

## Your composition:

4 mm Planibel Clear - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	81
Reflection	15

## ENERGY

Solar factor	77
Reflection	13



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	2.7

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	81
Light Reflection - $\rho_v$ (%)	15
Internal light reflection - $\rho_{vi}$ (%)	15
Colour Rendering - RD65 - Ra (%)	98

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	77	77
Energy Reflection - $\rho_e$ (%)	13	13
Direct Energy Transmission - $\tau_e$ (%)	72	72
Solar abs. Glass 1 - $\alpha_e$ (%)	9	9
Solar abs. Glass 2 - $\alpha_e$ (%)	6	6
Total Energy absorption - $\alpha_e$ (%)	15	15
Shading coefficient - SC	0.89	0.89
UV Transmission - UV (%)	50	
Selectivity	1.05	1.05

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - EN 12758) - dB	30 (-1; -4) <sup>(1)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	24
Weight (kg/m²)	20

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

This document is no evaluation of the risk of glass breakage due to thermal stress. For tempered glass: the risk of spontaneous breakage due to Nickel-Sulfide is not covered by AGC Glass Europe. The Heat Soak Test is available on request.

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<sup>(1)</sup>These sound reduction indexes correspond to glazings which are 1,23 by 1,48m according to EN ISO 10140-3 and are tested in laboratory conditions. In-situ performances may vary according to the effective glazing dimensions, frame system, noise sources etc. The accuracy of the given indexes is not better than +/- 1dB.

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## Your composition:

4 mm Planibel Clear - 16 mm Air 100% - 4 mm Planibel Low-e G fast pos.3

Personal notes:

## LIGHT

Transmission	75
Reflection	17

## ENERGY

Solar factor	73
Reflection	16



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.7

## LIGHT PROPERTIES (EN 410)

	EN 410
Light Transmission - $\tau_v$ (%)	75
Light Reflection - $\rho_v$ (%)	17
Internal light reflection - $\rho_{vi}$ (%)	15
Colour Rendering - RD65 - Ra (%)	99

## ENERGY PROPERTIES

	EN 410	ISO 9050
Solar factor - g (%)	73	72
Energy Reflection - $\rho_e$ (%)	16	16
Direct Energy Transmission - $\tau_e$ (%)	62	60
Solar abs. Glass 1 - $\alpha_e$ (%)	9	10
Solar abs. Glass 2 - $\alpha_e$ (%)	13	14
Total Energy absorption - $\alpha_e$ (%)	22	24
Shading coefficient - SC	0.84	0.83
UV Transmission - UV (%)	39	
Selectivity	1.03	1.03

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - EN 12758) - dB	30 (-1; -4) <sup>(1)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	24
Weight (kg/m²)	20

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## Your composition:

4 mm Planibel Clear - 16 mm Argon 90% - 4 mm Planibel Low-e G fast pos.3

Personal notes:

## LIGHT

Transmission	75
Reflection	17

## ENERGY

Solar factor	74
Reflection	16



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.5

## LIGHT PROPERTIES (EN 410)

EN 410

Light Transmission - $\tau_v$ (%)	75
Light Reflection - $\rho_v$ (%)	17
Internal light reflection - $\rho_{vi}$ (%)	15
Colour Rendering - RD65 - Ra (%)	99

## ENERGY PROPERTIES

EN 410 ISO 9050

Solar factor - g (%)	74	72
Energy Reflection - $\rho_e$ (%)	16	16
Direct Energy Transmission - $\tau_e$ (%)	62	60
Solar abs. Glass 1 - $\alpha_e$ (%)	9	10
Solar abs. Glass 2 - $\alpha_e$ (%)	13	14
Total Energy absorption - $\alpha_e$ (%)	22	24
Shading coefficient - SC	0.85	0.83
UV Transmission - UV (%)	39	
Selectivity	1.01	1.01

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - EN 12758) - dB	30 (-1; -4) <sup>(1)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	24
Weight (kg/m²)	20

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm Planibel Low-e Top N+ on Clearvision pos.2 - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	80
Reflection	14

## ENERGY

Solar factor	58
Reflection	33



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.4

## LIGHT PROPERTIES (EN 410)

EN 410

Light Transmission - $\tau_v$ (%)	80
Light Reflection - $\rho_v$ (%)	14
Internal light reflection - $\rho_{vi}$ (%)	13
Colour Rendering - RD65 - Ra (%)	98

