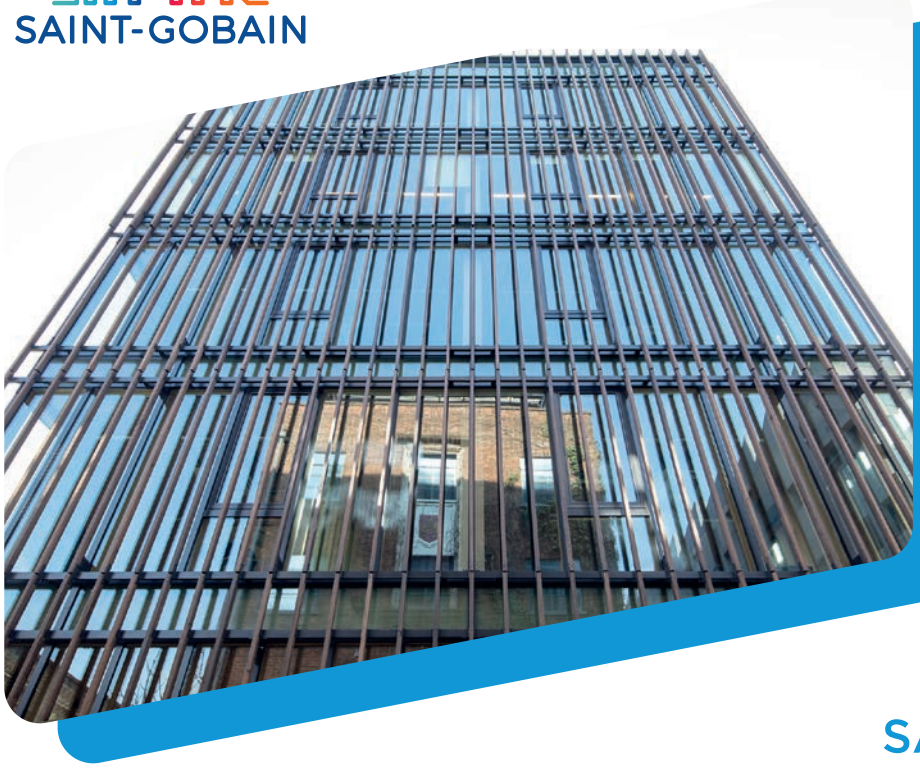

COMMERCIAL PRODUCT PERFORMANCE GUIDE

Project: Black and White Building
Product: SKN 183 and SKN 183 II

SAINT-GOBAIN GLASS

COOL-LITE® HIGH PERFORMANCE SOLAR CONTROL PRODUCT RANGE

Sealed Unit Configuration (6-16-4)		Visible Light		Energy Factors		Solar Factor	U-Value	Normal Internal Emissivity (Single Outer Pane)	Selectivity
Outer Pane (Coating on Face 2)	Inner Pane	Total Light Transmission %	External Reflection %	Direct Transmission %	External Reflection %	g-value	Argon (90%) W/m²K		
COOL-LITE XTREME 70/33 II	PLANICLEAR	70	11	31	36	0.33	1.0	0.01	2.12
COOL-LITE XTREME 61/29 II	PLANICLEAR	61	11	27	32	0.29	1.0	0.01	2.10
COOL-LITE XTREME 50/22 II	PLANICLEAR	47	16	19	35	0.21	1.0	0.01	2.24
COOL-LITE SKN 183 II	PLANICLEAR	75	12	38	34	0.40	1.0	0.01	1.88
COOL-LITE SKN 176 II	PLANICLEAR	70	13	35	32	0.37	1.0	0.01	1.89
COOL-LITE SKN 175 II	PLANICLEAR	70	14	33	37	0.35	1.0	0.01	2.00
COOL-LITE SKN 165 II	PLANICLEAR	61	16	32	34	0.34	1.0	0.01	1.79
COOL-LITE SKN 154 II	PLANICLEAR	52	18	26	30	0.28	1.0	0.01	1.86
COOL-LITE SKN 144 II	PLANICLEAR	42	20	20	31	0.23	1.1	0.03	1.83

All the above hold CE marked performance accreditation for the products in their annealed and tempered state.

