

Features

- Suitable for sloped glazed area, or roof mounted skylights
- Integrates with standard 1600 vertical wall
- Pressure equalized rain screen design
- Simple overlap connections
- "Shingled" internal channels for positive drainage
- Integral purlin condensation gutters
- Optional rafter condensation gutters
- Tremco® VISIONstrip® exterior glazing system
- Interior elastomeric glazing gaskets
- Structural silicone glazed (SSG) option for purlins
- Three rafter depths for efficient structural design
- Optional roll formed steel reinforcing channels
- Veneer type mullion for use with steel sub-structure
- Single glazing adapter for exterior canopies
- Accommodates slopes from 20° to 45°
- Full and half compression rings for pyramids and sloped gables
- Slope, gable, pyramid, and canopy construction available
- Two color option
- Permanodic® anodized finishes option
- Painted finishes in standard and custom choices

For specific product applications,
consult your Kawneer representative.

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Architects - Most extrusion and window types illustrated in this catalog are standard products for Kawneer. These concepts have been expanded and modified to afford you design freedom. Some miscellaneous details are non-standard and are intended to demonstrate how the system can be modified to expand design flexibility. Please contact your Kawneer representative for further assistance.

PICTORIAL VIEW5

SKYLIGHT TYPES.....6

DETAILS 7-10

STRUCTURAL LIMITATIONS.....11-13

THERMAL CHARTS 14-22

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses () are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

- m – meter
- cm – centimeter
- mm – millimeter
- s – second
- Pa – pascal
- MPa – megapascal

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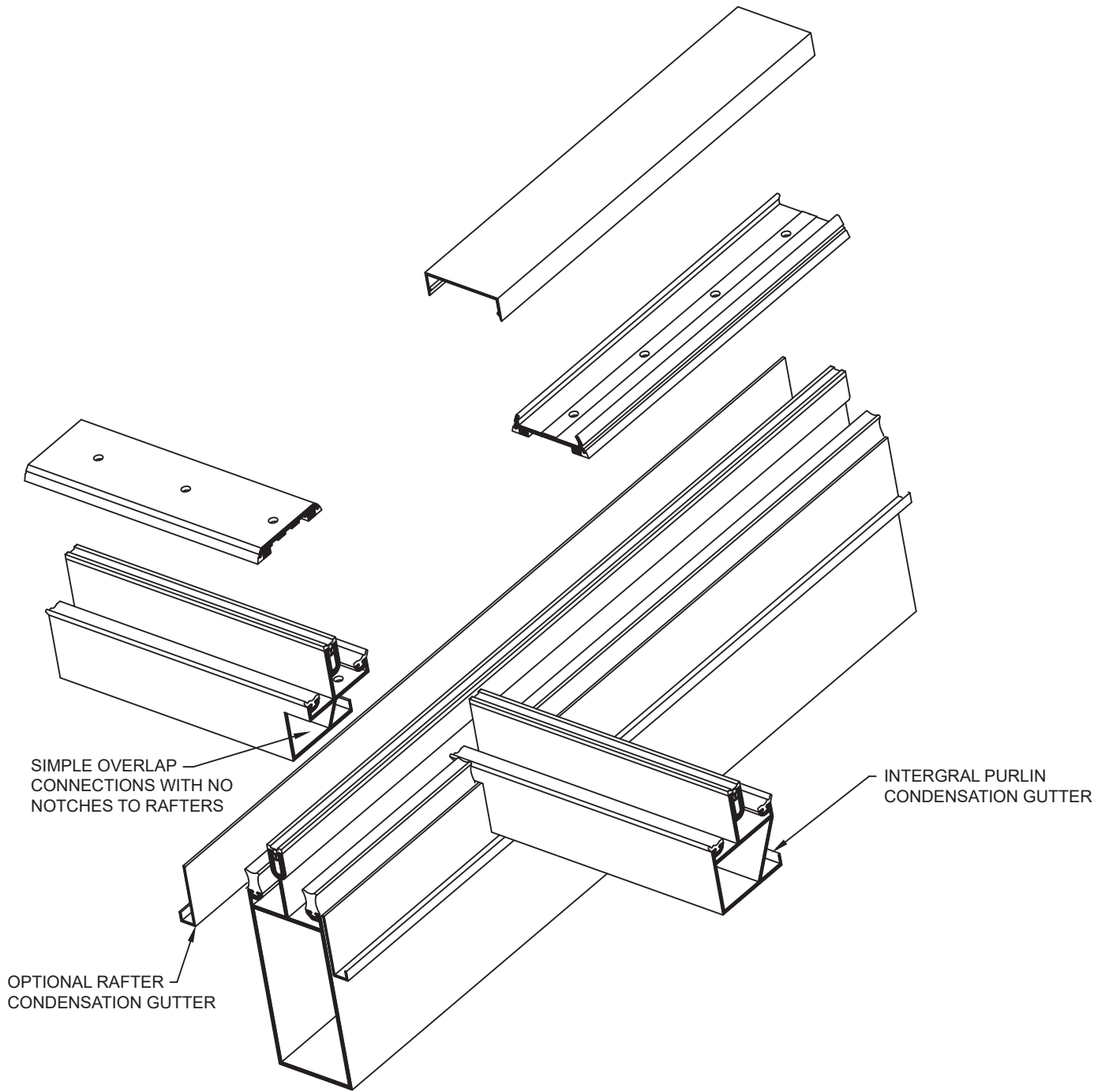
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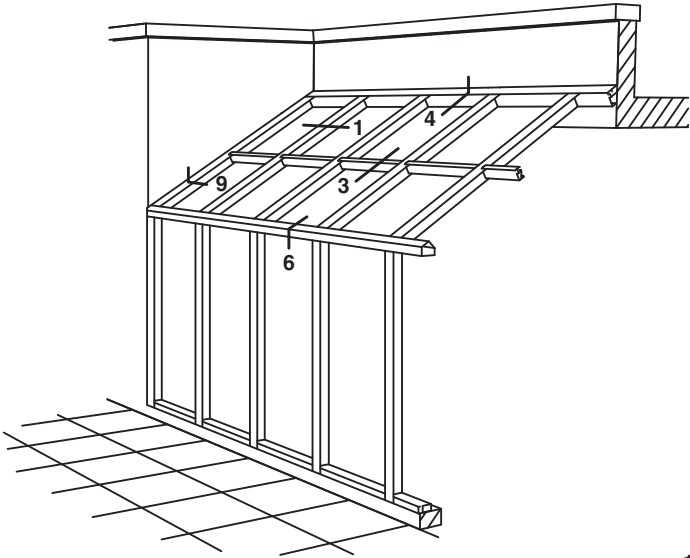
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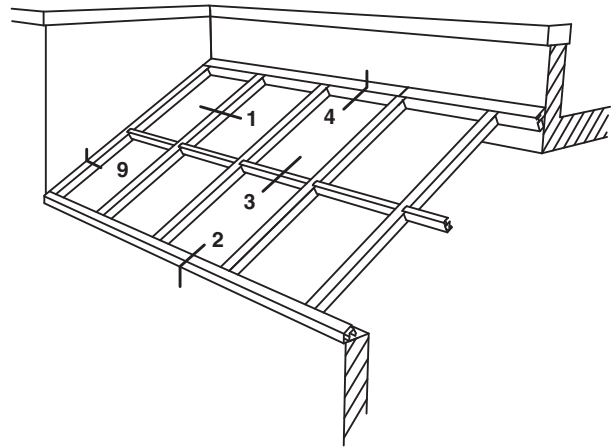
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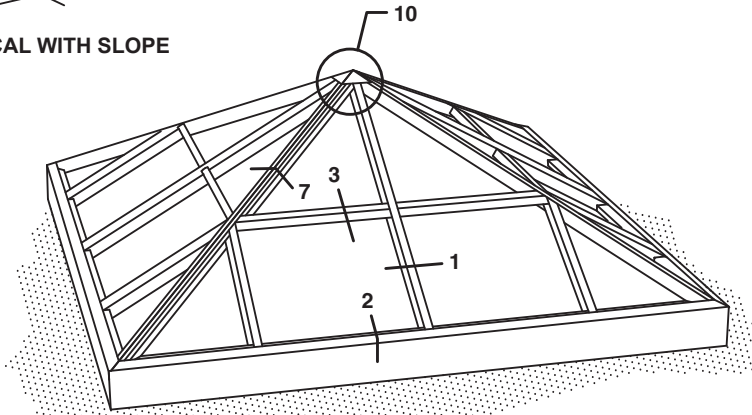