## ENERGY PROPERTIES

EN 410 ISO 9050

Solar factor - g (%)	58	55
Energy Reflection - $\rho_e$ (%)	33	35
Direct Energy Transmission - $\tau_e$ (%)	54	51
Solar abs. Glass 1 - $\alpha_e$ (%)	9	10
Solar abs. Glass 2 - $\alpha_e$ (%)	4	4
Total Energy absorption - $\alpha_e$ (%)	13	14
Shading coefficient - SC	0.67	0.63
UV Transmission - UV (%)	25	
Selectivity	1.38	1.38

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm Planibel Low-e Top N+ on Clearvision pos.2 - 16 mm Argon 90% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	80
Reflection	14

## ENERGY

Solar factor	58
Reflection	33



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.1

## LIGHT PROPERTIES (EN 410)

EN 410

Light Transmission - $\tau_v$ (%)	80
Light Reflection - $\rho_v$ (%)	14
Internal light reflection - $\rho_{vi}$ (%)	13
Colour Rendering - RD65 - Ra (%)	98

## ENERGY PROPERTIES

EN 410 ISO 9050

Solar factor - g (%)	58	55
Energy Reflection - $\rho_e$ (%)	33	35
Direct Energy Transmission - $\tau_e$ (%)	54	51
Solar abs. Glass 1 - $\alpha_e$ (%)	9	10
Solar abs. Glass 2 - $\alpha_e$ (%)	4	4
Total Energy absorption - $\alpha_e$ (%)	13	14
Shading coefficient - SC	0.67	0.63
UV Transmission - UV (%)	25	
Selectivity	1.38	1.38

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm Sunergy Clear pos.2 - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	61
Reflection	12

## ENERGY

Solar factor	52
Reflection	12



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	2.0

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	61
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	16
Colour Rendering - RD65 - Ra (%)	96

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	52	50
Energy Reflection - $\rho_e$ (%)	12	13
Direct Energy Transmission - $\tau_e$ (%)	46	44
Solar abs. Glass 1 - $\alpha_e$ (%)	38	39
Solar abs. Glass 2 - $\alpha_e$ (%)	4	4
Total Energy absorption - $\alpha_e$ (%)	42	43
Shading coefficient - SC	0.60	0.57
UV Transmission - UV (%)	33	
Selectivity	1.17	1.17

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm Sunergy Clear pos.2 - 16 mm Argon 90% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	61
Reflection	12

## ENERGY

Solar factor	52
Reflection	12



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.8

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	61
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	16
Colour Rendering - RD65 - Ra (%)	96

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	52	50
Energy Reflection - $\rho_e$ (%)	12	13
Direct Energy Transmission - $\tau_e$ (%)	46	44
Solar abs. Glass 1 - $\alpha_e$ (%)	38	39
Solar abs. Glass 2 - $\alpha_e$ (%)	4	4
Total Energy absorption - $\alpha_e$ (%)	42	43
Shading coefficient - SC	0.60	0.57
UV Transmission - UV (%)	33	
Selectivity	1.17	1.17

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

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## Your composition:

4 mm Sunergy Clear pos.2 - 16 mm Air 100% - 4 mm Planibel Low-e Top N+ pos.3

Personal notes:

## LIGHT

Transmission	60
Reflection	12

## ENERGY

Solar factor	45
Reflection	16



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.4

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	60
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	15
Colour Rendering - RD65 - Ra (%)	96

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	45	43
Energy Reflection - $\rho_e$ (%)	16	17
Direct Energy Transmission - $\tau_e$ (%)	38	35
Solar abs. Glass 1 - $\alpha_e$ (%)	40	41
Solar abs. Glass 2 - $\alpha_e$ (%)	6	7
Total Energy absorption - $\alpha_e$ (%)	46	48
Shading coefficient - SC	0.52	0.49
UV Transmission - UV (%)	17	
Selectivity	1.33	1.33

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - EN 12758) - dB	30 (-1; -4) <sup>(1)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	24
Weight (kg/m²)	20

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## Your composition:

4 mm Sunergy Clear pos.2 - 16 mm Argon 90% - 4 mm Planibel Low-e Top N+ pos.3

Personal notes:

## LIGHT

Transmission	60
Reflection	12

## ENERGY

Solar factor	45
Reflection	16



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.1

## LIGHT PROPERTIES (EN 410)

EN 410

Light Transmission - $\tau_v$ (%)	60
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	15
Colour Rendering - RD65 - Ra (%)	96

