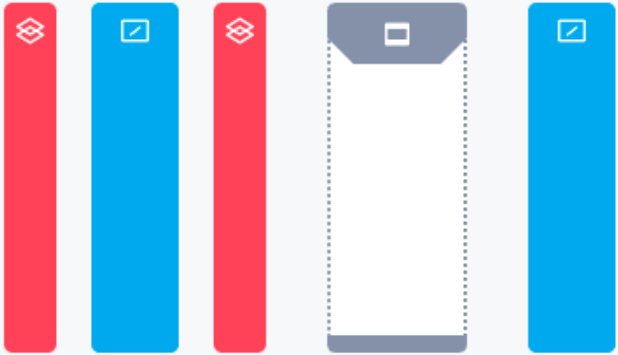
Planibel Anti-Fog
Planibel Clearlite 4 mm Annealed
iplus 1.1
Argon 90% 8-24 mm
Planibel Clearlite 4 mm Annealed

Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 8 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.7**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**28 (-1;-3)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**16.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

Glass Configurator
Calculation software verified by INISMa
EN 410 and EN 673
Report n° 2018B COU 35741

Several AGC products are now available in Low-Carbon Glass version. The Low-Carbon Glass version does not affect the properties of the above glass configuration. For more info about the AGC Low-Carbon Glass range, please visit our YourGlass page.

Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 10 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.4**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**28 (-1;-3)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**18.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 12 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.3**

Acoustic properties

Direct airborne sound reduction - EN 12758 : Rw (C;Ctr) [dB] [1]	**29 (-1;-3)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**20.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3 and are tested in laboratory conditions. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +/- 1 dB.

Glass Configurator
Calculation software verified by INISMa
EN 410 and EN 673
Report n° 2018B COU 35741

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 14 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.1**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**30 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**22.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

Glass Configurator
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EN 410 and EN 673
Report n° 2018B COU 35741

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 15 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.1**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**30 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**23.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

Glass Configurator
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Report n° 2018B COU 35741

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 16 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.1**

Acoustic properties

Direct airborne sound reduction - EN 12758 : Rw (C;Ctr) [dB] 1	**30 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**24.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3 and are tested in laboratory conditions. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +/- 1 dB.

Glass Configurator
Calculation software verified by INISMa
EN 410 and EN 673
Report n° 2018B COU 35741

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 18 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.1**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**30 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**26.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

Glass Configurator
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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 20 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.1**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**31 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**28.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 22 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.2**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**31 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**30.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

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Calculated by	Lars Andersen	Calculated on	6.1.2023	Country	Denmark

① 4 mm iplus 1.1-AF Annealed ② 24 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

Glass performance data simulation

Light properties - EN 410

Light transmittance : τv [%]	**75**
External light reflection : ρv [%]	**15**
Internal light reflection : ρvi [%]	**14**
Colour rendering index : Ra [%]	**99**

Energy properties - EN 410

Total solar energy transmittance : g [%]	**55**
External energy reflection : ρe [%]	**24**
Internal energy reflection : ρei [%]	**29**
Direct energy transmission : τe [%]	**52**
Energy absorption glass 1 : αe1 [%]	**22**
Energy absorption glass 2 : αe2 [%]	**2**
Total energy absorption : αe [%]	**24**
Shading coefficient : SC	**0.63**
UV transmission : τuv [%]	**35**
Selectivity	**1.36**

Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m².K)]	**1.2**

Acoustic properties

Direct airborne sound reduction - Interpolated : Rw (C;Ctr) [dB] 1	**32 (-1;-4)**

Safety properties

Resistance to fire - EN 13501-2	**NPD**
Reaction to fire - EN 13501-1	**NPD**
Bullet resistance - EN 1063	**NPD**
Burglar resistance - EN 356	**NPD**
Pendulum body impact resistance - EN 12600	**NPD / NPD**
Explosion resistance - EN 13541	**NPD**

Thickness and weight

Nominal thickness : [mm]	**32.0**
Weight : [kg/m²]	**20**

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +\/- 2 dB.

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