




VENTANA

SELECT
SERIES 86

PHIUS Certified Products




Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing			Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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			0.96	0.17	0.561	0.757	0.133	
7			0.96	0.17	0.561	0.749	0.132	
6			0.95	0.17	0.561	0.746	0.131	
5			0.95	0.17	0.561	0.746	0.131	
4			0.96	0.17	0.561	0.748	0.132	
Marine North			0.96	0.17	0.561	0.750	0.132	
Marine South			0.96	0.17	0.561	0.754	0.133	
3			0.96	0.17	0.561	0.752	0.132	
2 West			0.97	0.17	0.561	0.762	0.134	
2 East			0.97	0.17	0.561	0.762	0.134	
Ventana Select Series 86 Star		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	117	4.60	1.05	0.19	0.012	0.007	0.150
	Sill	117	4.60	1.05	0.19	0.012	0.007	BTU/hr.ft.F
	left jamb	117	4.60	1.07	0.19	0.013	0.007	0.086
	right jamb	117	4.60	1.07	0.19	0.013	0.007	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn		Center-of-glass properties						
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG				
				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		0.96	0.17	0.486	0.757	0.133		
7		0.96	0.17	0.486	0.749	0.132		
6		0.95	0.17	0.486	0.746	0.131		
5		0.95	0.17	0.486	0.746	0.131		
4		0.96	0.17	0.486	0.748	0.132		
Marine North		0.96	0.17	0.486	0.750	0.132		
Marine South	✓	0.96	0.17	0.486	0.754	0.133		
3	✓	0.96	0.17	0.486	0.752	0.132		
2 West		0.97	0.17	0.486	0.762	0.134		
2 East		0.97	0.17	0.486	0.762	0.134		
Ventana Select Series 86 Standard 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	117	4.60	1.05	0.19	0.012	0.007	0.150
	Sill	117	4.60	1.05	0.19	0.012	0.007	BTU/hr.ft.F
left jamb	117	4.60	1.07	0.19	0.013	0.007	0.086	
right jamb	117	4.60	1.07	0.19	0.013	0.007	Grade B	

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Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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	0.486	0.757	0.133
7		1.01	0.18	0.486	0.749	0.132
6		1.01	0.18	0.486	0.746	0.131
5		1.01	0.18	0.486	0.746	0.131
4		1.01	0.18	0.486	0.748	0.132
Marine North		1.01	0.18	0.486	0.750	0.132
Marine South	✓	1.02	0.18	0.486	0.754	0.133
3	✓	1.02	0.18	0.486	0.752	0.132
2 West		1.02	0.18	0.486	0.762	0.134
2 East		1.02	0.18	0.486	0.762	0.134

Ventana Select Series 86 Star 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	117	4.60	1.05	0.19	0.012	0.007	0.150
Sill	117	4.60	1.05	0.19	0.012	0.007	BTU/hr.ft.F
left jamb	117	4.60	1.07	0.19	0.013	0.007	0.086
right jamb	117	4.60	1.07	0.19	0.013	0.007	Grade B

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG		
				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		0.96	0.17	0.417	0.757	0.133
7		0.96	0.17	0.417	0.749	0.132
6		0.95	0.17	0.417	0.746	0.131
5		0.95	0.17	0.417	0.746	0.131
4		0.96	0.17	0.417	0.748	0.132
Marine North		0.96	0.17	0.417	0.750	0.132
Marine South	✓	0.96	0.17	0.417	0.754	0.133
3	✓	0.96	0.17	0.417	0.752	0.132
2 West		0.97	0.17	0.417	0.762	0.134
2 East		0.97	0.17	0.417	0.762	0.134

Ventana Select Series 86 Star 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	117	4.60	1.05	0.19	0.012	0.007	0.150
Sill	117	4.60	1.05	0.19	0.012	0.007	BTU/hr.ft.F
left jamb	117	4.60	1.07	0.19	0.013	0.007	0.086
right jamb	117	4.60	1.07	0.19	0.013	0.007	Grade B


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Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn				Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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	0.417	0.757	0.133
7			1.01	0.18	0.417	0.749	0.132
6			1.01	0.18	0.417	0.746	0.131
5			1.01	0.18	0.417	0.746	0.131
4			1.01	0.18	0.417	0.748	0.132
Marine North			1.01	0.18	0.417	0.750	0.132
Marine South	<input checked="" type="checkbox"/>		1.02	0.18	0.417	0.754	0.133
3	<input checked="" type="checkbox"/>		1.02	0.18	0.417	0.752	0.132
2 West			1.02	0.18	0.417	0.762	0.134
2 East			1.02	0.18	0.417	0.762	0.134
Ventana Select Series 86 Star 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	117	4.60	1.05	0.19	0.012	0.007	0.150
Sill	117	4.60	1.05	0.19	0.012	0.007	BTU/hr.ft.F
left jamb	117	4.60	1.07	0.19	0.013	0.007	0.086
right jamb	117	4.60	1.07	0.19	0.013	0.007	Grade B