## ENERGY PROPERTIES

EN 410 ISO 9050

Solar factor - g (%)	45	43
Energy Reflection - $\rho_e$ (%)	16	17
Direct Energy Transmission - $\tau_e$ (%)	38	35
Solar abs. Glass 1 - $\alpha_e$ (%)	40	41
Solar abs. Glass 2 - $\alpha_e$ (%)	6	7
Total Energy absorption - $\alpha_e$ (%)	46	48
Shading coefficient - SC	0.52	0.49
UV Transmission - UV (%)	17	
Selectivity	1.33	1.33

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - EN 12758) - dB	30 (-1; -4) <sup>(1)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	24
Weight (kg/m²)	20

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm Stopray Smart 51/33 pos.2 - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	51
Reflection	25

## ENERGY

Solar factor	33
Reflection	31



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.4

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	51
Light Reflection - $\rho_v$ (%)	25
Internal light reflection - $\rho_{vi}$ (%)	17
Colour Rendering - RD65 - Ra (%)	94

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	33	31
Energy Reflection - $\rho_e$ (%)	31	32
Direct Energy Transmission - $\tau_e$ (%)	30	28
Solar abs. Glass 1 - $\alpha_e$ (%)	37	38
Solar abs. Glass 2 - $\alpha_e$ (%)	2	2
Total Energy absorption - $\alpha_e$ (%)	39	40
Shading coefficient - SC	0.38	0.36
UV Transmission - UV (%)	21	
Selectivity	1.55	1.55

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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<sup>(2)</sup>These sound reduction indexes are estimated (no test). They correspond to glazings which are 1,23m. by 1,48 m. In-situ performances may vary according to the effective glazing dimensions, frame system, noise sources etc. The accuracy of the given indexes is +/- 2dB.

## Your composition:

6 mm Stopray Smart 51/33 pos.2 - 16 mm Argon 90% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	51
Reflection	25

## ENERGY

Solar factor	33
Reflection	31



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.1

## LIGHT PROPERTIES (EN 410)

	EN 410
Light Transmission - $\tau_v$ (%)	51
Light Reflection - $\rho_v$ (%)	25
Internal light reflection - $\rho_{vi}$ (%)	17
Colour Rendering - RD65 - Ra (%)	94

## ENERGY PROPERTIES

	EN 410	ISO 9050
Solar factor - g (%)	33	31
Energy Reflection - $\rho_e$ (%)	31	32
Direct Energy Transmission - $\tau_e$ (%)	30	28
Solar abs. Glass 1 - $\alpha_e$ (%)	37	38
Solar abs. Glass 2 - $\alpha_e$ (%)	2	2
Total Energy absorption - $\alpha_e$ (%)	39	40
Shading coefficient - SC	0.38	0.36
UV Transmission - UV (%)	21	
Selectivity	1.55	1.55

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm iplus Light pos.2 - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	64
Reflection	25

## ENERGY

Solar factor	40
Reflection	32



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.3

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	64
Light Reflection - $\rho_v$ (%)	25
Internal light reflection - $\rho_{vi}$ (%)	24
Colour Rendering - RD65 - Ra (%)	95

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	40	37
Energy Reflection - $\rho_e$ (%)	32	33
Direct Energy Transmission - $\tau_e$ (%)	36	34
Solar abs. Glass 1 - $\alpha_e$ (%)	30	32
Solar abs. Glass 2 - $\alpha_e$ (%)	2	1
Total Energy absorption - $\alpha_e$ (%)	32	33
Shading coefficient - SC	0.46	0.43
UV Transmission - UV (%)	17	
Selectivity	1.6	1.6

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

The data are calculated using spectral measurements that are conform to standards EN 410, ISO 9050 (1990) and WIS/WINDAT. The Ug-value (formerly k-value) is calculated according to standard EN 673. The emissivity measurement complies with standards EN 673 (Annex A) and EN 12898.

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## Your composition:

6 mm iplus Light pos.2 - 16 mm Argon 90% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	64
Reflection	25

## ENERGY

Solar factor	39
Reflection	32



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.0

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	64
Light Reflection - $\rho_v$ (%)	25
Internal light reflection - $\rho_{vi}$ (%)	24
Colour Rendering - RD65 - Ra (%)	95

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	39	37
Energy Reflection - $\rho_e$ (%)	32	33
Direct Energy Transmission - $\tau_e$ (%)	36	34
Solar abs. Glass 1 - $\alpha_e$ (%)	30	32
Solar abs. Glass 2 - $\alpha_e$ (%)	2	1
Total Energy absorption - $\alpha_e$ (%)	32	33
Shading coefficient - SC	0.45	0.43
UV Transmission - UV (%)	17	
Selectivity	1.64	1.64

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

Nominal thickness (mm)	26
Weight (kg/m²)	25

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## Your composition:

