

Series 8500

Vinyl Sliding Patio Door

STARLINE
WINDOWS



Quality, Comfort & Peace of Mind

Foreword

This Design Guide provides specifications on the Series 8500 vinyl sliding patio door.

This document is intended to provide information on our standard products. Non-standard designs and applications can be reviewed to determine the feasibility on a project-specific basis.

Please email any project specific enquiries to architectural@starlinewindows.com or technical@starlinewindows.com.

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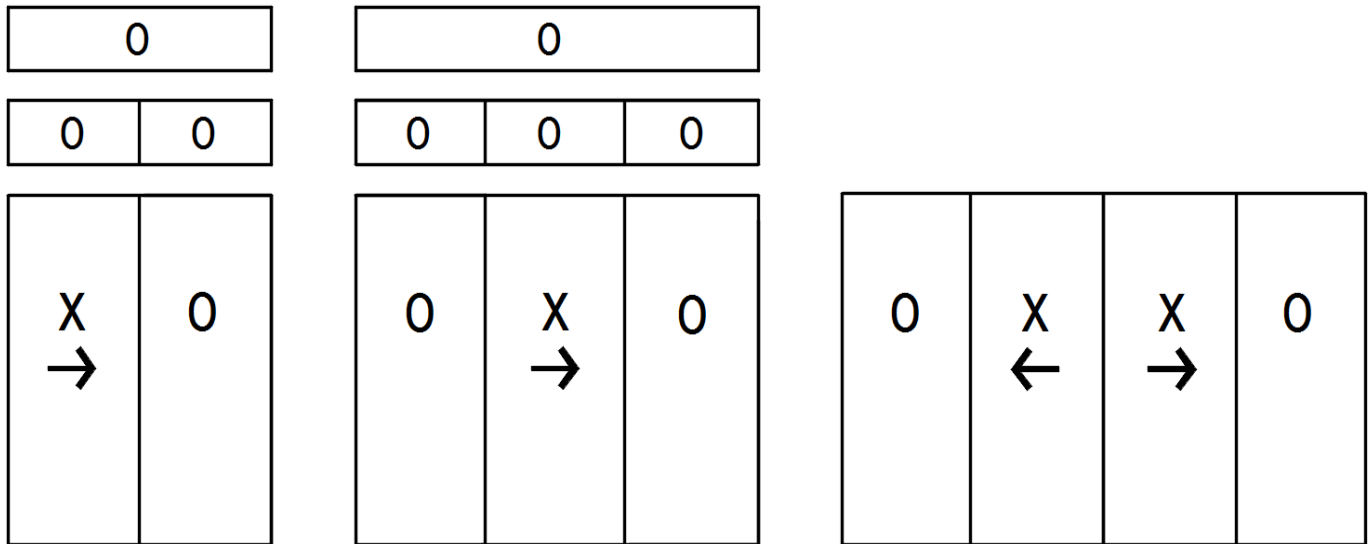
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Recommended Size Guidelines

Starline Windows provides maximum guidelines for door module area and weight for new construction and restoration projects. The 8500 Series is a sliding patio door.

Door Configuration Options



The 8500 Series family are sliding patio doors. The Vista sliding patio door offers XO, OX and OXO configurations with various transom options and the Grandview sliding patio door comes in an OXXO configuration.

In the following tables: ✓ Means available door configuration. ✗ Means unavailable door configuration.

The / denotes that it there is a transom. The letter designation preceding the / relates to the transom and the letter designation following the / relates to the door configuration. Ex.OO/XO = XO sliding door with a transom with two fixed lites.

VISTA SERIES STANDARD SIZES AND AVAILABLE CONFIGURATIONS ¹

| Heel Dimension | Width | 59 1/4" | | 71 1/4" | | 95 1/4" | | 106 3/4" | | 142 3/4" | |
|----------------|--------------------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|
| | Height | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" |
| Configuration | XO or OX | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | OXO or XOO | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| | O/XO | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | OO/XO | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | O/XOO | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
| | OOO/OXO or OOO/XOO | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ |

GRANDVIEW SERIES STANDARD SIZES AND AVAILABLE CONFIGURATIONS¹

| Heel Dimension | Width | 117 1/4" | | 141 1/4" | | 189 1/4" | |
|----------------|--------|----------|---------|----------|---------|----------|---------|
| | Height | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" | 79 1/4" | 94 1/4" |
| Configuration | OXXO | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

GRANDVIEW SERIES STANDARD WINDOW SIZES & AVAILABLE CONFIGURATIONS¹

| Heel Dimension | Width | 95 1/4" | 119 1/4" | 143 1/4" |
|----------------|--------|---------------------------|---------------------------|---------------------------|
| | Height | 41 1/4", 47 1/4", 59 1/4" | 41 1/4", 47 1/4", 59 1/4" | 41 1/4", 47 1/4", 59 1/4" |
| Configuration | OXXO | ✓ | ✓ | ✓ |

¹ Non-standard door sizes may be available upon request and for an additional cost. Non-standard sizing will be reviewed on a project specific basis and may require longer lead times.

VISTA AND GRANDVIEW SLIDING DOOR LIMITATIONS

| PRODUCT NAME | VISTA | | GRANDVIEW |
|--|--------------------------------------|-----|-----------|
| SLIDER CONFIGURATION | XO, OX | OXO | OXXO |
| MAXIMUM WEIGHT (Without Slider) ¹ | 250 pounds | | |
| MAXIMUM AREA FOR SLIDER ² | Double glazed = 32 sq.ft. | | |
| MINIMUM HEIGHT | 16" | | |
| MINIMUM WIDTH | 48" | 72" | 84" |
| MINIMUM SLIDER WIDTH | 24" | | |
| TRANSOM AVAILABLE | Yes – Minimum height of 12" required | | No |

Note: Limitations are guidelines and depend on site conditions.

MAXIMUM SLIDING DOOR WIDTH HEIGHT AND AREA

| FRAME FINISH ³ | MAXIMUM WIDTH | MAXIMUM HEIGHT | MAXIMUM AREA |
|--|---------------|----------------|----------------|
| White (unpainted). Beige, Silver -UV Cure Coat | 189" | 94 3/8" | 124 sq. ft. |
| Black, Charcoal, and Brown -UV Cure Coat | 144" | 94 3/8" | 94.375 sq. ft. |

MAXIMUM IGU AREA AND LINEAL INCHES BASED ON GLASS LITE THICKNESS⁴

| GLASS THICKNESS | MAX. IGU AREA | MAX. UNITED INCHES (One Width + Height) |
|-----------------|---------------|---|
| 3mm | 19.5 sq. ft. | < 105" |
| 4mm | 30 sq. ft. | 105"-150" |
| 5mm | 41 sq. ft. | >150"-175" |
| 6mm | 50 sq. ft. | >175" + |

Series 8500 Sliding Patio Door Design Guidelines

Note: There are minimum and maximum dimensions as well as overall IGU areas to consider for different types of glass (ex. annealed, tempered, laminated, etc.). Maximum dimensions are as laid out in above chart, regardless of the glass type. For all other sizing information please visit the Products tab on Vitrum Glass Groups website at: <http://www.vitrum.ca/> for the most up to date information.