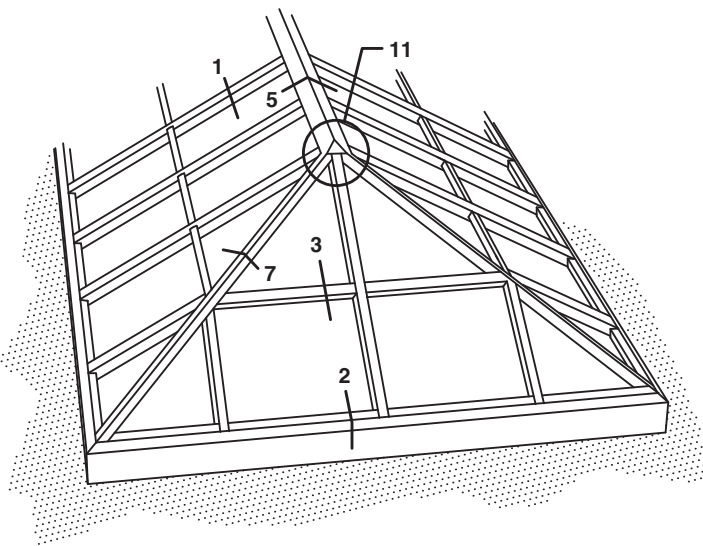
VERTICAL WITH SLOPE



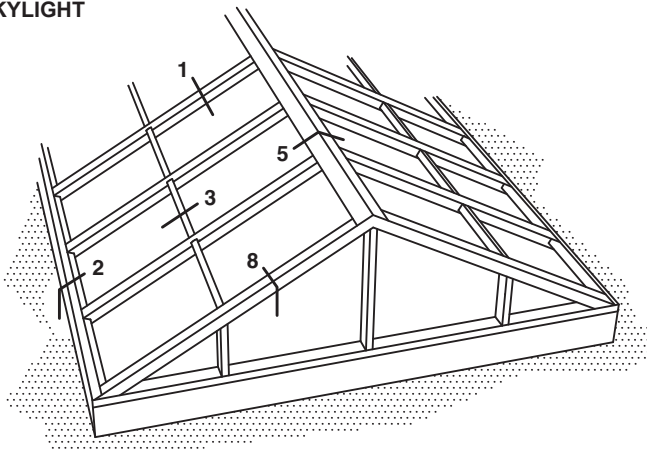
SINGLE SLOPE SKYLIGHT



PYRAMID SKYLIGHT



RIDGE SKYLIGHT WITH SLOPED GABLE

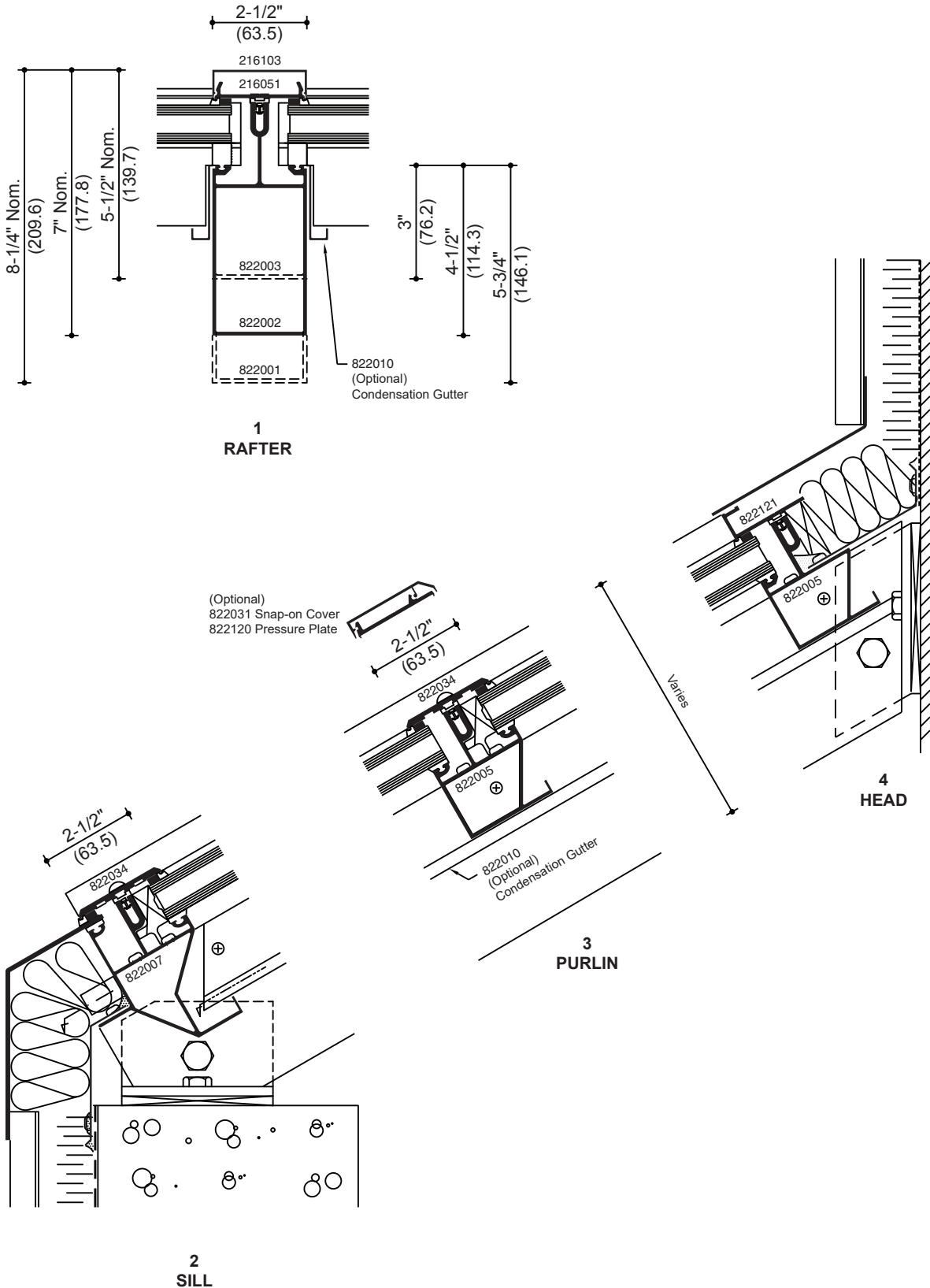


RIDGE SKYLIGHT WITH VERTICAL GABLE

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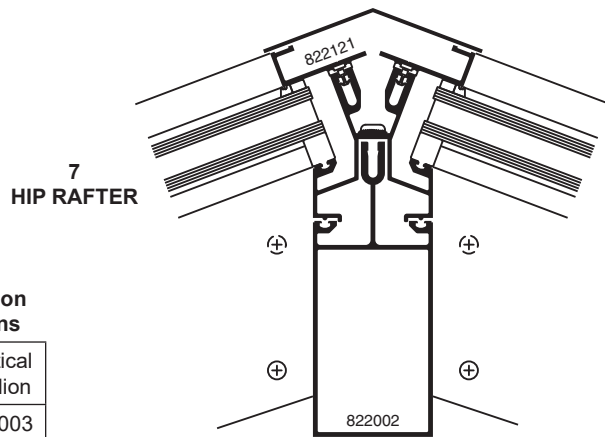
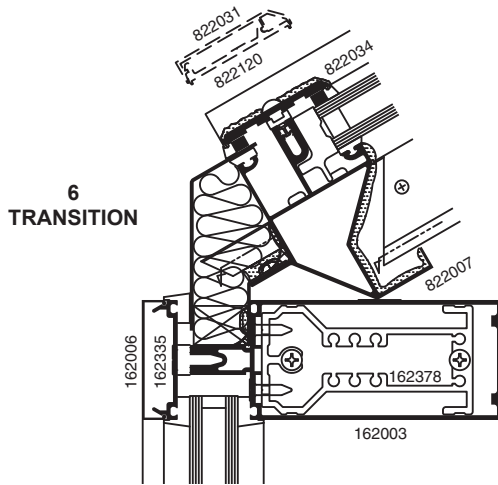
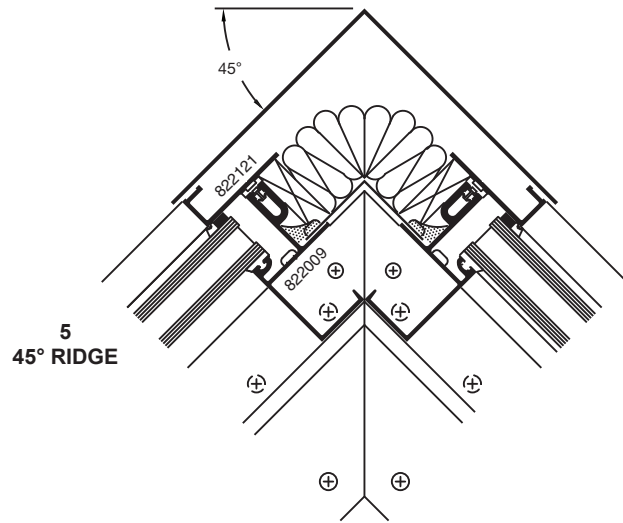
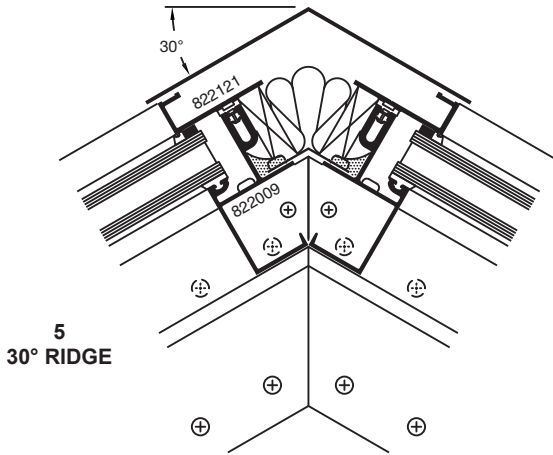
Additional information and CAD details are available at www.kawneer.com



