

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Table of Contents

Model	Finish	Stile	Page	Model	Finish	Stile	Page
Energy Star Qualification Criteria and Zones							
Casement	Metal Clad	Standard	3	Terrace Door	Cyprium	Inswing	25
Casement	Non-Clad	Standard	4	Terrace Door	Cyprium	Outswing	25
Casement	Metal Clad	Fixed	5	Patio Door	Metal Clad	Standard	26
Casement	Non-Clad	Fixed	7	LiftSlide	Metal Clad	Standard	29
Casement	Metal Clad	Push Out	8				
Casement	Non-Clad	Push Out	9				
Casement	Cyprium	L/R	11				
Casement	Cyprium	Fixed	11				
Casement	Cyprium	Push Out	11				
Casement	Cyprium	Push Out Fixed	11				
Awning	Metal Clad	Standard	12				
Awning	Non-Clad	Standard	13				
Awning	Metal Clad	Push Out	14				
Awning	Non-Clad	Push Out	15				
Awning	Cyprium	Standard	17				
Awning	Cyprium	Push Out	17				
Picture	Metal Clad	35 mm	18				
Picture	Non-Clad	35 mm	19				
Picture	Cyprium	35 mm	20				
Double Hung	Metal Clad	Standard	21				
Double Hung	Non-Clad	Standard	23				

## ENERGY STAR® Qualification Criteria for Residential Windows, Doors and Skylights

Windows			
Climate Zone	U-Factor <sup>1</sup>	SHGC <sup>2</sup>	
Northern	≤ 0.30	Any	Prescriptive
	= 0.31	≥ 0.35	Equivalent Energy Performance
	= 0.32	≥ 0.40	
North-Central	≤ 0.32	≤ 0.40	
South-Central	≤ 0.35	≤ 0.30	
Southern	≤ 0.60	≤ 0.27	

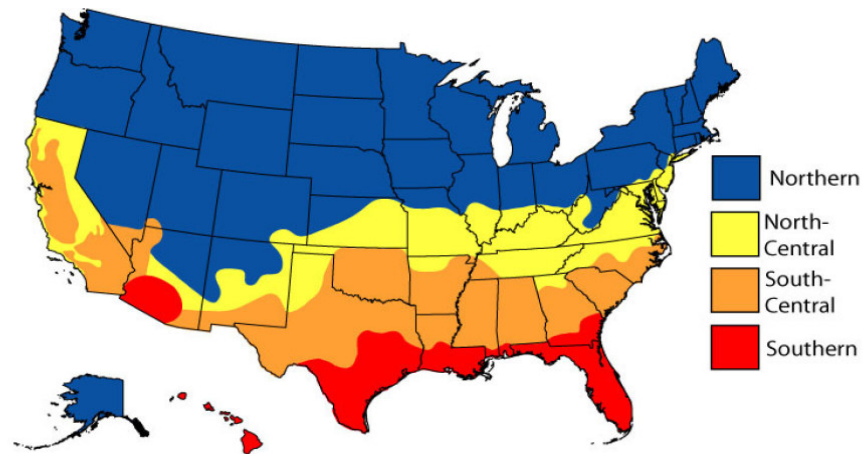
Doors		
Glazing Level	U-Factor <sup>1</sup>	SHGC <sup>2</sup>
Opaque	≤ 0.21	No Rating
≤ 1/2-Lite	≤ 0.27	≤ 0.30
> 1/2-Lite	≤ 0.32	≤ 0.30

Skylights		
Climate Zone	U-Factor <sup>1</sup>	SHGC <sup>2</sup>
Northern	≤ 0.55	Any
North-Central	≤ 0.55	≤ 0.40
South-Central	≤ 0.57	≤ 0.30
Southern	≤ 0.70	≤ 0.30

