



Calculation based on ISO 15099

Product name: Universal Fixed Window Interior Glazed				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E366/ 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		0.89	0.16	0.239	0.710	0.125
7		0.88	0.15	0.239	0.693	0.122
6		0.87	0.15	0.239	0.681	0.120
5		0.87	0.15	0.239	0.680	0.120
4		0.87	0.15	0.239	0.679	0.120
Marine North		0.87	0.15	0.239	0.679	0.120
Marine South	✓	0.87	0.15	0.239	0.681	0.120
3	✓	0.87	0.15	0.239	0.680	0.120
2 West	✓	0.87	0.15	0.239	0.686	0.121
2 East	✓	0.87	0.15	0.239	0.686	0.121
Universal Fixed Window Inte		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		U-frame		Ψ		
		mm	in	W/m2K	BTU/hr.ft.F	W/mK
Head		58	2.27	1.08	0.19	0.016
Sill		58	2.27	1.08	0.19	0.009
left jamb		58	2.27	1.09	0.19	0.017
right jamb		58	2.27	1.09	0.19	0.010


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Product name: Universal Fixed Window Interior Glazed				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing	<div></div>			Cardinal E366/ 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			0.89	0.16	0.211	0.710	0.125	
7			0.88	0.15	0.211	0.693	0.122	
6			0.87	0.15	0.211	0.681	0.120	
5			0.87	0.15	0.211	0.680	0.120	
4		✓	0.87	0.15	0.211	0.679	0.120	
Marine North		✓	0.87	0.15	0.211	0.679	0.120	
Marine South	✓	✓	0.87	0.15	0.211	0.681	0.120	
3	✓	✓	0.87	0.15	0.211	0.680	0.120	
2 West	✓	✓	0.87	0.15	0.211	0.686	0.121	
2 East	✓	✓	0.87	0.15	0.211	0.686	0.121	
Universal Fixed Window Interior Cardinal Endur		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	58	2.27	1.08	0.19	0.016	0.009	0.082	
Sill	58	2.27	1.08	0.19	0.016	0.009	BTU/hr.ft.F	
left jamb	58	2.27	1.09	0.19	0.017	0.010	0.047	
right jamb	58	2.27	1.09	0.19	0.017	0.010	Grade A	


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ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South-facing			Cardinal E366/ 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	BTU/hr.ft2.F		
					W/m2K			
8			0.89	0.16	0.211	0.125		
7			0.88	0.15	0.211	0.122		
6			0.87	0.15	0.211	0.120		
5			0.87	0.15	0.211	0.120		
4		✓	0.87	0.15	0.211	0.120		
Marine North		✓	0.87	0.15	0.211	0.120		
Marine South	✓	✓	0.87	0.15	0.211	0.120		
3	✓	✓	0.87	0.15	0.211	0.120		
2 West	✓	✓	0.87	0.15	0.211	0.121		
2 East	✓	✓	0.87	0.15	0.211	0.121		
Universal Fixed Window Interior Cardinal Endur		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		58	2.27	1.08	0.19	0.016	0.009	0.082
Sill		58	2.27	1.08	0.19	0.016	0.009	BTU/hr.ft.F
left jamb		58	2.27	1.09	0.19	0.017	0.010	0.047
right jamb		58	2.27	1.09	0.19	0.017	0.010	Grade A


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ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing	 Cardinal E366/ 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			0.95	0.17	0.211	0.710 0.125
7			0.94	0.16	0.211	0.693 0.122
6			0.93	0.16	0.211	0.681 0.120
5			0.93	0.16	0.211	0.680 0.120
4			0.93	0.16	0.211	0.679 0.120
Marine North		✓	0.93	0.16	0.211	0.679 0.120
Marine South	✓	✓	0.93	0.16	0.211	0.681 0.120
3	✓	✓	0.93	0.16	0.211	0.680 0.120
2 West	✓	✓	0.93	0.16	0.211	0.686 0.121
2 East	✓	✓	0.93	0.16	0.211	0.686 0.121
Universal Fixed Window Inte		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		U-frame		Ψ
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		58	2.27	1.08	0.19	0.016 0.009
Sill		58	2.27	1.08	0.19	0.016 0.009
left jamb		58	2.27	1.09	0.19	0.017 0.010
right jamb		58	2.27	1.09	0.19	0.017 0.010


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ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing	<div> Passive House Institute US</div>			Cardinal E366/ 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			0.89	0.16	0.184	0.710	0.125	
7			0.88	0.15	0.184	0.693	0.122	
6			0.87	0.15	0.184	0.681	0.120	
5			0.87	0.15	0.184	0.680	0.120	
4		✓	0.87	0.15	0.184	0.679	0.120	
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2 West	✓	✓	0.87	0.15	0.184	0.686	0.121	
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Universal Fixed Window Inte		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		58	2.27	1.08	0.19	0.016	0.009	0.082
Sill		58	2.27	1.08	0.19	0.016	0.009	BTU/hr.ft.F
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Climate specific recommendations:		Whole-window installed U-value		Ucog-Value	
		W/m2K	BTU/hr.ft2.F	SHGC	BTU/hr.ft2.F
				W/m2K	
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7		0.88	0.15	0.184	0.122
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Universal Fixed Window Interior		FRAME		Psi-spacer	Psi-opaque
Cardinal Endur	Frame height		U-frame		Ψ
	mm	in	W/m2K	BTU/hr.ft2.F	
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				W/mK	
				BTU/hr.ft.F	
				Grade A	

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		mm	in	W/m2K	BTU/hr.ft2.F	
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