



2025 RESIDENTIAL PRODUCT GUIDE





TABLE OF CONTENTS

About Alpen 4

Alpen in Action 5

The Alpen Advantage 6

Zenith Series 10

Zenith Paint System 15

Window Design Options 15

Door Design Options 20

Tyrol Series 23

Window Design Options 30

Door Design Options 33

Glass 36

Alpen ThinGlass 37

Glass Options 38

NFRC Performance Data 40

Zenith Series 41

Tyrol Series 43



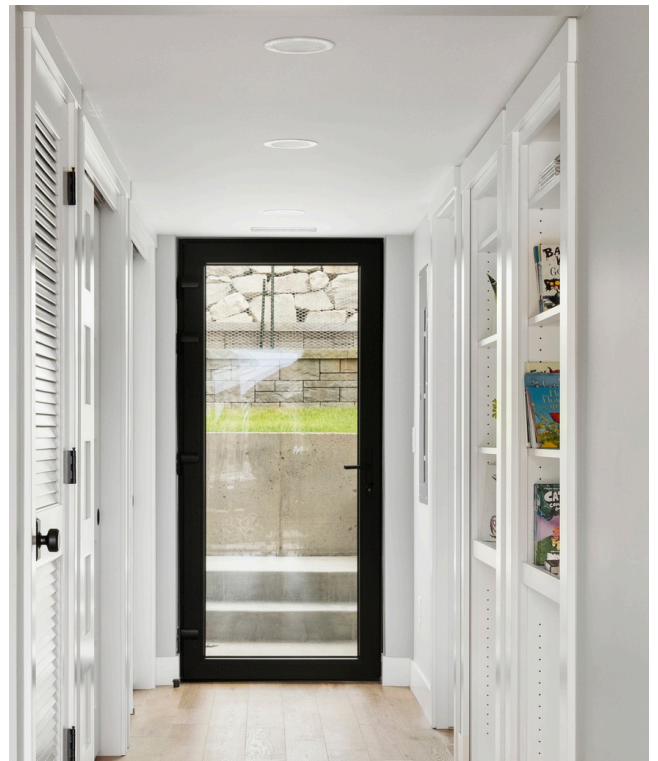
What seems revolutionary to some is core to our philosophy.

Buildings should be crafted to a much higher standard.

Alpen makes the #1 most efficient windows in North America. For almost fifty years, we have pursued a quest to dramatically transform the built environment in the U.S. by designing windows, doors and architectural glass that continue to raise the bar on performance for residential and commercial buildings. Central to our advancements is our proprietary thin-glass technology, co-developed with the Department of Energy—a pivotal innovation that's been proven across more than 1M+ square feet of installed windows.

In addition to elevating how we live and work indoors, we are actively meeting the challenge of our changing climate by using sustainable materials and best-in-class manufacturing methods that minimize the embodied carbon of our products.

Alpen delivers trusted performance, within reach (and without compromise) designed and built in the Rocky Mountains, USA.



ALPEN IN ACTION

Every Alpen purchase makes a meaningful contribution to reducing energy consumption.

From 2019 to 2024, Alpen windows saved **76,402,108 kBTUs** of energy compared to standard code-compliant windows. Over the 25-year lifespan of these windows, that adds up to a remarkable **572,747,931 kBTUs**, demonstrating the long-term impact of choosing high-performance windows and doors that contribute to a more sustainable future.

Here’s a glimpse of what that energy savings looks like...

Drive to the Moon and Back

The energy saved could power a round trip to the moon 32 times. Over 25 years, it’s enough for 315 lunar adventures.



Drive Around Earth

The equivalent of 618 trips around the Earth has been powered by Alpen windows. Over 25 years, that’s 6,053 global journeys.



Retire Coal Rail Cars

The energy savings are equivalent to retiring 31 rail cars of coal. Over 25 years, that’s 299 rail cars taken off the tracks.



Plant a Forest

Alpen windows have saved enough energy to plant 273,000 trees. Over 25 years, that impact grows to 2.7 million trees.



Shut Down a Power Plant

The energy saved could shut down a coal power plant for half a day. Over 25 years, that grows to nearly 5 days of halted operations.



Cover Skyscraper Footprints

Enough energy has been conserved to cover 2,378 skyscraper footprints with trees. In 25 years, 23,280 skyscrapers will be transformed into green space.