6 mm iplus Energy N pos.2 - 16 mm Air 100% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	72
Reflection	12

## ENERGY

Solar factor	40
Reflection	31



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.3

## LIGHT PROPERTIES (EN 410)

## EN 410

Light Transmission - $\tau_v$ (%)	72
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	13
Colour Rendering - RD65 - Ra (%)	95

## ENERGY PROPERTIES

## EN 410 ISO 9050

Solar factor - g (%)	40	38
Energy Reflection - $\rho_e$ (%)	31	33
Direct Energy Transmission - $\tau_e$ (%)	37	35
Solar abs. Glass 1 - $\alpha_e$ (%)	30	31
Solar abs. Glass 2 - $\alpha_e$ (%)	2	1
Total Energy absorption - $\alpha_e$ (%)	32	32
Shading coefficient - SC	0.46	0.44
UV Transmission - UV (%)	12	
Selectivity	1.8	1.8

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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## THICKNESS AND WEIGHT

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Weight (kg/m²)	25

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## Your composition:

6 mm iplus Energy N pos.2 - 16 mm Argon 90% - 4 mm Planibel Clear

Personal notes:

## LIGHT

Transmission	72
Reflection	12

## ENERGY

Solar factor	40
Reflection	31



THERMAL PROPERTIES (EN 673)	EN 673
Ug-Value - W/(m².K)	1.0

## LIGHT PROPERTIES (EN 410)

	EN 410
Light Transmission - $\tau_v$ (%)	72
Light Reflection - $\rho_v$ (%)	12
Internal light reflection - $\rho_{vi}$ (%)	13
Colour Rendering - RD65 - Ra (%)	95

## ENERGY PROPERTIES

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Shading coefficient - SC	0.46	0.44
UV Transmission - UV (%)	12	
Selectivity	1.8	1.8

## OTHER 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

## ACOUSTIC PROPERTIES

Direct airborne sound insulation ( $R_w$ (C;Ctr) - ESTIMATED) - dB	36 (-1; -5) <sup>(2)</sup>
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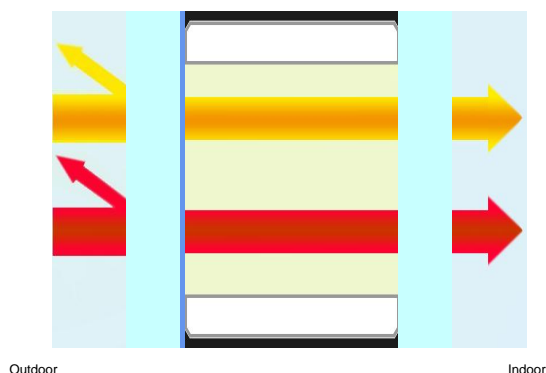
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### Glazing design



	First glazing	Second glazing
Gas		Air 16.00mm
Coating		
First glass	PLANILUX 4.00mm	PLANILUX 4.00mm
Coating	PLANITHERM ONE	
Layer		
Coating		
Second glass		
Coating		

### Manufacturing sizes

Nominal thickness : **24.0 mm**  
Weight : **20.0 kg/m²**

### Luminous factors (EN410-2011)

Transmittance : **71 %**  
Outdoor reflectance : **23 %**  
Indoor reflectance : **22 %**

### Energy factors (EN410-2011)

Transmittance : **44 %**  
Outdoor reflectance : **39 %**  
Indoor reflectance : **39 %**  
Absorptance A1 : **15 %**  
Absorptance A2 : **2 %**

### Solar factors (EN410-2011)

g : **0.47**  
Shading coefficient : **0.54**

### Thermal transmission (EN673-2011) - 0° related to vertical position

Ug : **1.3 W/(m².K)**



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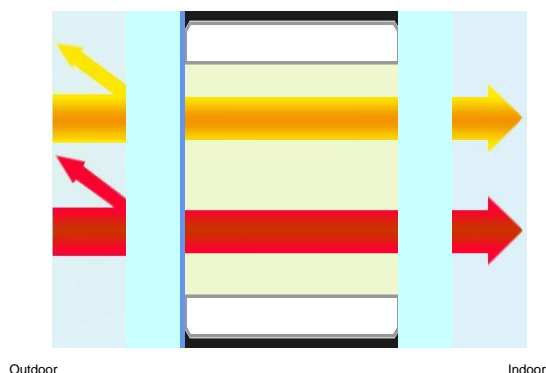
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Calculation rules and functional output of Calumen II have been validated by TÜV Rheinland Quality Report 11923R-11-33705