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Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn				Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - South- facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG No Grids			
Climate specific recommendations:				Whole-window installed U-value		Ucog-Value	
				W/m2K	BTU/hr.ft2.F	SHGC	W/m2K
8		1.00	0.18	0.344	0.795	0.140	
7		1.00	0.18	0.344	0.797	0.140	
6		1.01	0.18	0.344	0.804	0.142	
5		1.01	0.18	0.344	0.805	0.142	
4		1.01	0.18	0.344	0.809	0.143	
Marine North		1.01	0.18	0.344	0.812	0.143	
Marine South	✓	1.02	0.18	0.344	0.817	0.144	
3	✓	1.02	0.18	0.344	0.814	0.143	
2 West		1.02	0.18	0.344	0.822	0.145	
2 East		1.02	0.18	0.344	0.822	0.145	
Ventana Select Series 86 Star	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	117	4.59	1.06	0.19	0.017	0.010	0.155
Sill	117	4.59	1.06	0.19	0.017	0.010	BTU/hr.ft.F
left jamb	117	4.59	1.08	0.19	0.018	0.010	0.089
right jamb	117	4.59	1.08	0.19	0.018	0.010	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South-facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG			
					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			1.00	0.18	0.298	0.795	0.140	
7			1.00	0.18	0.298	0.797	0.140	
6			1.01	0.18	0.298	0.804	0.142	
5			1.01	0.18	0.298	0.805	0.142	
4			1.01	0.18	0.298	0.809	0.143	
Marine North			1.01	0.18	0.298	0.812	0.143	
Marine South	✓	✓	1.02	0.18	0.298	0.817	0.144	
3	✓	✓	1.02	0.18	0.298	0.814	0.143	
2 West	✓	✓	1.02	0.18	0.298	0.822	0.145	
2 East	✓	✓	1.02	0.18	0.298	0.822	0.145	
Ventana Select Series 86 Star			FRAME			Psi-spacer		Psi-opaque
			Frame height		U-frame		Ψ	
Cardinal Endur	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F		
Head	117	4.59	1.06	0.19	0.017	0.010	0.155	
Sill	117	4.59	1.06	0.19	0.017	0.010	BTU/hr.ft.F	
left jamb	117	4.59	1.08	0.19	0.018	0.010	0.089	
right jamb	117	4.59	1.08	0.19	0.018	0.010	Grade B	


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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			1.06	0.19	0.298	0.795	0.140	
7			1.06	0.19	0.298	0.797	0.140	
6			1.06	0.19	0.298	0.804	0.142	
5			1.07	0.19	0.298	0.805	0.142	
4			1.07	0.19	0.298	0.809	0.143	
Marine North			1.07	0.19	0.298	0.812	0.143	
Marine South	✓	✓	1.07	0.19	0.298	0.817	0.144	
3			1.07	0.19	0.298	0.814	0.143	
2 West			1.08	0.19	0.298	0.822	0.145	
2 East	✓	✓	1.08	0.19	0.298	0.822	0.145	
Ventana Select Series 86 Star		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		117	4.59	1.06	0.19	0.017	0.010	0.155
Sill		117	4.59	1.06	0.19	0.017	0.010	BTU/hr.ft.F
left jamb		117	4.59	1.08	0.19	0.018	0.010	0.089
right jamb		117	4.59	1.08	0.19	0.018	0.010	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Standard Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South-facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG			
					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			1.00	0.18	0.256	0.795	0.140	
7			1.00	0.18	0.256	0.797	0.140	
6			1.01	0.18	0.256	0.804	0.142	
5			1.01	0.18	0.256	0.805	0.142	
4			1.01	0.18	0.256	0.809	0.143	
Marine North			1.01	0.18	0.256	0.812	0.143	
Marine South	✓	✓	1.02	0.18	0.256	0.817	0.144	
3	✓	✓	1.02	0.18	0.256	0.814	0.143	
2 West	✓	✓	1.02	0.18	0.256	0.822	0.145	
2 East	✓	✓	1.02	0.18	0.256	0.822	0.145	
Ventana Select Series 86 Star			FRAME		Psi-spacer		Psi-opaque	
Cardinal Endur			Frame height		U-frame		Psi	
			mm	in	W/m2K	BTU/hr.ft2.F		
Head			117	4.59	1.06	0.19	0.017	0.010
Sill			117	4.59	1.06	0.19	0.017	0.010
left jamb			117	4.59	1.08	0.19	0.018	0.010
right jamb			117	4.59	1.08	0.19	0.018	0.010
							W/mK	BTU/hr.ft.F
							0.155	
								0.089
								Grade B