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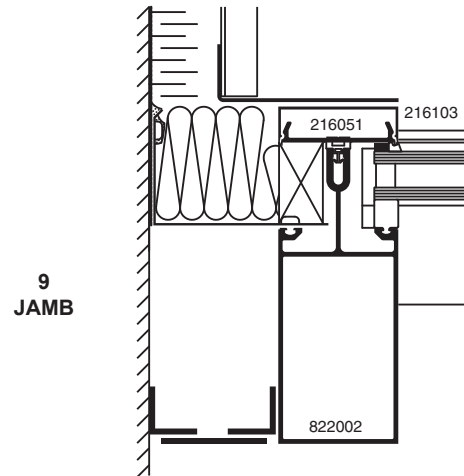
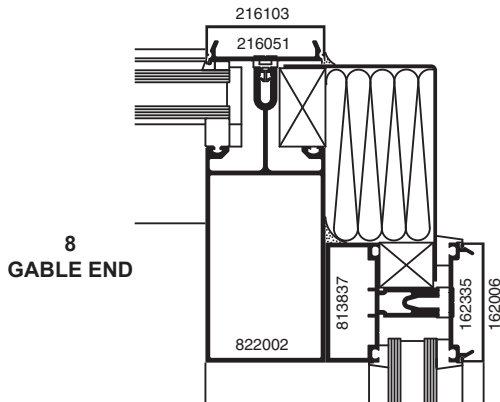
Additional information and CAD details are available at www.kawneer.com



Rafter / Mullion Combinations

Sloped Rafter	Vertical Mullion
822001	162003
822002	162001

NOTE: SEE CURTAIN WALL SECTION FOR DETAILS OF 1600 WALL SYSTEM®1.



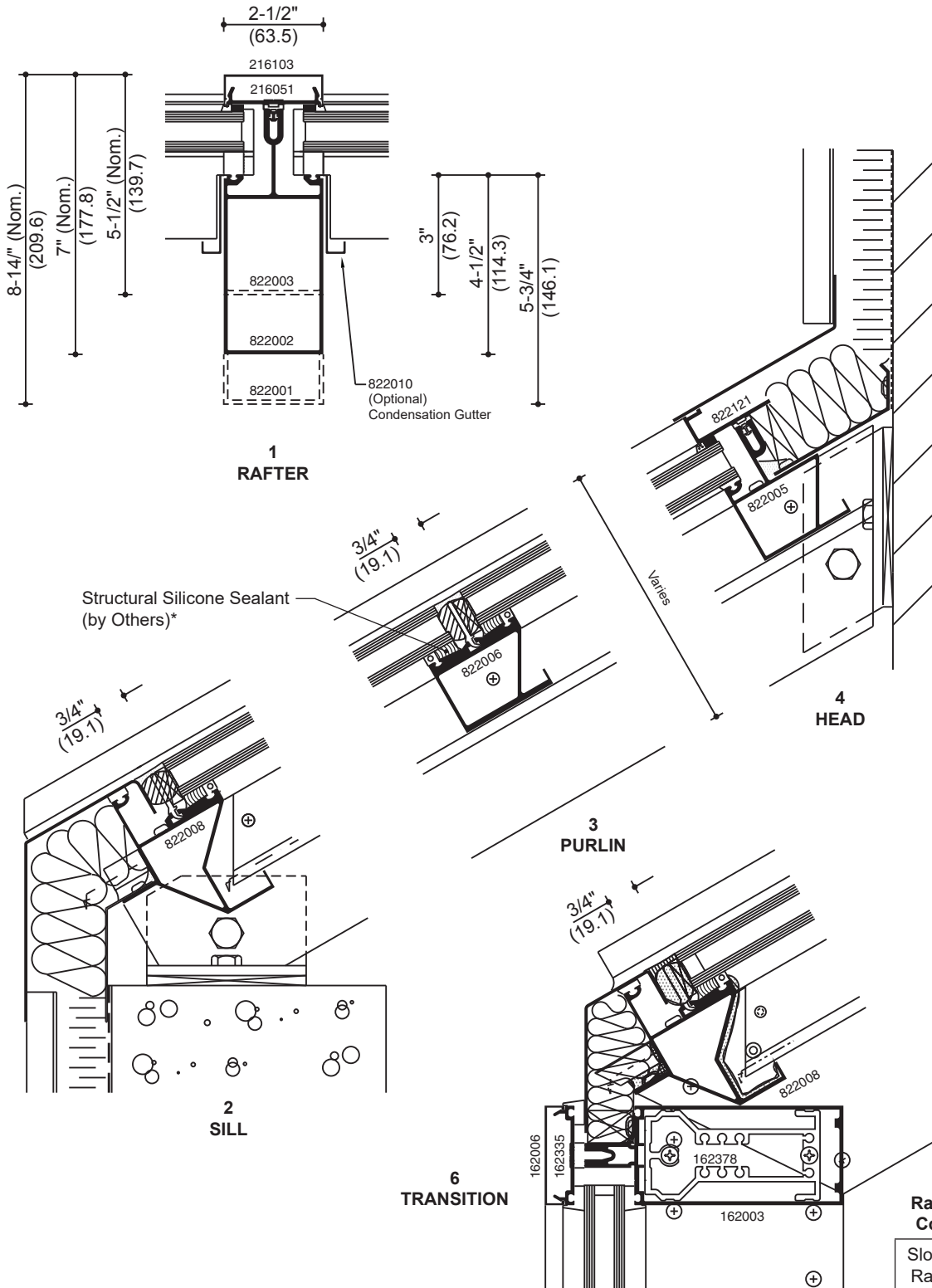
NOTE: SEE CURTAIN WALL SECTION FOR DETAILS OF 1600 WALL SYSTEM®1.

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SSG OPTIONS



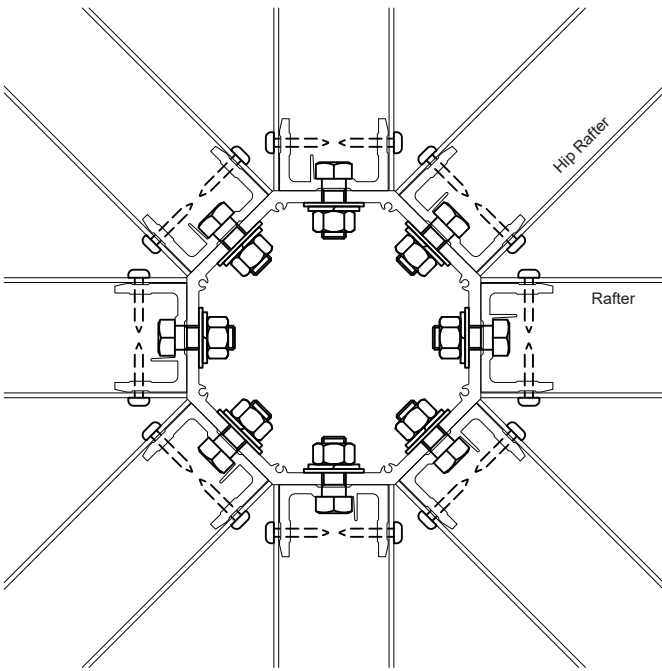
NOTE: SEE CURTAIN WALL SECTION FOR DETAILS OF 1600 WALL SYSTEM®1.

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.