¹ Maximum module weight is a guideline that considers, production capabilities, tailgate deliveries and window installer capabilities. Please consult with the window installers on a project specific basis to determine their ideal overall door module weight with respects to handling and installing. Industry standard for installation typically ranges from 200 lbs. and up, depending on site conditions, man power and equipment that will be used to assist with installation. If an overall door module is greater than 300 lbs, site glazing is required due to manufacturing limitations. Door modules that are heavier than installers are willing to install (approximate range 200lbs – 300 lbs) site glazing may be an option, however it is Starline Window's recommendation that factory glazing, in a controlled environment, is utilized whenever possible.

² Maximum area for an individual insulated glass unit (IGU) is dependent on the glass thickness selected. Once the desired IGU area has been determined, refer to **Maximum IGU Area & Lineal Inches Based on Glass Lite Thickness** chart above for minimum allowable glass thickness. **Please note:** There may be certain design, structural, building code, by-law etc. requirements that could dictate the glass thickness. Glass thickness will be confirmed during the shop drawing phase, if applicable, and /or ordering of the windows.

³ UV Cure coat is available for the exterior and interior of the window frame.

⁴ Glass thickness may be required to be thicker than stated in the **Maximum IGU Area & Lineal Inches Based on Glass Lite Thickness** chart due to structural requirements, building code requirements, by-law requirements, etc. Example: 4mm thick glass is selected from the chart for an IGU that is 25 sq. ft. (4mm can be up to 30 sq. ft). Due to structural requirements, 5mm glass is required (due to wind load). 5mm glass is heavier than 4mm glass, therefore the door size may need to be reduced to keep overall weight within Starline windows recommended maximum weight.

Door Hardware

The Series 8500 sliding patio door has a D shaped handle made from zinc-alloy. The interior handle is a hook latch-locking handle that positively engages with an adjustable keeper (non-keyed) at the frame jamb. Handles are available in white and black.

The sliding panel slides on adjustable steel wheel ball bearings.

Options include keyed locks.

Frame Finishes

Starline Windows offers various options for vinyl frame finish. Starline standard finish for the exterior and interior of the vinyl frame is Standard White. The extrusion is left as a bare substrate (not painted) as the colour is impregnated into the vinyl material.

Options

There is an option to paint the exterior of the frame using an exterior grade UV cure coating which is specifically designed for use on vinyl fenestration products. This coating contains 100% solids, thus emits no volatile organic compounds (VOC's) or hazardous air pollutants (HAPS).

The following **standard colours**¹ are available:

- Black
- Kendall Charcoal

The following **semi-standard colours**¹ are available:

- Brown
- Silver
- Beige

Custom colours may also be available for the exterior of the frame. The scope of work and overall custom colour quantity will be reviewed by Starline on a project specific basis to determine the feasibility of the custom colour request.

Note: Standard and Semi-standard colours are available for an additional cost

Custom colours are available for an additional cost premium. An approximate 12-week lead time is required to procure custom colour requests. Refer to the **Vinyl Finishes** document in the Miscellaneous section of the catalogue for images of the stock and semi-standard colours available.

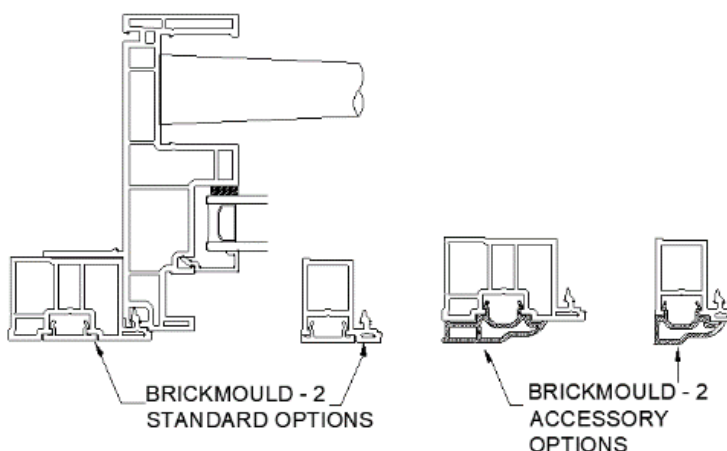
¹ Starline does not paint the interior of the windows. If the exterior of the window is painted, the interior frame finish is white unpainted vinyl.

Frame and Accessory Options

Accessory Options

There are various accessory and add on options available for the Vista & Grandview 8500 Series, such as:

- Brickmould (2 profiles to choose from) with 2 accessory options
- Surface mounted (plant on) muntins
- Insulated glass internal grilles
- Insect screens



Note: Refer to the **Vista 8500 Series – Standard Details** pdf for further information. The pdf contains details for some of the accessory options available. For additional and complete information regarding the available accessory options, contact your local Starline Sales rep at sales@starlinewindows.com.

Refer to the **Vinyl Windows & Doors – Internal Grilles & Surface Mounted Muntins** document in the Miscellaneous section of the catalogue for more detailed information regarding options available.

Series 8500 Sliding Patio Door Design Guidelines

Perimeter Frame Options

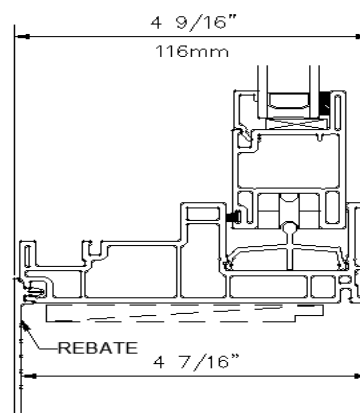
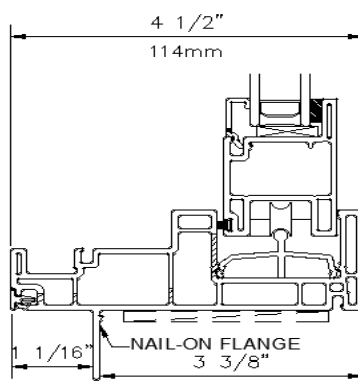
Starline Windows offers the following types of perimeter frames to best suite your project specific needs.