The Alpen Product Advantage

Customizable for
True Architectural
Freedom

Passive House
Compatible

Unparalleled
Performance
and Comfort

Superior Air and
Water Resistance

Long-Lasting
Durability

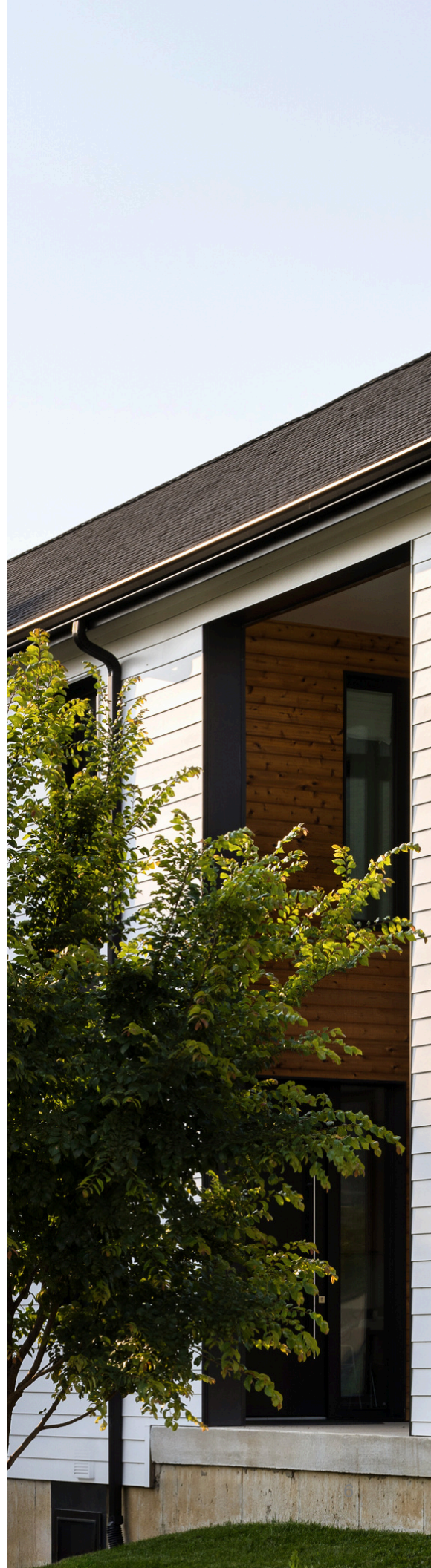
Low Embodied
Carbon

Healthy, Safe
Living Spaces

Built for All
Climates and
Conditions

Modern,
Beautiful Design

90% Soundproof
for Enhanced
Peace and Quiet



Beacon Hill Passive House in Kansas City, MO

Architect: Hoke Ley

Builder: Kala Performance Homes

Featuring Tyrol Windows







PRODUCTS

ZENITH SERIES

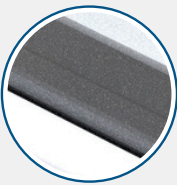


Fully Insulated, Premium
Fiberglass Frame

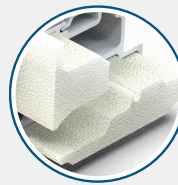
Industry Leading Triple and
Quad Pane ThinGlass

Whole Window NFRC
Certified up to R-10

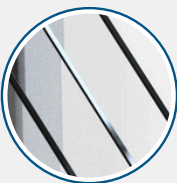
The Zenith Series combines the durability of fiberglass with favored outswing North American functionality to offer efficiency, comfort, and lasting craftsmanship. Our insulated glass technology boasts exceptional thermal performance and structural integrity. Designed to fit various sizes and styles, Zenith Series caters to diverse architectural needs while meeting or exceeding the latest standards for performance.



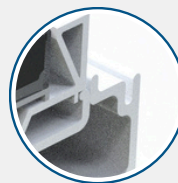
3D-printed thermoplastic spacer chemically bonds to glass, forming a durable, gas-tight seal with a 40+ year lifespan.



Super insulating closed-cell foam in frame and sash cavities for maximum thermal insulation and condensation resistance.



Triple and quad-pane AlpenGlass ensures unmatched energy efficiency and comfort in all climate zones.



Eco-friendly fiberglass expands and contracts like glass to reduce stress on seals. Durable, super-smooth premium color coating available in 16 shades.



Enjoy exceptional energy efficiency and year-round comfort.

Our stylish Zenith Series windows and doors are NFRC Certified.

NFRC Performance for Zenith Windows				
U-Factor	R-Value	SHGC	VT	CR
Down to 0.10	Up to R-10	0.15 - 0.53	0.34 - 0.65	Up to 83



NFRC Performance for Zenith Doors				
U-Factor	R-Value	SHGC	VT	CR
Down to 0.14	Up to R-7.1	0.15 - 0.52	0.34 - 0.52	Up to 73

Note: For full NFRC and other performance data, reference page 41

ZENITH'S BEST-IN-CLASS PAINT SYSTEM

Available for all Zenith window and door types

Unmatched Durability,
Design, and Performance

Our advanced paint offers superior durability and a modern color palette inspired by the Sherwin Williams Color Forecast, bringing both style and weather resistance to your windows and doors.

Precision Application and
Proven Performance

With a 6-step application process, our fiberglass paint is engineered to meet AAMA 623, 624, and 625 standards, delivering consistent quality trusted by industry professionals.

Sustainability Meets
Advanced Technology

Using a water-borne top coat, our proprietary process enhances paint adhesion and longevity, creating an eco-friendly, resilient finish designed to endure the toughest conditions.

Printed colors provide a general reference and are not an exact match to the final product. Order color samples on our website at www.thinkalpen.com.





Umber Bronze



Verde Valley

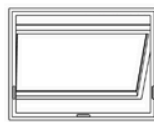


Deep Water

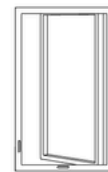




Fixed



Awning



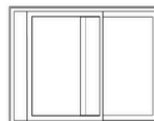
Casement



Single Hung



Double Hung



Horizontal Slider



Geometric



Radius

Midnight Black	Pure White	Bronze	Umber Bronze	Alpine Ivory	Sand Dune	Riverstone	Boulder Grey
Silver Mist	Bison Brown	Red Canyon	Pine	Stormy Sky	Verde Valley	Deep Water	Custom

*Standard finish features a solid color on both sides. Two-tone split finishes are also available upon request.

**Printed colors provide a general reference and are not an exact match to the final product. Order color samples on our website at www.thinkalpen.com.



Fargo House in Louisville, CO



Encore Contemporary
Operating Handle



Maxim Low Profile
Lock Handle



Encore Tango
Operating Handle



Maxim
Lock Handle



White



Matte Black



Faux Nickel



Faux Bronze



Matte Black



White



Beige



Coppertone



Chestnut



Satin Nickel*



Oil Rubbed Bronze*

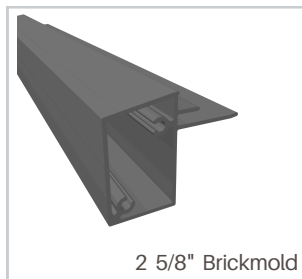
*Real metal finishes are premium options

Printed colors provide a general reference and are not an exact match to the final product. Order samples on our website at www.thinkalpen.com.

