



Calculation based on ISO 15099

Product name: Universal Outswing Awning Window				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E180/ Arg/ Clear/ Arg/ E180 (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		0.97	0.17	0.514	0.743	0.131
7		0.96	0.17	0.514	0.730	0.129
6		0.95	0.17	0.514	0.723	0.127
5		0.95	0.17	0.514	0.723	0.127
4		0.95	0.17	0.514	0.724	0.127
Marine North		0.95	0.17	0.514	0.725	0.128
Marine South		0.96	0.17	0.514	0.729	0.128
3		0.95	0.17	0.514	0.726	0.128
2 West		0.96	0.17	0.514	0.736	0.130
2 East		0.96	0.17	0.514	0.736	0.130
Universal Outswing Awning V Cardinal Endur		FRAME		Psi-spacer		Psi-opaque
		Frame height		U-frame		W/mK BTU/hr.ft.F 0.083 Grade B
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		105	4.13	1.08	0.19	0.020
Sill		105	4.13	1.09	0.19	0.012
left jamb		105	4.13	1.07	0.19	0.019
right jamb		105	4.13	1.07	0.19	0.011


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ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E180/ Arg/ Clear/ Arg/ E180 (6mm) 44,0mm SDL/no 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		0.97	0.17	0.447	0.743	0.131
7		0.96	0.17	0.447	0.730	0.129
6		0.95	0.17	0.447	0.723	0.127
5		0.95	0.17	0.447	0.723	0.127
4		0.95	0.17	0.447	0.724	0.127
Marine North		0.95	0.17	0.447	0.725	0.128
Marine South	✓	0.96	0.17	0.447	0.729	0.128
3	✓	0.95	0.17	0.447	0.726	0.128
2 West		0.96	0.17	0.447	0.736	0.130
2 East		0.96	0.17	0.447	0.736	0.130
Universal Outswing Awning V Cardinal Endur		FRAME		Psi-spacer		Psi-opaque
		Frame height		U-frame		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
	Head	105	4.13	1.08	0.19	0.143
	Sill	105	4.13	1.09	0.19	BTU/hr.ft.F
	left jamb	105	4.13	1.07	0.19	0.083
	right jamb	105	4.13	1.07	0.19	Grade B


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ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E180/ Arg/ Clear/ Arg/ E180 (6mm) 44,0mm Internal grids And SDL with Internal grids < 25.4mm maintain 3mm clearance		
Climate specific recommendations:		Whole-window installed U-value		Ucog-Value		
		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8		0.97	0.17	0.447	0.743	0.131
7		0.96	0.17	0.447	0.730	0.129
6		0.95	0.17	0.447	0.723	0.127
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Universal Outswing Awning V Cardinal Endur		FRAME		Psi-spacer		Psi-opaque
		Frame height		U-frame		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		105	4.13	1.08	0.19	0.020
Sill		105	4.13	1.09	0.19	0.012
left jamb		105	4.13	1.07	0.19	0.019
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ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180/ Arg/ Clear/ Arg/ E180 (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		1.02	0.18	0.447	0.743
7		1.01	0.18	0.447	0.730
6		1.01	0.18	0.447	0.723
5		1.01	0.18	0.447	0.723
4		1.01	0.18	0.447	0.724
Marine North		1.01	0.18	0.447	0.725
Marine South	✓	1.01	0.18	0.447	0.729
3	✓	1.01	0.18	0.447	0.726
2 West		1.02	0.18	0.447	0.736
2 East		1.02	0.18	0.447	0.736
Universal Outswing Awning V Cardinal Endur		FRAME		Psi-spacer	
		Frame height		Ψ	
		mm	in	W/mK	BTU/hr.ft.F
					W/mK
Head	105	4.13	1.08	0.19	0.020
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ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing			Cardinal E180/ Arg/ Clear/ Arg/ E180 (6mm) 44,0mm SDL/no 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			0.97	0.17	0.385	0.743 0.131		
7			0.96	0.17	0.385	0.730 0.129		
6			0.95	0.17	0.385	0.723 0.127		
5			0.95	0.17	0.385	0.723 0.127		
4			0.95	0.17	0.385	0.724 0.127		
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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	1.08	0.19	0.020	0.012	0.143
Sill		105	4.13	1.09	0.19	0.020	0.012	BTU/hr.ft.F
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