Sealed Unit Configuration (8.8SS*-16-6)		Visible Light		Energy Factors		Solar Factor	U-Value	BS EN 356 Secure by Design	BS EN 12600 Impact Safety	Acoustic Rw (C;Ctr)
Outer Pane (Coating on Face 2)	Inner Pane	Total Light Transmission %	External Reflection %	Direct Transmission %	External Reflection %	g-value	Argon (90%) W/m2K			
STADIP SILENCE COOL-LITE XTREME 70/33	PLANICLEAR	69	11	29	31	0.31	1.0	P2A	1(B)1	42 (-2;-7)
STADIP SILENCE COOL-LITE SKN 176	PLANICLEAR	69	13	33	31	0.35	1.0	P2A	1(B)1	42 (-2;-7)
STADIP SILENCE COOL-LITE SKN 165	PLANICLEAR	60	16	30	31	0.32	1.0	P2A	1(B)1	42 (-2;-7)

Please note that all the of the above configurations should be subject to a thermal safety check before specification.

- **COOL-LITE® XTREME** is a range of extremely selective solar control glazing for the commercial market. The low solar factor and high light transmittance make it theideal product for architects and specifiers looking to achieve the best selectivity.
- **COOL-LITE® SKN** is a range of glazing options designed to balance high performance solar control with high light transmittance and neutral aesthetics, creating light and comfortable commercial and residential interiors.
- **STADIP® & STADIP® SILENCE (SS)** are laminated glazing products that provide additional security, safety, UV and acoustic benefits.
- **PLANICLEAR®** All coatings feature on this substrate as standard.

Availability - Please consult one of our Technical Specification Managers for more information and availability.

PLANITHERM® ONE T FG HIGH PERFORMANCE LOW-E PRODUCT RANGE

Sealed Unit Configuration (6-16-6)		Visible Light		Energy Factors			Solar Factor	Shading Coefficient	U-Value
Outer Pane (Coating on Face 2)	Inner Pane	Total Light Transmission %	External Reflection %	Direct Transmission %	External Reflection %	Absorption %	g-value	SC	Argon (90%) W/m²K
PLANITHERM ONE T FG	PLANICLEAR	66	25	41	38	20	0.44	0.51	1.0
PLANITHERM ULTRA N II	PLANICLEAR	79	12	55	26	18	0.59	0.67	1.1

Sealed Unit Configuration (6-16-6.8SS)		Visible Light		Energy Factors			Solar Factor	Shading Coefficient	U-Value
Outer Pane (Coating on Face 2)	Inner Pane	Total Light Transmission %	External Reflection %	Direct Transmission %	External Reflection %	Absorption %	g-value	SC	Argon (90%) W/m2K
PLANITHERM ONE T FG	STADIP SILENCE	65	25	39	38	22	0.44	0.50	1.0
PLANITHERM ULTRA N II	STADIP SILENCE	79	12	52	26	25	0.58	0.67	1.1

- **PLANITHERM®** is a range of high performance low-emissivity (low-E) glass coatings that provide a good level of solar control for a variety of applications.
- **PLANITHERM® ONE T FG** is a high performing low-E glass developed for specifications where the best thermal insulation is needed, with a centre pane U-value of 1.0W/m²k when used in a 16mm 90% argon cavity.
- **PLANITHERM® ULTRA N** is a high performance low-E glass developed for specifications where a high level of thermal insulation is required, with a centre pane U-value of 1.1W/m²k in a 16mm 90% argon cavity.
- **PLANICLEAR®** All coatings feature on this substrate as standard.

COOL-LITE® EXTREME ORAÉ

ORAÉ®

PERFORMANCE MEETS SUSTAINABILITY

ORAÉ®- lower carbon glass combined with our highest performance solar control coatings.

- Significantly reduces the carbon footprint of glass façades
- Manufactured with a high recycled glass content (around 70% of cullet)
- Has an estimated carbon footprint of only 6.64kg CO_2 eq/m² (for a 4mm substrate)
- No compromise on technical or aesthetic performance.

	Ug-Value[1]	Light Transmission (LT)[2]	Solar Factor (g-value)[2]	Selectivity (LT/g)	Outside Reflection (LRe)[2]	Inside Reflection (LRi)[2]	Carbon Footprint (GWP)[3,5]	Carbon Reduction vs. PLANICLEAR®[3,4]
	W/m²K	(%)	(%)	(%)	(%)	(%)	(kg CO_2 eq/m²)	(%)
COOL-LITE® XTREME 70/73 ORAÉ	1.0	70	33	2.12	11	13	24	-40%
COOL-LITE® XTREME 70/73 II ORAÉ	1.0	70	33	2.12	11	13	27	-36%
COOL-LITE® XTREME 61/29 ORAÉ	1.0	61	29	2.10	11	14	24	-40%
COOL-LITE® XTREME 61/29 II ORAÉ	1.0	61	29	2.10	11	15	27	-36%
COOL-LITE® XTREME 50/22 II ORAÉ	1.0	47	21	2.24	16	18	27	-36%
	Standard build-up double glazing unit (DGU) 6/16/4 mm – coating on Face 2, 90% Argon							