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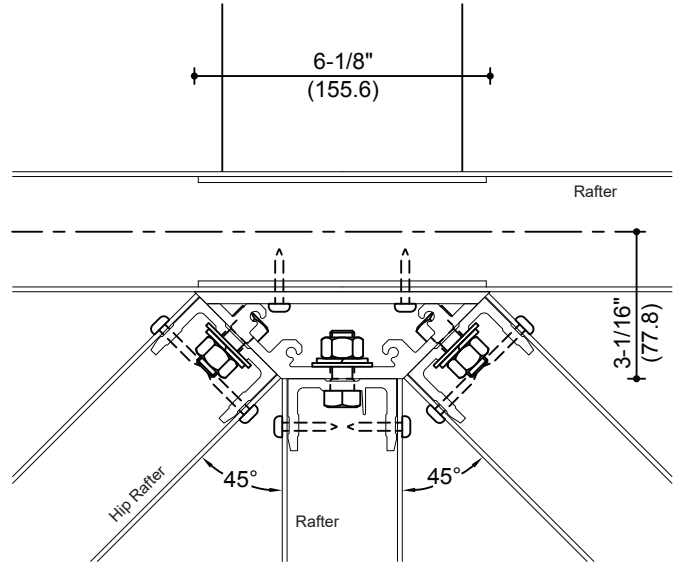
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6-1/8"
(155.6)

**10
COMPRESSION
RING**



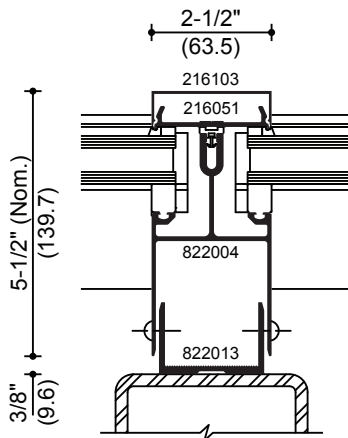
6-1/8"
(155.6)

3-1/16"
(77.8)

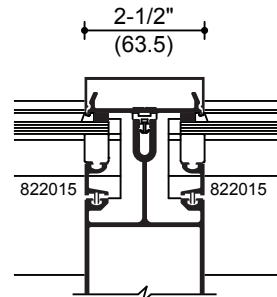
45°

45°

**11
HALF
COMPRESSION
RING**



VENEER RAFTER



SINGLE GLAZED ADAPTER

Rafter detail shown
Purlin detail similar

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Calculations are based on CAN3-S157 "Strength Design in Aluminum" in accordance with the National Building Code of Canada, considering combined service loads acting perpendicular to the glass plane and an allowable deflection of 1/175 of the span.

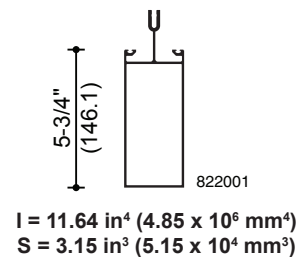
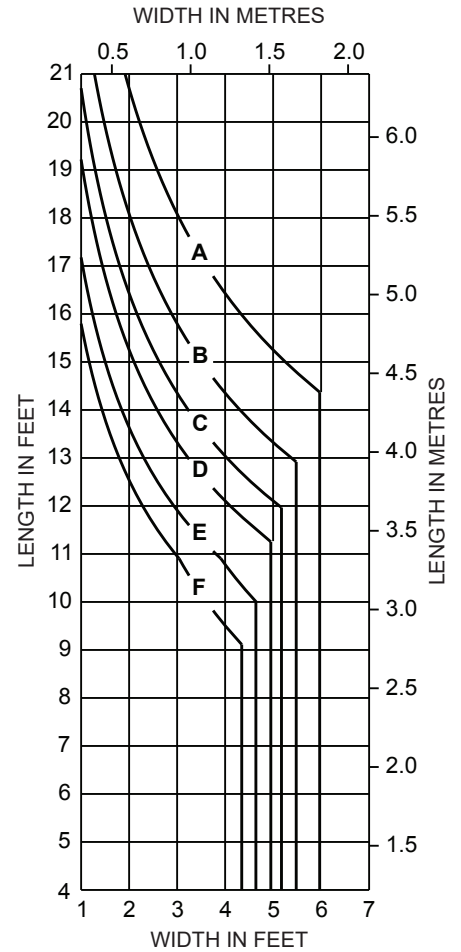
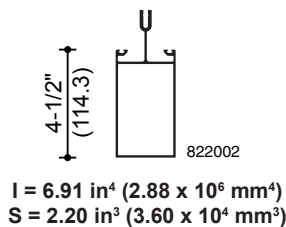
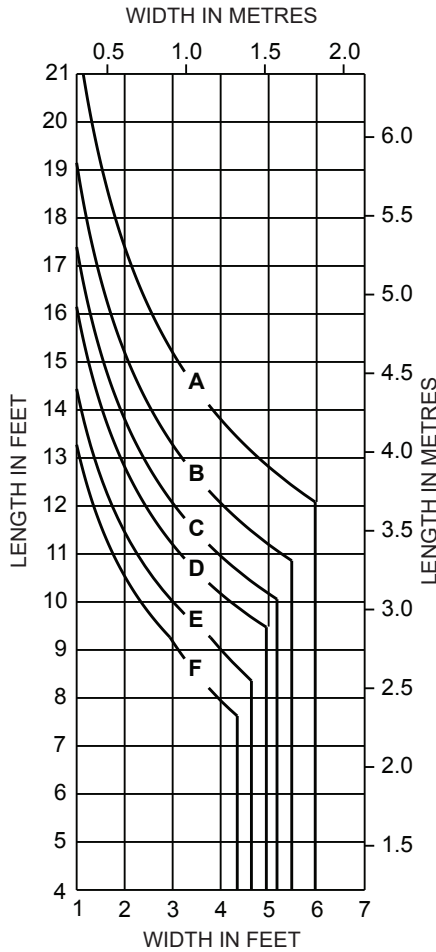
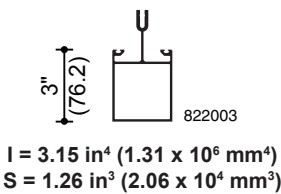
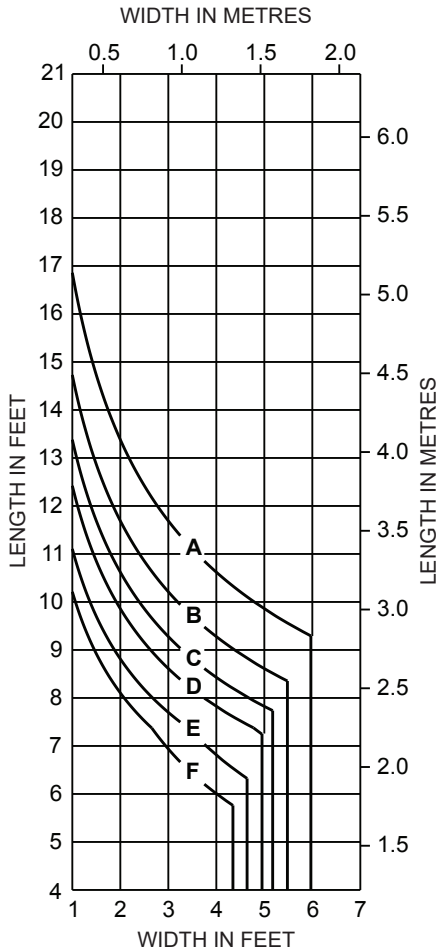
Determine the service dead, wind and live loads acting perpendicular to the glass plane for the required skylight slope. The greatest of the following load combinations should be used to select the rafter required from the charts:

- Deadload + Windload
- Deadload + Liveload
- Deadload + 0.7 (Windload + Liveload)

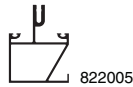
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A = 20 p.s.f. (0.96 kPa)
B = 30 p.s.f. (1.44 kPa)
C = 40 p.s.f. (1.92 kPa)
D = 50 p.s.f. (2.40 kPa)
E = 70 p.s.f. (3.36 kPa)
F = 90 p.s.f. (4.31 kPa)



I = 1.25 in⁴ (5.20 x 10⁵ mm⁴)
S = 0.71 in³ (1.16 x 10⁴ mm³)



I = 0.79 in⁴ (3.28 x 10⁵ mm⁴)
S = 0.71 in³ (1.17 x 10⁴ mm³)