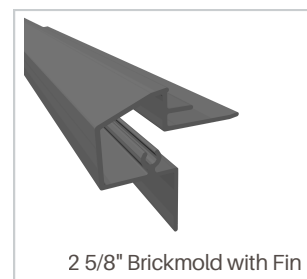


Brickmolds

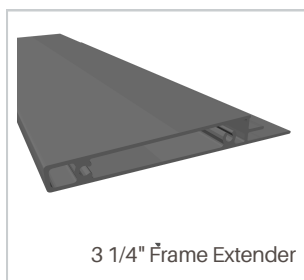
Add a clean, finished look to your windows and doors with our durable brickmolds. Designed for seamless installation, they enhance both protection and curb appeal.



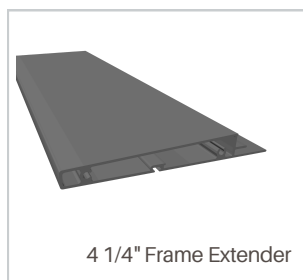
2 5/8" Brickmold



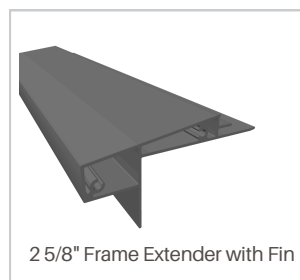
2 5/8" Brickmold with Fin



3 1/4" Frame Extender



4 1/4" Frame Extender



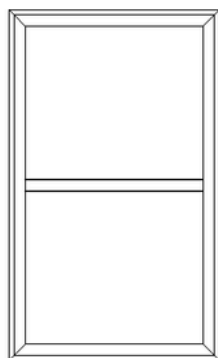
2 5/8" Frame Extender with Fin

Frame Extenders

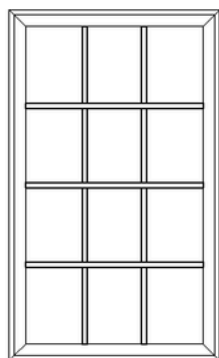
Easily bridge gaps between window frames and walls, while ensuring a clean look and precise fit.

Simulated Divided Lights

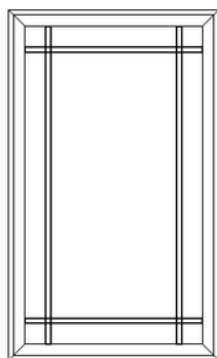
Enhance your windows with our simulated divided lights, combining classic charm with modern energy efficiency.



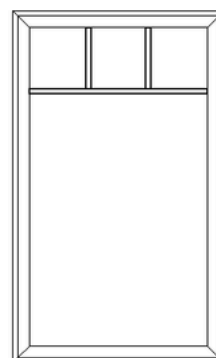
Faux Interlock



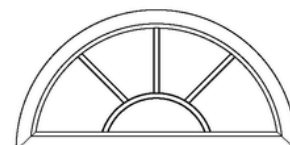
Colonial



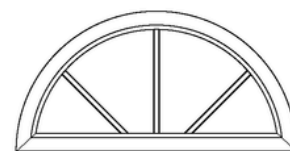
Prairie



Ladder



Sunburst



Spoke

Simulated Divided Lights are hand-cut, hand-painted, and hand-applied, with the option for custom patterns to suit your design needs.



Fargo House in Superior, CO

Designer: DAJ Designs
Builder: Buildwell

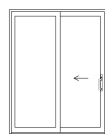




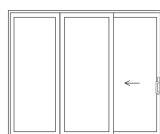
Our stunning Zenith Sliding Glass Door comes in two models - The Grandline and Narrowline

Both models feature:

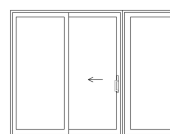
- Warp-resistant Fiberglass
- Silky smooth, silent glide rollers
- Integrated exterior screen track
- Raised sliding track keeps rollers cleaner for a longer lasting, fluid glide



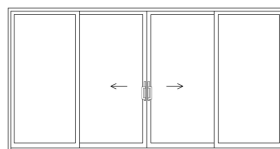
OX / XO



OOX / XOO



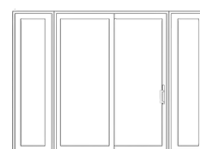
OXO



OXXO



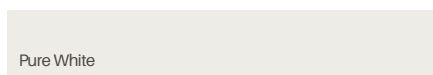
TRANSOMS



SIDELIGHTS



Midnight Black



Pure White



Umber Bronze



Bronze



Alpine Ivory



Sand Dune



Riverstone



Boulder Grey



Silver Mist



Red Canyon



Bison Brown



Pine



Stormy Sky



Verde Valley



Deep Water

Printed colors provide a general reference and are not an exact match to the final product. Order samples on our website at www.thinkalpen.com.

Signature



Contemporary



Black



White



Satin Nickel



Faux Bronze

Optional auxiliary foot lock available in black and white.



GRANDLINE MODEL

Available in sizes up to 9 feet tall

Stainless steel 3-point lock system

Wider sash profiles support larger sizes and higher wind loads

Concealed internal corner keys with 16-screw connections



NARROWLINE MODEL

Available in sizes up to 8 feet tall

Narrow sightlines maximize glass area for small door sizes

Two-point keyed mortise lock

Low sill step over height

Designed to seamlessly connect you to the outdoors, these doors offer expansive views, abundant natural light, and modern aesthetics. With sleek profiles and cutting-edge engineering, Zenith Sliding Doors provide unobstructed views, energy efficiency, and lasting durability—all with smooth, effortless operation and enhanced security.

