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## Sapphire AR Hard Low-E

### Technical specification

Sapphire cold storage anti-reflective glass offers visibility close to that of open cabinets, and it allows consumers to have a clear view of the products inside a refrigerated cabinet. Cold storage with Sapphire AR glass significantly improves temperature uniformity in the cabinets to prevent microbial pathogen growth. Compared to open refrigerators, a cabinet covered with Sapphire cold storage glass is up to 70% more energy efficient. The temperatures vary in open refrigerated cabinets to a much greater level than in closed cabinets. A lower variation in temperature reduces the energy required for cooling products and helps maintain recommended temperature for product storage.

### Optical properties

Optical performance [annex 1] and additional information about the products are described below :

| Sapphire AR Hard Low-E                                                  |                             |
|-------------------------------------------------------------------------|-----------------------------|
| Visible Light Transmittance<br>(380-780nm, according to EN410)          | ≥ 92,0 %                    |
| Visible Light Reflection at 8° angle<br>(380-780nm, according to EN410) | ≤ 1,0 %                     |
| UV-light transmission<br>(280-380nm, according to EN410)                | 24,74 %                     |
| Normal Emissivity                                                       | 0,150                       |
| Corrected emissivity                                                    | 0,168                       |
| Solar Transmittance                                                     | 72,47 %                     |
| Shading Coefficient                                                     | 88,01 %                     |
| Coated sides                                                            | 2                           |
| Reflection colour                                                       | Neutral blue                |
| Glass Substrate Type*                                                   | Hard Low-E on Regular Float |
| Glass substrate Thickness, mm*                                          | 4 mm                        |

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

## Mechanical and chemical properties

Groglass certifies that the substrate used for products complies with EN 572, and Sapphire AR is manufactured to comply with ISO 1096-2 Class A.

Product performance is listed below:

|                     |                               |
|---------------------|-------------------------------|
| Temperable          | ✓                             |
| Bendable            | Optional <sup>2</sup>         |
| 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] |

<sup>2</sup> Bendable radius differ on thickness thus needs to be determined through testing.

## 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 mm      | 27 pcs   |

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 "Handling and cleaning Guidelines"

## Annex 1

### Example spectra for Sapphire AR Hard Low-E double sided 4 mm FL.

