemplary measurement of the radio transparency of double insulating glass at the Fraunhofer Institute in Germany. 0 dB indicates the reception of mobile radio signals without glass (100% transmission).



The fine structure of NEUTRALUX® connect in detail.

### THERMAL INSULATING GLASS – THE MOST IMPORTANT ADVANTAGES

- Can easily be combined with other properties, such as sound insulation
- Low Ug-value and high g-value
- High light transmission for improved well-being inside the building
- Increase well-being with less electrosmog and good reception with NEUTRALUX® connect

## TECHNICAL DETAILS AT A GLANCE

| Product name                                     | Glass construction<br>Outer/Cavity/Mid/Cavity/Inner | EN 673                | EN 410                |         |                                 |                                 |   | EN ISO 717-1   | Thick-<br>ness    | Weight |
|--|---|-----------------------|-----------------------|---------|---------------------------------|---------------------------------|---|--|-------------------|--------|
|  |   | U <sub>s</sub> -Value | Light<br>Transmission | g-Value | Light<br>Reflection<br>external | Light<br>Reflection<br>internal | Colour<br>Rendering<br>Index R <sub>a</sub> | Sound<br>insulation<br>R <sub>w</sub> / C / C <sub>r</sub> |                   |        |
|  | W/(m <sup>2</sup> K)                                | %                     | %                     | %       | %                               |                                 | dB  | mm   | kg/m <sup>2</sup> |        |
| NEUTRALUX® advance // 1,1                        | 4 / 16 / :4   | 1,1                   | 82                    | 65      | 12                              | 12                              | 98  | 32   | 24                | 20     |
| NEUTRALUX® advance // 1,0                        | 4 / 12 / :4   | 1,0 <sup>1)</sup>     | 82                    | 65      | 12                              | 12                              | 98  | 30   | 20                | 20     |
| NEUTRALUX® advance duo // 0,9                    | 4: / 12 / :4  | 0,9 <sup>1)</sup>     | 82                    | 58      | 8                               | 8                               | 98  | 30   | 20                | 20     |
| NEUTRALUX® uno // 1,0                            | 4 / 16 / :4   | 1,0                   | 70                    | 50      | 22                              | 24                              | 97  | 32   | 24                | 20     |
| NEUTRALUX® uno // 0,9                            | 4 / 12 / :4   | 0,9 <sup>1)</sup>     | 70                    | 50      | 22                              | 24                              | 97  | 30   | 20                | 20     |
| NEUTRALUX® advance connect // 1,2 <sup>2)</sup>  | 4 / 16 / :4   | 1,2                   | 82                    | 65      | 12                              | 12                              | 98  | 32   | 24                | 20     |
| NEUTRALUX® uno connect // 1,2 <sup>2)</sup>      | 4 / 16 / :4   | 1,2                   | 70                    | 51      | 22                              | 23                              | 97  | 32   | 24                | 20     |
| NEUTRALUX® advance /// 0,5                       | 4: / 18 / 4 / 18 / :4                               | 0,5                   | 74                    | 53      | 14                              | 14                              | 97  | -  | 48                | 30     |
| NEUTRALUX® advance /// 0,6                       | 4: / 14 / 4 / 14 / :4                               | 0,6                   | 74                    | 53      | 14                              | 14                              | 97  | 32 / -1 / -4   | 40                | 30     |
| NEUTRALUX® advance /// 0,7                       | 4: / 12 / 4 / 12 / :4                               | 0,7                   | 74                    | 53      | 14                              | 14                              | 97  | 32 / -1 / -5   | 36                | 30     |
| NEUTRALUX® advance /// 0,5                       | 4: / 10 / 4 / 10 / :4                               | 0,5 <sup>1)</sup>     | 74                    | 53      | 14                              | 14                              | 97  | 32 / -1 / -5   | 32                | 30     |
| NEUTRALUX® uno /// 0,4                           | 4: / 12 / 4 / 12 / :4                               | 0,4 <sup>1)</sup>     | 55                    | 36      | 32                              | 32                              | 95  | 33 / -2 / -5   | 36                | 30     |
| NEUTRALUX® advance connect /// 0,7 <sup>2)</sup> | 4: / 14 / 4 / 14 / :4                               | 0,7                   | 74                    | 54      | 15                              | 15                              | 97  | 32 / -1 / -4   | 40                | 30     |
| NEUTRALUX® uno connect /// 0,7 <sup>2)</sup>     | 4: / 14 / 4 / 14 / :4                               | 0,7                   | 56                    | 37      | 32                              | 32                              | 95  | 32 / -1 / -4   | 40                | 30     |

1) The values given are based on a 95% krypton gas filling. 2) See also the flyer: NEUTRALUX® connect and the ISOLAR® Compass 2/2021: Radio-transparent insulating glass ([www.isolar.de](http://www.isolar.de)). | All NEUTRALUX® thermal insulating glasses, as well as all multi-pane insulating glasses listed in the ISOLAR® programme, can be equipped with a thermally improved edge seal (warm edge) on request. ISOLAR® style and glazing bar insulating glass: Installation of profiled glazing bars, Viennese bars and spacer bars is possible with almost all functional glass types in the cavity. Please ask your ISOLAR® specialist for the multitude of variations of the glazing bar division. Lead glazing in classic and modern shapes possible.

### AVAILABILITY AND COMBINATIONS:

- Available on basic float, fully toughened glass, heat strengthened glass and laminated safety glass
- All constructions available as alarm glass
- Can be combined with any decorative coatings



## CLEAR BENEFITS WITH ISOLAR®

ISOLAR® is one of the largest associations of independent insulating glass manufacturers in Europe with members from twelve countries. Thanks to the close cooperation within the group, our products are constantly optimised and new developments are driven forward. You will find an ISOLAR® partner in your area as well, who will support you as an experienced full-range supplier with comprehensive consulting expertise and who will supply you with high-quality functional glass for windows and façades.



Heat insulation



Solar control



Bird protection



Design



Fire protection



Radio transparency



Sound insulation



Attack resistance



Safety glass



Fall protection

### WE'RE HERE TO HELP.

ISOLAR Glas Beratung GmbH is your competent partner when it comes to glass. We turn your wishes into clear solutions. Ask us.

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[www.isolar.de/en](http://www.isolar.de/en)

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