

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.47	0.28	0.65	00483-00001
Solar Grey	5049.19	2154.19	0.47	0.30	0.63	00488-00001
Solar Bronze	5041.19	2154.19	0.49	0.31	0.48	00516-00001
Evergreen	9881.19	2154.19	0.47	0.33	0.55	00489-00001
Azuria	5033.19	2154.19	0.47	0.33	0.55	00490-00001

Cardinal LoE 340

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	2001.19	0.48	0.19	0.39	00484-00001

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	2001.19	0.48	0.42	0.72	00485-00001

Solar Bans

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	2001.19	0.47	0.28	0.64	00486-00001
SB 60	5281.19	2001.19	0.48	0.40	0.73	00487-00001

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.48	0.28	0.64	00491-00001
Solar Grey	5049.19	30032.19	0.47	0.29	0.42	00504-00001
Solar Bronze	5041.19	30032.19	0.48	0.31	0.47	00505-00001
Evergreen	9881.19	30032.19	0.48	0.33	0.54	00506-00001
Azuria	5033.19	30032.19	0.48	0.33	0.54	00507-00001
White Lam	2154.19	1892.19	0.47	0.27	0.47	00493-00001
SGP Lam	2156.19	2067.19	0.47	0.27	0.61	00492-00003

Cardinal LoE 340

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.49	0.19	0.38	00494-00001
White Lam	2164.19	1892.19	0.48	0.18	0.28	00496-00001

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	3072.19	0.49	0.41	0.71	00497-00001
SGP Lam	2013.19	2067.19	0.48	0.27	0.61	00492-00003

Solar Bans

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	3072.19	0.48	0.28	0.63	00500-00001
SB 60	5281.19	3072.19	0.49	0.40	0.72	00502-00001

PLASTIC GLAZING

Double Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30004.19	0.68	0.75	0.77	00517-00001
White	30007.19	0.68	0.52	0.43	00517-00002
Bronze	30010.19	0.68	0.41	0.22	00517-00003

Triple Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005.19	0.50	0.68	0.66	00518-00001
White	30008.19	0.50	0.48	0.34	00518-00002
Bronze	30011.19	0.50	0.34	0.19	00518-00003

White Dome / 25 mm Clear MWS

	Panes	U-factor	SHGC	VT	CPD Line
White / Clear	30013.19	0.38	0.31	0.29	00520-00001

VT values for plastic glazing are not certified due to NFRC Test Procedure limitations. Values shown are center of glazing.

TRIPLE PANE - TEMP / TEMP / LAM

Cardinal LoE 366 | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.33	0.24	0.56	00508-00001
White Lam	2154.19	1892.19	0.33	0.24	0.41	00509-00001

Cardinal LoE 340 | 180 | Lam

1-5/16" O.A. - Temp / Temp / Lam

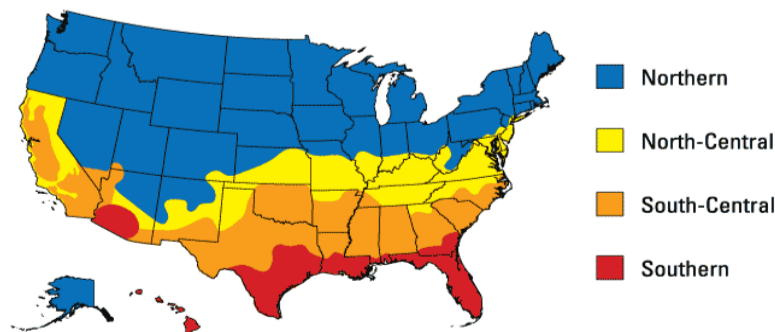
	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.33	0.15	0.34	00510-00001
White Lam	2164.19	1892.19	0.33	0.15	0.25	00511-00001

Tint | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Solar Grey	5049.19	3072.19	0.38	0.42	0.47	00512-00001
Solar Bronze	5041.19	3072.19	0.38	0.46	0.53	00513-00001
Evergreen	9881.19	3072.19	0.38	0.38	0.60	00514-00001
Azuria	5033.19	3072.19	0.38	0.36	0.61	00515-00001



CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



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Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

5843 Unit Skylight

5843-SKFX
CRY-M-17

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.48	0.28	0.64	00079-00001

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	30032.19	0.48	0.28	0.64	00080-00001

ES Unit Skylight

ES-3903-SKFX
CRY-M-18

TEMP / TEMP / TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.29	0.18	0.40	00007-00002

TEMP / TEMP / TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	30032.19	0.29	0.18	0.39	00007-00004
White Lam	2154.19	1892.19	0.29	0.17	0.28	00007-00003

Cardinal LoE 340

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.29	0.12	0.24	00007-00001

Cardinal LoE 340

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	30032.19	0.29	0.12	0.23	00007-00007
White Lam	2164.19	1892.19	0.29	0.11	0.17	00007-00008

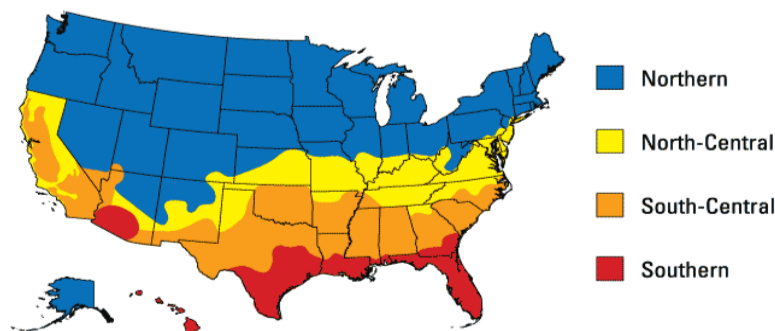
5000 Unit Skylight

5000-SKFX
CRY-M-19

White Dome / 25 mm Clear MWS

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
White / Clear	30013.19		0.44	0.29	0.29	00007-00001