Valid through February 2021

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Product name: Ventana Select Series 86 Standard Tilt Turn		Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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		1.06	0.19	0.256	0.795	0.140	
7		1.06	0.19	0.256	0.797	0.140	
6		1.06	0.19	0.256	0.804	0.142	
5		1.07	0.19	0.256	0.805	0.142	
4		1.07	0.19	0.256	0.809	0.143	
Marine North		1.07	0.19	0.256	0.812	0.143	
Marine South	✓ ✓	1.07	0.19	0.256	0.817	0.144	
3		1.07	0.19	0.256	0.814	0.143	
2 West		1.08	0.19	0.256	0.822	0.145	
2 East	✓ ✓	1.08	0.19	0.256	0.822	0.145	
Ventana Select Series 86 Star 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	117 4.59	1.06	0.19	0.017	0.010	0.155	
Sill	117 4.59	1.06	0.19	0.017	0.010	BTU/hr.ft.F	
left jamb	117 4.59	1.08	0.19	0.018	0.010	0.089	
right jamb	117 4.59	1.08	0.19	0.018	0.010	Grade B	


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Product name: Ventana Select Series 86		Center-of-glass properties						
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing				Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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	0.561	0.757	0.133		
7		0.92	0.16	0.561	0.749	0.132		
6		0.91	0.16	0.561	0.746	0.131		
5		0.91	0.16	0.561	0.746	0.131		
4		0.92	0.16	0.561	0.748	0.132		
Marine North	<input checked="" type="checkbox"/>	0.92	0.16	0.561	0.750	0.132		
Marine South		0.92	0.16	0.561	0.754	0.133		
3		0.92	0.16	0.561	0.752	0.132		
2 West		0.93	0.16	0.561	0.762	0.134		
2 East		0.93	0.16	0.561	0.762	0.134		
Ventana Select Series 86		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	117	4.60	0.92	0.16	0.013	0.007	0.133
	Sill	117	4.60	0.93	0.16	0.013	0.007	BTU/hr.ft.F
	left jamb	117	4.60	0.93	0.16	0.014	0.008	0.077
	right jamb	117	4.60	0.93	0.16	0.014	0.008	Grade B


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Product name: Ventana Select Series 86						Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing					Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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		0.92	0.16	0.486	0.757	0.133		
7		0.92	0.16	0.486	0.749	0.132		
6		0.91	0.16	0.486	0.746	0.131		
5		0.91	0.16	0.486	0.746	0.131		
4		0.92	0.16	0.486	0.748	0.132		
Marine North		0.92	0.16	0.486	0.750	0.132		
Marine South	✓	0.92	0.16	0.486	0.754	0.133		
3	✓	0.92	0.16	0.486	0.752	0.132		
2 West		0.93	0.16	0.486	0.762	0.134		
2 East		0.93	0.16	0.486	0.762	0.134		
Ventana Select Series 86 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	117	4.60	0.92	0.16	0.013	0.007	0.133
	Sill	117	4.60	0.93	0.16	0.013	0.007	BTU/hr.ft.F
	left jamb	117	4.60	0.93	0.16	0.014	0.008	0.077
	right jamb	117	4.60	0.93	0.16	0.014	0.008	Grade B


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Product name: Ventana Select Series 86						Center-of-glass properties	
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing					Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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	0.98	0.17		0.486	0.757	0.133
	7	0.97	0.17		0.486	0.749	0.132
	6	0.97	0.17		0.486	0.746	0.131
	5	0.97	0.17		0.486	0.746	0.131
	4	0.97	0.17		0.486	0.748	0.132
	Marine North	0.97	0.17		0.486	0.750	0.132
	Marine South	✓	0.98	0.17	0.486	0.754	0.133
	3	✓	0.98	0.17	0.486	0.752	0.132
	2 West		0.98	0.17	0.486	0.762	0.134
2 East		0.98	0.17	0.486	0.762	0.134	
Ventana Select Series 86	FRAME				Psi-spacer		Psi-opaque
Cardinal Endur	Frame height		U-frame		Ψ		
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	
Head	117	4.60	0.92	0.16	0.013	0.007	0.133
Sill	117	4.60	0.93	0.16	0.013	0.007	BTU/hr.ft.F
left jamb	117	4.60	0.93	0.16	0.014	0.008	0.077
right jamb	117	4.60	0.93	0.16	0.014	0.008	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86						Center-of-glass properties		
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing					Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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		0.92	0.16	0.417	0.757	0.133		
7		0.92	0.16	0.417	0.749	0.132		
6		0.91	0.16	0.417	0.746	0.131		
5		0.91	0.16	0.417	0.746	0.131		
4		0.92	0.16	0.417	0.748	0.132		
Marine North		0.92	0.16	0.417	0.750	0.132		
Marine South	✓	0.92	0.16	0.417	0.754	0.133		
3	✓	0.92	0.16	0.417	0.752	0.132		
2 West		0.93	0.16	0.417	0.762	0.134		
2 East		0.93	0.16	0.417	0.762	0.134		
Ventana Select Series 86		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	117	4.60	0.92	0.16	0.013	0.007	0.133	
Sill	117	4.60	0.93	0.16	0.013	0.007	BTU/hr.ft.F	
left jamb	117	4.60	0.93	0.16	0.014	0.008	0.077	
right jamb	117	4.60	0.93	0.16	0.014	0.008	Grade B	


