



Calculation based on ISO 15099

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> Passive House Institute US</div>			Cardinal E366/ 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			0.82	0.14	0.230	0.625	0.110	
7			0.81	0.14	0.230	0.612	0.108	
6			0.80	0.14	0.230	0.601	0.106	
5		✓	0.80	0.14	0.230	0.600	0.106	
4		✓	0.80	0.14	0.230	0.597	0.105	
Marine North		✓	0.80	0.14	0.230	0.595	0.105	
Marine South	✓	✓	0.79	0.14	0.230	0.592	0.104	
3	✓	✓	0.80	0.14	0.230	0.594	0.105	
2 West	✓	✓	0.76	0.13	0.230	0.555	0.098	
2 East	✓	✓	0.76	0.13	0.230	0.555	0.098	
Universal Fixed Window Interior		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	1.23	0.22	0.007	0.004	0.082
Sill		58	2.27	1.23	0.22	0.007	0.004	BTU/hr.ft.F
left jamb		58	2.27	1.24	0.22	0.007	0.004	0.047
right jamb		58	2.27	1.24	0.22	0.007	0.004	Grade A


Valid through November 2022

Calculation based on ISO 15099

Product name: <b>Universal Fixed Window Interior Glazed</b>				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	South- facing	North, East, West - facing				Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (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	BTU/hr.ft2.F
8			0.82	0.14	0.203	0.110
7			0.81	0.14	0.203	0.108
6			0.80	0.14	0.203	0.106
5		✓	0.80	0.14	0.203	0.106
4		✓	0.80	0.14	0.203	0.105
Marine North		✓	0.80	0.14	0.203	0.105
Marine South	✓	✓	0.79	0.14	0.203	0.104
3	✓	✓	0.80	0.14	0.203	0.105
2 West	✓	✓	0.76	0.13	0.203	0.098
2 East	✓	✓	0.76	0.13	0.203	0.098
Universal Fixed Window Inte		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		Ψ		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		58	2.27	1.23	0.22	0.082
Sill		58	2.27	1.23	0.22	BTU/hr.ft.F
left jamb		58	2.27	1.24	0.22	0.047
right jamb		58	2.27	1.24	0.22	Grade A


Valid through November 2022

Calculation based on ISO 15099

Product name: <b>Universal Fixed Window Interior Glazed</b>				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (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		0.82	0.14	0.203	0.625	0.110
7		0.81	0.14	0.203	0.612	0.108
6		0.80	0.14	0.203	0.601	0.106
5	✓	0.80	0.14	0.203	0.600	0.106
4	✓	0.80	0.14	0.203	0.597	0.105
Marine North	✓	0.80	0.14	0.203	0.595	0.105
Marine South	✓	0.79	0.14	0.203	0.592	0.104
3	✓	0.80	0.14	0.203	0.594	0.105
2 West	✓	0.76	0.13	0.203	0.555	0.098
2 East	✓	0.76	0.13	0.203	0.555	0.098
Universal Fixed Window Inte Cardinal Endur		FRAME		Psi-spacer		Psi-opaque
		Frame height		U-frame		W/mK
		mm	in	W/m2K	BTU/hr.ft2.F	
Head		58	2.27	1.23	0.22	0.007
Sill		58	2.27	1.23	0.22	0.007
left jamb		58	2.27	1.24	0.22	0.007
right jamb		58	2.27	1.24	0.22	0.007


