

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith Fixed High Profile				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Alpen Balanced-6 TGT No Grids			
Climate specific recommendations:				Whole-window installed U-value		Ucog-Value		
				W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8			0.88	0.15	0.386	0.650	0.115	
7			0.87	0.15	0.386	0.637	0.112	
6			0.87	0.15	0.386	0.642	0.113	
5			0.87	0.15	0.386	0.644	0.113	
4		✓	0.88	0.15	0.386	0.648	0.114	
Marine North		✓	0.88	0.15	0.386	0.651	0.115	
Marine South	✓		0.88	0.16	0.386	0.657	0.116	
3	✓		0.88	0.16	0.386	0.653	0.115	
2 West			0.89	0.16	0.386	0.668	0.118	
2 East			0.89	0.16	0.386	0.668	0.118	
Alpen Zenith Fixed High Profile Superspacer S2 Premium	FRAME				Psi-spacer		Psi-opaque	
	Frame height		U-frame		Ψ		W/mK	
	mm	in	W/m2K	BTU/hr.ft2.F				W/mK
	Head	73	2.87	0.91	0.16	0.037	0.021	0.107
	Sill	73	2.87	0.91	0.16	0.037	0.021	BTU/hr.ft.F
left jamb	73	2.87	0.91	0.16	0.037	0.021	0.062	
right jamb	73	2.87	0.91	0.16	0.037	0.021	Grade A	

Valid through March 2023

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith Fixed High Profile				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing						
			Alpen SolarControl-6 TGT		No Grids			
Climate specific recommendations:			Whole-window installed U-value		Ucog-Value			
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F	
8			0.85	0.15	0.266	0.612	0.108	
7			0.84	0.15	0.266	0.597	0.105	
6			0.84	0.15	0.266	0.601	0.106	
5			0.84	0.15	0.266	0.602	0.106	
4		✓	0.84	0.15	0.266	0.606	0.107	
Marine North		✓	0.85	0.15	0.266	0.609	0.107	
Marine South	✓	✓	0.85	0.15	0.266	0.614	0.108	
3	✓	✓	0.85	0.15	0.266	0.611	0.108	
2 West	✓	✓	0.86	0.15	0.266	0.624	0.110	
2 East	✓	✓	0.86	0.15	0.266	0.624	0.110	
Alpen Zenith Fixed High Profile Superspacer S2 Premium		FRAME				Psi-spacer		Psi-opaque
		Frame height		U-frame		Ψ		
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK	
Head	73	2.87	0.91	0.16	0.037	0.022	0.107	
Sill	73	2.87	0.91	0.16	0.037	0.022	BTU/hr.ft.F	
left jamb	73	2.87	0.91	0.16	0.037	0.022	0.062	
right jamb	73	2.87	0.91	0.16	0.037	0.022	Grade A	

Valid through March 2023

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Product name: Alpen Zenith Fixed High Profile				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing						
			Alpen HighGain-6 TGT		No Grids			
Climate specific recommendations:			Whole-window installed U-value		Ucog-Value			
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F	
8			0.92	0.16	0.581	0.699	0.123	
7			0.91	0.16	0.581	0.687	0.121	
6			0.91	0.16	0.581	0.694	0.122	
5			0.91	0.16	0.581	0.697	0.123	
4			0.92	0.16	0.581	0.701	0.124	
Marine North	<input checked="" type="checkbox"/>		0.92	0.16	0.581	0.705	0.124	
Marine South			0.93	0.16	0.581	0.711	0.125	
3			0.92	0.16	0.581	0.707	0.125	
2 West			0.94	0.16	0.581	0.724	0.128	
2 East			0.94	0.16	0.581	0.724	0.128	
Alpen Zenith Fixed High Profile Superspacer S2 Premium	FRAME				Psi-spacer		Psi-opaque	
	Frame height		U-frame		Ψ		W/mK	
	mm	in	W/m2K	BTU/hr.ft2.F				W/mK
	Head	73	2.87	0.91	0.16	0.036	0.021	0.106
	Sill	73	2.87	0.91	0.16	0.036	0.021	BTU/hr.ft.F
left jamb	73	2.87	0.91	0.16	0.036	0.021	0.061	
right jamb	73	2.87	0.91	0.16	0.036	0.021	Grade A	

Valid through March 2023

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith Casement				Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Alpen Balanced-6 TGT No Grids		
Climate specific recommendations:				Whole-window installed U-value		Ucog-Value	
				W/m2K	BTU/hr.ft2.F	SHGC	W/m2K
8			0.92	0.16	0.386	0.650	0.115
7			0.91	0.16	0.386	0.637	0.112
6			0.92	0.16	0.386	0.642	0.113
5			0.92	0.16	0.386	0.644	0.113
4			0.92	0.16	0.386	0.648	0.114
Marine North		✓	0.92	0.16	0.386	0.651	0.115
Marine South	✓		0.93	0.16	0.386	0.657	0.116
3	✓		0.93	0.16	0.386	0.653	0.115
2 West			0.94	0.17	0.386	0.668	0.118
2 East			0.94	0.17	0.386	0.668	0.118
Alpen Zenith Casement Superspacer S2 Premium		FRAME			Psi-spacer		Psi-opaque
		Frame height		U-frame		Ψ	
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK
Head	73	2.86	1.13	0.20	0.036	0.021	0.124
Sill	73	2.86	1.13	0.20	0.036	0.021	BTU/hr.ft.F
left jamb	73	2.86	1.13	0.20	0.036	0.021	0.071
right jamb	73	2.86	1.13	0.20	0.036	0.021	Grade B