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86		Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing				Cardinal E180 / ARG90 / CLR / ARG90 / E180 (3MM/3MM/3MM) - 1-3/8" IG 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		0.98	0.17	0.417	0.757	0.133	
7		0.97	0.17	0.417	0.749	0.132	
6		0.97	0.17	0.417	0.746	0.131	
5		0.97	0.17	0.417	0.746	0.131	
4		0.97	0.17	0.417	0.748	0.132	
Marine North		0.97	0.17	0.417	0.750	0.132	
Marine South	✓	0.98	0.17	0.417	0.754	0.133	
3	✓	0.98	0.17	0.417	0.752	0.132	
2 West		0.98	0.17	0.417	0.762	0.134	
2 East		0.98	0.17	0.417	0.762	0.134	
Ventana Select Series 86	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	117	4.60	0.92	0.16	0.013	0.007	0.133
Sill	117	4.60	0.93	0.16	0.013	0.007	BTU/hr.ft.F
left jamb	117	4.60	0.93	0.16	0.014	0.008	0.077
right jamb	117	4.60	0.93	0.16	0.014	0.008	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - South- facing	North, East, West - facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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			0.96	0.17	0.344	0.795	0.140
7			0.97	0.17	0.344	0.797	0.140
6			0.97	0.17	0.344	0.804	0.142
5			0.97	0.17	0.344	0.805	0.142
4			0.97	0.17	0.344	0.809	0.143
Marine North			0.98	0.17	0.344	0.812	0.143
Marine South	<input checked="" type="checkbox"/>		0.98	0.17	0.344	0.817	0.144
3	<input checked="" type="checkbox"/>		0.98	0.17	0.344	0.814	0.143
2 West			0.98	0.17	0.344	0.822	0.145
2 East			0.98	0.17	0.344	0.822	0.145
Ventana Select Series 86 Tilt	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	117	4.59	0.94	0.16	0.018	0.010	0.139
Sill	117	4.59	0.94	0.16	0.018	0.010	BTU/hr.ft.F
left jamb	117	4.59	0.94	0.17	0.019	0.011	0.080
right jamb	117	4.59	0.94	0.17	0.019	0.011	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing	 Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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			0.96	0.17	0.298	0.795	0.140	
7			0.97	0.17	0.298	0.797	0.140	
6			0.97	0.17	0.298	0.804	0.142	
5			0.97	0.17	0.298	0.805	0.142	
4			0.97	0.17	0.298	0.809	0.143	
Marine North			0.98	0.17	0.298	0.812	0.143	
Marine South	✓	✓	0.98	0.17	0.298	0.817	0.144	
3	✓	✓	0.98	0.17	0.298	0.814	0.143	
2 West	✓	✓	0.98	0.17	0.298	0.822	0.145	
2 East	✓	✓	0.98	0.17	0.298	0.822	0.145	
Ventana Select Series 86 Tilt 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	117	4.59	0.94	0.16	0.018	0.010	0.139
	Sill	117	4.59	0.94	0.16	0.018	0.010	BTU/hr.ft.F
left jamb	117	4.59	0.94	0.17	0.019	0.011	0.080	
right jamb	117	4.59	0.94	0.17	0.019	0.011	Grade B	