NAIL-ON FLANGE

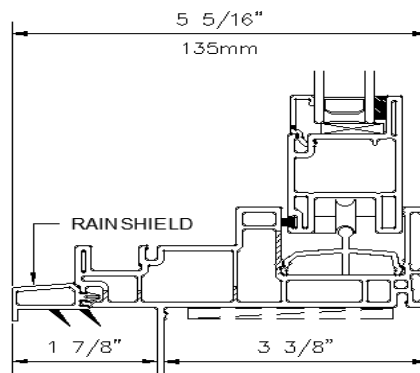
RAINSHIELD

REBATE¹

To support drainage when an interior air seal is required², it is Starline's recommendation to order the door sill nailing flange with factory drilled 3/8"x 5/8" slots at 30" o/c and 8" from the end of the frame as this allows for sub sill drainage. The flanged weep holes are an industry accepted practice. Shimming between the nailing flange and the sheathing at the sill only is not ok as the shimmed flange provides unnecessary stress on the window sill and will result in Starline's warranty being void. If the building design requires shimming between the nailing flange and sheathing at the sill, head and jambs must also be shimmed out the same thickness as at the sill. Minimum 3/8" gap required between sheathing and nailing flange to allow for proper sub sill drainage.



SHIMS ARE TO BE 2" WIDE HIGH IMPACT PLASTIC SHIM @ 4" O.C., TO PROVIDE 50% LEVEL SUPPORT OF WINDOW SILL. (OPTION TO BE SUPPLIED BY STARLINE)



Note: Refer to the **8500 Series – Standard Details** pdf for further information. These details will provide some standard installation methods for the above frame options. These installation details are a suggested method of installation and does not necessarily represent a detail that is suitable for a specific project. To confirm project specific details, please check with your Waterproofing / Building Envelope Consultant.

¹Rebate frame is available for project specific conditions only. Please email any project specific enquiries to sales@starlinewindows.com

²Starline and industry best practice guidelines recommends having an interior air seal.

Glazing

Starline's standard insulated glass unit (IGU) will be comprised of the following glass make-up:

- Double glazed, double sealed IGU with an overall thickness of 13/16" (21 mm).
- Standard high-performance soft coat (sputtered) Low E which is applied to surface #2.
- Aluminum spacer with argon fill.
- Minimum glass thickness is 3mm.

Maximum IGU Area Based on Glass Lite Thickness

| GLASS THICKNESS | MAX IGU AREA | MAX. UNITED INCHES (One Width + Height) |
|-----------------|--------------|---|
| 3mm | 19.5 sq. ft. | < 105" |
| 4mm | 30 sq. ft. | 105"-150" |
| 5mm | 41 sq. ft. | >150"-175" |
| 6mm | 50 sq. ft. | >175" + |

IGU Charts

SERIES 8500 DOUBLE GLAZED IGU: 21mm, Overall thickness of primary seal (Butyl): 0.8mm

| EXTERIOR | | SPACER | | INTERIOR | |
|----------|------|--------|------|-----------|------|
| mm | inch | mm | inch | mm | inch |
| 3 | 1/8 | 13.6 | 9/16 | 3 | 1/8 |
| 4 | 5/32 | 12.6 | 1/2 | 4 | 5/32 |
| 4 | 5/32 | 11.6 | 7/16 | 6 | 1/4 |
| 5 | 3/16 | 11.6 | 7/16 | 5 | 3/16 |
| 6 | 1/4 | 9.6 | 3/8 | 6 | 1/4 |
| 4 | 5/32 | 9.6 | 3/8 | 6LAM .030 | 1/4 |

Note: The IGU, glass thickness and spacer bar size is based on nominal dimension. Actual dimensions will vary slightly.

There are other glass make-up combinations available other than noted in the above chart. Charts purpose is to provide a few examples. There are various other combinations available that can be reviewed on a project specific basis.

Energy Star

The series 8500 Sliding Patio Door using standard high-performance soft coat (sputtered) Low E which is applied to surface #2, warm edge spacer and argon fill will qualify for Energy Star zone 1. There are various other glazing options available for the 8500 Series which can provide an Energy Star zone 2 rating. Contact your local Starline Sales Representative for further information.

Acoustical Ratings

BASED ON 19-21 mm DOUBLE GLAZED IGU

| GLASS EXT. | GAP | GLASS INT. | TEST NUMBER | STC | OITC |
|------------|----------|----------------------|-------------|-----|------|
| 3mm Ann. | 13mm AIR | 3mm Ann. | TL2265 | 29 | 23 |
| 4mm Ann. | 11mm AIR | 4mm Ann. | TL2267 | 29 | 24 |
| 6mm Ann. | 11mm AIR | 4mm Ann. | TL2266 | 33 | 27 |
| 4mm Ann. | 9mm AIR | 6mm Lam. (PVB 0.8mm) | TL2268A | 35 | 29 |

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Performance Test Results – Canada¹

VISTA SERIES SLIDING PATIO DOOR

| PRODUCT DESIGNATOR | AIR TIGHTNESS | WATER PENETRATION RESISTANCE | | UNIFORM LOAD DEFLECTION | OPERATIONAL FORCE |
|--------------------|---------------|------------------------------|----------------------------|-------------------------|-------------------|
| | | LAB TESTED | FIELD TEST ^{2, 3} | | |
| LC-PG30 | A3 | 510 Pa | 330 Pa | 1440 Pa | Grade 25 |

The Vista 8500 Series Sliding Patio Door has been tested to AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09

GRANDVIEW SERIES SLIDING PATIO DOOR

| PRODUCT DESIGNATOR | AIR TIGHTNESS | WATER PENETRATION RESISTANCE | | UNIFORM LOAD DEFLECTION | OPERATIONAL FORCE |
|--------------------|---------------|------------------------------|----------------------------|-------------------------|-------------------|
| | | LAB TESTED | FIELD TEST ^{2, 3} | | |
| LC-PG30 | A3 | 400 Pa | 330 Pa | 1440 Pa | Grade 20 |

The Grandview 8500 Series Sliding Patio Door has been tested to AAMA/WDMA/CSA 101 I.S.2/A440-08, AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09