Valid through November 2022

Calculation based on ISO 15099

Product name: Universal Fixed Window Interior Glazed			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing			Cardinal E366/ 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			0.88	0.15	0.203	0.625	0.110	
7			0.87	0.15	0.203	0.612	0.108	
6			0.86	0.15	0.203	0.601	0.106	
5			0.86	0.15	0.203	0.600	0.106	
4		✓	0.86	0.15	0.203	0.597	0.105	
Marine North		✓	0.85	0.15	0.203	0.595	0.105	
Marine South	✓	✓	0.85	0.15	0.203	0.592	0.104	
3	✓	✓	0.85	0.15	0.203	0.594	0.105	
2 West	✓	✓	0.82	0.14	0.203	0.555	0.098	
2 East	✓	✓	0.82	0.14	0.203	0.555	0.098	
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	1.23	0.22	0.007	0.004	0.082
Sill		58	2.27	1.23	0.22	0.007	0.004	BTU/hr.ft.F
left jamb		58	2.27	1.24	0.22	0.007	0.004	0.047
right jamb		58	2.27	1.24	0.22	0.007	0.004	Grade A


Valid through November 2022

Calculation based on ISO 15099

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/ E180/ Arg/ i89(#6) (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			0.82	0.14	0.177	0.625	0.110	
7			0.81	0.14	0.177	0.612	0.108	
6			0.80	0.14	0.177	0.601	0.106	
5		✓	0.80	0.14	0.177	0.600	0.106	
4		✓	0.80	0.14	0.177	0.597	0.105	
Marine North		✓	0.80	0.14	0.177	0.595	0.105	
Marine South	✓	✓	0.79	0.14	0.177	0.592	0.104	
3	✓	✓	0.80	0.14	0.177	0.594	0.105	
2 West	✓	✓	0.76	0.13	0.177	0.555	0.098	
2 East	✓	✓	0.76	0.13	0.177	0.555	0.098	
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	1.23	0.22	0.007	0.004	0.082
Sill		58	2.27	1.23	0.22	0.007	0.004	BTU/hr.ft.F
left jamb		58	2.27	1.24	0.22	0.007	0.004	0.047
right jamb		58	2.27	1.24	0.22	0.007	0.004	Grade A


Valid through November 2022

Calculation based on ISO 15099

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> Passive House Institute US</div>			Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm Internal grids And SDL/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			0.82	0.14	0.177	0.625	0.110	
7			0.81	0.14	0.177	0.612	0.108	
6			0.80	0.14	0.177	0.601	0.106	
5		✓	0.80	0.14	0.177	0.600	0.106	
4		✓	0.80	0.14	0.177	0.597	0.105	
Marine North		✓	0.80	0.14	0.177	0.595	0.105	
Marine South	✓	✓	0.79	0.14	0.177	0.592	0.104	
3	✓	✓	0.80	0.14	0.177	0.594	0.105	
2 West	✓	✓	0.76	0.13	0.177	0.555	0.098	
2 East	✓	✓	0.76	0.13	0.177	0.555	0.098	
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	1.23	0.22	0.007	0.004	0.082
Sill		58	2.27	1.23	0.22	0.007	0.004	BTU/hr.ft.F
left jamb		58	2.27	1.24	0.22	0.007	0.004	0.047
right jamb		58	2.27	1.24	0.22	0.007	0.004	Grade A

Valid through November 2022

Calculation based on ISO 15099

Product name: <b>Universal Fixed Window Interior Glazed</b>				Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing West - facing			Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm Internal grids And SDL/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		0.88	0.15	0.177	0.625	0.110
7		0.87	0.15	0.177	0.612	0.108
6		0.86	0.15	0.177	0.601	0.106
5		0.86	0.15	0.177	0.600	0.106
4		0.86	0.15	0.177	0.597	0.105
Marine North		0.85	0.15	0.177	0.595	0.105
Marine South	✓	0.85	0.15	0.177	0.592	0.104
3	✓	0.85	0.15	0.177	0.594	0.105
2 West	✓	0.82	0.14	0.177	0.555	0.098
2 East	✓	0.82	0.14	0.177	0.555	0.098
Universal Fixed Window Inte		FRAME		Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		Ψ		
		mm	in	W/m2K	BTU/hr.ft.F	W/mK
Head		58	2.27	1.23	0.22	0.007
Sill		58	2.27	1.23	0.22	0.004
left jamb		58	2.27	1.24	0.22	0.007
right jamb		58	2.27	1.24	0.22	0.004

Valid through November 2022