Effective January 4, 2010

<sup>1</sup> Btu/h.ft<sup>2</sup>.°F

<sup>2</sup> Fraction of incident solar radiation











































# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Non-Clad Double Hung

USA

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space				No SDL		SDL with Internal Spacer				Energy Star Qualified (with and without SDL)														
			Width(s)		Gas Fill	Spacer Bar	U-value	CR	<1"		>1"		Northern			North-Central			South-Central			Southern					
			Width(s)	Gas Fill	Spacer Bar	U-value	CR	SHGC	VT	SHGC	VT	SHGC	VT	N	<1"	>1"	N	<1"	>1"	N	<1"	>1"	N	<1"	>1"		
	Insulating BZ - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.46	40	0.43	0.42																		
	Insulating BZ - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.47	40			0.39	0.37	0.34	0.33														
	Insulating BZ - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.49	37	0.39	0.36																		
	Insulating BZ - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.49	37			0.35	0.32	0.31	0.28														
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.46	40	0.54	0.57																		
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.47	40			0.48	0.50	0.43	0.44														
	Insulating CL - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.48	38	0.52	0.56																		
	Insulating CL - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.50	38			0.47	0.50	0.41	0.44														
	Insulating CL - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.49	37	0.51	0.56																		
	Insulating CL - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.49	37			0.46	0.49	0.41	0.43														
	Insulating CL - LAM	3mm (1/8") / 7mm (9/32")	8mm (5/16")	Air	Standard	0.48	39	0.51	0.56	0.45	0.49	0.40	0.43														
	Insulating GY - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.46	40	0.40	0.38																		
	Insulating GY - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.47	40			0.36	0.33	0.32	0.29														
	Insulating GY - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.49	37			0.32	0.28	0.28	0.24														
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.36	47	0.45	0.55																		
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.38	47			0.40	0.48	0.36	0.42														
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.36	50			0.40	0.48	0.36	0.42														
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.35	50	0.45	0.55																		
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.35	49			0.40	0.48	0.36	0.42														
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.33	49	0.45	0.55																		
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.33	53			0.40	0.48	0.36	0.42														
	Insulating Low E 179 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.32	53	0.45	0.55																		
	Insulating Low E 179 - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.38	45	0.44	0.54																		
	Insulating Low E 179 - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.42	45			0.39	0.48	0.35	0.42														
	Insulating Low E 179 - CL	4mm / 4mm (5/32")	10mm (13/32")	Argon	Standard	0.34	47	0.44	0.54																		
	Insulating Low E 179 - CL	4mm / 4mm (5/32")	10mm (13/32")	Argon	Standard	0.38	47			0.39	0.48	0.35	0.42														
	Insulating Low E 179 - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.40	42	0.44	0.54																		
	Insulating Low E 179 - CL	5mm / 5mm (3/16")	8mm (5/16")	Air	Standard	0.41	42			0.39	0.47	0.34	0.42														
	Insulating Low E 179 - CL	5mm / 5mm (3/16")	8mm (5/16")	Argon	Standard	0.36	45	0.43	0.54																		
	Insulating Low E 179 - CL	5mm / 5mm (3/16")	8mm (5/16")	Argon	Standard	0.37	45			0.39	0.47	0.34	0.42														
	Insulating Low E 179 - LAM	3mm (1/8") / 7mm (9/32")	8mm (5/16")	Air	Standard	0.39	45	0.44	0.53																		
	Insulating Low E 179 - LAM	3mm (1/8") / 7mm (9/32")	8mm (5/16")	Air	Standard	0.40	45			0.39	0.47	0.35	0.41														
	Insulating Low E 179 - LAM	3mm (1/8") / 7mm (9/32")	8mm (5/16")	Argon	Standard	0.35	48	0.44	0.53																		
	Insulating Low E 179 - LAM	3mm (1/8") / 7mm (9/32")	8mm (5/16")	Argon	Standard	0.36	48			0.39	0.47	0.35	0.41														
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.35	48	0.29	0.50																		
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.36	48			0.26	0.44	0.23	0.39														
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.35	51			0.26	0.44	0.23	0.39														
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.33	51	0.29	0.50																		
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.32	50	0.29	0.50																		
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.33	50			0.26	0.44	0.23	0.39														
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.32	54			0.26	0.44	0.23	0.39														
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.30	54	0.29	0.50																		
Heat-Smart	Insulating Low E 272 - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.36	46	0.29	0.49																		
Heat-Smart	Insulating Low E 272 - CL	4mm / 4mm (5/32")	10mm (13/32")	Air	Standard	0.40	45			0.26	0.44	0.23	0.38														
Heat-Smart	Insulating Low E 272 - CL	4mm / 4mm (5/32")	10mm (13/32")	Argon	Standard	0.33	48	0.29	0.49																		



# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



Effective January 4, 2010

## Cyprium Terrace Door Inswing

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified		
								SHGC	VT	<1"		>1"		> 1/2 Lite		
										SHGC	VT	SHGC	VT	SHGC	VT	N
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.43	42	0.46	0.48	0.39	0.41	0.34	0.34			
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.42	43	0.46	0.48	0.39	0.41	0.34	0.34			
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.33	52	0.25	0.42	0.22	0.36	0.19	0.30			
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.31	55	0.25	0.42	0.21	0.36	0.18	0.30	✓	✓	✓
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.33	54	0.25	0.42	0.22	0.36	0.19	0.30			
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.30	57	0.25	0.42	0.21	0.36	0.18	0.30	✓	✓	✓

## Cyprium Terrace Door Outswing

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified		
								SHGC	VT	<1"		>1"		> 1/2 Lite		
										SHGC	VT	SHGC	VT	SHGC	VT	N
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.45	42	0.46	0.48	0.40	0.41	0.34	0.35			
	Insulating CL - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.43	43	0.46	0.48	0.40	0.41	0.34	0.35			
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Standard	0.35	52	0.25	0.42	0.22	0.36	0.19	0.30			
Heat-Smart	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Standard	0.32	55	0.25	0.42	0.22	0.36	0.19	0.30	✓	✓	✓
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Air	Thermal	0.34	54	0.25	0.42	0.22	0.36	0.19	0.30			
Heat-Smart with Thermal	Insulating Low E 272 - CL	3mm / 3mm (1/8")	12.5mm (1/2")	Argon	Thermal	0.32	57	0.25	0.42	0.22	0.36	0.19	0.30	✓	✓	✓

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad Patio Door

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		> 1/2 Lite			
										SHGC	VT	SHGC	VT	N	<1"	>1"	
	Insulating BZ-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.47	35	0.45	0.43								
	Insulating BZ-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.48	35			0.40	0.38	0.35	0.33				
	Insulating CL-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.47	35	0.58	0.62								
	Insulating CL-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.48	35			0.51	0.54	0.44	0.47				
	Insulating GY-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.47	35	0.42	0.38								
	Insulating GY-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.48	35			0.37	0.34	0.32	0.29				
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.36	40	0.49	0.60								
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.38	40			0.43	0.52	0.37	0.45				
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.34	48	0.49	0.60								
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.36	48			0.43	0.52	0.37	0.45				
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.33	42	0.49	0.60								
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.34	42			0.43	0.52	0.37	0.45				
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.31	50	0.49	0.60								
	Insulating Low E 179-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.32	50			0.43	0.52	0.37	0.45				
	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.25	53	0.42	0.52								
	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.26	53			0.37	0.46	0.33	0.39				
Heat-Smart T	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.23	62	0.42	0.52								
Heat-Smart T	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.24	62			0.37	0.46	0.33	0.39				
	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.23	54	0.42	0.52								
	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.23	54			0.37	0.46	0.33	0.39				
Heat-Smart T	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.21	64	0.42	0.52								
Heat-Smart T	Insulating Low E 179-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.21	64			0.37	0.46	0.33	0.39				
	Insulating Low E 179-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.35	44	0.48	0.59								
	Insulating Low E 179-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.36	44			0.42	0.51	0.37	0.44				
	Insulating Low E 179-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.32	45	0.48	0.59								
	Insulating Low E 179-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.33	45			0.42	0.51	0.37	0.44				
	Insulating Low E 179-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.34	45	0.48	0.59								
	Insulating Low E 179-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.34	45			0.42	0.51	0.37	0.44				
	Insulating Low E 179-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.35	44	0.48	0.59								
	Insulating Low E 179-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.36	44			0.42	0.51	0.37	0.44				
	Insulating Low E 179-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.32	46	0.48	0.59								
	Insulating Low E 179-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.33	46			0.42	0.51	0.37	0.44				
	Insulating Low E 179-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.35	44	0.48	0.57								
	Insulating Low E 179-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.36	44			0.42	0.50	0.37	0.43				
	Insulating Low E 179-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.32	45	0.48	0.57								
	Insulating Low E 179-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.33	45			0.42	0.50	0.37	0.43				
Heat-Smart	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.35	41	0.32	0.54								
Heat-Smart	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.36	41			0.28	0.48	0.25	0.41				

