



Calculation based on ISO 15099

Product name: <b>Universal Outswing Awning Window</b>				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E180/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm 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		0.90	0.16	0.487	0.653	0.115
7		0.89	0.16	0.487	0.642	0.113
6		0.89	0.16	0.487	0.635	0.112
5		0.88	0.16	0.487	0.634	0.112
4		0.88	0.16	0.487	0.632	0.111
Marine North		0.88	0.16	0.487	0.631	0.111
Marine South	✓	0.88	0.16	0.487	0.628	0.111
3	✓	0.88	0.16	0.487	0.630	0.111
2 West		0.85	0.15	0.487	0.589	0.104
2 East		0.85	0.15	0.487	0.589	0.104
Universal Outswing Awning V		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		105	4.13	1.16	0.20	0.010
Sill		105	4.13	1.16	0.20	0.009
left jamb		105	4.13	1.15	0.20	0.009
right jamb		105	4.13	1.15	0.20	0.009
						0.141
						BTU/hr.ft.F
						0.082
						Grade B


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Climate specific recommendations:		Whole-window installed U-value		Ucog-Value		
		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8		0.90	0.16	0.424	0.653	0.115
7		0.89	0.16	0.424	0.642	0.113
6		0.89	0.16	0.424	0.635	0.112
5		0.88	0.16	0.424	0.634	0.112
4		0.88	0.16	0.424	0.632	0.111
Marine North		0.88	0.16	0.424	0.631	0.111
Marine South	✓	0.88	0.16	0.424	0.628	0.111
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2 West		0.85	0.15	0.424	0.589	0.104
2 East		0.85	0.15	0.424	0.589	0.104
Universal Outswing Awning V		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		105	4.13	1.16	0.20	0.010
Sill		105	4.13	1.16	0.20	0.009
left jamb		105	4.13	1.15	0.20	0.009
right jamb		105	4.13	1.15	0.20	0.009
						0.141
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Climate specific recommendations:		Whole-window installed U-value		Ucog-Value		
		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8		0.90	0.16	0.424	0.653	0.115
7		0.89	0.16	0.424	0.642	0.113
6		0.89	0.16	0.424	0.635	0.112
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Marine North		0.88	0.16	0.424	0.631	0.111
Marine South	✓	0.88	0.16	0.424	0.628	0.111
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2 West		0.85	0.15	0.424	0.589	0.104
2 East		0.85	0.15	0.424	0.589	0.104
Universal Outswing Awning V		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		105	4.13	1.16	0.20	0.010
Sill		105	4.13	1.16	0.20	0.009
left jamb		105	4.13	1.15	0.20	0.009
right jamb		105	4.13	1.15	0.20	0.009
						0.005
						0.141
						BTU/hr.ft.F
						0.082
						Grade B


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Product name: Universal Outswing Awning Window				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing	<div> Passive House Institute US</div>			Cardinal E180/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm Internal grids And SDL with Internal grids < 25.4mm		
Climate specific recommendations:		Whole-window installed U-value				Ucog-Value		
		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F		
		8	0.95	0.17	0.424	0.653	0.115	
		7	0.95	0.17	0.424	0.642	0.113	
		6	0.94	0.17	0.424	0.635	0.112	
		5	0.94	0.17	0.424	0.634	0.112	
		4	0.94	0.17	0.424	0.632	0.111	
		Marine North	0.94	0.17	0.424	0.631	0.111	
		Marine South	✓	0.94	0.17	0.424	0.628	0.111
		3	✓	0.94	0.17	0.424	0.630	0.111
2 West		0.91	0.16	0.424	0.589	0.104		
2 East		0.91	0.16	0.424	0.589	0.104		
Universal Outswing Awning V		FRAME				Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		U-frame		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	
Head		105	4.13	1.16	0.20	0.010	0.005	0.141
Sill		105	4.13	1.16	0.20	0.009	0.005	BTU/hr.ft.F
left jamb		105	4.13	1.15	0.20	0.009	0.005	0.082
right jamb		105	4.13	1.15	0.20	0.009	0.005	Grade B


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Climate specific recommendations:			Whole-window installed U-value		Ucog-Value			
			W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F	
8			0.90	0.16	0.365	0.653	0.115	
7			0.89	0.16	0.365	0.642	0.113	
6			0.89	0.16	0.365	0.635	0.112	
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2 East			0.85	0.15	0.365	0.589	0.104	
Universal Outswing Awning V		FRAME				Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		U-frame		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	
Head		105	4.13	1.16	0.20	0.010	0.005	0.141
Sill		105	4.13	1.16	0.20	0.009	0.005	BTU/hr.ft.F
left jamb		105	4.13	1.15	0.20	0.009	0.005	0.082
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3	✓	0.88	0.16	0.365	0.630 0.111
2 West		0.85	0.15	0.365	0.589 0.104
2 East		0.85	0.15	0.365	0.589 0.104
Universal Outswing Awning V		FRAME		Psi-spacer	
Cardinal Endur		U-frame		Ψ	
		mm in	W/m2K BTU/hr.ft2.F	W/mK	BTU/hr.ft.F
Head		105 4.13	1.16 0.20	0.010	0.005
Sill		105 4.13	1.16 0.20	0.009	0.005
left jamb		105 4.13	1.15 0.20	0.009	0.005
right jamb		105 4.13	1.15 0.20	0.009	0.005
					W/mK
					0.141
					BTU/hr.ft.F
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8		0.95	0.17	0.365	0.653	0.115
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2 West		0.91	0.16	0.365	0.589	0.104
2 East		0.91	0.16	0.365	0.589	0.104
Universal Outswing Awning V						
Cardinal Endur		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	105 4.13	1.16 0.20	0.010	0.005	0.141
	Sill	105 4.13	1.16 0.20	0.009	0.005	BTU/hr.ft.F
	left jamb	105 4.13	1.15 0.20	0.009	0.005	0.082
	right jamb	105 4.13	1.15 0.20	0.009	0.005	Grade B

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