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WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	≥ 0.31	≥ 0.35	Equivalent Energy Performance
	≥ 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.50	Any	
North Central	≤ 0.53	≤ 0.35	
South Central	≤ 0.53	≤ 0.28	
Southern	≤ 0.60	≤ 0.28	

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient

Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.55	0.27	0.63	0855-00001
Solar Grey	5049.19	2154.19	0.55	0.29	0.42	0860-00001
Solar Bronze	5041.19	2154.19	0.55	0.30	0.47	0888-00001
Evergreen	9881.19	2154.19	0.55	0.32	0.54	0861-00001
Azuria	5033.19	2154.19	0.55	0.33	0.54	0862-00001

Cardinal LoE 340

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	2001.19	0.55	0.19	0.38	0856-00001

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	2001.19	0.56	0.41	0.70	0857-00001

Solar Bans

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	2001.19	0.55	0.28	0.63	0858-00001
SB 60	5281.19	2001.19	0.55	0.40	0.71	0859-00001

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.55	0.27	0.62	0863-00001
Solar Grey	5049.19	30032.19	0.56	0.29	0.41	0876-00001
Solar Bronze	5041.19	30032.19	0.56	0.30	0.46	0877-00001
Evergreen	9881.19	30032.19	0.56	0.32	0.53	0878-00001
Azuria	5033.19	30032.19	0.56	0.32	0.53	0879-00001
White Lam	2154.19	1892.19	0.55	0.26	0.45	0865-00001
SGP Lam	2156.19	2067.19	0.56	0.27	0.60	0864-00003

Cardinal LoE 340

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.55	0.18	0.37	0866-00001
White Lam	2164.19	1892.19	0.56	0.18	0.27	0868-00001

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	3072.19	0.56	0.40	0.69	0869-00001
SGP Lam	2013.19	2067.19	0.57	0.27	0.60	0864-00003

Solar Bans

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	3072.19	0.56	0.27	0.62	0872-00001
SB 60	5281.19	3072.19	0.57	0.39	0.70	0874-00001

PLASTIC GLAZING

Double Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30004.19	0.74	0.73	0.77	0889-00001
White	30007.19	0.74	0.51	0.43	0889-00002
Bronze	30010.19	0.74	0.40	0.22	0889-00003

Triple Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005.19	0.58	0.66	0.66	0890-00001
White	30008.19	0.58	0.47	0.34	0890-00002
Bronze	30011.19	0.58	0.33	0.19	0890-00003

White Dome / 25 mm Clear MWS

	Panes	U-factor	SHGC	VT	CPD Line
White / Clear	30013.19	0.46	0.30	0.29	0892-00001

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TRIPLE PANE - TEMP / TEMP / LAM

Cardinal LoE 366 | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.41	0.23	0.55	0880-00001
White Lam	2154.19	1892.19	0.41	0.23	0.40	0881-00001

Cardinal LoE 340 | 180 | Lam

1-5/16" O.A. - Temp / Temp / Lam

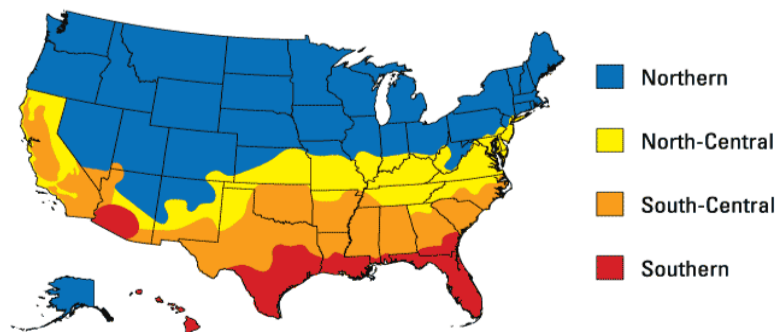
	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.41	0.15	0.33	0882-00001
White Lam	2164.19	1892.19	0.41	0.15	0.24	0883-00001

Tint | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Solar Grey	5049.19	3072.19	0.47	0.41	0.46	0884-00001
Solar Bronze	5041.19	3072.19	0.47	0.45	0.51	0885-00001
Evergreen	9881.19	3072.19	0.47	0.37	0.59	0886-00001
Azuria	5033.19	3072.19	0.47	0.35	0.59	0887-00001



CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



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Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	2001.19	0.48	0.25	0.57	0804-00001
Solar Grey	5049.19	2154.19	0.48	0.26	0.38	0809-00001
Solar Bronze	5041.19	2154.19	0.48	0.27	0.42	0837-00001
Evergreen	9881.19	2154.19	0.48	0.29	0.48	0810-00001
Azuria	5033.19	2154.19	0.48	0.29	0.48	0811-00001

Cardinal LoE 340

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	2001.19	0.48	0.17	0.34	0805-00001

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	2001.19	0.49	0.37	0.63	0806-00001

Solar Bans

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	2001.19	0.48	0.25	0.56	0807-00001
SB 60	5281.19	2001.19	0.48	0.36	0.64	0808-00001

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.49	0.25	0.56	0812-00001
Solar Grey	5049.19	30032.19	0.49	0.26	0.37	0825-00001
Solar Bronze	5041.19	30032.19	0.49	0.27	0.41	0826-00001
Evergreen	9881.19	30032.19	0.49	0.29	0.47	0827-00001
Azuria	5033.19	30032.19	0.49	0.29	0.48	0828-00001
White Lam	2154.19	1892.19	0.49	0.23	0.41	0814-00001
SGP Lam	2156.19	2067.19	0.49	0.24	0.53	0813-00003

Cardinal LoE 340

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.49	0.17	0.33	0815-00001
White Lam	2164.19	1892.19	0.49	0.16	0.24	0817-00001

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2011.19	3072.19	0.50	0.36	0.62	0818-00001
SGP Lam	2013.19	2067.19	0.50	0.24	0.53	0813-00003