TYROL SERIES

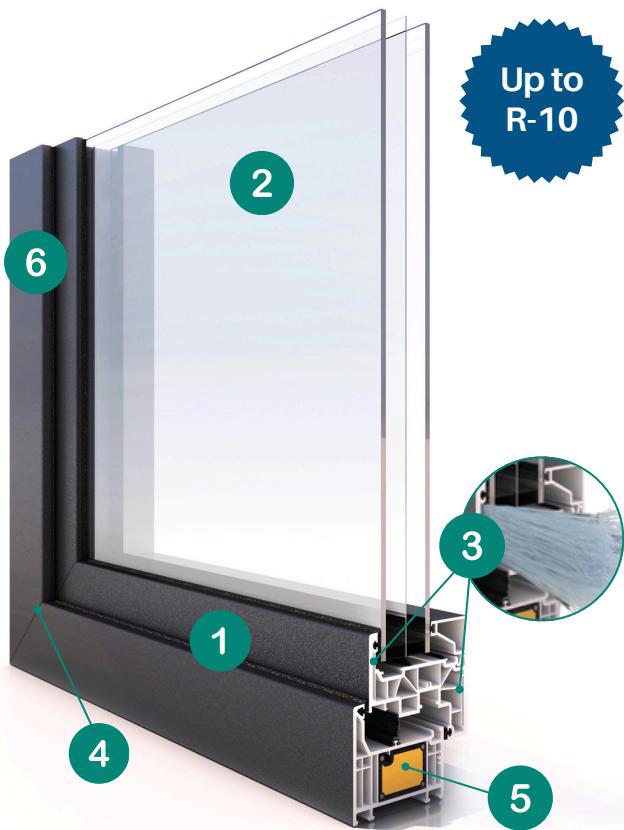


Premium Fiberglass
Reinforced uPVC

Industry Leading Triple
and Quad Pane ThinGlass

Whole Window NFRC
Certified up to R-11

Tyrol Edge and Contour introduce slimmer frames, cleaner sightlines, and lighter construction to the Tyrol Series, Alpen's fiberglass-reinforced uPVC window and door line. Designed to meet Passive House and net-zero standards, the Tyrol Series delivers up to R-11 full-frame performance with triple-sealed frames, quad-pane AlpenGlass options, and industry-best air infiltration ratings. Built in the U.S. for faster lead times and easier service, the system combines European-style tilt-turn function with sleek aesthetics and durable, high-performance materials.



Tyrol Edge

Sleek. Modern. High-Performance.

1. Slimmest frame offset (7mm) for maximum glass visibility
2. Triple and quad-pane high performance AlpenGlass
3. Continuous, embedded structural fiberglass strands
4. Seamless, fusion welded corners
5. Insulating, thermoplastic core provides dimensional stability
6. Sleek, straight lines for aluminum-like look



Design Pressure
± 40.10 psf - ± 70.18 psf



NFRC U-Factor
U 0.20 to U 0.10 (R-5 to R-10)



Acoustics
Up to STC 45 / OITC 37



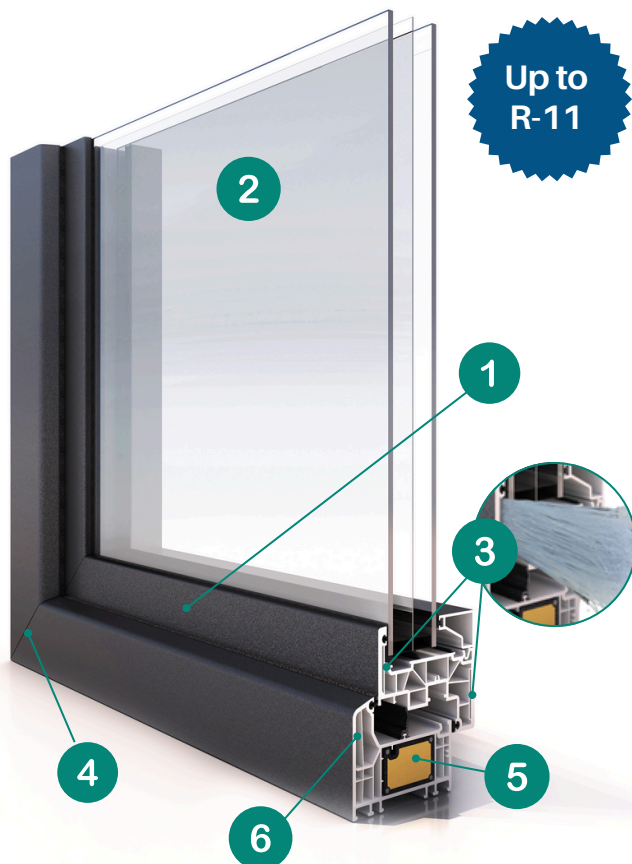
SHGC Range
0.15 to 0.49



Certifications
NFRC, PHIUS



Air Tightness
0.01 cfm/ft2 to 0.05 cfm/ft2



Tyrol Contour

Classic Lines. Timeless Design.

1. Traditional uPVC style with pronounced frame offset (18mm)
2. Triple and quad-pane high performance AlpenGlass
3. Continuous, embedded structural fiberglass strands
4. Seamless, fusion welded corners
5. Insulating, thermoplastic core provides dimensional stability
6. Added chamber allows for increased insulation and higher Uf



Design Pressure
± 40.10 psf - ± 70.18 psf



NFRC U-Factor
U 0.20 to U 0.09 (R-5 to R-11)



Acoustics
Up to STC 45 / OITC 37



SHGC Range
0.15 to 0.49



Certifications
NFRC, PHIUS, PHI



Air Tightness
0.01 cfm/ft2 to 0.05 cfm/ft2





Beacon Hill Passive House in Kansas City, MO

Architect: Hoke Ley

Builder: Kala Performance Homes

Featuring Tyrol series windows and Doors



Experience optimal energy efficiency and thermal performance in any season.