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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	0.298	0.795	0.140	
7			1.02	0.18	0.298	0.797	0.140	
6			1.03	0.18	0.298	0.804	0.142	
5			1.03	0.18	0.298	0.805	0.142	
4			1.03	0.18	0.298	0.809	0.143	
Marine North			1.03	0.18	0.298	0.812	0.143	
Marine South	✓	✓	1.04	0.18	0.298	0.817	0.144	
3	✓	✓	1.03	0.18	0.298	0.814	0.143	
2 West	✓	✓	1.04	0.18	0.298	0.822	0.145	
2 East	✓	✓	1.04	0.18	0.298	0.822	0.145	
Ventana Select Series 86 Tilt		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		117	4.59	0.94	0.16	0.018	0.010	0.139
Sill		117	4.59	0.94	0.16	0.018	0.010	BTU/hr.ft.F
left jamb		117	4.59	0.94	0.17	0.019	0.011	0.080
right jamb		117	4.59	0.94	0.17	0.019	0.011	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing				Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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		0.96	0.17	0.256	0.795	0.140	
7		0.97	0.17	0.256	0.797	0.140	
6		0.97	0.17	0.256	0.804	0.142	
5		0.97	0.17	0.256	0.805	0.142	
4		0.97	0.17	0.256	0.809	0.143	
Marine North		0.98	0.17	0.256	0.812	0.143	
Marine South	✓	0.98	0.17	0.256	0.817	0.144	
3	✓	0.98	0.17	0.256	0.814	0.143	
2 West	✓	0.98	0.17	0.256	0.822	0.145	
2 East	✓	0.98	0.17	0.256	0.822	0.145	
Ventana Select Series 86 Tilt	FRAME				Psi-spacer		Psi-opaque
Cardinal Endur	Frame height		U-frame		Ψ		
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK
Head	117	4.59	0.94	0.16	0.018	0.010	0.139
Sill	117	4.59	0.94	0.16	0.018	0.010	BTU/hr.ft.F
left jamb	117	4.59	0.94	0.17	0.019	0.011	0.080
right jamb	117	4.59	0.94	0.17	0.019	0.011	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing			Cardinal E272 / ARG90 / CLR / ARG90 / E272 (5MM/5MM/5MM) - 1-3/8" IG 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	0.256	0.795	0.140
7			1.02	0.18	0.256	0.797	0.140
6			1.03	0.18	0.256	0.804	0.142
5			1.03	0.18	0.256	0.805	0.142
4			1.03	0.18	0.256	0.809	0.143
Marine North			1.03	0.18	0.256	0.812	0.143
Marine South	✓	✓	1.04	0.18	0.256	0.817	0.144
3	✓	✓	1.03	0.18	0.256	0.814	0.143
2 West	✓	✓	1.04	0.18	0.256	0.822	0.145
2 East	✓	✓	1.04	0.18	0.256	0.822	0.145
Ventana Select Series 86 Tilt	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	117	4.59	0.94	0.16	0.018	0.010	0.139
Sill	117	4.59	0.94	0.16	0.018	0.010	BTU/hr.ft.F
left jamb	117	4.59	0.94	0.17	0.019	0.011	0.080
right jamb	117	4.59	0.94	0.17	0.019	0.011	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone		North, East, West - facing South-facing		 Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG 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		0.86	0.15	0.533	0.665	0.117		
7		0.85	0.15	0.533	0.658	0.116		
6		0.85	0.15	0.533	0.654	0.115		
5		0.85	0.15	0.533	0.653	0.115		
4	✓	0.85	0.15	0.533	0.652	0.115		
Marine North	✓	0.85	0.15	0.533	0.651	0.115		
Marine South		0.85	0.15	0.533	0.648	0.114		
3		0.85	0.15	0.533	0.650	0.114		
2 West		0.82	0.14	0.533	0.606	0.107		
2 East		0.82	0.14	0.533	0.606	0.107		
Ventana Select Series 86 Tilt		FRAME				Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		U-frame		Ψ		
		mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK
	Head	117	4.60	0.97	0.17	0.006	0.003	0.132
	Sill	117	4.60	0.98	0.17	0.006	0.003	BTU/hr.ft.F
	left jamb	117	4.60	0.98	0.17	0.006	0.004	0.076
	right jamb	117	4.60	0.98	0.17	0.006	0.004	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties						
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing				Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG			
					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		0.86	0.15	0.462	0.665	0.117		
7		0.85	0.15	0.462	0.658	0.116		
6		0.85	0.15	0.462	0.654	0.115		
5		0.85	0.15	0.462	0.653	0.115		
4		0.85	0.15	0.462	0.652	0.115		
Marine North		0.85	0.15	0.462	0.651	0.115		
Marine South	✓	0.85	0.15	0.462	0.648	0.114		
3	✓	0.85	0.15	0.462	0.650	0.114		
2 West		0.82	0.14	0.462	0.606	0.107		
2 East		0.82	0.14	0.462	0.606	0.107		
Ventana Select Series 86 Tilt 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	117	4.60	0.97	0.17	0.006	0.003	0.132
	Sill	117	4.60	0.98	0.17	0.006	0.003	BTU/hr.ft.F
left jamb	117	4.60	0.98	0.17	0.006	0.004	0.076	
right jamb	117	4.60	0.98	0.17	0.006	0.004	Grade B	