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad Patio Door

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		N	<1"	>1"	
										SHGC	VT	SHGC	VT				
Heat-Smart with Thermal	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.33	49	0.32	0.54								
Heat-Smart with Thermal	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.35	49			0.28	0.48	0.25	0.41				
Heat-Smart	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.31	43	0.32	0.54								
Heat-Smart	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.33	42			0.28	0.48	0.24	0.41				
Heat-Smart with Thermal	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.30	51	0.32	0.54								
Heat-Smart with Thermal	Insulating Low E 272-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.31	51			0.28	0.48	0.24	0.41		✓		✓
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.24	54	0.27	0.43					✓			
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.24	54			0.24	0.38	0.21	0.33		✓		✓
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.22	63	0.27	0.43					✓			
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.22	63			0.24	0.38	0.21	0.33		✓		✓
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.21	55	0.27	0.43					✓			
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.22	55			0.24	0.38	0.21	0.33		✓		✓
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.19	66	0.27	0.43					✓			
	Insulating Low E 272-CL-Low E 272	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.20	66			0.24	0.38	0.21	0.33		✓		✓
	Insulating Low E 272-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.33	44	0.31	0.53								
	Insulating Low E 272-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.35	44			0.28	0.47	0.24	0.40				
	Insulating Low E 272-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.30	46	0.31	0.53								
	Insulating Low E 272-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.31	46			0.28	0.47	0.24	0.40		✓		✓
	Insulating Low E 272-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.32	45	0.31	0.53								
	Insulating Low E 272-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.32	45			0.28	0.47	0.24	0.40		✓		✓
	Insulating Low E 272-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.33	45	0.31	0.54								
	Insulating Low E 272-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.35	45			0.28	0.47	0.24	0.40				
	Insulating Low E 272-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.30	47	0.31	0.54								
	Insulating Low E 272-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.32	47			0.28	0.47	0.24	0.40		✓		✓
	Insulating Low E 272-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.33	45	0.31	0.52								
	Insulating Low E 272-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.35	44			0.28	0.45	0.24	0.39				
	Insulating Low E 272-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.30	46	0.31	0.52								
	Insulating Low E 272-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.32	46			0.28	0.45	0.24	0.39		✓		✓
Heat-Smart X	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.34	41	0.22	0.49								
Heat-Smart X	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.36	41			0.19	0.43	0.17	0.37				
Heat-Smart X with Thermal	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.32	49	0.22	0.49					✓			
Heat-Smart X with Thermal	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.34	49			0.19	0.43	0.17	0.37				
Heat-Smart X	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.31	43	0.21	0.49					✓			
Heat-Smart X	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.32	43			0.19	0.43	0.17	0.37		✓		✓
Heat-Smart X with Thermal	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.29	51	0.21	0.49					✓			
Heat-Smart X with Thermal	Insulating Low E 366-CL	4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.31	51			0.19	0.43	0.17	0.37		✓		✓
	Insulating Low E 366-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.22	55	0.19	0.43					✓			
	Insulating Low E 366-CL-Low E 179	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.22	55			0.17	0.37	0.15	0.32		✓		✓