Our timeless Tyrol Series windows and doors are NFRC Certified.

NFRC Performance for Tyrol Windows

U-Factor	R-Value	SHGC	VT	CR
Down to 0.09	Up to R-11	0.15 - 0.45	0.36 - 0.56	Up to 84



NFRC Performance for Tyrol Doors

U-Factor	R-Value	SHGC	VT	CR
Down to 0.14	Up to R-7	0.09 - 0.40	0.16 - 0.49	Up to 84

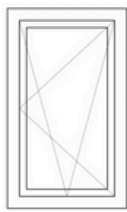




Types



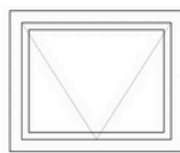
Picture



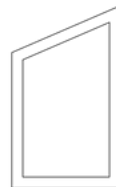
Tilt-Turn



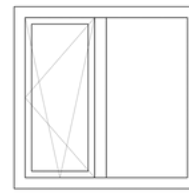
Turn Only



Hopper

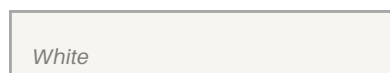


Geometric



Assembly

Frame Colors



White



Bronze



Black

Printed colors provide a general reference and are not an exact match to the final product.. Order samples on our website at www.thinkalpen.com.



White

Bronze

Black

Nickel

Other Windows Exposed Hinge



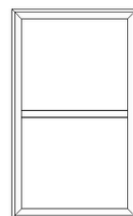
Edge & Contour Concealed Hinge



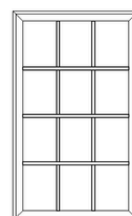


Simulated Divided Lights

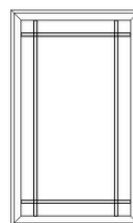
Enhance your windows with our simulated divided lights, combining classic charm with modern energy efficiency.



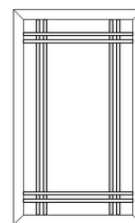
Faux Interlock



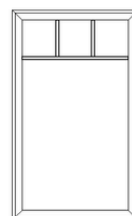
Colonial



Prairie



Double Prairie



Ladder

Simulated Divided Lights are hand-cut, hand-painted, and hand-applied, with the option for custom patterns to suit your design needs.



Wildewood House in Nederland, CO

Architect: Shape Architecture

Featuring Tyrol Windows and Doors

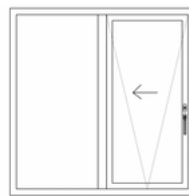




TYROL DOOR DESIGN OPTIONS



Experience comfort and home efficiency with Tyrol series doors. Tyrol's versatile options blend durability and performance with European style.



Tilt-Glide



Swing



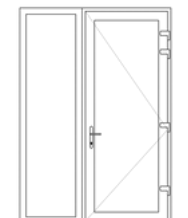
French



Tilt-Glide Transoms

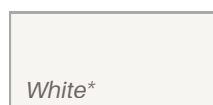


Transoms

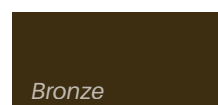


Sidelights

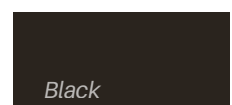
FRAME FOIL COLOR OPTIONS



*White**



Bronze



Black

*Core enamel, not foil



White

Nickel

Bronze

Black

Printed colors provide a general reference and are not an exact match to the final product. Order samples on our website at www.thinkalpen.com.



Tilt-Glide



Swing Door





GLASS



ALPEN THINGLASS

High-Performance Glass for Residential Project Design

For over 40 years, we've been delivering advanced glass solutions that inspire architects, builders, and homeowners to achieve energy-efficient, forward-thinking designs. Our innovative glass technology transforms window performance with exceptional energy efficiency and lightweight design.

Superior Insulation

Thin triple or quad-pane glass with performance up to an impressive R-15.

Proven Reliability

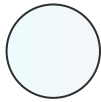
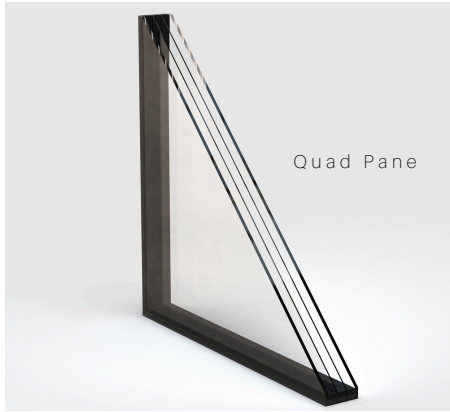
Made in the USA, backed by an industry leading warranty, with millions of square feet installed across North America.

Lightweight Innovation

Up to 50% lighter than traditional glass, enabling expansive and creative window designs.

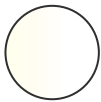
Enhanced Comfort

Improves indoor temperature stability and reduces outside noise for a quieter, more comfortable living space.