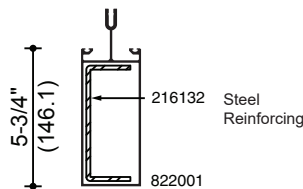
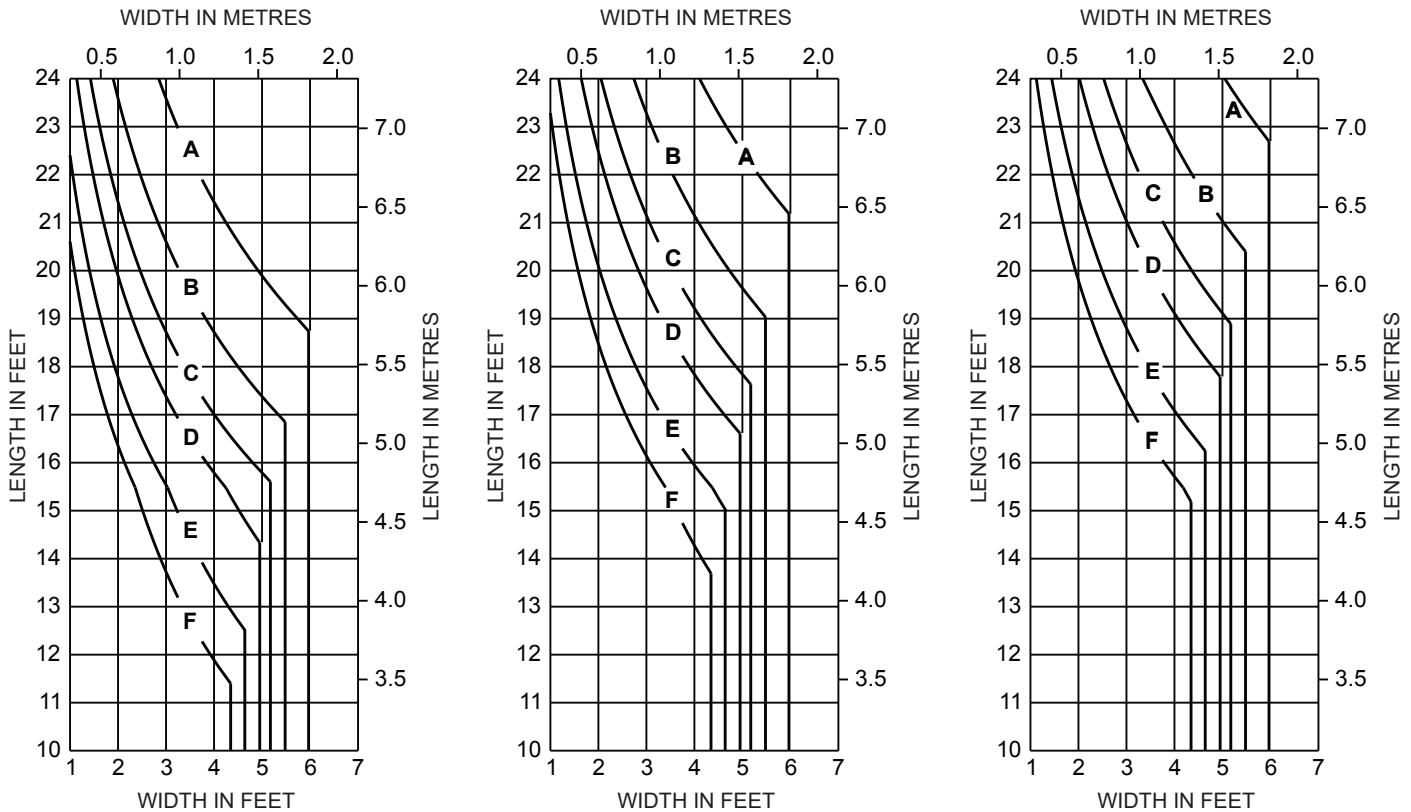
NOTE:
 THE CURVED LINES ON THE GRAPHS REPRESENT THE RAFTER LIMITATIONS. THE VERTICAL LINES REPRESENT THE MAXIMUM RAFTER CENTRES BASED ON THE PURLIN LIMITATIONS.

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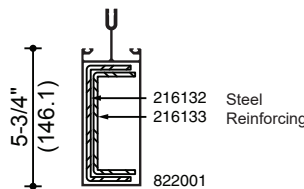
Determine the service dead, wind and live loads acting perpendicular to the glass plane for the required skylight slope. The greatest of the following load combinations should be used to select the rafter required from the charts:

- Deadload + Windload
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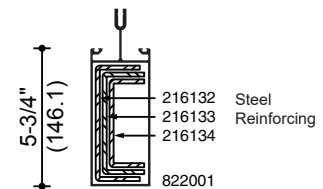
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Aluminum
 $I = 11.64 \text{ in}^4 (4.85 \times 10^6 \text{ mm}^4)$
 $S = 3.15 \text{ in}^3 (5.15 \times 10^4 \text{ mm}^3)$
Steel
 $I = 4.73 \text{ in}^4 (1.97 \times 10^6 \text{ mm}^4)$
 $S = 1.94 \text{ in}^3 (3.18 \times 10^4 \text{ mm}^3)$

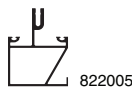


Aluminum
 $I = 11.64 \text{ in}^4 (4.85 \times 10^6 \text{ mm}^4)$
 $S = 3.15 \text{ in}^3 (5.15 \times 10^4 \text{ mm}^3)$
Steel
 $I = 8.54 \text{ in}^4 (3.55 \times 10^6 \text{ mm}^4)$
 $S = 3.63 \text{ in}^3 (5.95 \times 10^4 \text{ mm}^3)$



Aluminum
 $I = 11.64 \text{ in}^4 (4.85 \times 10^6 \text{ mm}^4)$
 $S = 3.15 \text{ in}^3 (5.15 \times 10^4 \text{ mm}^3)$
Steel
 $I = 11.39 \text{ in}^4 (4.74 \times 10^6 \text{ mm}^4)$
 $S = 5.01 \text{ in}^3 (8.22 \times 10^4 \text{ mm}^3)$

A = 20 p.s.f. (0.96 kPa)
B = 30 p.s.f. (1.44 kPa)
C = 40 p.s.f. (1.92 kPa)
D = 50 p.s.f. (2.40 kPa)
E = 70 p.s.f. (3.36 kPa)
F = 90 p.s.f. (4.31 kPa)



$I = 1.25 \text{ in}^4 (5.20 \times 10^5 \text{ mm}^4)$
 $S = 0.71 \text{ in}^3 (1.16 \times 10^4 \text{ mm}^3)$



$I = 0.79 \text{ in}^4 (3.28 \times 10^5 \text{ mm}^4)$
 $S = 0.71 \text{ in}^3 (1.17 \times 10^4 \text{ mm}^3)$

NOTE:
 THE CURVED LINES ON THE GRAPHS REPRESENT THE RAFTER LIMITATIONS. THE VERTICAL LINES REPRESENT THE MAXIMUM RAFTER CENTRES BASED ON THE PURLIN LIMITATIONS.

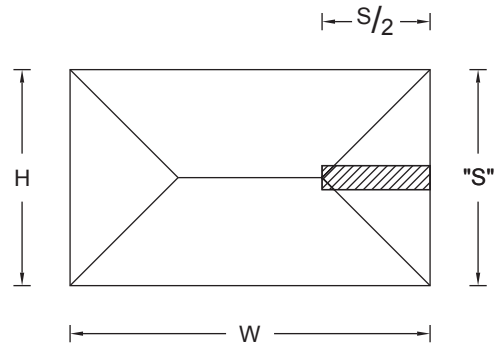
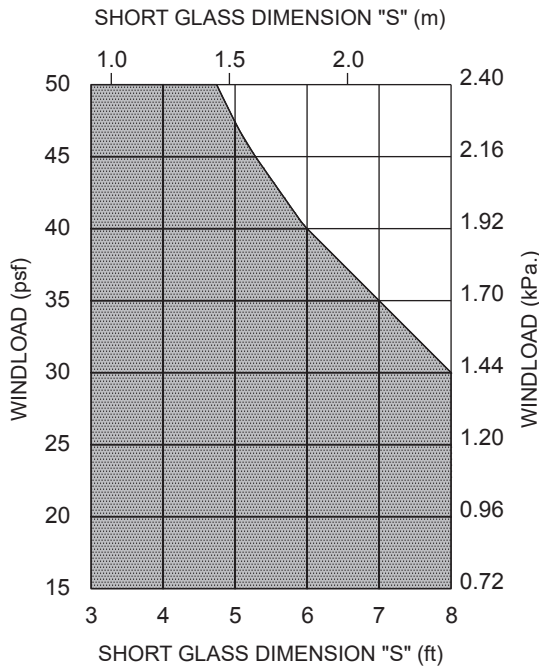
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STRUCTURAL SILICONE SEALANT LIMITATIONS

Calculations are based on an allowable silicone sealant tensile stress of 20psi, and a sealant contact bond width of 1/2" (12.7mm). Wind loading on the glass is assumed to have a trapezoidal distribution, therefore loading on the sealant is based on the design windload and the short glass dimension, see below.