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad Patio Door

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified		
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		N	> 1/2 Lite	
										SHGC	VT	SHGC	VT		<1"	>1"
	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.23	54	0.18	0.35					✓		
	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Standard	0.24	54			0.16	0.31	0.15	0.27		✓	✓
Heat-Smart XT	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.21	64	0.18	0.35					✓		
Heat-Smart XT	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Air	Thermal	0.22	64			0.16	0.31	0.15	0.27		✓	✓
	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.21	55	0.18	0.35					✓		
	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Standard	0.21	55			0.16	0.31	0.15	0.27		✓	✓
Heat-Smart XT	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.19	66	0.18	0.35					✓		
Heat-Smart XT	Insulating Low E 366-CL-Low E 366	4mm / 4mm / 4mm (5/32")	12.5mm (1/2")	Argon	Thermal	0.19	66			0.16	0.31	0.15	0.27		✓	✓
	Insulating Low E 366-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.33	45	0.21	0.48							
	Insulating Low E 366-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Air	Standard	0.34	45			0.19	0.42	0.17	0.36			
	Insulating Low E 366-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.30	47	0.21	0.48					✓		
	Insulating Low E 366-LAM	4mm (5/32") / 10.4mm (13/32")	12.5mm (1/2")	Argon	Standard	0.31	47			0.19	0.42	0.17	0.36		✓	✓
	Insulating Low E 366-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.31	45	0.21	0.48					✓		
	Insulating Low E 366-LAM	4mm (5/32") / 6.8mm (9/32")	21mm (13/16")	Argon	Standard	0.31	45			0.19	0.42	0.16	0.36		✓	✓
	Insulating Low E 366-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.33	45	0.21	0.48							
	Insulating Low E 366-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Air	Standard	0.35	45			0.19	0.42	0.17	0.36			
	Insulating Low E 366-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.30	47	0.21	0.48					✓		
	Insulating Low E 366-LAM	4mm (5/32") / 6.9mm (9/32")	12.5mm (1/2")	Argon	Standard	0.31	47			0.19	0.42	0.17	0.36		✓	✓
	Insulating Low E 366-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.33	45	0.21	0.47							
	Insulating Low E 366-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Air	Standard	0.35	45			0.19	0.41	0.17	0.35			
	Insulating Low E 366-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.30	46	0.21	0.47					✓		
	Insulating Low E 366-LAM	4mm (5/32") / 8mm (5/16")	12.5mm (1/2")	Argon	Standard	0.31	46			0.19	0.41	0.17	0.35		✓	✓
	LAM	11.7mm (15/32")	n/a	n/a	n/a	0.79	15	0.56	0.66	0.50	0.57	0.43	0.49			
	LAM	13.6mm (17/32")	n/a	n/a	n/a	0.78	16	0.54	0.64	0.48	0.56	0.42	0.49			
	LAM366	11.7mm (15/32")	n/a	n/a	n/a	0.79	15	0.27	0.46	0.24	0.40	0.21	0.34			
	LAM366	13.6mm (17/32")	n/a	n/a	n/a	0.79	16	0.27	0.44	0.24	0.38	0.21	0.33			

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad LiftSlide

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified				
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		> 1/2 Lite				
										SHGC	VT	SHGC	VT	N	<1"	>1"		
	Insulating BZ-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34	0.42	0.38									
	Insulating BZ-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34			0.37	0.33							
	Insulating BZ-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34					0.32	0.29					
	Insulating BZ-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34	0.39	0.35									
	Insulating BZ-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34			0.34	0.30							
	Insulating BZ-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34					0.30	0.26					
	Insulating CL-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34	0.55	0.59									
	Insulating CL-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34			0.49	0.51							
	Insulating CL-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34					0.42	0.44					
	Insulating CL-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34	0.54	0.58									
	Insulating CL-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34			0.47	0.51							
	Insulating CL-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34					0.41	0.44					
	Insulating GY-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34	0.38	0.33									
	Insulating GY-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34			0.33	0.29							
	Insulating GY-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.61	34					0.29	0.25					
	Insulating GY-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34	0.35	0.29									
	Insulating GY-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34			0.31	0.25							
	Insulating GY-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.61	34					0.27	0.22					
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.40	42	0.41	0.49									
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.42	42			0.36	0.43							
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.45	42					0.31	0.37					
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.40	42	0.41	0.49									
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.43	42			0.36	0.43							
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.45	42					0.31	0.37					
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.38	42	0.41	0.49									
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.40	42			0.36	0.43							
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.42	42					0.31	0.37					
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.38	42	0.41	0.49									
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.40	42			0.36	0.43							
	Insulating Low E 179-CL-Low E 179	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.43	42					0.31	0.37					
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.41	42	0.39	0.48									
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.43	42			0.35	0.42							
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.44	42					0.30	0.36					
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.42	42	0.39	0.48									
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.43	42			0.35	0.42							
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.44	42					0.30	0.36					
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.39	42	0.39	0.48									
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.40	42			0.35	0.42							
Heat-Smart T with Stainless	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.42	42					0.30	0.36					