Performance Test Results – USA¹

VISTA SERIES SLIDING PATIO DOOR

| PRODUCT DESIGNATOR | AIR TIGHTNESS | WATER PENETRATION RESISTANCE | | UNIFORM LOAD STRUCTURAL | OPERATIONAL FORCE |
|--------------------|--|------------------------------|----------------------------|-------------------------|-------------------|
| | | LAB TESTED | FIELD TEST ^{2, 3} | | |
| LC-PG30 | 0.04 CFM/ft ² @ 1.57 psf | 10.65 psf | 6.89 psf | 45.1 psf | Grade 25 |

The Vista 8500 Series Sliding Patio Door has been tested to AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09

GRANDVIEW SERIES SLIDING PATIO DOOR

| PRODUCT DESIGNATOR | AIR TIGHTNESS | WATER PENETRATION RESISTANCE | | UNIFORM LOAD STRUCTURAL | OPERATIONAL FORCE |
|--------------------|--|------------------------------|----------------------------|-------------------------|-------------------|
| | | LAB TESTED | FIELD TEST ^{2, 3} | | |
| LC-PG30 | 0.02 CFM/ft ² @ 1.57 psf | 8.4 psf | 6.89 psf | 45.1 psf | Grade 20 |

The Grandview 8500 Series Sliding Patio Door has been tested to AAMA/WDMA/CSA 101 I.S.2/A440-08, AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09.

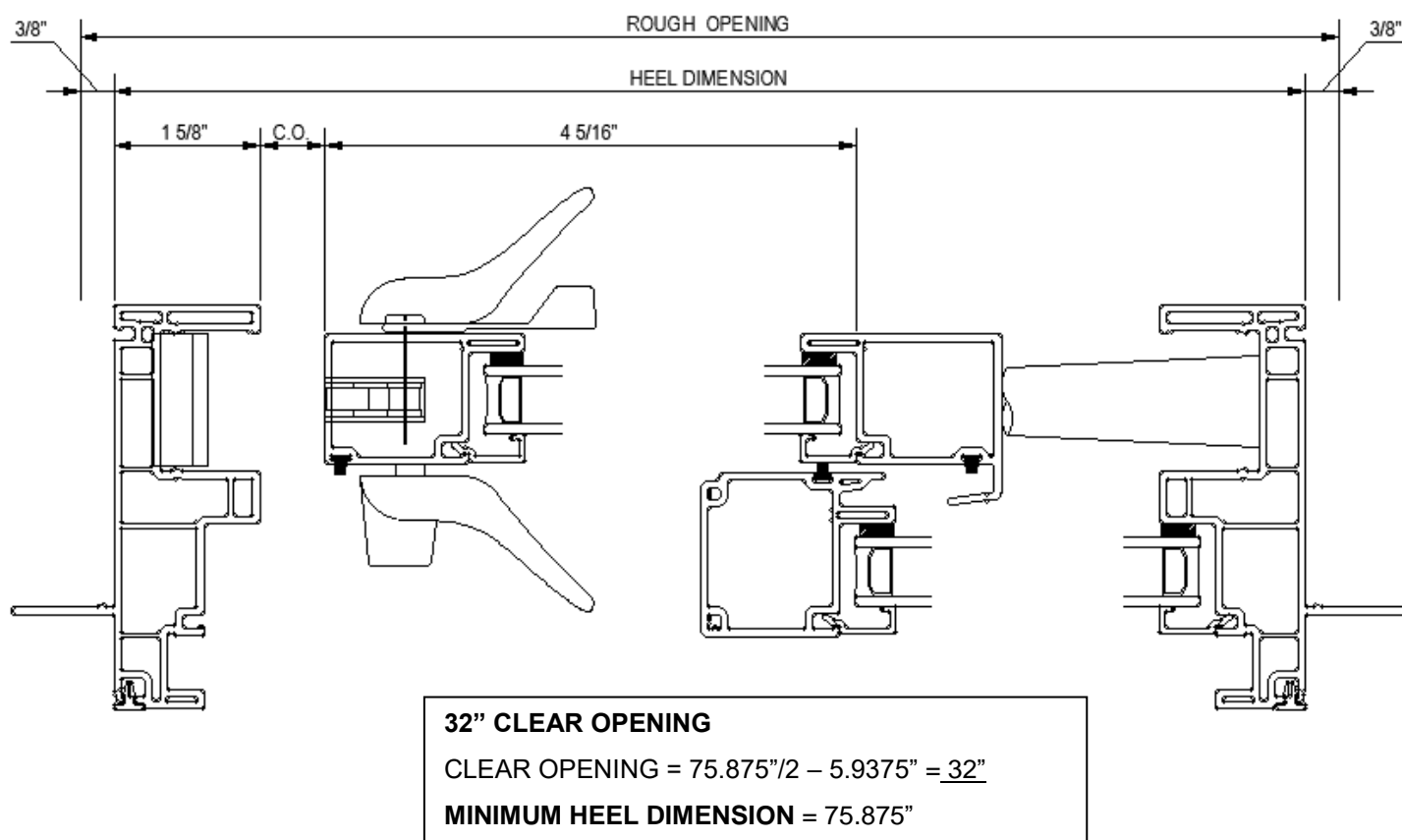
¹ The performance test results is based on lab testing and will vary depending on the specific window configuration. Contact your local Starline Sales Representative to determine the specific performance test results for the window configurations on a project specific basis.

² Water penetration resistance field tests shall follow the criteria and testing procedures as outlined in the AAMA 502-08 specification standard.

³ 330Pa / 6.89 psf is the maximum field test result that can be achieved for the Series 8500 Patio Door. Should the Project Specifications state a water penetration field test requirement of a lesser value, the project specified values shall govern.

XO or OX Sliding Door Clear Opening Diagrams

Clear Opening Between Jambs



$$\text{CLEAR OPENING} = (\text{HEEL DIMENSION} / 2) - 5.9375"$$

STARLINE WINDOWS IS NOT RESPONSIBLE FOR DETERMINING THE CLEAR OPENING IN ANY JURISDICTION.

LIMITATIONS OF 8500 XO OR OX SLIDING DOOR:

- MAX. HEIGHT (HEEL DIMENSION) = 94 3/8"
- MAX. WIDTH (HEEL DIMENSION) = 95 1/2"
- MAX. WIDTH (LEAF DIMENSION) = 47 3/4"

Product Specification 08 32 13 – Sliding Vinyl Framed Glass Door



Note: Bolded text in this specification are options that are highlighted for the specifier to select or to list requirements.