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG 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		0.91	0.16	0.462	0.665	0.117
7		0.91	0.16	0.462	0.658	0.116
6		0.91	0.16	0.462	0.654	0.115
5		0.91	0.16	0.462	0.653	0.115
4		0.90	0.16	0.462	0.652	0.115
Marine North		0.90	0.16	0.462	0.651	0.115
Marine South	✓	0.90	0.16	0.462	0.648	0.114
3	✓	0.90	0.16	0.462	0.650	0.114
2 West		0.87	0.15	0.462	0.606	0.107
2 East		0.87	0.15	0.462	0.606	0.107

Ventana Select Series 86 Tilt 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	117	4.60	0.97	0.17	0.006	0.003	0.132
Sill	117	4.60	0.98	0.17	0.006	0.003	BTU/hr.ft.F
left jamb	117	4.60	0.98	0.17	0.006	0.004	0.076
right jamb	117	4.60	0.98	0.17	0.006	0.004	Grade B

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG 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		0.86	0.15	0.397	0.665	0.117
7		0.85	0.15	0.397	0.658	0.116
6		0.85	0.15	0.397	0.654	0.115
5		0.85	0.15	0.397	0.653	0.115
4	✓	0.85	0.15	0.397	0.652	0.115
Marine North	✓	0.85	0.15	0.397	0.651	0.115
Marine South	✓	0.85	0.15	0.397	0.648	0.114
3	✓	0.85	0.15	0.397	0.650	0.114
2 West		0.82	0.14	0.397	0.606	0.107
2 East		0.82	0.14	0.397	0.606	0.107

Ventana Select Series 86 Tilt 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	117	4.60	0.97	0.17	0.006	0.003	0.132
Sill	117	4.60	0.98	0.17	0.006	0.003	BTU/hr.ft.F
left jamb	117	4.60	0.98	0.17	0.006	0.004	0.076
right jamb	117	4.60	0.98	0.17	0.006	0.004	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG 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			0.91	0.16	0.397	0.665	0.117	
7			0.91	0.16	0.397	0.658	0.116	
6			0.91	0.16	0.397	0.654	0.115	
5			0.91	0.16	0.397	0.653	0.115	
4			0.90	0.16	0.397	0.652	0.115	
Marine North		☑	0.90	0.16	0.397	0.651	0.115	
Marine South	☑		0.90	0.16	0.397	0.648	0.114	
3	☑		0.90	0.16	0.397	0.650	0.114	
2 West			0.87	0.15	0.397	0.606	0.107	
2 East			0.87	0.15	0.397	0.606	0.107	
Ventana Select Series 86 Tilt 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	117	4.60	0.97	0.17	0.006	0.003	0.132
	Sill	117	4.60	0.98	0.17	0.006	0.003	BTU/hr.ft.F
left jamb	117	4.60	0.98	0.17	0.006	0.004	0.076	
right jamb	117	4.60	0.98	0.17	0.006	0.004	Grade B	


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South-facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-5/8" IG 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	0.534	0.655	0.115	
7			0.83	0.15	0.534	0.624	0.110	
6			0.81	0.14	0.534	0.590	0.104	
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.81	0.14	0.534	0.585	0.103	
4	<input checked="" type="checkbox"/>		0.80	0.14	0.534	0.576	0.101	
Marine North	<input checked="" type="checkbox"/>		0.80	0.14	0.534	0.572	0.101	
Marine South			0.79	0.14	0.534	0.566	0.100	
3			0.80	0.14	0.534	0.569	0.100	
2 West			0.77	0.14	0.534	0.533	0.094	
2 East			0.77	0.14	0.534	0.533	0.094	
Ventana Select Series 86 Tilt 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	117	4.60	1.00	0.18	0.005	0.003	0.134
	Sill	117	4.60	1.00	0.18	0.005	0.003	BTU/hr.ft.F
left jamb	117	4.60	1.00	0.18	0.005	0.003	0.078	
right jamb	117	4.60	1.00	0.18	0.005	0.003	Grade B	


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties						
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing				Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-5/8" IG			
					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		0.85	0.15	0.463	0.655	0.115		
7		0.83	0.15	0.463	0.624	0.110		
6		0.81	0.14	0.463	0.590	0.104		
5	✓	0.81	0.14	0.463	0.585	0.103		
4		0.80	0.14	0.463	0.576	0.101		
Marine North		0.80	0.14	0.463	0.572	0.101		
Marine South	✓	0.79	0.14	0.463	0.566	0.100		
3	✓	0.80	0.14	0.463	0.569	0.100		
2 West		0.77	0.14	0.463	0.533	0.094		
2 East		0.77	0.14	0.463	0.533	0.094		
Ventana Select Series 86 Tilt 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	117	4.60	1.00	0.18	0.005	0.003	0.134
	Sill	117	4.60	1.00	0.18	0.005	0.003	BTU/hr.ft.F
left jamb	117	4.60	1.00	0.18	0.005	0.003	0.078	
right jamb	117	4.60	1.00	0.18	0.005	0.003	Grade B	