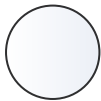
SolarControl

Increased protection against solar gain keeps spaces cool in summer and swing seasons



Balanced

Blend of low U-Factor and moderate solar control ensures high performance in all climates



HighGain

Maximum light and solar heat gain - ideal for passive solar homes and in spaces where more daylight is desired

ThinGlass Triple Center of Glass Performance

COATING	U-FACTOR	SHGC
SolarControl-6 TGT	0.12	0.25
Balanced-6 TGT	0.12	0.35
HighGain-6 TGT	0.13	0.57

ThinGlass Quad Center of Glass Performance

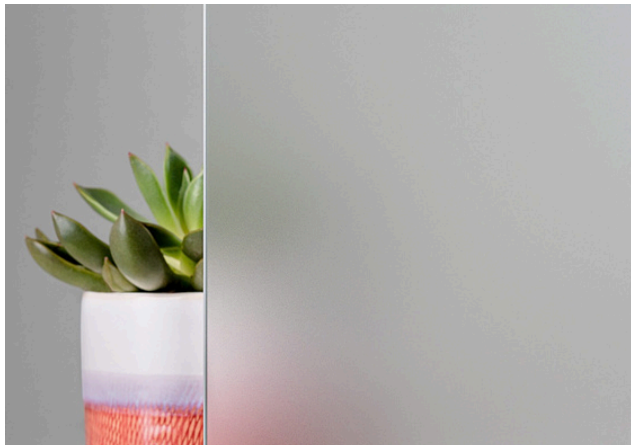
COATING	U-FACTOR	SHGC
SolarControl-9 TGQ	0.10	0.23
Balanced-9 TGQ	0.09	0.33
HighGain-9 TGQ	0.07	0.53
SolarControl R-10 TGQ	0.07	0.21



Pattern 62 (Pinhead)



Aquatex



Satin Etched



Rain



Reeded (1/2")

















PERFORMANCE






Low (L)
Lowest Solar Heat Gain Coefficient
SolarControl






Medium (M)
Low U-Factor, High Visible Light
Balanced

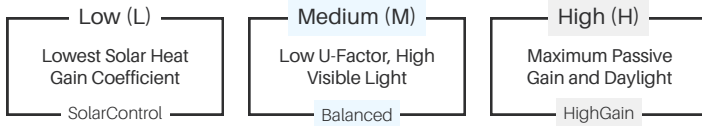
High (H)
Maximum Passive Gain and Daylight
HighGain



ZR-5 FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed Low Profile	5L TGT	0.19	5.3	0.22	0.53	73	<0.01 cfm/ft ²	0.18	5.6	0.25	0.60
	5M TGT	0.20	5.0	0.34	0.59	72	<0.01 cfm/ft ²	0.19	5.3	0.39	0.66
	5H TGT	0.20	5.0	0.53	0.65	71	<0.01 cfm/ft ²	0.19	5.3	0.60	0.73
 Fixed High Profile	5L TGT	0.18	5.6	0.20	0.47	72	<0.01 cfm/ft ²	0.18	5.6	0.25	0.60
	5M TGT	0.19	5.3	0.31	0.52	72	<0.01 cfm/ft ²	0.19	5.3	0.39	0.66
	5H TGT	0.19	5.3	0.48	0.58	71	<0.01 cfm/ft ²	0.19	5.3	0.60	0.73
 Casement & Awning	5L TGT	0.20	5.0	0.18	0.41	73	0.02 cfm/ft ²	0.18	5.6	0.25	0.60
	5M TGT	0.20	4.8	0.27	0.45	72	0.02 cfm/ft ²	0.19	5.3	0.39	0.66
	5H TGT	0.21	4.8	0.41	0.50	72	0.02 cfm/ft ²	0.19	5.3	0.60	0.73
 Single Hung	5L TGT	0.24	4.2	0.20	0.45	65	0.05 cfm/ft ²	0.22	4.5	0.26	0.60
	5M TGT	0.25	4.0	0.30	0.50	64	0.05 cfm/ft ²	0.22	4.5	0.39	0.67
	5H TGT	0.25	4.0	0.45	0.55	64	0.05 cfm/ft ²	0.23	4.3	0.60	0.74
 Double Hung	5L TGT	0.26	3.8	0.19	0.47	65	0.09 cfm/ft ²	0.22	4.5	0.26	0.60
	5M TGT	0.26	3.8	0.28	0.43	64	0.09 cfm/ft ²	0.22	4.5	0.39	0.67
	5H TGT	0.26	3.8	0.43	0.52	64	0.09 cfm/ft ²	0.23	4.3	0.60	0.74
 Horizontal Slider	5L TGT	0.24	4.2	0.20	0.46	63	0.09 cfm/ft ²	0.22	4.5	0.26	0.60
	5M TGT	0.25	4.0	0.30	0.51	63	0.09 cfm/ft ²	0.22	4.5	0.39	0.67
	5H TGT	0.25	4.0	0.47	0.56	63	0.09 cfm/ft ²	0.23	4.3	0.60	0.74