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad LiftSlide

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		N	<1"	>1"	
										SHGC	VT	SHGC	VT				
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.39	42	0.39	0.48								
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.40	42			0.35	0.42						
	Insulating Low E 179-CL-Low E 179	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.42	42						0.30	0.36			
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.49	42	0.19	0.27								
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.51	42			0.17	0.24						
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.52	42						0.15	0.20			
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.49	40	0.19	0.27								
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.51	40			0.17	0.24						
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.52	40						0.15	0.20			
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.46	43	0.19	0.27								
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.47	43			0.17	0.24						
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.49	43						0.15	0.20			
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.46	42	0.19	0.27								
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.48	42			0.17	0.24						
	Insulating Low E 240-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.49	42						0.15	0.20			
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.52	39	0.20	0.26								
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.55	39			0.18	0.22						
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.56	38						0.16	0.19			
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.52	38	0.20	0.26								
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.55	38			0.18	0.22						
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.57	38						0.16	0.19			
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.48	41	0.19	0.26								
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.51	41			0.17	0.22						
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.53	41						0.15	0.19			
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.48	40	0.19	0.26								
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.51	40			0.17	0.22						
	Insulating Low E 240-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.53	39						0.15	0.19			
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.49	42	0.31	0.51								
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.50	42			0.27	0.45						
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.51	42						0.24	0.39			
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.49	41	0.31	0.51								
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.51	41			0.27	0.45						
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.51	41						0.24	0.39			
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.46	43	0.31	0.51								
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.47	43			0.27	0.45						
Heat-Smart with Stainless	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.48	43						0.24	0.39			
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.46	42	0.31	0.51								
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.47	42			0.27	0.45						
Heat-Smart	Insulating Low E 272-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.49	42						0.24	0.39			

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



Effective January 4, 2010

## Metal Clad LiftSlide

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		N	<1"	>1"	
										SHGC	VT	SHGC	VT				
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.49	42	0.31	0.51								
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.50	42			0.27	0.44						
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.52	42						0.24	0.38			
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.49	41	0.31	0.51								
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.51	41			0.27	0.44						
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.52	40						0.24	0.38			
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.46	43	0.30	0.51								
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.47	43			0.27	0.44						
Heat-Smart with Stainless	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.49	43						0.24	0.38			
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.46	42	0.30	0.51								
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.47	42			0.27	0.44						
Heat-Smart	Insulating Low E 272-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.49	42						0.24	0.38			
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.52	39	0.30	0.48								
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.55	39			0.27	0.42						
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.56	39						0.24	0.36			
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.52	38	0.30	0.48								
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.55	38			0.27	0.42						
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.56	38						0.24	0.36			
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.48	41	0.30	0.48								
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.51	41			0.27	0.42						
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.53	41						0.24	0.36			
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.48	40	0.30	0.48								
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.51	40			0.27	0.42						
	Insulating Low E 272-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.53	40						0.24	0.36			
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.49	42	0.21	0.46								
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.50	42			0.19	0.40						
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Stainless	0.51	42						0.17	0.35			
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.49	41	0.21	0.46								
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.50	41			0.19	0.40						
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Air	Standard	0.51	41						0.17	0.35			
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.45	43	0.21	0.46								
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.46	43			0.19	0.40						
Heat-Smart X with Stainless	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Stainless	0.48	43						0.17	0.35			
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.46	42	0.21	0.46								
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.47	42			0.19	0.40						
Heat-Smart X	Insulating Low E 366-CL	5mm / 5mm (3/16")	16mm (5/8")	Argon	Standard	0.48	42						0.17	0.35			
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.48	42	0.21	0.46								
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.50	42			0.19	0.40						
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Stainless	0.51	42						0.17	0.34			