• Calculation software  
verified  
• EN 410 and EN 673

### Glazing design



	First glazing	Second glazing
Gas		Argon 90% 16.00mm
Coating		
First glass	PLANILUX 4.00mm	PLANILUX 4.00mm
Coating	PLANITHERM ONE	
Layer		
Coating		
Second glass		
Coating		

### Manufacturing sizes

Nominal thickness : **24.0 mm**  
Weight : **20.0 kg/m²**

### Luminous factors (EN410-2011)

Transmittance : **71 %**  
Outdoor reflectance : **23 %**  
Indoor reflectance : **22 %**

### Energy factors (EN410-2011)

Transmittance : **44 %**  
Outdoor reflectance : **39 %**  
Indoor reflectance : **39 %**  
Absorptance A1 : **15 %**  
Absorptance A2 : **2 %**

### Solar factors (EN410-2011)

g : **0.47**  
Shading coefficient : **0.54**

### Thermal transmission (EN673-2011) - 0° related to vertical position

Ug : **1.0 W/(m².K)**



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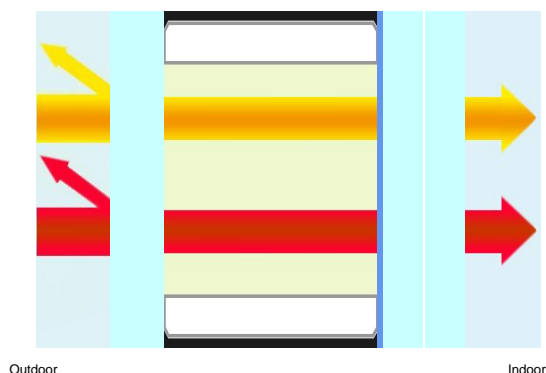
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• Calculation software  
verified  
• EN 410 and EN 673

### Glazing design



	First glazing	Second glazing
Gas		Air 16.00mm
Coating		PLANITHERM ULTRA N
First glass	PLANILUX 4.00mm	PLANILUX 3.00mm
Coating		
Layer		PVB standard 0.38 mm
Coating		
Second glass		PLANILUX 3.00mm
Coating		

### Manufacturing sizes

Nominal thickness : **26.4 mm**  
Weight : **25.4 kg/m²**

### Luminous factors (EN410-2011)

Transmittance : **79 %**  
Outdoor reflectance : **12 %**  
Indoor reflectance : **12 %**

### Energy factors (EN410-2011)

Transmittance : **51 %**  
Outdoor reflectance : **27 %**  
Indoor reflectance : **22 %**  
Absorptance A1 : **10 %**  
Absorptance A2 : **13 %**

### Solar factors (EN410-2011)

g : **0.62**  
Shading coefficient : **0.71**

### Thermal transmission (EN673-2011) - 0° related to vertical position

Ug : **1.4 W/(m².K)**



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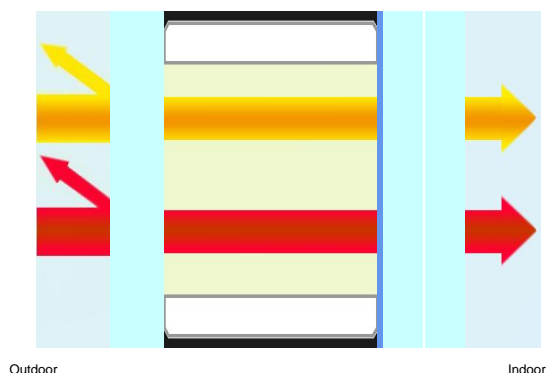
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• Calculation software  
verified  
• EN 410 and EN 673

### Glazing design



	First glazing	Second glazing
Gas		Argon 90% 16.00mm
Coating		PLANITHERM ULTRA N
First glass	PLANILUX 4.00mm	PLANILUX 3.00mm
Coating		
Layer		PVB standard 0.38 mm
Coating		
Second glass		PLANILUX 3.00mm
Coating		

### Manufacturing sizes

Nominal thickness : **26.4 mm**  
Weight : **25.4 kg/m²**

### Luminous factors (EN410-2011)

Transmittance : **79 %**  
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Transmittance : **51 %**  
Outdoor reflectance : **27 %**  
Indoor reflectance : **22 %**  
Absorptance A1 : **10 %**  
Absorptance A2 : **13 %**

### Solar factors (EN410-2011)

g : **0.62**  
Shading coefficient : **0.71**

### Thermal transmission (EN673-2011) - 0° related to vertical position

Ug : **1.1 W/(m².K)**



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