ZR-6 FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed Low Profile	SolarControl-6 TGT	0.14	7.1	0.22	0.51	79	<0.01 cfm/ft ²	0.12	8.3	0.25	0.58
	Balanced-6 TGT	0.14	7.1	0.32	0.51	79	<0.01 cfm/ft ²	0.12	8.3	0.36	0.58
	HighGain-6 TGT	0.15	6.7	0.51	0.62	78	<0.01 cfm/ft ²	0.13	7.7	0.58	0.71
 Fixed High Profile	SolarControl-6 TGT	0.14	7.1	0.20	0.45	79	<0.01 cfm/ft ²	0.12	8.3	0.25	0.58
	Balanced-6 TGT	0.14	7.1	0.28	0.46	79	<0.01 cfm/ft ²	0.12	8.3	0.36	0.58
	HighGain-6 TGT	0.14	7.1	0.45	0.56	78	<0.01 cfm/ft ²	0.13	7.7	0.58	0.71
 Casement & Awning	SolarControl-6 TGT	0.16	6.2	0.17	0.39	80	0.02 cfm/ft ²	0.12	8.3	0.25	0.58
	Balanced-6 TGT	0.16	6.2	0.25	0.39	80	0.02 cfm/ft ²	0.12	8.3	0.36	0.58
	HighGain-6 TGT	0.16	6.2	0.39	0.48	79	0.02 cfm/ft ²	0.13	7.7	0.58	0.71
 Single Hung	SolarControl-6 TGT	0.20	5.0	0.19	0.43	68	0.05 cfm/ft ²	0.17	5.9	0.25	0.58
	Balanced-6 TGT	0.20	5.0	0.27	0.44	68	0.05 cfm/ft ²	0.17	5.9	0.36	0.58
	HighGain-6 TGT	0.21	4.8	0.43	0.53	68	0.05 cfm/ft ²	0.18	5.6	0.58	0.71
 Double Hung	SolarControl-6 TGT	0.22	4.5	0.18	0.41	68	0.09 cfm/ft ²	0.17	5.9	0.25	0.58
	Balanced-6 TGT	0.22	4.5	0.26	0.41	68	0.09 cfm/ft ²	0.17	5.9	0.36	0.58
	HighGain-6 TGT	0.23	4.3	0.41	0.50	68	0.09 cfm/ft ²	0.18	5.6	0.58	0.71
 Horizontal Slider	SolarControl-6 TGT	0.20	5.0	0.20	0.44	67	0.09 cfm/ft ²	0.17	5.9	0.25	0.58
	Balanced-6 TGT	0.20	5.0	0.28	0.45	67	0.09 cfm/ft ²	0.17	5.9	0.36	0.58
	HighGain-6 TGT	0.21	4.8	0.44	0.54	67	0.09 cfm/ft ²	0.18	5.6	0.58	0.71
 Grandline Door	SolarControl-6 TGT	0.18	5.6	0.17	0.39	72	0.13 cfm/ft ²	0.12	8.3	0.25	0.58
	Balanced-6 TGT	0.18	5.6	0.25	0.49	72	0.13 cfm/ft ²	0.12	8.3	0.36	0.58
	HighGain-6 TGT	0.18	5.6	0.40	0.48	72	0.13 cfm/ft ²	0.13	7.7	0.58	0.71
 Narrowline Door	SolarControl-6 TGT	0.18	5.6	0.19	0.43	72	0.13 cfm/ft ²	0.12	8.3	0.25	0.58
	Balanced-6 TGT	0.18	5.6	0.27	0.43	72	0.13 cfm/ft ²	0.12	8.3	0.36	0.58
	HighGain-6 TGT	0.18	5.6	0.43	0.52	72	0.13 cfm/ft ²	0.13	7.7	0.58	0.71



ZR-9 FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed Low Profile	SolarControl-9 TGQ	0.12	8.3	0.20	0.47	82	<0.01 cfm/ft ²	0.10	10.0	0.23	0.54
	Balanced-9 TGQ	0.12	8.3	0.29	0.47	82	<0.01 cfm/ft ²	0.09	11.1	0.33	0.54
	HighGain-9 TGQ	0.12	8.3	0.47	0.58	82	<0.01 cfm/ft ²	0.10	10.0	0.54	0.66
 Fixed High Profile	SolarControl-9 TGQ	0.12	8.3	0.18	0.42	83	<0.01 cfm/ft ²	0.10	10.0	0.23	0.54
	Balanced-9 TGQ	0.11	9.1	0.26	0.42	82	<0.01 cfm/ft ²	0.09	11.1	0.33	0.54
	HighGain-9 TGQ	0.12	8.3	0.42	0.52	82	<0.01 cfm/ft ²	0.10	10.0	0.54	0.66
 Casement & Awning	SolarControl-9 TGQ	0.14	7.1	0.16	0.36	83	0.02 cfm/ft ²	0.10	10.0	0.23	0.54
	Balanced-9 TGQ	0.14	7.1	0.23	0.36	83	0.02 cfm/ft ²	0.09	11.1	0.33	0.54
	HighGain-9 TGQ	0.15	6.7	0.37	0.44	82	0.02 cfm/ft ²	0.10	10.0	0.54	0.66
 Grandline Door	SolarControl-9 TGQ	0.16	6.2	0.16	0.37	72	0.13 cfm/ft ²	0.10	10.0	0.23	0.54
	Balanced-9 TGQ	0.16	6.2	0.23	0.37	72	0.13 cfm/ft ²	0.09	11.1	0.33	0.54
	HighGain-9 TGQ	0.16	6.2	0.37	0.45	72	0.13 cfm/ft ²	0.10	10.0	0.54	0.66
 Narrowline Door	SolarControl-9 TGQ	0.15	6.7	0.17	0.40	73	0.13 cfm/ft ²	0.10	10.0	0.23	0.54
	Balanced-9 TGQ	0.15	6.7	0.25	0.40	73	0.13 cfm/ft ²	0.09	11.1	0.33	0.54
	HighGain-9 TGQ	0.16	6.2	0.40	0.49	73	0.13 cfm/ft ²	0.10	10.0	0.54	0.66



ZR-10 FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed Low Profile	SolarControl-10 TGQ	0.10	10.0	0.19	0.44	72	<0.01 cfm/ft ²	0.07	14.3	0.21	0.50
 Fixed High Profile	SolarControl-10TGQ	0.10	10.0	0.17	0.40	71	<0.01 cfm/ft ²	0.07	14.3	0.21	0.50
 Casement & Awning	SolarControl-10 TGQ	0.13	7.7	0.15	0.34	70	0.02 cfm/ft ²	0.07	14.3	0.21	0.50
 Grandline Door	SolarControl-10 TGQ	0.14	7.1	0.15	0.34	71	0.13 cfm/ft ²	0.07	14.3	0.21	0.50
 Narrowline Door	SolarControl-10 TGQ	0.14	7.1	0.16	0.37	69	0.13 cfm/ft ²	0.07	14.3	0.21	0.50