The intersection of the windload and the short glass dimension (shorter of the vertical and horizontal dimensions) must fall below the curve in the chart below.



NOTE:

THE INSULATING GLASS EDGE CONSTRUCTION MUST BE SUITABLE FOR STRUCTURAL SILICONE SEALANT APPLICATION.

SHOP DRAWINGS MUST BE SUBMITTED TO THE STRUCTURAL SILICONE SEALANT MANUFACTURER FOR REVIEW OF THE DETAILS.

ALL MATERIALS AND FINISHES WHICH CONTACT THE STRUCTURAL SILICONE SEALANT SHOULD BE SUBMITTED TO THE STRUCTURAL SEALANT MANUFACTURER FOR ADHESION AND COMPATIBILITY TESTING.

ANODIZED FINISHES AND FLUOROPOLYMER FINISHES MAY BE USED FOR STRUCTURAL GLAZING APPLICATIONS. PAINT FINISHES MUST BE APPLIED BY A LICENSED APPLICATOR IN ACCORDANCE WITH THE PAINT MANUFACTURER'S REQUIREMENTS.

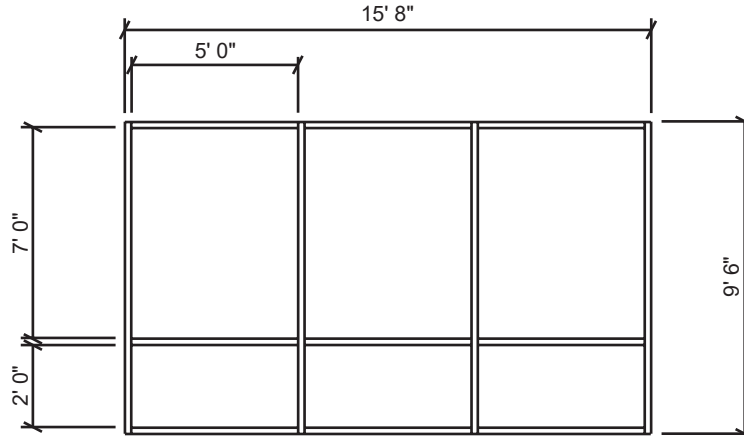
APPLICATION OF THE STRUCTURAL SILICONE SEALANT SHOULD NOT PROCEED UNTIL DETAILS HAVE BEEN REVIEWED, AND TESTING HAS BEEN SUCCESSFULLY COMPLETED.

THE STRUCTURAL SILICONE SEALANT MANUFACTURER'S RECOMMENDATIONS FOR SEALANT PRODUCT, SURFACE PREPARATION, AND SEALANT APPLICATION, MUST BE STRICTLY FOLLOWED.

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Project Specific U-factor Example Calculation



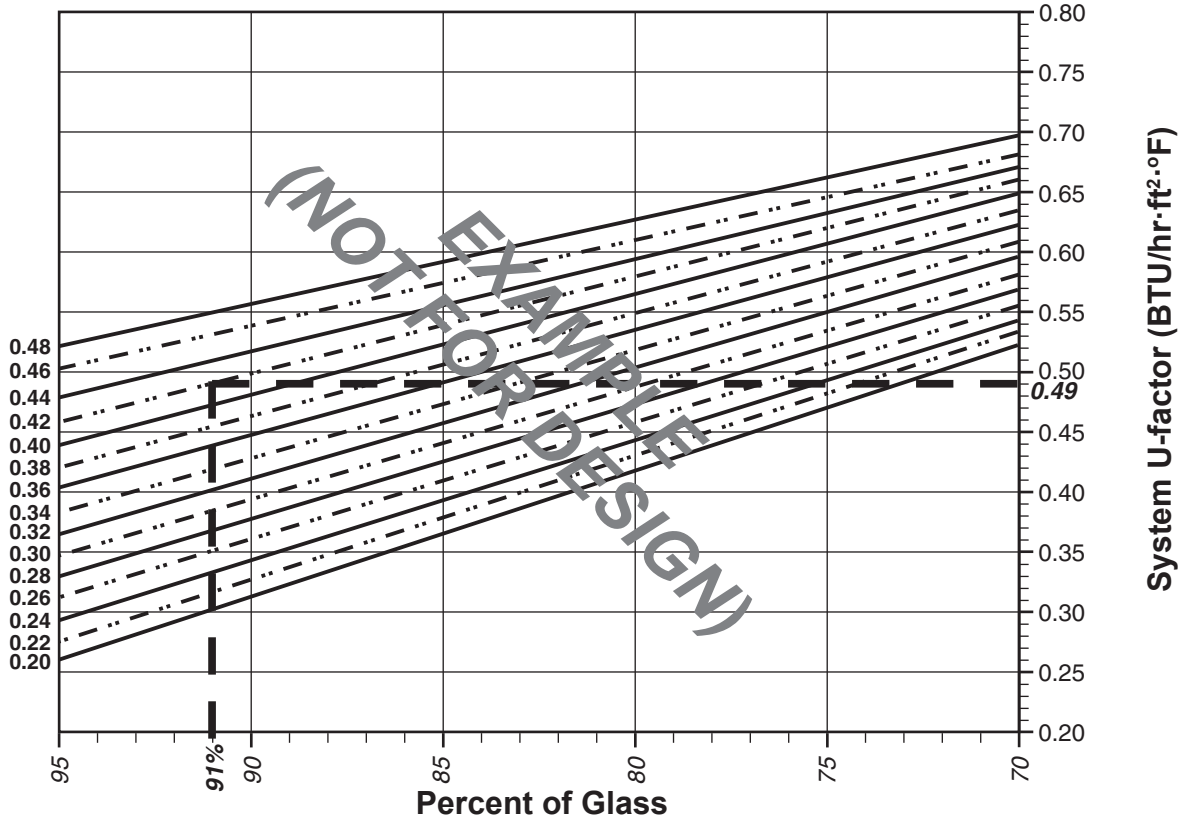
Example Glass U-factor = 0.42 Btu/hr·ft²·°F

Total Daylight Opening = 3(5' x 7') + 3(5' x 2') = 135ft²

Total Projected Area = (Total Daylight Opening + Total Area of Framing System)
= 15' 8" x 9' 6" = 148.83ft²

Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)
= (135 ÷ 148.83)100 = 91%

System U-factor vs Percent of Glass Area



**Based on 91% glass and Center of Glass (COG) U-factor of 0.42
System U-factor is equal to 0.49 Btu/hr·ft²·°F**

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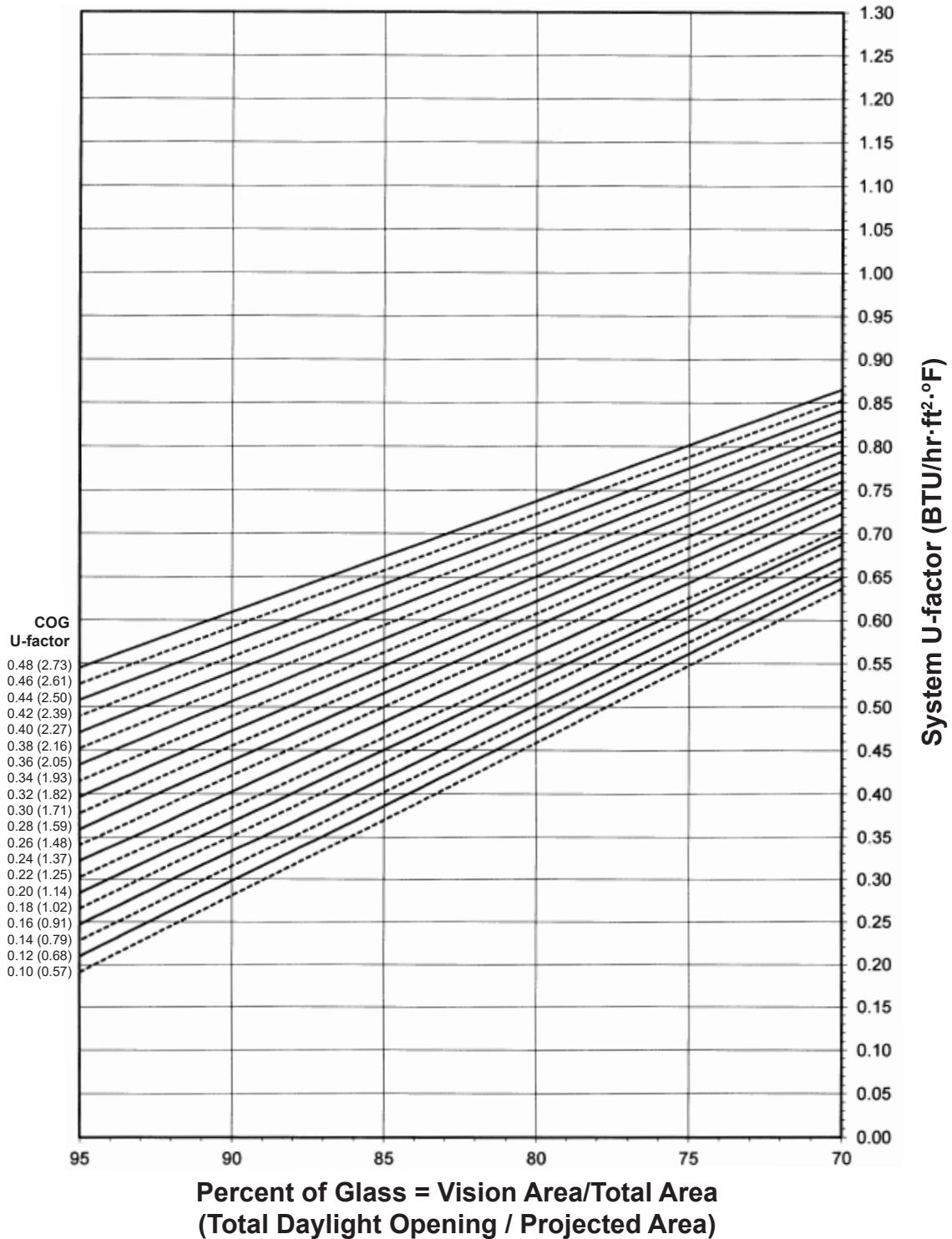
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Note:

Values in parentheses are metric.
 COG=Center of Glass.
 Charts are generated per AAMA 507.

CAPTURED GLAZING

System U-factor vs Percent of Glass Area



Notes for System U-Factor, SHGC and VT charts:

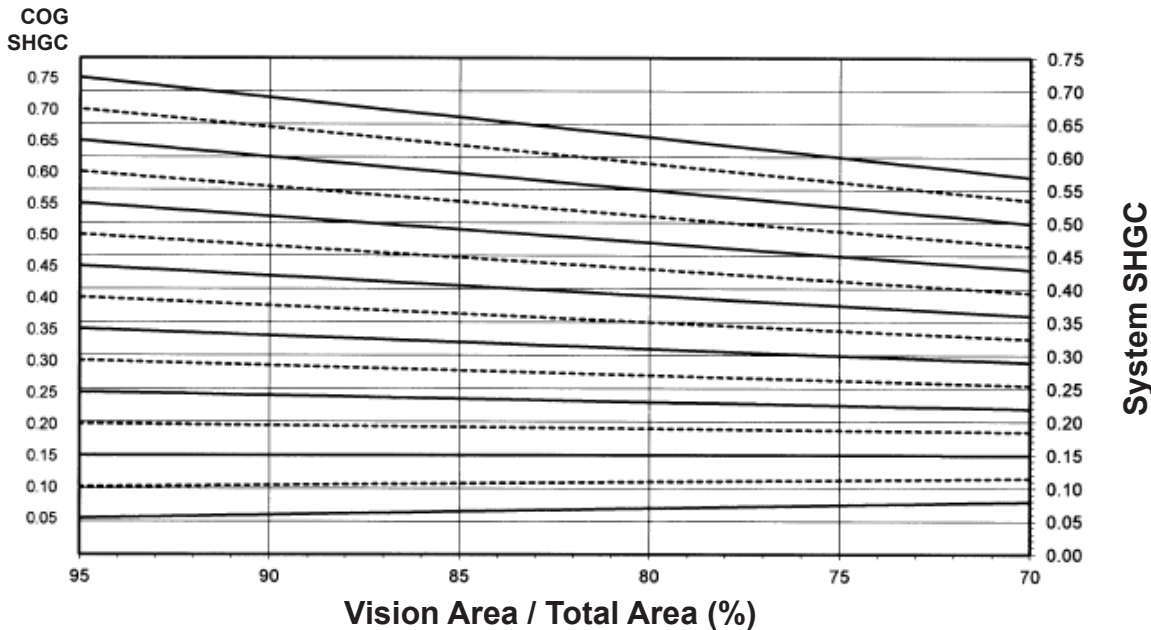
For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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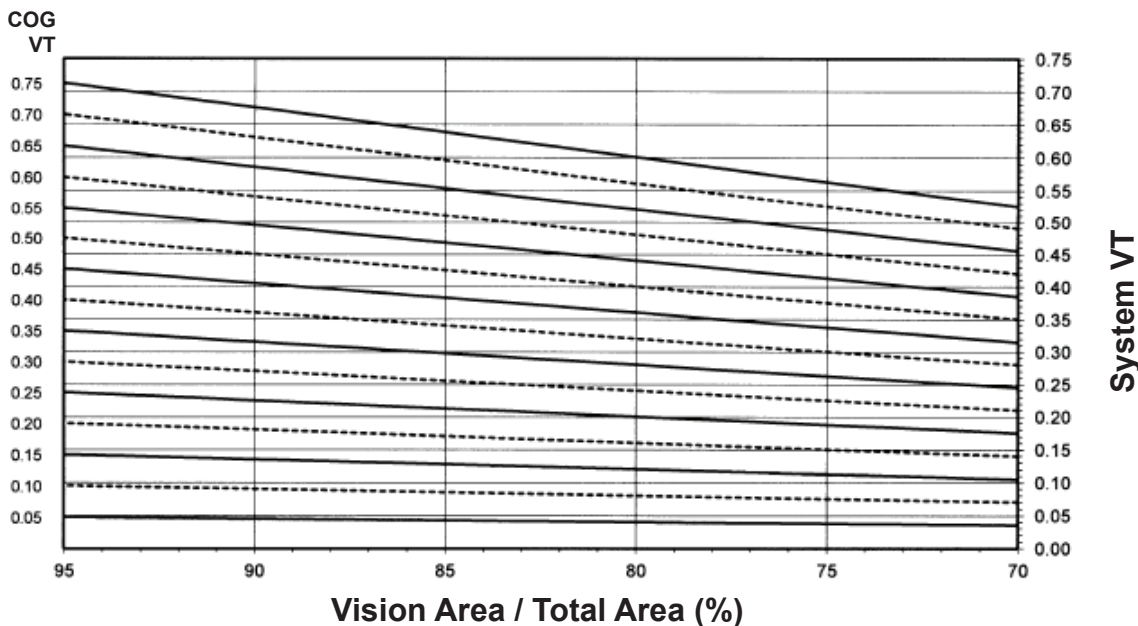
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CAPTURED GLAZING

System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



System Visible Transmittance (VT) vs Percent of Vision Area



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CAPTURED GLAZING

Thermal Transmittance ¹

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.60
0.46	0.59
0.44	0.57
0.42	0.55
0.40	0.53
0.38	0.52
0.36	0.50
0.34	0.48
0.32	0.46
0.30	0.45
0.28	0.43
0.26	0.41
0.24	0.39
0.22	0.38
0.20	0.36
0.18	0.34
0.16	0.32
0.14	0.31
0.12	0.29
0.10	0.27

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

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CAPTURED GLAZING

SHGC Matrix ²

Glass SHGC ³	Overall Glass U-Factor ⁴
0.75	0.69
0.70	0.65
0.65	0.60
0.60	0.56
0.55	0.51
0.50	0.47
0.45	0.42
0.40	0.38
0.35	0.33
0.30	0.29
0.25	0.24
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.68
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.09
0.05	0.05