Part 1 - General

A fully welded 4 ½" PVC sliding door frame designed for single family homes, townhouses, residential low and midrise construction and institutional projects.¹

¹Note to specifier: Frame depth depends on frame type selected. Nail-on flange, Rebate, and Rainshield frame depths vary. Above frame depth is based on Starline's standard Nail-on flange frame. If a frame type other than Nail-on Flange is selected, contact technical@starlinewindows.com for further information.

1.1 Summary

A. Section Includes: Sliding Vinyl-Frame Glass Doors:

1. Vinyl framed sliding glass balcony door shall be Starline's **Vista and / or Grandview** 8500 Series sliding balcony door manufactured by Starline Windows Ltd.
2. Work included: Furnish labor, material and other services to complete the fabrication of the doors, including all materials and fitments required for the operation of the units in the manner, direction and performance shown on the shop drawings and specified herein.

Work not included: Window installation and installation accessories, structural support of door framing, interior trims. **(Specifier list others).**

Related work specified elsewhere: **(Specifier to list).**

B. Related Sections: **(Specifier to select the following related sections)**

1. 07 27 00 – Air Barriers
2. 07 60 00 – Flashing and Trim
3. 07 92 00 – Joint Sealants
4. 08 15 23 – Vinyl-Framed Swing Doors
5. 08 53 13 – Vinyl Windows
6. 08 80 00 – Glazing

1.2 Quality Assurance

- A. Drawings and specifications for Work of this Section are based upon **Vista and/or Grandview** 8500 Series sliding patio door manufactured by Starline Windows Ltd. Whenever alternative products are offered, submit supporting technical literature, samples, drawings and performance data for comparison 10 days prior to closing date.
- B. Doors shall be tested and conform to the AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09 requirements.
- C. Manufacturer Qualifications:
1. Manufacturer to have a minimum 10 years of documented experience.

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2. Manufacturer capable of providing a vinyl swing door system that meet or exceed the performance requirements indicated.
- D. Installers to follow manufacture's installation procedures and recommendations.
- E. Mock-Up: If requested by Consultant, a mock up is to be provided and installed at project site. Mock-up to include acceptable products and manufacturer approved installation methods. Obtain Owner's and Consultant's acceptance of finish color, and workmanship standard.

1.3 Structural requirements¹

Specifier to select or remove section or components, depending if project is engineered.

- A. Limit mullion deflection to L/175.
- B. Allow for deflection of building structure. Vinyl doors shall be designed, fabricated and installed to withstand slab edge vertical differential deflections of maximum $3/4''^2$ and seismic inter-story lateral drift movements of elastic $\pm 3/8''^2$ without significant damage to the fenestration system or in-elastic $\pm 1 3/4''^2$ with significant damage expected but framing to be designed to remain anchored to the structure.

¹ Note to specifier: This section is only applicable if there is a Professional Engineer involved with the project.

² Note to specifier: Values may change based on the configuration of the doors. Values to be specified by a Professional Engineer.

1.4 Test and Performance Requirements

Specifier to select from the following performance requirements.

- A. Doors shall meet performance class **LC-PG30¹** when tested to AAMA/WDMA/CSA 101 I.S.2/A440-11 and CSA A440SI-09:
 1. Air Infiltration: Door air infiltration shall not exceed 0.04 cfm/ft² (A3) when tested in accordance with ASTM E 283 with a pressure difference of 1.57 psf / 75 Pa.
 2. Water Penetration Resistance:
 - I. There shall be no water infiltration for doors when tested in accordance with ASTM E547 with a pressure difference of 10.65 psf / 6.257 Pa (Laboratory Test).
 - II. There shall be no water infiltration for doors when tested in accordance with AAMA 502-08 with a pressure difference up to a maximum of 6.89 psf / 330 Pa (Field Test)².
 3. Uniform Load Deflection Test: The deflection of door shall not exceed L/175 and there shall be no permanent set when tested in accordance with ASTM E330 with a design pressure of 30 psf / 1440 Pa, positive and negative.
 4. Uniform Load Structural Test: There shall be no damage to hardware, accessories, fasteners, or any other damage that would render the door in operable when tested in accordance with ASTM E330 with a structural test pressure of 45.1 psf / 2160 Pa, positive and negative.
 5. Thermal Performance³
 - I. U-value: The maximum door thermal transmittance U-value shall be **0.30 BTU/ hr*ft²*F (1.69 W/m²*k) when tested in accordance with AAMA 1503.1 and CAN/CSA-A440.2. Windows shall be tested and labeled to N.F.R.C. standard 100 & 200.**
 - II. Solar Heat Gain Coefficient: A (maximum or minimum) of **0.34**.
 - III. Visible Light Transmittance: A (maximum or minimum) of **0.62**

¹ Note to specifier: Performance class result is based on lab testing and will vary by configuration and glass type. Contact Starline Windows for information on how the product can be engineered to achieve higher performance class than specified above.

² Note to specifier: 330Pa / 6.89 psf is the maximum field test result that can be achieved. Should the Project Specifications state a water penetration resistance field test pressure of a lesser value, the project specified values shall govern. The water penetration resistance field tests follow the criteria and testing procedures as outlined in the AAMA 502-08 specification standard.

³ Note to specifier: Thermal performance depends on glass specified. For double glazed values the above test was performed using 24mm double glazed insulated glass unit (4mm/Air/4mm) with standard high performance soft coat (sputtered) Low E which is applied to surface #2, argon filled with aluminum spacer bar. For triple glazed values the above test was performed using 32mm triple glazed insulated glass unit (4mm/Air/4mm/Air/4mm) with standard high performance soft coat (sputtered) Low E which is applied to surface #2, argon filled with aluminum spacer bar.

Note: A second low E coating can be applied to surface #4 for the double glazed unit and surface #6 for the triple glazed unit to further increase the thermal performance. For both double and triple glazed the NFRC door test size was 79" x 79" (2000mm x 2000mm).

1.5 Submittals

- A. Product Data: Submit complete product data on system being used.
- B. Samples: Submit glass and frame colour(s) samples.
- C. Close-out Submittals:
 - 1. Warranty: Submit executed Manufacturer's warranty.
 - 2. Project Record Documents: Submit operation and maintenance data for installed product in accordance with General Conditions.