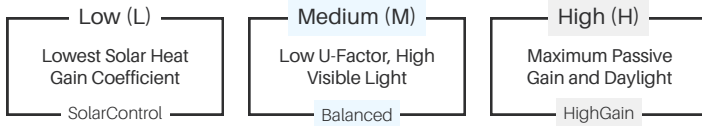




TR-5 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	5L TGT	0.20	5.0	0.20	0.48	70	<0.01 cfm/ft ²	0.18	5.4	0.25	0.60
	5M TGT	0.20	5.0	0.31	0.54	70	<0.01 cfm/ft ²	0.19	5.3	0.39	0.67
	5H TGT	0.20	5.0	0.49	0.59	69	<0.01 cfm/ft ²	0.20	5.0	0.60	0.74
 Tilt-Turn/Hopper	5L TGT	0.20	5.0	0.18	0.42	69	0.02 cfm/ft ²	0.18	5.4	0.25	0.60
	5M TGT	0.20	5.0	0.27	0.47	69	0.02 cfm/ft ²	0.19	5.3	0.39	0.67
	5H TGT	0.20	5.0	0.42	0.51	68	0.02 cfm/ft ²	0.20	5.0	0.60	0.74



TR-6 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-6 TGT	0.15	6.7	0.20	0.46	77	<0.01 cfm/ft ²	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.15	6.7	0.29	0.47	77	<0.01 cfm/ft ²	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.15	6.7	0.46	0.57	76	<0.01 cfm/ft ²	0.13	7.7	0.58	0.71
 Tilt-Turn/Hopper	SolarControl-6 TGT	0.16	6.3	0.18	0.40	76	0.02 cfm/ft ²	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.16	6.3	0.25	0.41	76	0.02 cfm/ft ²	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.16	6.3	0.41	0.49	75	0.02 cfm/ft ²	0.13	7.7	0.58	0.71



TR-9 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-9 TGQ	0.12	8.3	0.19	0.43	83	<0.01 cfm/ft ²	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.12	8.3	0.27	0.44	83	<0.01 cfm/ft ²	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.13	7.7	0.44	0.53	82	<0.01 cfm/ft ²	0.10	10.1	0.54	0.67
 Tilt-Turn/Hopper	SolarControl-9 TGQ	0.13	7.7	0.16	0.38	81	0.02 cfm/ft ²	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.13	7.7	0.24	0.38	81	0.02 cfm/ft ²	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.14	7.1	0.38	0.46	81	0.02 cfm/ft ²	0.10	10.1	0.54	0.67



TR-11 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-11 TGQ	0.10	10	0.17	0.40	74	<0.01 cfm/ft ²	0.07	15.4	0.21	0.50
 Tilt-Turn/Hopper	SolarControl-11 TGQ	0.11	9.1	0.15	0.35	73	0.02 cfm/ft ²	0.07	15.4	0.21	0.50



TR-5 CONTOUR FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	5L TGT	0.19	5.3	0.20	0.48	70	<0.01 cfm/ft ²	0.18	5.40	0.25	0.67
	5M TGT	0.20	5.0	0.31	0.54	70	<0.01 cfm/ft ²	0.19	5.30	0.39	0.60
	5H TGT	0.20	5.0	0.49	0.59	69	<0.01 cfm/ft ²	0.20	5.10	0.60	0.74
 Tilt-Turn/Hopper	5L TGT	0.19	5.3	0.18	0.42	69	0.02 cfm/ft ²	0.18	5.40	0.25	0.67
	5M TGT	0.20	5.0	0.27	0.47	69	0.02 cfm/ft ²	0.19	5.30	0.39	0.60
	5H TGT	0.20	5.0	0.42	0.51	68	0.02 cfm/ft ²	0.20	5.10	0.60	0.74

TR-6 CONTOUR FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-6 TGT	0.15	6.7	0.20	0.46	77	<0.01 cfm/ft ²	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.14	7.1	0.29	0.47	77	<0.01 cfm/ft ²	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.15	6.7	0.46	0.57	77	<0.01 cfm/ft ²	0.13	7.7	0.58	0.71
 Tilt-Turn/Hopper	SolarControl-6 TGT	0.15	6.7	0.17	0.40	76	0.02 cfm/ft ²	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.15	6.7	0.25	0.41	76	0.02 cfm/ft ²	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.16	6.3	0.41	0.49	75	0.02 cfm/ft ²	0.13	7.7	0.58	0.71

TR-9 CONTOUR FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-9 TGQ	0.12	8.3	0.19	0.43	83	<0.01 cfm/ft ²	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.12	8.3	0.27	0.44	83	<0.01 cfm/ft ²	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.12	8.3	0.44	0.53	83	<0.01 cfm/ft ²	0.10	10.1	0.54	0.67
 Tilt-Turn/Hopper	SolarControl-9 TGQ	0.13	7.7	0.16	0.38	81	0.02 cfm/ft ²	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.13	7.7	0.24	0.38	81	0.02 cfm/ft ²	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.13	7.7	0.38	0.46	81	0.02 cfm/ft ²	0.10	10.1	0.54	0.67

TR-11 CONTOUR FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-11 TGQ	0.09	11.1	0.17	0.40	75	<0.01 cfm/ft ²	0.07	15.4	0.21	0.50
 Tilt-Turn/Hopper	SolarControl-11 TGQ	0.11	9.1	0.15	0.35	73	0.02 cfm/ft ²	0.07	15.4	0.21	0.50



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