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

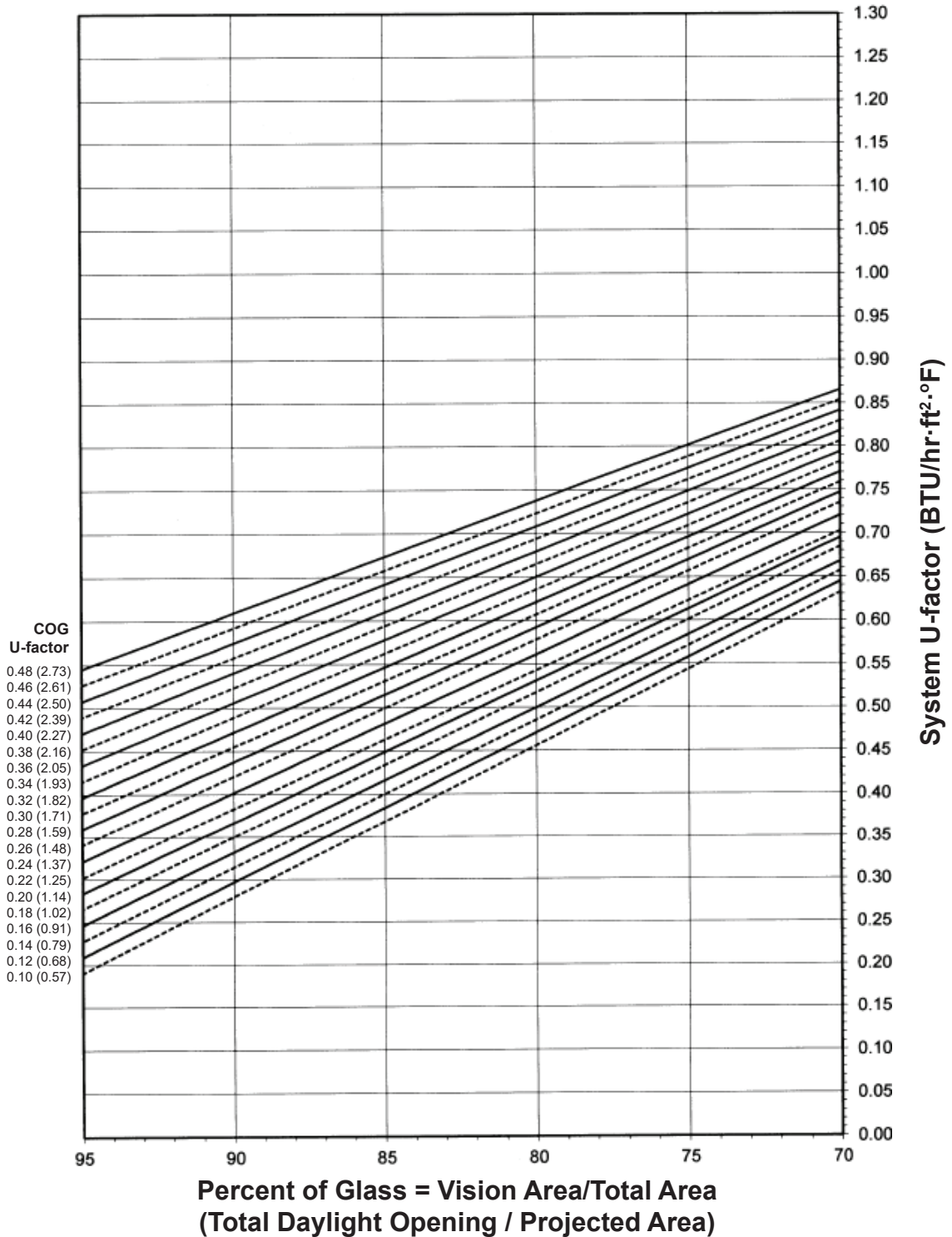
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Note:

Values in parentheses are metric.
 COG=Center of Glass.
 Charts are generated per AAMA 507.

SSG GLAZING

System U-factor vs Percent of Glass Area



Notes for System U-Factor, SHGC and VT charts:

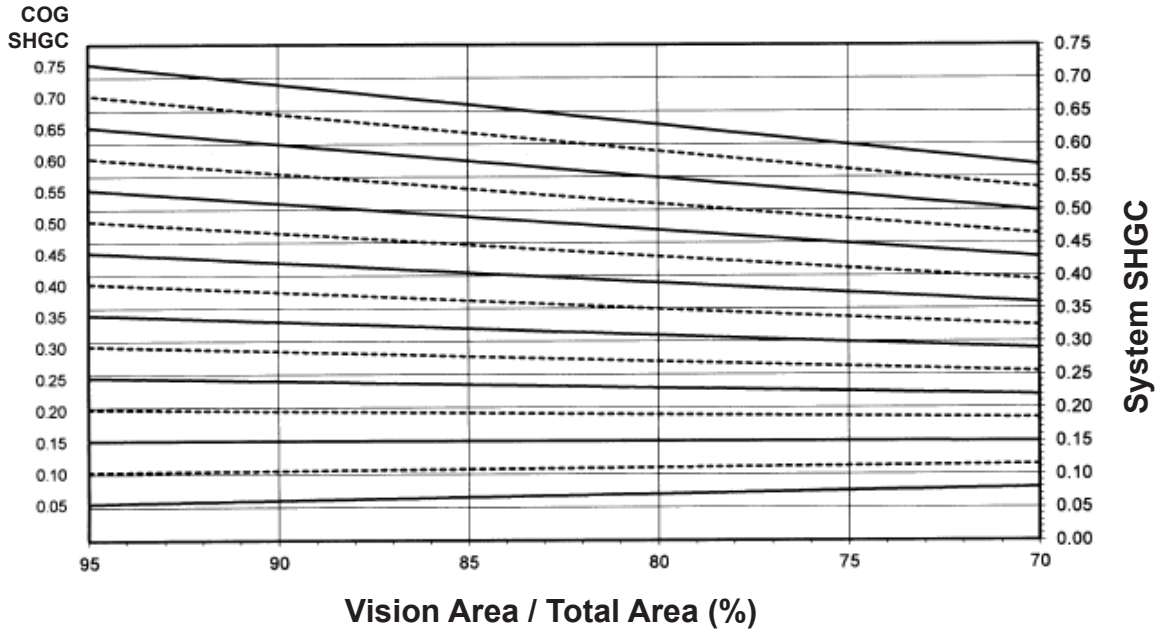
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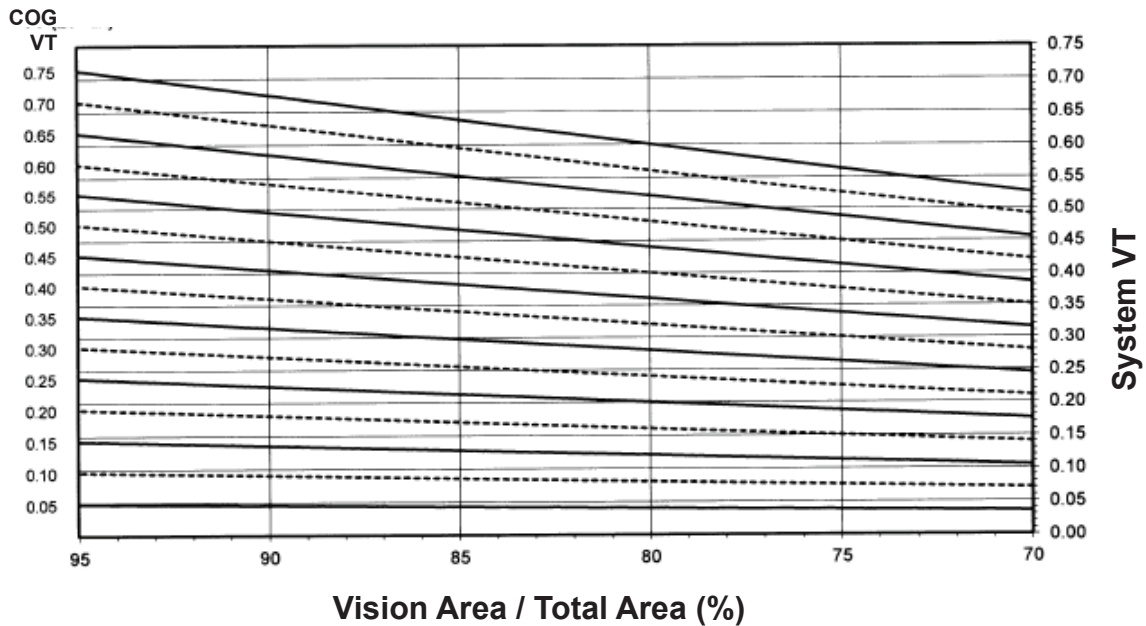
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System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



System Visible Transmittance (VT) vs Percent of Vision Area



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Thermal Transmittance ¹

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.60
0.46	0.58
0.44	0.57
0.42	0.55
0.40	0.53
0.38	0.51
0.36	0.50
0.34	0.48
0.32	0.46
0.30	0.45
0.28	0.43
0.26	0.41
0.24	0.39
0.22	0.37
0.20	0.36
0.18	0.34
0.16	0.32
0.14	0.30
0.12	0.29
0.10	0.27

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

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SHGC Matrix ²

Glass SHGC ³	Overall Glass U-Factor ⁴
0.75	0.69
0.70	0.65
0.65	0.60
0.60	0.56
0.55	0.51
0.50	0.47
0.45	0.42
0.40	0.38
0.35	0.33
0.30	0.29
0.25	0.24
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.68
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.09
0.05	0.05

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

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