Part 2 – Products

2.1 Manufacturers

- A. Acceptable Manufacturers: Starline Windows
 - 1. Sliding Vinyl-Framed Glass Door: **Vista and/or Grandview 8500 Series.**
- B. Substitutions: Approved alternates

2.2 Material

- A. Vinyl Extrusion:
 - 1. 114 mm (4 1/2") deep perimeter frame member¹.
 - 2. Multi-chamber for strength and thermal performance with a nominal wall thickness of 1.93mm (0.078").
 - 3. Frame member and intermediate bars 100% uPVC and is UV stabilized for optimum outdoor performance.
- B. Fasteners: Stainless steel and / or steel coated with Leland DT200 coating and of sufficient size and quantity to perform their intended function.
- C. Weather-stripping: Finseal material.
- D. Glass Setting Blocks: FPVC, Neoprene, EPDM, Santoprene or silicone with an 80 to 90 ± Shore A durometer hardness. Block material shall be compatible with sealed unit edge sealant.
- E. Glazing bead: uPVC and glazed from the outside.

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F. Glazing tape: Foam tape.

¹Note to specifier: Frame depth depends on frame type selected. Nail-on flange, Rebate, Rainshield and Extended Rainshield frame depths vary. Above frame depth is based on Starline's standard Nail-on flange frame. If a frame type other than Nail-on Flange is selected, contact technical@starlinewindows.com for further information.

2.3 Fabrication

- A. Fabricate framing from extrusions of size and shape shown on approved shop drawings or approved signed order if shop drawings are not applicable.
- B. Main framing and sliding ventilator extrusions shall be welded mitre corner construction.
- C. Intermediate mullions and T-Bars shall be butt jointed and gasketed, mechanically screwed and sealed to the main perimeter frame.
- D. All framing profiles shall be straight and free of deformations and defects.
- E. Joints shall be accurately machined, fitted and sealed.
- F. Coupling mullions shall be designed to provide a functional split to permit modular construction and allow for thermal expansion. (Coupling mullion used when OXO configuration is required).
- G. Perimeter frame shall be 114mm (4 1/2") deep with a minimum wall thickness of 1.93mm (0.078") and be thermally broken.¹
- H. Sliding ventilator shall be 37mm (1 7/16") deep with a minimum wall thickness of 1.93mm (0.078") and be thermally broken.
- I. All interior joints and interior screw heads shall be sealed with a non-hardening sealant.
- J. Sliding ventilator shall have a single Mohair weather strip with fin seal at the interlock. The sill, the head and the jamb at the frame shall have a Mohair weather strip with fin seal. Weather stripping will be white when a white, beige or silver exterior frame colour is used and weather stripping will be black when a brown, charcoal or black frame is used.
- K. All glazing pockets shall be vented, pressure equalized, and drained to the outside.
- L. Glass bead shall be uPVC and a snap-in screw-less type.

¹Note to specifier: Frame depth depends on frame type selected. Nail-flange, Rebate and Rainshield frame depths vary. Above frame depth is based on Starline's standard Nail-on flange frame.

2.4 Glazing¹

- A. Double glazed, double seal insulated glass unit (IGU) with an overall thickness of 3/4" (19 mm).
- B. Standard high-performance soft coat (sputtered) Low E applied to surface #2.
- C. Aluminum spacer with argon fill.
- D. Glass thickness shall be 3mm. Glass thickness and quality shall conform to the requirements of the U.S.A. and Canadian Code for commercial construction, current edition.
- E. Where practical, glazing shall be installed at the factory before shipping to site.

¹ Note to specifier: Glazing noted above is based on Starline's. standard product offering. There are various other options available. Refer to [2.7.A](#) of this specification.

2.5 Hardware¹

- A. Hardware shall be furnished by the door manufacturer.
- B. Where practical, all hardware fittings shall be installed at the factory before shipping to site.
- C. Hardware shall be as follows:
 - 1. Sliding panel shall slide on adjustable ball bearing steel wheels.
 - 2. D shaped handle is made from zinc alloy. The interior handle is a hook latch-locking handle that positively engages with an adjustable keeper (non-keyed) at the frame jamb.
 - 3. Handles are available in white and black.

¹Note to specifier: Hardware noted above is based on Starline's standard product offering. There are various other options available. Refer to [2.7.F](#) of this specification.

2.6 Frame Finish

- A. All exposed surfaces of vinyl door and framing members shall be free of scratches and other serious surface blemishes.
- B. Finish: Standard white on the exterior and interior.

Note to Specifier: Option to have dual frame colour; Painted colour on the exterior of the window only. The interior of the window is always white. Should an exterior colour be required, refer to [2.7.D](#) of this specification for colour options.

2.7 Optional Items

Specifier to select from the following options and remove options not being selected.

- A. Glazing
 - 1. **4mm, 5mm, 6mm and greater thickness available.**
 - 2. Tinted, obscured & reflective glass
 - 3. Laminated glass
 - 4. Insulated glass internal grilles
 - 5. Surface mounted (plant-on) muntins
 - 6. Spacer bars
 - I. Warm edge spacer bar
 - II. Black aluminum spacer bar
- B. 180° Coupling mullions
- C. Extruded aluminum head flashing
- D. Dual frame color upgrade options – 1 color on exterior and white on the interior:
- E. Dual frame color upgrade options- 1 color on the exterior and one color on the interior
 - 1. UV cure coating¹: UV cure coating on the exterior with white interior or uv- cure coat both interior and exterior . **(Specifier to select from the colour(s) listed below).**

Black

Brown

Silver

Kendall Charcoal

Beige

Series 8500 Sliding Patio Door Design Guidelines

- 2. **Custom colours**³ may be available. Virtually any colour can be matched or closely matched. The scope of work and overall custom colour quantity will be reviewed by Starline on a project specific basis to determine the feasibility of the custom colour request.
- F. Shop Drawings: Submit complete shop drawings which include floor plans, elevations, door schedule, and product components including anchorage, fasteners, accessories and finish colour.
 - 1. Non-engineered shop drawings
 - 2. Engineered shop drawings, stamped and sealed by professional engineer.
- G. Threshold
 - 1. 68mm tall threshold without a nailing flange.
 - 2. 68mm tall threshold with a nailing flange.
- H. Hardware
 - 1. Keyed lock
 - 2. Overhead holders (Stay arm) in stainless steel.
- I. Protection: Insulated Glass Unit shall be protected with smart guard on the **exterior and / or interior**.
- J. Insect Screens: Frames are made from extruded aluminum and are rigidly joined at the corners. Aluminum frame shall be finished to match interior window frame colour. Screen shall be black fiber mesh. Screens are held in place with clips.

¹ Note to specifier: UV colours are available for an additional cost premium.

²Note to specifier: Custom colours are available for an additional cost premium. An approximate 12-week lead time is required to procure custom colour requests.