[1] according to EN673 [2] according to EN410
[3] Global Warming Potential (GWP) A1-A3 Stages: The GWP values with ORAÉ®, are estimations based on our Life Cycle Assessment model. Data were collected during the 4 ORAÉ® campaigns made in 2022. The detailed environmental data is documented through third party-verified environmental product declarations – EPDs – which are available at *www.calumen.com*.
[4] Global Warming Potential (GWP A1-A3 Stages) values with PLANICLEAR® are calculations made with Calumen regarding the composition computed based on the standard EN 15804+A2. Estimations based on the Life Cycle Analysis (LCA) of our products. Only complete Environmental Product Declaration (EPD) can be verified by an external third party. GWP calculations of any glazing configuration with PLANICLEAR® can already be made on *www.calumen.com*.
[5] All panes of the DGU with the same substrate; first pane respectively annealed or tempered (II) with the same glass compositions; counter panes always annealed.

STADIP® & STADIP SILENCE® LAMINATED PRODUCT RANGE

Configuration of Unit	1/1 Octave Band Centre Frequency Attenuation (dB)							
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Rw(C;Ctr)
6(16Argon)6	27	21	20	30	39	35	44	33(-1;-5)
8(16Argon)6	30	23	23	34	40	37	48	36(-2;-5)
10(16Argon)6	33	23	26	36	41	43	55	39(-2;-6)
6(16Argon)6.8SS (33.2)	30	23	25	36	46	49	56	39(-2;-6)
6(16Argon)8.8SS (44.2)	29	25	28	39	49	48	52	42(-2;-7)
6(16Argon)10.8SS (55.2)	31	25	29	40	50	46	53	42(-2;-6)
6(16Argon)10.8 (55.2)	32	27	29	38	44	44	54	41(-1;-5)
8(16Argon)10.8SS (55.2)	32	27	32	42	48	48	53	44(-2;-6)
8(16Argon)10.8 (55.2)	31	28	31	40	42	42	55	41(-1;-4)
10(16Argon)12.8SS (66.2)	29	30	33	43	45	47	57	44(-1;-4)
10(16Argon)12.8 (66.2)	24	26	32	39	38	43	56	40(-1;-4)
10(20Air)12.8SS (66.2)	-	29	36	43	44	46	59	45(-1;-5)
10(24Air)14.8SS (86.2)	27	33	37	44	45	44	54	45(-1;-3)
12.8A (66.2)(16Argon)8.8SS (44.2)	31	30	35	46	54	55	63	48(-2;-6)
10.8A (64.2)(24Air)14.8SS (86.2)	28	36	42	48	52	53	60	51(-1;-4)

- **STADIP®** is a laminated product that provides additional security, safety and UV benefits over and above annealed, heat strengthened or thermally toughened glass.
- **STADIP® SILENCE SS** is a laminated product that provides all the benefits of **STADIP®** with additional high acoustic performance.

*SS denotes the use of **STADIP SILENCE®** acoustic laminate interlayer.
All acoustic performances are tested and certified in acoustic test reports and can be requested through Saint Gobain Glass.

Calumen®

Calumen® is a brand-new glazing configurator designed for all building professionals, whatever their level of expertise in glass products:

- **Architects**
- **Designers**
- **Engineering offices**
- **Consultants**
- **Façade makers**
- **Window manufacturers**
- **Glass processors**
- **General contractors.**

- An all-in-one glazing configuration tool
- Easy to use interface
- Latest data for acoustics, energy, solar and sustainability solutions
- Simply enter your required performances
- Will recommend the most suitable solutions

With its all-in-one design and ease-of-use features, new Calumen® is the perfect tool for finding the right glass for architectural projects of any size, for residential windows and all other applications of glass in buildings.

Available for worldwide users in 13 languages, the latest version of Calumen® is accessible at **www.calumen.com**

GLOSSARY OF TERMS

LIGHT TRANSMITTANCE (LT)

The proportion of the visible spectrum that is transmitted through the glass.

U-VALUE

This is the measure of the rate of heat loss of a building component. It is expressed as Watts per square metre, per Kelvin, W/m²K.

LIGHT REFLECTANCE (LRE)

The proportion of the visible spectrum that is reflected by the glass.

SOLAR FACTOR (g)

The percentage of total solar radient heat energy transmitted through glazing (the sum of energy transmitted directly and energy absorbed and re-emitted to the interior).

WEIGHTED NOISE REDUCTION (RW)

A single figure rating for the sound insulation of building elements. Includes a weighting for the human ear.

SAINT-GOBAIN

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