Solar Bans

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SB 70XL	5432.19	3072.19	0.49	0.25	0.56	0821-00001
SB 60	5281.19	3072.19	0.50	0.35	0.63	0823-00001

PLASTIC GLAZING

Double Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30004.19	0.67	0.66	0.77	0838-00001
White	30007.19	0.67	0.46	0.43	0838-00002
Bronze	30010.19	0.67	0.36	0.22	0838-00003

Triple Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005.19	0.50	0.60	0.66	0839-00001
White	30008.19	0.50	0.42	0.34	0839-00002
Bronze	30011.19	0.50	0.30	0.19	0839-00003

White Dome / 25 mm Clear MWS

	Panes	U-factor	SHGC	VT	CPD Line
White / Clear	30013.19	0.39	0.27	0.29	0841-00001

VT values for plastic glazing are not certified due to NFRC Test Procedure limitations. Values shown are center of glazing.

TRIPLE PANE - TEMP / TEMP / LAM

Cardinal LoE 366 | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154.19	3072.19	0.35	0.21	0.49	0829-00001
White Lam	2154.19	1892.19	0.35	0.21	0.36	0830-00001

Cardinal LoE 340 | 180 | Lam

1-5/16" O.A. - Temp / Temp / Lam

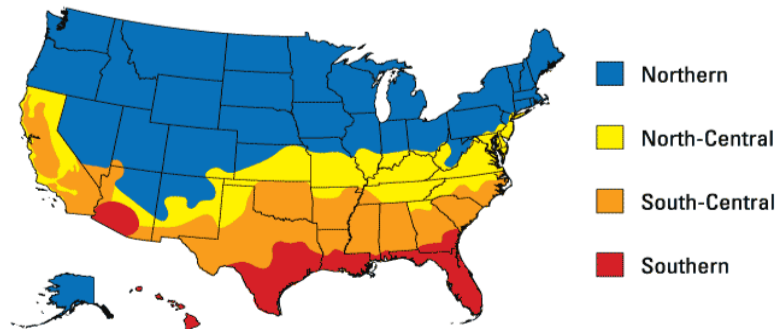
	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2164.19	3072.19	0.35	0.14	0.30	0831-00001
White Lam	2164.19	1892.19	0.35	0.13	0.22	0832-00001

Tint | 180 | Lam

Pane 2 2191.19

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Solar Grey	5049.19	3072.19	0.40	0.37	0.42	0833-00001
Solar Bronze	5041.19	3072.19	0.40	0.40	0.46	0834-00001
Evergreen	9881.19	3072.19	0.40	0.33	0.53	0835-00001
Azuria	5033.19	3072.19	0.40	0.31	0.53	0836-00001



CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



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Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.60	0.28	0.65	00857-00002
Solar Grey	5049	2154	0.60	0.29	0.43	00857-00004
Solar Bronze	5041	2154	0.60	0.31	0.48	00857-00003
Evergreen	9881	2154	0.60	0.33	0.55	00857-00006
Azuria	5033	2154	0.60	0.33	0.55	00857-00005

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2011	2001	0.60	0.42	0.72	00854-00002
	5049	2011	0.60	0.37	0.48	00854-00015
	5041	2011	0.60	0.40	0.53	00854-00014
	9881	2011	0.60	0.38	0.61	00854-00017
	5033	2011	0.60	0.38	0.61	00854-00016

Solar Ban 70XL

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	2001	0.60	0.28	0.64	00844-00003
	5049	5432	0.60	0.29	0.43	00844-00021
	5041	5432	0.60	0.30	0.47	00844-00020
	9881	5432	0.60	0.32	0.54	00844-00023
	5033	5432	0.60	0.33	0.55	00844-00022

Solar Ban 60

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	2001	0.60	0.40	0.73	00844-00002
	5049	5281	0.60	0.36	0.48	00844-00017
	5041	5281	0.60	0.38	0.54	00844-00016
	9881	5281	0.60	0.37	0.61	00844-00019
	5033	5281	0.60	0.37	0.62	00844-00018

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	1810	0.60	0.28	0.63	00854-00005
Solar Grey	5049	30032	0.60	0.29	0.42	00854-00026
Solar Bronze	5041	30032	0.60	0.31	0.47	00854-00025
Evergreen	9881	30032	0.60	0.32	0.54	00854-00028
Azuria	5033	30032	0.60	0.33	0.54	00854-00027
White Lam	2154	1892	0.60	0.27	0.46	00854-00011

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.60	0.28	0.63	00844-00006
	5049	5432	0.60	0.29	0.43	00844-00021
	5041	5432	0.60	0.30	0.47	00844-00020
	9881	5432	0.60	0.32	0.54	00844-00023
	5033	5432	0.60	0.33	0.55	00844-00022
	5432	1892	0.60	0.27	0.46	00844-00013

Solar Ban 70XL

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.60	0.28	0.63	00844-00006
	5049	5432	0.60	0.29	0.43	00844-00021
	5041	5432	0.60	0.30	0.47	00844-00020
	9881	5432	0.60	0.32	0.54	00844-00023
	5033	5432	0.60	0.33	0.55	00844-00022
	5432	1892	0.60	0.27	0.46	00844-00013

Solar Ban 60

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	1810	0.61	0.40	0.71	00845-00004
	5049	5281	0.60	0.36	0.48	00844-00017
	5041	5281	0.60	0.38	0.54	00844-00016
	9881	5281	0.60	0.37	0.61	00844-00019
	5033	5281	0.60	0.37	0.62	00844-00018
	5281	1892	0.61	0.38	0.52	00845-00011

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SGP Lam	2156	2067	0.60	0.27	0.61	00857-00001

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2013	2067	0.60	0.27	0.61	00857-00001