Part 3 - Execution

3.1 Examination

- A. Installer to examine openings, structural support, substrates and any other conditions that would affect the installation, for compliance with manufacturer's instructions.
- B. Verify rough opening dimensions.
- C. Verify sill is within tolerance of levelness to ensure adequate shimming to obtain proper drainage.

3.2 Installation

- A. Install manufacturer's system in accordance with manufacturer's installation procedures and recommendations **and approved shop drawings..**
- B. Doors shall be installed and adjusted by experienced personnel in accordance with the manufacturer's installation procedures and instructions and approved shop drawings.
- C. All items in this section shall be set in their correct location and shall be set level, square, plumb and at proper elevations and in alignment with other work.

3.3 Field Quality and Control

- A. Manufacturer's Field Services: Upon Owner and/or Consultants written request, provide manufacturer's field service representative for site visit to inspect installation and to ensure accordance with manufacturer's instructions (and approved shop drawings, if applicable).

- B. Field Tests: Owner and/or Consultant may choose to conduct tests for water penetration and air infiltration.
 - 1. Testing Standard per AAMA 502.
 - 2. Field testing shall be performed by a qualified independent testing agency.
 - 3. Field testing should not occur until the door has been installed and the caulking is cured. Ensure the products used to complete the building envelope tie in (membrane, caulking, flashing, cladding, etc.) are installed complete and have cured.

3.4 Protection and Cleaning

- A. Protection: Doors shall be isolated from concrete, mortar, plaster and dissimilar metals with bituminous paint or other isolation coatings.
- B. Cleaning: It shall be the responsibility of the General Contractor to maintain protection and provide final cleaning.

Note: This specification is intended to be used by a qualified Specifier and will require modifications for the project specific requirements. This specification is not intended to be use verbatim as the project specific specification.

Laws, building and safety codes governing the design and use of this product vary widely. Starline Windows does not control the selection and use of this product and assumes no responsibility therefor.

Series 8500 Sliding Patio Door Design Guidelines

Series 8500 Double Glazed NFRC Product Energy Chart, 1

| DOUBLE GLAZED (19mm IGU) | GLAZING (Ext/Gap/Int) | SPACER | U VALUE (W/M ² K) | U VALUE (Btu/hft ² F) | Shading Coefficient | Solar Heat Gain Coefficient | Visible Light Transmittance | CPD (Certified Product Directory) |
|---|---|-----------|-----------------------------------|-------------------------------------|---|--------------------------------|--------------------------------|--------------------------------------|
| Center of Glass (COG) | 3mm Solarban 60 (#2) / Air / 3mm Clear | 1/2" Alum | 1.70 | 0.30 | 0.46 | 0.40 | 0.72 | |
| | 3mm Solarban 60 (#2) / Argon / 3mm Clear | 1/2" Alum | 1.44 | 0.25 | 0.46 | 0.40 | 0.72 | |
| | 3mm Solarban 60 (#2) / Air / 3mm Clear | 13.6mm WE | 1.70 | 0.30 | 0.46 | 0.40 | 0.72 | |
| | 3mm Solarban 60 (#2) / Argon / 3mm Clear | 13.6mm WE | 1.43 | 0.25 | 0.46 | 0.40 | 0.72 | |
| Sliding Door | 3mm Solarban 60 (#2) / Air / 3mm Clear | 1/2" Alum | 1.89 | 0.33 | 0.39 | 0.34 | 0.62 | STL-A-37-02227-00001 |
| | 3mm Solarban 60 (#2) / Argon / 3mm Clear | 1/2" Alum | 1.69 | 0.30 | 0.39 | 0.34 | 0.62 | STL-A-37-02313-00001 |
| | 3mm Solarban 60 (#2) / Air / 3mm Clear | 13.6mm WE | 1.81 | 0.32 | 0.39 | 0.34 | 0.62 | STL-A-37-02399-00001 |
| | 3mm Solarban 60 (#2) / Argon / 3mm Clear | 13.6mm WE | 1.61 | 0.28 | 0.39 | 0.34 | 0.62 | STL-A-37-02485-00001 |
| I.G.U. (Insulated Glass Unit) Reference Codes | GLASS | | FILL | | SPACER | | | |
| | 3mm Solarban 60 (#2 surface) = 5281 3mm Clear = 5009 | | Air = 1 Argon ³ = 9 | | Aluminum Spacer = 1/2" Alum Warm Edge Spacer = 13.6mm WE | | | |

Based on NFRC CPD - Certification Date: November 30, 2015 Expiration Date: October 7, 2019

Fenestration = Frame, mullions, sash and vision glass. Refer to www.nfrc.org for more information.

³ Argon not standard offering for USA projects.



Prepared by:
Kurt Leano
NFRC Certified Simulator

Note: The energy values above are based on the NFRC gateway testing sizes. Project-specific energy values will depend on glazing make-up and door module configurations. Contact technical@starlinewindows.com for project-specific inquiries.

Series 8500 Double Glazed NFRC Product Energy Chart, 2

| DOUBLE GLAZED (19mm IGU) | GLAZING (Ext/Gap/Int) | SPACER | U VALUE (W/M ² K) | U VALUE (Btu/hft ² F) | Shading Coefficient | Solar Heat Gain Coefficient | Visible Light Transmittance | CPD (Certified Product Directory) |
|---|---|-----------|-----------------------------------|-------------------------------------|---|--------------------------------|--------------------------------|--------------------------------------|
| Center of Glass (COG) | 3mm Solarban 70XL (#2) / Air / 3mm Clear | 1/2" Alum | 1.67 | 0.29 | 0.32 | 0.28 | 0.64 | |
| | 3mm Solarban 70XL (#2) / Argon / 3mm Clear | 1/2" Alum | 1.40 | 0.25 | 0.31 | 0.27 | 0.64 | |
| | 3mm Solarban 70XL (#2) / Air / 3mm Clear | 13.6mm WE | 1.66 | 0.29 | 0.32 | 0.28 | 0.64 | |
| | 3mm Solarban 70XL (#2) / Argon / 3mm Clear | 13.6mm WE | 1.40 | 0.25 | 0.31 | 0.27 | 0.64 | |
| Sliding Door | 3mm Solarban 70XL (#2) / Air / 3mm Clear | 1/2" Alum | 1.86 | 0.33 | 0.27 | 0.24 | 0.55 | STL-A-37-02228-00001 |
| | 3mm Solarban 70XL (#2) / Argon / 3mm Clear | 1/2" Alum | 1.65 | 0.29 | 0.27 | 0.23 | 0.55 | STL-A-37-02314-00001 |
| | 3mm Solarban 70XL (#2) / Air / 3mm Clear | 13.6mm WE | 1.79 | 0.32 | 0.27 | 0.24 | 0.55 | STL-A-37-02400-00001 |
| | 3mm Solarban 70XL (#2) / Argon / 3mm Clear | 13.6mm WE | 1.57 | 0.28 | 0.27 | 0.23 | 0.55 | STL-A-37-02486-00001 |
| I.G.U. (Insulated Glass Unit) Reference Codes | GLASS | | FILL | | SPACER | | | |
| | 3mm Solarban 70XL (#2 surface) = 5432 3mm Clear = 5009 | | Air = 1 Argon ³ = 9 | | Aluminum Spacer = 1/2" Alum Warm Edge Spacer = 13.6mm WE | | | |

