

THERMAL INSULATING GLASS

ClimaGuard® N³

TRANSPARENCY - COMFORT - ENERGY EFFICIENCY

- **Exceptional thermal insulation** energy saving benefits due to minimum heat loss
- **Optimum transparency** allows the maximum use of natural daylight
- **Excellent visual neutrality** clarity of glass enables flawless colour rendering
- **Ultimate solar gain** effective contribution of solar energy

The increasing cost of energy, sustainability of natural resources and the reduction of harmful CO₂ emissions are at the forefront of political and environmental concerns today. The construction industry is constantly being challenged to significantly reduce the future energy requirement in buildings, the greatest energy loss being that of heat through the external envelope of a building.

In comparison with other construction materials, state-of-the-art insulating glass units provide excellent thermal insulation together with high transparency. This architectural benefit provides almost unlimited creative options in building design.



PRODUCT DESCRIPTION

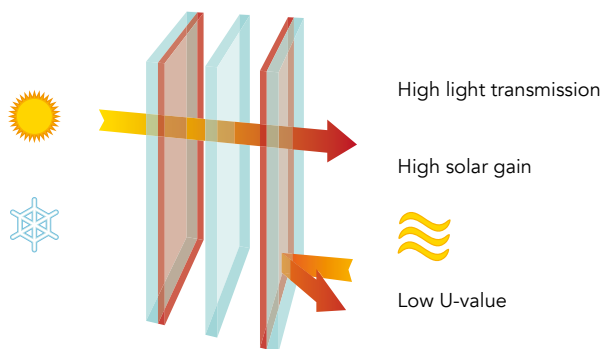
Insulating glass units, in triple glazed configurations, comprising a combination of Climaguard®N³ with ExtraClear™ float glass, have an outstanding visual performance. The neutrality of the high light transmission and reflection are, in fact, comparable to that of an ordinary double glazed insulating unit.

FUNCTIONS AND BENEFITS

Climaguard®N³ offers the ideal balance between low U-value, high transparency, colour neutrality and solar heat gain.

The superior thermal insulation minimises cold down draughts, maintaining comfort even when you are close to the window, and prevents condensation forming on the inner pane.

Climaguard®N³ is the perfect solution, especially suited for use in low energy buildings and Passive house dwellings. Triple glazed insulating glass unit configurations, consisting of Climaguard®N³ and ExtraClear™ float glass, have been certified as being suitable as a "passive house component" by Dr. Wolfgang Feist of the Passivhaus Institute, Germany.



It is possible to manufacture an alternative, reduced cost, state-of-the-art insulating glass unit by substituting argon gas in the unit cavities, instead of krypton. Furthermore ExtraClear™ float glass can be utilised to replace the low iron float.

This allows the consumer to purchase an insulating glass unit, with a marginally reduced performance, but nevertheless, assures a continuous active contribution to the environment and combats climate change.

TECHNICAL DATA / PERFORMANCE TABLE

Insulating glass configurations	Coating on surface	Gas filling *	Light Transmission %	Light Reflection %	Colour Rendering Index Ra	Solar Factor (g) EN 410 %	U-Value EN 673 (15K) W/(m ² K)
4 - 12 - 4 - 12 - 4	2 + 5	argon	72	15	98	54	0.7
4 - 16 - 4 - 16 - 4	2 + 5	argon	72	15	98	54	0.6
4 - 10 - 4 - 10 - 4	2 + 5	krypton	72	15	98	54	0.6
4 - 12 - 4 - 12 - 4	2 + 5	krypton	72	15	98	54	0.5
4 - 16 - 4 **	3	argon	81	12	99	67	1.2

* Gas filling rate 90%

** In a double glazed insulating glass unit the product offers outstanding values regarding transparency and colour neutrality.

All performance data are nominal values and are subject to production tolerances.

Disclaimer: The information contained in this publication is a general description of the product Climaguard®N³ and GUARDIAN hereby disclaims all liability arising from any inaccuracy in or omissions from this publication and all the consequences of relying on it. It is the responsibility of the users of this information to ensure that the intended application of Climaguard®N³ is appropriate and complies with all relevant laws, regulations, standards, codes of practices and other requirements. It is recommended that fabricators of Climaguard®N³ consult the Processing Guidelines provided by GUARDIAN for specific instructions on how to handle, store, treat, process, use and install Climaguard®N³ products successfully. The Processing Guidelines are provided with the first delivery of Climaguard®N³ or can be obtained directly from GUARDIAN.