

The logo features a stylized green mountain range icon above the word "agculture" in a lowercase, sans-serif font. Below "agculture" is the text "by AGC" in a smaller, uppercase, sans-serif font.

agculture
by AGC

A large, modern greenhouse structure with a blue metal frame and glass panels, situated next to a body of water. The structure is long and extends into the distance. The sky is blue with white clouds. The water in the foreground is dark and reflects the sky and the structure. The ground in front of the greenhouse is covered in green grass.

Advanced glass solutions
for the next generation
of greenhouses



At AGCULTURE™, we provide advanced glass solutions for the next generation of greenhouses. Now available for the highest Hortiscatter, our low-iron float glass is prepared with a special surface treatment and available with double-sided anti-reflective coatings. This glass distributes the light evenly all over the greenhouse in order to make it available for each and every one of the leaves and crops.

This improves the health of the crops while ensuring increased and uniform production.

AGCULTURE™ offers a large portfolio of glass, suitable for a wide range of vegetables, plants and flowers such as tomatoes, cucumbers, medical cannabis and orchids, to name only a few.

We will analyse your request to come up with the best solution for your specific need.

Advanced glass for a wide range of crops

Key properties

Hemispherical light transmission (T^{Hem}) and anti-reflective coating

- ✔ Our highly durable anti-reflective coating ensures high hemispherical light transmission (average light transmission all year round). **The higher the T^{Hem} , the higher the production.**

Hortiscatter

- ✔ **Even distribution of the light**, reducing the amount of shadow and ensuring **homogeneous growth of the crops**. This avoids burning of the leaves and also makes the leaves form in a more horizontal way¹ leading to more light and **an increase in production**.

Hydrophilic glass

- ✔ Around 90% of the time in cold climates, the inner side of the glass in greenhouses is wet. With hydrophobic glass, water droplets typically form on the inner surface, thus reflecting the light and reducing light transmission. By contrast, **water spreads uniformly on hydrophilic glass**, which results in formation of a uniform water film. This uniform distribution of water has no negative impact on the light transmission, enabling growers to maximise their production.
- ✔ No “rain effect” inside the greenhouse.
- ✔ Hydrophilic surface guides the water towards gutters allowing it to be recaptured and recycled.





Acid-etched glass

- ✔ With acid-etched glass, we can offer a wide range of Hortiscatter along with homogeneous distribution of the light, meeting the specific requirements of various crops.

Operational excellence and high-quality production

- ✔ At AGC, glass is produced, etched and/or coated, processed and packed all in-house to be delivered to growers. The quality of your glass is carefully monitored from A to Z.

Resistant to corrosion

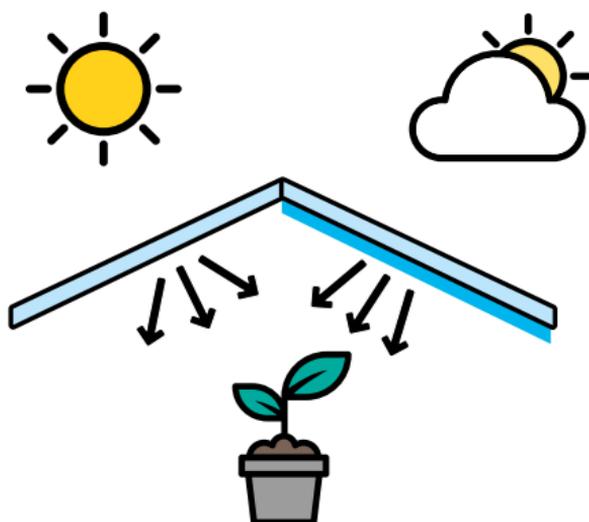
- ✔ Our anti-reflective coating not only maximises the light transmission but also protects the glass from corrosion which is highly likely when the glass surface is wet.

Did you know?

- ✔ **1%** more T^{Hem} (Hemispherical light transmission) = approximately **0.8%** more production²
- ✔ **10%** more Hortiscatter = approx. **3%** more production^{1,3}

The values are valid for tomato, with the Hortiscatter rule tested up to 45% hortiscatter.

How does it work?



Hot and sunny day (dry glass)

Advantages of scattered light

- ✔ Light reaches even the lower leaves causing them to grow more horizontally¹.
- ✔ Homogeneous distribution of the light allows uniform development of the crops.
- ✔ Lower leaves contribute more to photosynthesis.
- ✔ Increased production.

Cold and cloudy day (wet glass)

Advantages of more direct light

- ✔ The water film doesn't reflect the incident light like droplets do, which increases the light transmission as compared with hydrophobic surfaces.
- ✔ Increased production.

1. Li, T., Heuvelink, E., Dueck, T.A., Janse, J., Gort, G. and Marcelis, L.F.M., 2014. Enhancement of crop photosynthesis by diffuse light: quantifying the contributing factors. *Ann. Bot.* 114, 145-156.

2. Marcelis, L.F.M., Broekhuijsen, A.G.M., Meinen, E., Nijis, E.M.F.M. and Raaphorst, M.G.M. 2006. Quantification of the growth response to light quality of greenhouse grown crops. *Acta Horticulturae* 711, 97-104. doi:10.17660/ActaHortic.2006.711.9.

3. <https://wiki.groenkennisnet.nl/display/KAS/Diffuus+licht+en+gewas>

Technical specifications

Performance

Glass (4 mm)	PAR ^(d, e) (± 1.0%)	T ^{Hem(d, f)} (± 1.0%)	Hortiscatter ^(g) (± 5%)
Fountain ^(a, c) , Ultra low hortiscatter, 2xAR ^(b)	96.5%	85.5%	15%
Fountain, Low hortiscatter, 2xAR	96.5%	84.1%	27%
Fountain, Mid hortiscatter, 2xAR	96.5%	83.0%	38%
Fountain, High hortiscatter, 2xAR	96.5%	80.6%	63%

- ^(a) Fountain is a low iron float glass which is chemically etched on one side and coated with AR coatings
- ^(b) AR is the anti-reflective coating
- ^(c) All products are fully thermally toughened (tempered)
- ^(d) The values were measured after tempering process
- ^(e) PAR: Photosynthetically Active Radiation
- ^(f) T^{Hem} (Hemispherical light transmission) is the total transmission of light through a hemisphere over the observer or target, distributed equally over the hemisphere surface.²
- ^(g) Hortiscatter is the integral value of geometrical distribution of light intensity, as measured by the bi-directional transmittance (or reflectance) distribution function (BTDF) under a given angle of incidence of incoming light beam (3D data).¹ Our Hortiscatter is measured and certified by Wageningen University and Research.

PAR, T^{Hem} and Hortiscatter are calculated according to standard NEN 2675 + C1:2018 by Wageningen University and Research (WUR).

Availability

Thickness: 4.0 mm (± 0.2 mm) and 5.0 mm (± 0.2 mm)

Conformity

- ✔ The basic glass is in accordance with DIN EN 572-2 latest version - Glass in building - Basic soda lime silicate glass products - Part 2: Float glass.
- ✔ Thermally toughened products are in accordance with DIN EN 12150 et. seq. latest version - Glass in building - Thermally toughened soda lime silicate safety glass.
- ✔ Products with coating are in accordance with DIN EN 1096 et. seq. latest. version - Glass in building - Coated glass.