Based on NFRC CPD - Certification Date: November 30, 2015 Expiration Date: October 7, 2019

Fenestration = Frame, mullions, sash and vision glass. Refer to www.nfrc.org for more information.

³ Argon not standard offering for USA projects.



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Series 8500 Sliding Patio Door Design Guidelines

Series 8500 Double Glazed NFRC Product Energy Chart, 3

| DOUBLE GLAZED (19mm IGU) | GLAZING (Ext/Gap/Int) | SPACER | U VALUE (W/M ² K) | U VALUE (Btu/hft ² F) | Shading Coefficient | Solar Heat Gain Coefficient | Visible Light Transmittance | CPD (Certified Product Directory) |
|---|--|------------|-----------------------------------|-------------------------------------|--|--------------------------------|--------------------------------|--------------------------------------|
| Center of Glass (COG) | 3mm Solarban 60 / Air / 4mm IS-20 | 7/16" Alum | 1.35 | 0.24 | 0.45 | 0.39 | 0.70 | |
| | 3mm Solarban 60 / Argon / 4mm IS-20 | 7/16" Alum | 1.16 | 0.21 | 0.44 | 0.39 | 0.70 | |
| | 3mm Solarban 60 / Air / 4mm IS-20 | 11.6mm WE | 1.36 | 0.24 | 0.45 | 0.39 | 0.70 | |
| | 3mm Solarban 60 / Argon / 4mm IS-20 | 11.6mm WE | 1.17 | 0.21 | 0.44 | 0.39 | 0.70 | |
| Sliding Door | 3mm Solarban 60 / Air / 4mm IS-20 | 7/16" Alum | 1.55 | 0.27 | 0.38 | 0.33 | 0.60 | STL-A-37-02236-00001 |
| | 3mm Solarban 60 / Argon / 4mm IS-20 | 7/16" Alum | 1.41 | 0.25 | 0.38 | 0.33 | 0.60 | STL-A-37-02322-00001 |
| | 3mm Solarban 60 / Air / 4mm IS-20 | 11.6mm WE | 1.50 | 0.26 | 0.38 | 0.33 | 0.60 | STL-A-37-02408-00001 |
| | 3mm Solarban 60 / Argon / 4mm IS-20 | 11.6mm WE | 1.35 | 0.24 | 0.38 | 0.33 | 0.60 | STL-A-37-02494-00001 |
| I.G.U. (Insulated Glass Unit) Reference Codes | GLASS | | FILL | | SPACER | | | |
| | 3mm Solarban 60 (#2 surface) = 5281 4mm IS-20 (#4 surface) = 3291 | | Air = 1 Argon ³ = 9 | | Aluminum Spacer = 7/16" Alum Warm Edge Spacer = 11.6mm WE | | | |

Based on NFRC CPD - Certification Date: November 30, 2015 Expiration Date: October 7, 2019

Fenestration = Frame, mullions, sash and vision glass. Refer to www.nfrc.org for more information.

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Note: The energy values above are based on the NFRC gateway testing sizes. Project-specific energy values will depend on glazing make-up and door module configurations. Contact technical@starlinewindows.com for project-specific inquiries.

Series 8500 Double Glazed NFRC Product Energy Chart, 4

| DOUBLE GLAZED (19mm IGU) | GLAZING (Ext/Gap/Int) | SPACER | U VALUE (W/M ² K) | U VALUE (Btu/hft ² F) | Shading Coefficient | Solar Heat Gain Coefficient | Visible Light Transmittance | CPD (Certified Product Directory) |
|---|---|------------|-----------------------------------|-------------------------------------|--|--------------------------------|--------------------------------|--------------------------------------|
| Center of Glass (COG) | 3mm Solarban 70XL / Air / 4mm IS-20 | 7/16" Alum | 1.33 | 0.23 | 0.31 | 0.27 | 0.62 | |
| | 3mm Solarban 70XL / Argon / 4mm IS-20 | 7/16" Alum | 1.14 | 0.20 | 0.30 | 0.27 | 0.62 | |
| | 3mm Solarban 70XL / Air / 4mm IS-20 | 11.6mm WE | 1.33 | 0.24 | 0.31 | 0.27 | 0.62 | |
| | 3mm Solarban 70XL / Argon / 4mm IS-20 | 11.6mm WE | 1.14 | 0.20 | 0.30 | 0.27 | 0.62 | |
| Sliding Door | 3mm Solarban 70XL / Air / 4mm IS-20 | 7/16" Alum | 1.53 | 0.27 | 0.26 | 0.23 | 0.53 | STL-A-37-02237-00001 |
| | 3mm Solarban 70XL / Argon / 4mm IS-20 | 7/16" Alum | 1.39 | 0.25 | 0.26 | 0.23 | 0.53 | STL-A-37-02323-00001 |
| | 3mm Solarban 70XL / Air / 4mm IS-20 | 11.6mm WE | 1.48 | 0.26 | 0.26 | 0.23 | 0.53 | STL-A-37-02409-00001 |
| | 3mm Solarban 70XL / Argon / 4mm IS-20 | 11.6mm WE | 1.33 | 0.23 | 0.26 | 0.23 | 0.53 | STL-A-37-02495-00001 |
| I.G.U. (Insulated Glass Unit) Reference Codes | GLASS | | FILL | | SPACER | | | |
| | 3mm Solarban 70XL (#2 surface) = 5432 4mm IS-20 = 3291 | | Air = 1 Argon ³ = 9 | | Aluminum Spacer = 7/16" Alum Warm Edge Spacer = 11.6mm WE | | | |

Based on NFRC CPD - Certification Date: November 30, 2015 Expiration Date: October 7, 2019

Fenestration = Frame, mullions, sash and vision glass. Refer to www.nfrc.org for more information.

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