Valid through March 2023

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith Casement			Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing			Alpen SolarControl-6 TGT No Grids		
Climate specific recommendations:			Whole-window installed U-value		Ucog-Value		
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8			0.89	0.16	0.266	0.612	0.108
7			0.88	0.16	0.266	0.597	0.105
6			0.88	0.16	0.266	0.601	0.106
5			0.89	0.16	0.266	0.602	0.106
4			0.89	0.16	0.266	0.606	0.107
Marine North		✓	0.89	0.16	0.266	0.609	0.107
Marine South	✓	✓	0.89	0.16	0.266	0.614	0.108
3	✓	✓	0.89	0.16	0.266	0.611	0.108
2 West	✓	✓	0.90	0.16	0.266	0.624	0.110
2 East	✓	✓	0.90	0.16	0.266	0.624	0.110
Alpen Zenith Casement Superspacer S2 Premium		FRAME			Psi-spacer		Psi-opaque
		Frame height		U-frame		Ψ	
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK
Head	73	2.86	1.13	0.20	0.037	0.021	0.124
Sill	73	2.86	1.13	0.20	0.037	0.021	BTU/hr.ft.F
left jamb	73	2.86	1.13	0.20	0.037	0.021	0.072
right jamb	73	2.86	1.13	0.20	0.037	0.021	Grade B

Valid through March 2023

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith Casement				Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Alpen HighGain-6 TGT No Grids		
Climate specific recommendations:				Whole-window installed U-value		Ucog-Value	
				W/m2K	BTU/hr.ft2.F	SHGC	W/m2K
8			0.96	0.17	0.581	0.699	0.123
7			0.95	0.17	0.581	0.687	0.121
6			0.96	0.17	0.581	0.694	0.122
5			0.96	0.17	0.581	0.697	0.123
4			0.96	0.17	0.581	0.701	0.124
Marine North			0.96	0.17	0.581	0.705	0.124
Marine South			0.97	0.17	0.581	0.711	0.125
3			0.97	0.17	0.581	0.707	0.125
2 West			0.98	0.17	0.581	0.724	0.128
2 East			0.98	0.17	0.581	0.724	0.128
Alpen Zenith Casement Superspacer S2 Premium		FRAME			Psi-spacer		Psi-opaque
		Frame height		U-frame		Ψ	
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK
Head	73	2.86	1.13	0.20	0.036	0.021	0.123
Sill	73	2.86	1.13	0.20	0.036	0.021	BTU/hr.ft.F
left jamb	73	2.86	1.13	0.20	0.036	0.021	0.071
right jamb	73	2.86	1.13	0.20	0.036	0.021	Grade B

Valid through March 2023

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith ZR-6 Fixed High Profile Thin Glass Triple			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing	 Alpen SolarControl-6 TGT + Krypton No Grids					
Climate specific recommendations:			Whole-window installed U-value		Ucog-Value			
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F	
8			0.87	0.15	0.271	0.649	0.114	
7			0.85	0.15	0.271	0.615	0.108	
6			0.81	0.14	0.271	0.565	0.100	
5		✓	0.80	0.14	0.271	0.551	0.097	
4		✓	0.77	0.14	0.271	0.520	0.092	
Marine North		✓	0.75	0.13	0.271	0.495	0.087	
Marine South	✓	✓	0.72	0.13	0.271	0.459	0.081	
3	✓	✓	0.74	0.13	0.271	0.476	0.084	
2 West	✓	✓	0.73	0.13	0.271	0.468	0.082	
2 East	✓	✓	0.73	0.13	0.271	0.468	0.082	
Alpen Zenith ZR-6 Fixed High Triseal Premium	FRAME				Psi-spacer		Psi-opaque	
	Frame height		U-frame		Ψ		W/mK	
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F		
	Head	72	2.83	0.88	0.16	0.037	0.022	0.105
	Sill	72	2.83	0.88	0.16	0.037	0.022	BTU/hr.ft.F
left jamb	72	2.83	0.88	0.16	0.038	0.022	0.061	
right jamb	72	2.83	0.88	0.16	0.038	0.022	Grade A	

Valid through September 2022

Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Zenith ZR-6 Casement Thin Glass Triple			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing						
			Alpen SolarControl-6 TGT + Krypton No Grids					
Climate specific recommendations:			Whole-window installed U-value		Ucog-Value			
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F	
8			0.92	0.16	0.271	0.649	0.114	
7			0.90	0.16	0.271	0.615	0.108	
6			0.86	0.15	0.271	0.565	0.100	
5			0.85	0.15	0.271	0.551	0.097	
4		<input checked="" type="checkbox"/>	0.82	0.14	0.271	0.520	0.092	
Marine North		<input checked="" type="checkbox"/>	0.80	0.14	0.271	0.495	0.087	
Marine South	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.77	0.14	0.271	0.459	0.081	
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.79	0.14	0.271	0.476	0.084	
2 West	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.78	0.14	0.271	0.468	0.082	
2 East	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.78	0.14	0.271	0.468	0.082	
Alpen Zenith ZR-6 Casement Triseal Premium	FRAME				Psi-spacer		Psi-opaque	
	Frame height		U-frame		Ψ		W/mK	
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F		
	Head	73	2.86	1.13	0.20	0.037	0.021	0.124
	Sill	73	2.86	1.13	0.20	0.037	0.021	BTU/hr.ft.F
left jamb	73	2.86	1.13	0.20	0.037	0.021	0.072	
right jamb	73	2.86	1.13	0.20	0.037	0.021	Grade B	

Valid through December 2021