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



Effective January 4, 2010

## Metal Clad LiftSlide

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		> 1/2 Lite			
										SHGC	VT	SHGC	VT	N	<1"	>1"	
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.49	41	0.21	0.46								
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.50	41			0.19	0.40						
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Air	Standard	0.52	41						0.17	0.34			
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.45	43	0.21	0.46								
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.46	43			0.19	0.40						
Heat-Smart X with Stainless	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Stainless	0.48	43						0.17	0.34			
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.46	42	0.21	0.46								
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.47	42			0.19	0.40						
Heat-Smart X	Insulating Low E 366-CL	6mm / 6mm (1/4")	14mm (9/16")	Argon	Standard	0.49	42						0.17	0.34			
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.39	42	0.19	0.33								
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.41	42			0.17	0.29						
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Stainless	0.44	42						0.15	0.25			
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.39	42	0.19	0.33								
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.41	42			0.17	0.29						
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Air	Standard	0.44	42						0.15	0.25			
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.36	43	0.18	0.33								
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.38	43			0.17	0.29						
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Stainless	0.41	43						0.15	0.25			
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.36	42	0.18	0.33								
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.38	42			0.17	0.29						
	Insulating Low E 366-CL-Low E 366	5mm / 5mm / 5mm (3/16")	12mm (15/32")	Argon	Standard	0.41	42						0.15	0.25			
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.40	42	0.19	0.32								
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.41	42			0.17	0.28						
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Stainless	0.43	42						0.15	0.24			
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.40	42	0.19	0.32								
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.42	42			0.17	0.28						
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Air	Standard	0.43	42						0.15	0.24			
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.37	42	0.18	0.32								
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.38	42			0.17	0.28						
Heat-Smart XT with Stainless	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Stainless	0.40	42						0.15	0.24			
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.37	42	0.18	0.32								
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.39	42			0.17	0.28						
	Insulating Low E 366-CL-Low E 366	6mm / 6mm / 6mm (1/4")	10mm (13/32")	Argon	Standard	0.41	42						0.15	0.24			
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.51	39	0.22	0.43								
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.55	39			0.20	0.38						
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Stainless	0.56	39						0.17	0.32			
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.52	38	0.22	0.43								
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.55	38			0.20	0.38						
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Air	Standard	0.56	38						0.17	0.32			

# NFRC U-FACTOR, SHGC/VT AND ENERGY STAR

Glazing Types listed include Standard and Custom configurations



## Metal Clad LiftSlide

Effective January 4, 2010

	Glazing Type	Glass Thickness	Air Space			U-value	CR	No SDL		SDL with Internal Spacer				Energy Star Qualified			
			Width(s)	Gas Fill	Spacer Bar			SHGC	VT	<1"		>1"		N	<1"	>1"	
										SHGC	VT	SHGC	VT				
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.47	41	0.21	0.43								
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.50	41			0.19	0.38						
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Stainless	0.52	41					0.17	0.32				
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.47	40	0.21	0.43								
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.50	40			0.19	0.38						
	Insulating Low E 366-LAM	6mm / 13.6mm (17/32")	8mm (5/16")	Argon	Standard	0.53	40					0.17	0.32				
	LAM	13.6mm (17/32")	n/a	n/a	n/a	0.92	15	0.53	0.61	0.47	0.53	0.41	0.46				
	LAM366	13.6mm (17/32")	n/a	n/a	n/a	0.92	15	0.27	0.42	0.24	0.36	0.21	0.31				