TRIPLE PANE

Cardinal LoE 366 + 180

1-5/16" O.A. - Temp / Temp / Temp

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.45	0.24	0.57	00863-00011
Solar Grey	5049	2154	0.45	0.30	0.38	00863-00013
Solar Bronze	5041	2154	0.45	0.32	0.42	00863-00012
Evergreen	9881	2154	0.45	0.31	0.48	00863-00015
Azuria	5033	2154	0.45	0.30	0.48	00863-00014

Cardinal LoE 366 + 180

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
	2154	1810	0.45	0.24	0.55	00864-00021
	5049	2154	0.45	0.30	0.38	00863-00013
	5041	2154	0.45	0.32	0.42	00863-00012
	9881	2154	0.45	0.31	0.48	00863-00015
	5033	2154	0.45	0.30	0.48	00863-00014

PLASTIC GLAZING

Double Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30004	0.78	0.75	0.77	00868-00001
White	30007	0.78	0.52	0.43	00868-00002
Bronze	30010	0.78	0.41	0.22	00868-00003

Triple Dome Glazing

	Panes	U-factor	SHGC	VT	CPD Line
	30006	0.61	0.68	0.66	00870-00001
	30009	0.61	0.48	0.34	00870-00002
	30012	0.61	0.34	0.19	00870-00003

25mm Polycarb. MWS

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005	0.61	0.57	0.57	00869-00001
White	30008	0.61	0.41	0.41	00869-00002
Bronze	30011	0.61	0.41	0.41	00869-00003

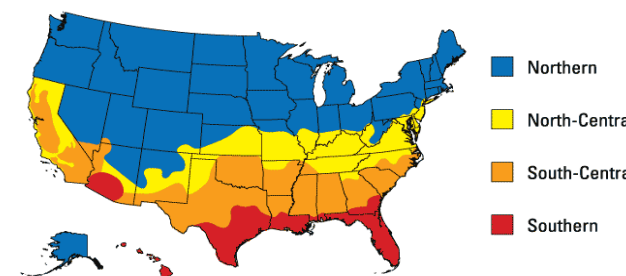
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WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS		
CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366 1" O.A. - Temp / Temp (1/8" over 1/8")						Cardinal LoE 272 1" O.A. - Temp / Temp (1/8" over 1/8")						Solar Ban 70XL 1" O.A. - Temp / Temp (1/8" over 1/8")						Solar Ban 60 1" O.A. - Temp / Temp (1/8" over 1/8")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	2001	0.44	0.27	0.63	0994-00002	2011	2001	0.45	0.41	0.70	0991-00002	5432	2001	0.45	0.27	0.62	0981-00003	5281	2001	0.45	0.39	0.71	0981-00002
Solar Grey	5049	2154	0.44	0.29	0.42	0994-00004	5049	2011	0.45	0.36	0.46	0991-00015	5049	5432	0.45	0.28	0.42	0981-00021	5049	5281	0.45	0.35	0.47	0981-00017
Solar Bronze	5041	2154	0.44	0.30	0.46	0994-00003	5041	2011	0.45	0.39	0.51	0991-00014	5041	5432	0.45	0.30	0.46	0981-00020	5041	5281	0.45	0.38	0.52	0981-00016
Evergreen	9881	2154	0.44	0.32	0.53	0994-00006	9881	2011	0.45	0.37	0.59	0991-00017	9881	5432	0.45	0.31	0.53	0981-00023	9881	5281	0.45	0.36	0.60	0981-00019
Azuria	5033	2154	0.44	0.33	0.54	0994-00005	5033	2011	0.45	0.37	0.59	0991-00016	5033	5432	0.45	0.32	0.53	0981-00022	5033	5281	0.45	0.36	0.60	0981-00018

TEMP / LAM

Cardinal LoE 366 1" O.A. - Temp / Lam (1/8" over 1/4")						Cardinal LoE 272 1" O.A. - Temp / Lam (1/8" over 1/4")						Solar Ban 70XL 1" O.A. - Temp / Lam (1/8" over 1/4")						Solar Ban 60 1" O.A. - Temp / Lam (1/8" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	1810	0.45	0.27	0.61	0991-00005	5432	1810	0.45	0.27	0.61	0981-00006	5432	1810	0.45	0.27	0.61	0981-00006	5281	1810	0.46	0.39	0.69	0982-00004
Solar Grey	5049	30032	0.45	0.29	0.41	0991-00026	5049	5432	0.45	0.28	0.42	0981-00021	5049	5432	0.45	0.28	0.42	0981-00021	5049	5281	0.45	0.35	0.47	0981-00017
Solar Bronze	5041	30032	0.45	0.30	0.45	0991-00025	5041	5432	0.45	0.30	0.46	0981-00020	5041	5432	0.45	0.30	0.46	0981-00020	5041	5281	0.45	0.38	0.52	0981-00016
Evergreen	9881	30032	0.45	0.32	0.52	0991-00028	9881	5432	0.45	0.31	0.53	0981-00023	9881	5432	0.45	0.31	0.53	0981-00023	9881	5281	0.45	0.36	0.60	0981-00019
Azuria	5033	30032	0.45	0.32	0.53	0991-00027	5033	5432	0.45	0.32	0.53	0981-00022	5033	5432	0.45	0.32	0.53	0981-00022	5033	5281	0.45	0.36	0.60	0981-00018
White Lam	2154	1892	0.45	0.26	0.45	0991-00011	5432	1892	0.45	0.26	0.45	0981-00013	5432	1892	0.45	0.26	0.45	0981-00013	5281	1892	0.46	0.37	0.51	0982-00011

1" O.A. - Temp / Lam (3/16" over 1/4")						1" O.A. - Temp / Lam (3/16" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
SGP Lam	2156	2067	0.44	0.26	0.59	0994-00001	2013	2067	0.44	0.26	0.59	0994-00001

