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# Sapphire AR 99 Protect

## Technical specification

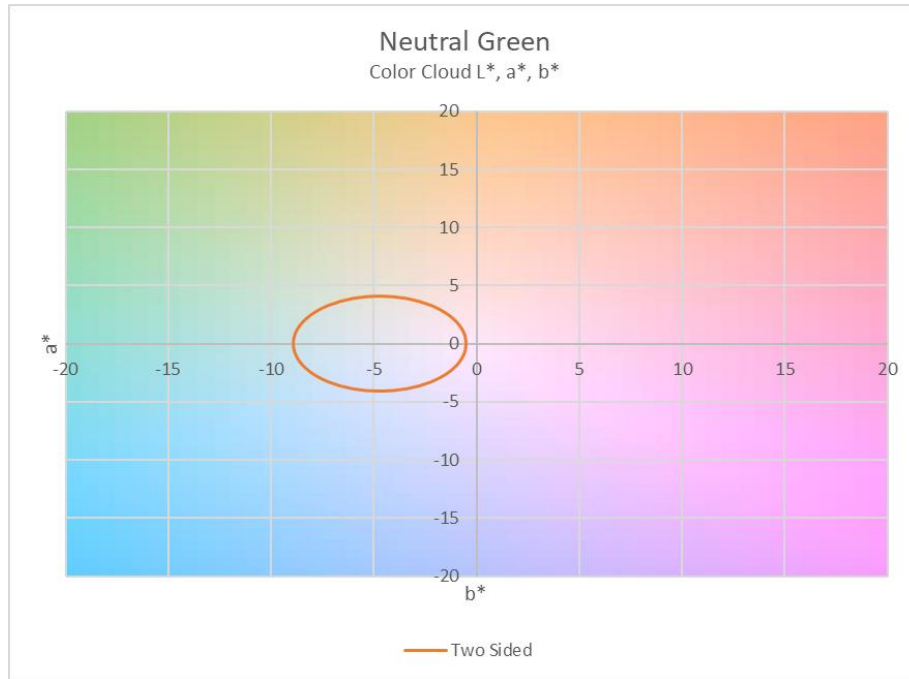
Sapphire AR 99 Protect is the highest quality, virtually invisible laminated glass. It offers the highest UV protection and is a physical safety solution. If it breaks, Sapphire AR 99 Protect remains attached to the laminating foil. Because of its durability and ease of handling, Sapphire AR 99 Protect is the preferred anti-reflective glass of the world's leading designers and architects.

## Optical properties

The optical performance and additional information about the products are described below :

		Double sided
Visible Light Transmittance (380-780nm, according to EN410)	4,4 mm	≥ 98,1 %
	6,4 mm	≥ 97,9 %
	8,8 mm	≥ 97,6 %
	9,5 mm	≥ 97,5 %
	10,8 mm	≥ 97,3 %
	11,5 mm	≥ 97,1 %
	12,8 mm	≥ 97,0 %
	13,5 mm	≥ 97,0 %
Visible Light Reflection at 8° angle (380-780nm, according to EN410)	4,4 mm	≤ 1.0 %
	6,4 mm	
	8,8 mm	
	9,5 mm	
	10,8 mm	
	11,5 mm	
	12,8 mm	
	13,5 mm	
UV-light transmission (280-380nm, according to EN410)		Up to 0 % (Up to 100% UV protection)
Refection colour <sup>[see graphs below]</sup>		Neutral green
Glass Substrate Type*		Laminated Low Iron
Glass substrate Thickness, mm*		4,4 to 13,5 mm

\* For other thicknesses or substrate type, please contact [sales@groglass.com](mailto:sales@groglass.com)



### Mechanical and chemical properties

The substrate used for products complies with EN 572 and ISO 12543. Magnetron sputtered coating is manufactured to comply with ISO 1096-2 Class A, and product Sapphire AR 99 Protect conforms to ISO 18916 – it passes Photographic Activity test. Sapphire AR 99 Protect also meets ISO 18902 by providing atleast 97 % UV protection and conservation level UV block ir certified by the National Physical Laboratory in UK, according to EN 410.

The product performance is listed below:

Weather resistance	PASS [according to EN 1096-2]
Neural salt spray	PASS [according to EN 1096-2]
Acid rain test	PASS [according to EN 1096-2]
UV and condensation	PASS [according to EN 1096-2]
Abrasion resistance	PASS [according to EN 1096-2]
ISO 18916 Photographic Activity test	PASS

### Technical information

The size of a stock sheet (gross size) is 3210 x 2250 mm (126" x 88"). Standard packaging is in Endcaps (max. 2.2 t) and packed through powder. For quantities in one package see the table below:

Thickness	Quantity
4,4 mm	25 pcs
6,4 mm	17 pcs
8,8 mm	13 pcs
9,5 mm	13 pcs
10,8 mm	10 pcs
11,5 mm	9 pcs
12,8 mm	9 pcs
13,5 mm	9 pcs

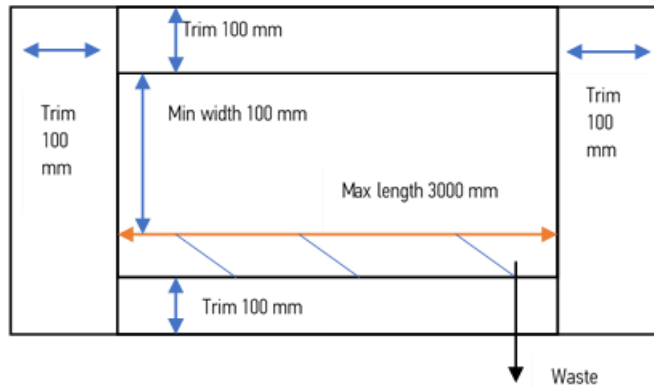
Groglass can offer to cut laminate with thickness range from 4.4 to 8,8 mm into smaller pieces. For cutting options, see the table below:

Laminate thickness, mm	Technological trim from each side, mm	Recommended size dimensions, mm	
		Min width	Max length
4,4	100	100	3000
6,4	200	200	2800
8,8	200	200	2800

\*\*Technological trim not cut for 1605x2250 mm (1/2 stock sheet);

### Example

Stock Sheet 4,4 mm 3210 x 2250 mm



The cut-sizes are transported on custom made A-frames. For other packing options or net sheet sizes, contact [sales@groglass.com](mailto:sales@groglass.com).

Information about Storage, Handling, Washing e.t.c. can be found in “Groglass Cleaning and Handling Guidelines”