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-5/8" IG 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		0.91	0.16	0.463	0.655	0.115
7		0.89	0.16	0.463	0.624	0.110
6		0.87	0.15	0.463	0.590	0.104
5		0.86	0.15	0.463	0.585	0.103
4		0.86	0.15	0.463	0.576	0.101
Marine North		0.85	0.15	0.463	0.572	0.101
Marine South	✓	0.85	0.15	0.463	0.566	0.100
3	✓	0.85	0.15	0.463	0.569	0.100
2 West		0.83	0.15	0.463	0.533	0.094
2 East		0.83	0.15	0.463	0.533	0.094

Ventana Select Series 86 Tilt 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	117	4.60	1.00	0.18	0.005	0.003	0.134
Sill	117	4.60	1.00	0.18	0.005	0.003	BTU/hr.ft.F
left jamb	117	4.60	1.00	0.18	0.005	0.003	0.078
right jamb	117	4.60	1.00	0.18	0.005	0.003	Grade B

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn		Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-5/8" IG 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		0.85	0.15	0.397	0.655	0.115
7		0.83	0.15	0.397	0.624	0.110
6		0.81	0.14	0.397	0.590	0.104
5	✓	0.81	0.14	0.397	0.585	0.103
4	✓	0.80	0.14	0.397	0.576	0.101
Marine North	✓	0.80	0.14	0.397	0.572	0.101
Marine South	✓	0.79	0.14	0.397	0.566	0.100
3	✓	0.80	0.14	0.397	0.569	0.100
2 West		0.77	0.14	0.397	0.533	0.094
2 East		0.77	0.14	0.397	0.533	0.094

Ventana Select Series 86 Tilt 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	117	4.60	1.00	0.18	0.005	0.003	0.134
Sill	117	4.60	1.00	0.18	0.005	0.003	BTU/hr.ft.F
left jamb	117	4.60	1.00	0.18	0.005	0.003	0.078
right jamb	117	4.60	1.00	0.18	0.005	0.003	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn				Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Cardinal E180 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-5/8" IG 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			0.91	0.16	0.397	0.655	0.115
7			0.89	0.16	0.397	0.624	0.110
6			0.87	0.15	0.397	0.590	0.104
5			0.86	0.15	0.397	0.585	0.103
4		✓	0.86	0.15	0.397	0.576	0.101
Marine North		✓	0.85	0.15	0.397	0.572	0.101
Marine South	✓		0.85	0.15	0.397	0.566	0.100
3	✓		0.85	0.15	0.397	0.569	0.100
2 West			0.83	0.15	0.397	0.533	0.094
2 East			0.83	0.15	0.397	0.533	0.094
Ventana Select Series 86 Tilt 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	117	4.60	1.00	0.18	0.005	0.003	0.134
Sill	117	4.60	1.00	0.18	0.005	0.003	BTU/hr.ft.F
left jamb	117	4.60	1.00	0.18	0.005	0.003	0.078
right jamb	117	4.60	1.00	0.18	0.005	0.003	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South-facing			Cardinal E366 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG 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			0.84	0.15	0.236	0.637	0.112
7			0.83	0.15	0.236	0.627	0.110
6			0.83	0.15	0.236	0.620	0.109
5			0.82	0.15	0.236	0.619	0.109
4		✓	0.82	0.14	0.236	0.617	0.109
Marine North		✓	0.82	0.14	0.236	0.615	0.108
Marine South	✓	✓	0.82	0.14	0.236	0.611	0.108
3	✓	✓	0.82	0.14	0.236	0.614	0.108
2 West	✓	✓	0.79	0.14	0.236	0.572	0.101
2 East	✓	✓	0.79	0.14	0.236	0.572	0.101
Ventana Select Series 86 Tilt		FRAME			Psi-spacer		Psi-opaque
Cardinal Endur		Frame height		U-frame		Ψ	
		mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F
	Head	117	4.60	0.97	0.17	0.006	0.004
	Sill	117	4.60	0.97	0.17	0.006	0.004
	left jamb	117	4.60	0.97	0.17	0.007	0.004
	right jamb	117	4.60	0.97	0.17	0.007	0.004
							0.132
							Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties						
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Cardinal E366 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG				
					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			0.84	0.15	0.205	0.637	0.112		
7			0.83	0.15	0.205	0.627	0.110		
6			0.83	0.15	0.205	0.620	0.109		
5			0.82	0.15	0.205	0.619	0.109		
4		✓	0.82	0.14	0.205	0.617	0.109		
Marine North		✓	0.82	0.14	0.205	0.615	0.108		
Marine South	✓	✓	0.82	0.14	0.205	0.611	0.108		
3	✓	✓	0.82	0.14	0.205	0.614	0.108		
2 West	✓	✓	0.79	0.14	0.205	0.572	0.101		
2 East	✓	✓	0.79	0.14	0.205	0.572	0.101		
Ventana Select Series 86 Tilt			FRAME		Psi-spacer		Psi-opaque		
Cardinal Endur			U-frame		Ψ		W/mK		
			Frame height	W/m2K	BTU/hr.ft2.F	W/mK		BTU/hr.ft.F	
			mm	in					
Head			117	4.60	0.97	0.17	0.006	0.004	0.132
Sill			117	4.60	0.97	0.17	0.006	0.004	BTU/hr.ft.F
left jamb			117	4.60	0.97	0.17	0.007	0.004	0.076
right jamb			117	4.60	0.97	0.17	0.007	0.004	Grade B


Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	South-facing	North, East, West - facing			Cardinal E366 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG			
					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	0.205	0.637	0.112	
7			0.89	0.16	0.205	0.627	0.110	
6			0.88	0.16	0.205	0.620	0.109	
5			0.88	0.16	0.205	0.619	0.109	
4		✓	0.88	0.15	0.205	0.617	0.109	
Marine North		✓	0.88	0.15	0.205	0.615	0.108	
Marine South	✓	✓	0.88	0.15	0.205	0.611	0.108	
3	✓	✓	0.88	0.15	0.205	0.614	0.108	
2 West	✓	✓	0.85	0.15	0.205	0.572	0.101	
2 East	✓	✓	0.85	0.15	0.205	0.572	0.101	
Ventana Select Series 86 Tilt			FRAME		Psi-spacer		Psi-opaque	
Cardinal Endur			U-frame		Ψ			
	Frame height		W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK	
	mm	in						
	Head	117	4.60	0.97	0.17	0.006	0.004	0.132
	Sill	117	4.60	0.97	0.17	0.006	0.004	BTU/hr.ft.F
	left jamb	117	4.60	0.97	0.17	0.007	0.004	0.076
	right jamb	117	4.60	0.97	0.17	0.007	0.004	Grade B

Valid through February 2021


Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties			
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing South-facing		 Cardinal E366 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG Internal grids >= 25.4mm maintain 3mm clearance			
		Whole-window installed U-value		Ucog-Value		
Climate specific recommendations:		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F
8		0.84	0.15	0.176	0.637	0.112
7		0.83	0.15	0.176	0.627	0.110
6		0.83	0.15	0.176	0.620	0.109
5		0.82	0.15	0.176	0.619	0.109
4		0.82	0.14	0.176	0.617	0.109
Marine North		0.82	0.14	0.176	0.615	0.108
Marine South		0.82	0.14	0.176	0.611	0.108
3		0.82	0.14	0.176	0.614	0.108
2 West		0.79	0.14	0.176	0.572	0.101
2 East		0.79	0.14	0.176	0.572	0.101

Ventana Select Series 86 Tilt 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	117	4.60	0.97	0.17	0.006	0.004	0.132
Sill	117	4.60	0.97	0.17	0.006	0.004	BTU/hr.ft.F
left jamb	117	4.60	0.97	0.17	0.007	0.004	0.076
right jamb	117	4.60	0.97	0.17	0.007	0.004	Grade B

Valid through February 2021

Calculation based on ISO 15099

Product name: Ventana Select Series 86 Tilt Turn			Center-of-glass properties					
ASHRAE/IECC /DOE North American Climate Zone	North, East, West - facing	South- facing			Cardinal E366 / ARG90 / E180 / ARG90 / I89 (3MM/3MM/3MM) - 1-3/8" IG			
					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	0.176	0.637	0.112	
7			0.89	0.16	0.176	0.627	0.110	
6			0.88	0.16	0.176	0.620	0.109	
5			0.88	0.16	0.176	0.619	0.109	
4		✓	0.88	0.15	0.176	0.617	0.109	
Marine North		✓	0.88	0.15	0.176	0.615	0.108	
Marine South	✓	✓	0.88	0.15	0.176	0.611	0.108	
3	✓	✓	0.88	0.15	0.176	0.614	0.108	
2 West	✓	✓	0.85	0.15	0.176	0.572	0.101	
2 East	✓	✓	0.85	0.15	0.176	0.572	0.101	
Ventana Select Series 86 Tilt		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	117	4.60	0.97	0.17	0.006	0.004	0.132
	Sill	117	4.60	0.97	0.17	0.006	0.004	BTU/hr.ft.F
	left jamb	117	4.60	0.97	0.17	0.007	0.004	0.076
	right jamb	117	4.60	0.97	0.17	0.007	0.004	Grade B

Valid through February 2021