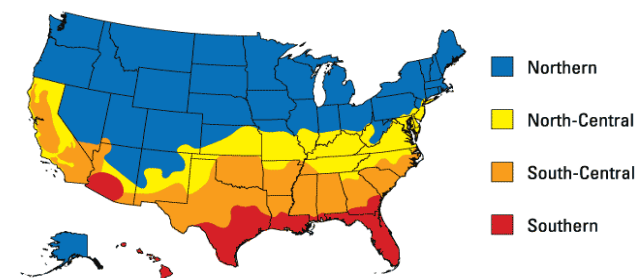
TRIPLE PANE

Cardinal LoE 366 + 180 1-5/16" O.A. - Temp / Temp / Temp						Cardinal LoE 366 + 180 1-5/16" O.A. - Temp / Temp / Lam						
Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line	
Clear	2154	2001	0.29	0.23	0.55	1000-00011	2154	1810	0.29	0.23	0.54	1001-00021
Solar Grey	5049	2154	0.29	0.29	0.37	1000-00013	5049	2154	0.29	0.29	0.37	1000-00013
Solar Bronze	5041	2154	0.29	0.32	0.41	1000-00012	5041	2154	0.29	0.32	0.41	1000-00012
Evergreen	9881	2154	0.29	0.30	0.47	1000-00015	9881	2154	0.29	0.30	0.47	1000-00015
Azuria	5033	2154	0.29	0.29	0.47	1000-00014	5033	2154	0.29	0.29	0.47	1000-00014
	Pane 2	2191				Pane 2	2191					

WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS		
CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·°F
² Solar Heat Gain Coefficient



Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

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TEMP / TEMP

Cardinal LoE 366 1" O.A. - Temp / Temp (1/8" over 1/8")						Cardinal LoE 272 1" O.A. - Temp / Temp (1/8" over 1/8")						Solar Ban 70XL 1" O.A. - Temp / Temp (1/8" over 1/8")						Solar Ban 60 1" O.A. - Temp / Temp (1/8" over 1/8")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	2001	0.49	0.27	0.62	0512-00002	2011	2001	0.49	0.40	0.69	0509-00002	5432	2001	0.49	0.27	0.62	0499-00003	5281	2001	0.49	0.39	0.70	0499-00002
Solar Grey	5049	2154	0.49	0.29	0.41	0512-00004	5049	2011	0.49	0.36	0.46	0509-00015	5049	5432	0.49	0.28	0.41	0499-00021	5049	5281	0.49	0.35	0.47	0499-00017
Solar Bronze	5041	2154	0.49	0.30	0.46	0512-00003	5041	2011	0.49	0.38	0.51	0509-00014	5041	5432	0.49	0.30	0.46	0499-00020	5041	5281	0.49	0.37	0.52	0499-00016
Evergreen	9881	2154	0.49	0.32	0.53	0512-00006	9881	2011	0.49	0.37	0.59	0509-00017	9881	5432	0.49	0.31	0.52	0499-00023	9881	5281	0.49	0.36	0.59	0499-00019
Azuria	5033	2154	0.49	0.32	0.53	0512-00005	5033	2011	0.49	0.36	0.59	0509-00016	5033	5432	0.49	0.32	0.53	0499-00022	5033	5281	0.49	0.36	0.60	0499-00018

TEMP / LAM

Cardinal LoE 366 1" O.A. - Temp / Lam (1/8" over 1/4")						Cardinal LoE 272 1" O.A. - Temp / Lam (1/8" over 1/4")						Solar Ban 70XL 1" O.A. - Temp / Lam (1/8" over 1/4")						Solar Ban 60 1" O.A. - Temp / Lam (1/8" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	1810	0.49	0.27	0.61	0509-00005	5432	1810	0.49	0.27	0.61	0499-00006	5432	1810	0.49	0.27	0.61	0499-00006	5281	1810	0.50	0.39	0.68	0500-00004
Solar Grey	5049	30032	0.49	0.28	0.41	0509-00026	5049	5432	0.49	0.28	0.41	0499-00021	5049	5432	0.49	0.28	0.41	0499-00021	5049	5281	0.49	0.35	0.47	0499-00017
Solar Bronze	5041	30032	0.49	0.30	0.45	0509-00025	5041	5432	0.49	0.30	0.46	0499-00020	5041	5432	0.49	0.30	0.46	0499-00020	5041	5281	0.49	0.37	0.52	0499-00016
Evergreen	9881	30032	0.49	0.31	0.52	0509-00028	9881	5432	0.49	0.31	0.52	0499-00023	9881	5432	0.49	0.31	0.52	0499-00023	9881	5281	0.49	0.36	0.59	0499-00019
Azuria	5033	30032	0.49	0.32	0.52	0509-00027	5033	5432	0.49	0.32	0.53	0499-00022	5033	5432	0.49	0.32	0.53	0499-00022	5033	5281	0.49	0.36	0.60	0499-00018
White Lam	2154	1892	0.49	0.26	0.45	0509-00011	5432	1892	0.49	0.26	0.45	0499-00013	5432	1892	0.49	0.26	0.45	0499-00013	5281	1892	0.50	0.37	0.50	0500-00011

1" O.A. - Temp / Lam (3/16" over 1/4")						1" O.A. - Temp / Lam (3/16" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
SGP Lam	2156	2067	0.49	0.26	0.59	0512-00001	2013	2067	0.49	0.26	0.59	0512-00001

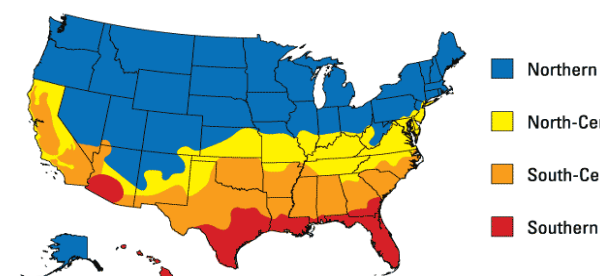
TRIPLE PANE

Cardinal LoE 366 + 180 1-5/16" O.A. - Temp / Temp / Temp						Cardinal LoE 366 + 180 1-5/16" O.A. - Temp / Temp / Lam						
Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line	
Clear	2154	2001	0.34	0.23	0.55	0516-00011	2154	1810	0.34	0.23	0.53	0517-00021
Solar Grey	5049	2154	0.34	0.29	0.36	0516-00013	5049	2154	0.34	0.29	0.36	0516-00013
Solar Bronze	5041	2154	0.34	0.31	0.40	0516-00012	5041	2154	0.34	0.31	0.40	0516-00012
Evergreen	9881	2154	0.34	0.30	0.46	0516-00015	9881	2154	0.34	0.30	0.46	0516-00015
Azuria	5033	2154	0.34	0.29	0.47	0516-00014	5033	2154	0.34	0.29	0.47	0516-00014
	Pane 2	2191				Pane 2	2191					

WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS		
CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



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	Energy Code Prescriptive Maximum Requirements			
	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.42	0.25	0.55	00550-00002
Solar Grey	5049	2154	0.42	0.26	0.37	00550-00004
Solar Bronze	5041	2154	0.42	0.27	0.41	00550-00003
Evergreen	9881	2154	0.42	0.29	0.47	00550-00006
Azuria	5033	2154	0.42	0.29	0.47	00550-00005

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2011	2001	0.42	0.37	0.62	00547-00002
	5049	2011	0.42	0.33	0.41	00547-00015
	5041	2011	0.42	0.35	0.45	00547-00014
	9881	2011	0.42	0.33	0.52	00547-00017
	5033	2011	0.42	0.33	0.52	00547-00016

Solar Ban 70XL

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	2001	0.43	0.25	0.55	00537-00003
	5049	5432	0.43	0.26	0.37	00537-00021
	5041	5432	0.43	0.27	0.41	00537-00020
	9881	5432	0.43	0.28	0.47	00537-00023
	5033	5432	0.43	0.29	0.47	00537-00022

Solar Ban 60

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	2001	0.43	0.35	0.62	00537-00002
	5049	5281	0.43	0.32	0.41	00537-00017
	5041	5281	0.43	0.34	0.46	00537-00016
	9881	5281	0.43	0.33	0.53	00537-00019
	5033	5281	0.43	0.33	0.53	00537-00018

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	1810	0.42	0.25	0.54	00547-00005
Solar Grey	5049	30032	0.42	0.26	0.36	00547-00026
Solar Bronze	5041	30032	0.42	0.27	0.40	00547-00025
Evergreen	9881	30032	0.42	0.29	0.46	00547-00028
Azuria	5033	30032	0.42	0.29	0.47	00547-00027
White Lam	2154	1892	0.42	0.24	0.40	00547-00011

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.43	0.25	0.54	00537-00006
	5049	5432	0.43	0.26	0.37	00537-00021
	5041	5432	0.43	0.27	0.41	00537-00020
	9881	5432	0.43	0.28	0.47	00537-00023
	5033	5432	0.43	0.29	0.47	00537-00022
	5432	1892	0.43	0.24	0.40	00537-00013

Solar Ban 70XL

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.43	0.25	0.54	00537-00006
	5049	5432	0.43	0.26	0.37	00537-00021
	5041	5432	0.43	0.27	0.41	00537-00020
	9881	5432	0.43	0.28	0.47	00537-00023
	5033	5432	0.43	0.29	0.47	00537-00022
	5432	1892	0.43	0.24	0.40	00537-00013

Solar Ban 60

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	1810	0.44	0.35	0.61	00538-00004
	5049	5281	0.43	0.32	0.41	00537-00017
	5041	5281	0.43	0.34	0.46	00537-00016
	9881	5281	0.43	0.33	0.53	00537-00019
	5033	5281	0.43	0.33	0.53	00537-00018
	5281	1892	0.44	0.34	0.45	00538-00011

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SGP Lam	2156	2067	0.42	0.24	0.52	00550-00001

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2013	2067	0.42	0.24	0.52	00550-00001

Cardinal LoE 340

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2165	1810	0.42	0.17	0.32	00551-00005
White Lam	2165	1892	0.42	0.17	0.24	00551-00001

WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS		
CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient

TRIPLE PANE

Cardinal LoE 366 + 180

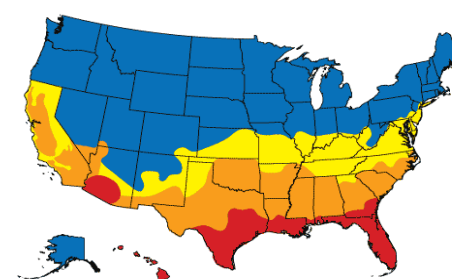
1-5/16" O.A. - Temp / Temp / Temp

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.27	0.21	0.49	00556-00011
Solar Grey	5049	2154	0.27	0.27	0.32	00556-00013
Solar Bronze	5041	2154	0.27	0.29	0.36	00556-00012
Evergreen	9881	2154	0.27	0.27	0.41	00556-00015
Azuria	5033	2154	0.27	0.27	0.42	00556-00014
	Pane 2	2191				

Cardinal LoE 366 + 180

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
	2154	1810	0.27	0.21	0.48	00557-00021
	5049	2154	0.27	0.27	0.32	00556-00013
	5041	2154	0.27	0.29	0.36	00556-00012
	9881	2154	0.27	0.27	0.41	00556-00015
	5033	2154	0.27	0.27	0.42	00556-00014
	Pane 2	2191				



- Northern
- North-Central
- South-Central
- Southern



PLASTIC GLAZING

25mm Polycarb. MWS

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005	0.43	0.50	0.57	00561-00001
White	30008	0.43	0.36	0.41	00561-00002
Bronze	30011	0.43	0.36	0.41	00561-00003

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VT values for plastic glazing are not certified due to NFRC Test Procedure limitations. Values shown are center of glazing.

Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.39	0.24	0.55	00513-00002
Solar Grey	5049	2154	0.39	0.26	0.37	00513-00004
Solar Bronze	5041	2154	0.39	0.27	0.40	00513-00003
Evergreen	9881	2154	0.39	0.28	0.46	00513-00006
Azuria	5033	2154	0.39	0.29	0.47	00513-00005

Cardinal LoE 272

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2011	2001	0.41	0.36	0.61	00510-00002
	5049	2011	0.41	0.32	0.41	00510-00015
	5041	2011	0.41	0.34	0.45	00510-00014
	9881	2011	0.41	0.33	0.52	00510-00017
	5033	2011	0.41	0.33	0.52	00510-00016

Solar Ban 70XL

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	2001	0.42	0.24	0.55	00500-00003
	5049	5432	0.42	0.25	0.36	00500-00021
	5041	5432	0.42	0.27	0.40	00500-00020
	9881	5432	0.42	0.28	0.46	00500-00023
	5033	5432	0.42	0.28	0.47	00500-00022

Solar Ban 60

1" O.A. - Temp / Temp (1/8" over 1/8")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	2001	0.42	0.35	0.62	00500-00002
	5049	5281	0.42	0.31	0.41	00500-00017
	5041	5281	0.42	0.33	0.46	00500-00016
	9881	5281	0.42	0.32	0.52	00500-00019
	5033	5281	0.42	0.32	0.53	00500-00018

TEMP / LAM

Cardinal LoE 366

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2154	1810	0.41	0.24	0.54	00510-00005
Solar Grey	5049	30032	0.41	0.26	0.36	00510-00026
Solar Bronze	5041	30032	0.41	0.27	0.40	00510-00025
Evergreen	9881	30032	0.41	0.28	0.46	00510-00028
Azuria	5033	30032	0.41	0.29	0.46	00510-00027
White Lam	2154	1892	0.41	0.23	0.39	00510-00011

Cardinal LoE 272

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.42	0.24	0.53	00500-00006
	5049	5432	0.42	0.25	0.36	00500-00021
	5041	5432	0.42	0.27	0.40	00500-00020
	9881	5432	0.42	0.28	0.46	00500-00023
	5033	5432	0.42	0.28	0.47	00500-00022
	5432	1892	0.42	0.23	0.39	00500-00013

Solar Ban 70XL

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5432	1810	0.42	0.24	0.53	00500-00006
	5049	5432	0.42	0.25	0.36	00500-00021
	5041	5432	0.42	0.27	0.40	00500-00020
	9881	5432	0.42	0.28	0.46	00500-00023
	5033	5432	0.42	0.28	0.47	00500-00022
	5432	1892	0.42	0.23	0.39	00500-00013

Solar Ban 60

1" O.A. - Temp / Lam (1/8" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	5281	1810	0.43	0.35	0.60	00501-00004
	5049	5281	0.42	0.31	0.41	00500-00017
	5041	5281	0.42	0.33	0.46	00500-00016
	9881	5281	0.42	0.32	0.52	00500-00019
	5033	5281	0.42	0.32	0.53	00500-00018
	5281	1892	0.43	0.33	0.44	00501-00011

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
SGP Lam	2156	2067	0.39	0.24	0.52	00513-00001

1" O.A. - Temp / Lam (3/16" over 1/4")

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
	2013	2067	0.39	0.24	0.52	00513-00001

Cardinal LoE 340

	Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line
Clear	2165	1810	0.40	0.17	0.32	00514-00005
White Lam	2165	1892	0.40	0.16	0.24	00514-00001

WINDOWS

CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

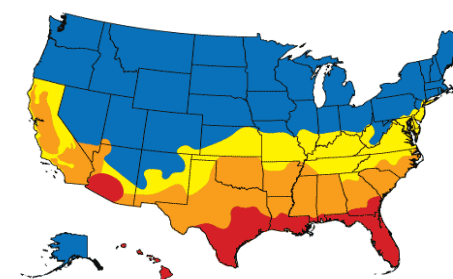
SKYLIGHTS

CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²

¹ Btu/h ft²·F

² Solar Heat Gain Coefficient



- Northern
- North-Central
- South-Central
- Southern



TRIPLE PANE

Cardinal LoE 366 + 180

1-5/16" O.A. - Temp / Temp / Temp

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
Clear	2154	2001	0.24	0.21	0.48	00519-00011
Solar Grey	5049	2154	0.24	0.26	0.32	00519-00013
Solar Bronze	5041	2154	0.24	0.28	0.36	00519-00012
Evergreen	9881	2154	0.24	0.27	0.41	00519-00015
Azuria	5033	2154	0.24	0.26	0.41	00519-00014
	Pane 2	2191				

Cardinal LoE 366 + 180

1-5/16" O.A. - Temp / Temp / Lam

	Pane 1	Pane 3	U-factor	SHGC	VT	CPD Line
	2154	1810	0.24	0.21	0.47	00520-00021
	5049	2154	0.24	0.26	0.32	00519-00013
	5041	2154	0.24	0.28	0.36	00519-00012
	9881	2154	0.24	0.27	0.41	00519-00015
	5033	2154	0.24	0.26	0.41	00519-00014
	Pane 2	2191				

PLASTIC GLAZING

25mm Polycarb. MWS

	Panes	U-factor	SHGC	VT	CPD Line
Clear	30005	0.40	0.49	0.57	00524-00001
White	30008	0.40	0.35	0.41	00524-00002
Bronze	30011	0.40	0.35	0.41	00524-00003

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VT values for plastic glazing are not certified due to NFRC Test Procedure limitations. Values shown are center of glazing.

Energy Code Prescriptive Maximum Requirements

	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

TEMP / TEMP

Cardinal LoE 366 1" O.A. - Temp / Temp (1/8" over 1/8")							Cardinal LoE 272 1" O.A. - Temp / Temp (1/8" over 1/8")							Solar Ban 70XL 1" O.A. - Temp / Temp (1/8" over 1/8")							Solar Ban 60 1" O.A. - Temp / Temp (1/8" over 1/8")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	2001	0.30	0.25	0.58	0306-00002	2011	2001	0.30	0.38	0.65	0303-00002	5432	2001	0.32	0.25	0.58	0297-00003	5281	2001	0.32	0.36	0.65	0297-00002			
Solar Grey	5049	2154	0.30	0.26	0.39	0306-00004	5049	2011	0.30	0.33	0.43	0303-00015	5049	5432	0.32	0.26	0.39	0297-00021	5049	5281	0.32	0.33	0.44	0297-00017			
Solar Bronze	5041	2154	0.30	0.28	0.43	0306-00003	5041	2011	0.30	0.36	0.48	0303-00014	5041	5432	0.32	0.28	0.43	0297-00020	5041	5281	0.32	0.35	0.48	0297-00016			
Evergreen	9881	2154	0.30	0.29	0.49	0306-00006	9881	2011	0.30	0.34	0.55	0303-00017	9881	5432	0.32	0.29	0.49	0297-00023	9881	5281	0.32	0.33	0.55	0297-00019			
Azuria	5033	2154	0.30	0.30	0.50	0306-00005	5033	2011	0.30	0.33	0.55	0303-00016	5033	5432	0.32	0.29	0.49	0297-00022	5033	5281	0.32	0.33	0.56	0297-00018			

TEMP / LAM

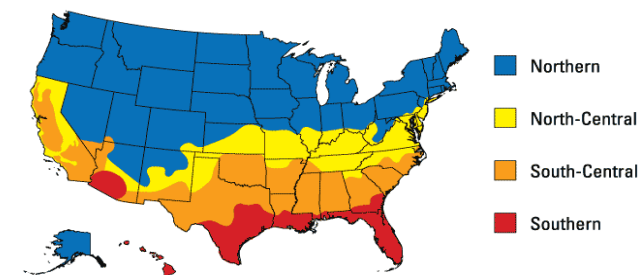
Cardinal LoE 366 1" O.A. - Temp / Lam (1/8" over 1/4")							Cardinal LoE 272 1" O.A. - Temp / Lam (1/8" over 1/4")							Solar Ban 70XL 1" O.A. - Temp / Lam (1/8" over 1/4")							Solar Ban 60 1" O.A. - Temp / Lam (1/8" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
Clear	2154	1810	0.30	0.25	0.57	0303-00005	5432	1810	0.32	0.25	0.57	0297-00006	5432	1810	0.32	0.25	0.57	0297-00006	5281	1810	0.34	0.36	0.64	0298-00004			
Solar Grey	5049	30032	0.30	0.26	0.38	0303-00026	5049	5432	0.32	0.26	0.39	0297-00021	5049	5432	0.32	0.26	0.39	0297-00021	5049	5281	0.32	0.33	0.44	0297-00017			
Solar Bronze	5041	30032	0.30	0.28	0.42	0303-00025	5041	5432	0.32	0.28	0.43	0297-00020	5041	5432	0.32	0.28	0.43	0297-00020	5041	5281	0.32	0.35	0.48	0297-00016			
Evergreen	9881	30032	0.30	0.29	0.48	0303-00028	9881	5432	0.32	0.29	0.49	0297-00023	9881	5432	0.32	0.29	0.49	0297-00023	9881	5281	0.32	0.33	0.55	0297-00019			
Azuria	5033	30032	0.30	0.29	0.49	0303-00027	5033	5432	0.32	0.29	0.49	0297-00022	5033	5432	0.32	0.29	0.49	0297-00022	5033	5281	0.32	0.33	0.56	0297-00018			
White Lam	2154	1892	0.30	0.24	0.42	0303-00011	5432	1892	0.32	0.24	0.42	0297-00013	5432	1892	0.32	0.24	0.42	0297-00013	5281	1892	0.34	0.35	0.47	0298-00011			

1" O.A. - Temp / Lam (3/16" over 1/4")							1" O.A. - Temp / Lam (3/16" over 1/4")						
Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line		Pane 1	Pane 2	U-factor	SHGC	VT	CPD Line	
SGP Lam	2156	2067	0.30	0.25	0.55	0306-00001	2013	2067	0.30	0.25	0.55	0306-00001	

WINDOWS			
CLIMATE ZONE	U-FACTOR ¹	SHGC ²	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North Central	≤ 0.30	≤ 0.40	
South Central	≤ 0.30	≤ 0.25	
Southern	≤ 0.40	≤ 0.25	

SKYLIGHTS		
CLIMATE ZONE	U-FACTOR ¹	SHGC ²
Northern	≤ 0.50	Any
North Central	≤ 0.53	≤ 0.35
South Central	≤ 0.53	≤ 0.28
Southern	≤ 0.60	≤ 0.28

Air Leakage ≤ 0.3 cfm/ft²
¹ Btu/h ft²·F
² Solar Heat Gain Coefficient



	Energy Code Prescriptive Maximum Requirements			
	WINDOWS		SKYLIGHTS	
	U-factor	SHGC	U-factor	SHGC
2012 IECC (Zone 5 & Marine 4)	0.35	0.40	0.60	0.40
2015 IECC (Zone 5 & Marine 4)	0.32	NR	0.55	NR
WSEC (Residential)	0.30	NR	0.50	NR
WSEC (Commercial)	0.30	0.30	0.50	0.35
WSEC (Com. Metal Framing)	0.38	0.36		
SEC (Commercial)	0.30	0.35	0.45	0.32
SEC (Com. Metal Framing)	0.38	0.35		
SEC (Residential)	0.30	NR	0.50	NR

This REFERENCE GUIDE shows NFRC Certified values for our common glazing configurations. Please contact us if you have a specific glazing requirement not shown.

VT values for plastic glazing are not certified due to NFRC Test Procedure limitations. Values shown are center of glazing.