

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.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.
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PANNING 34

WIND LOAD CHARTS 35-36

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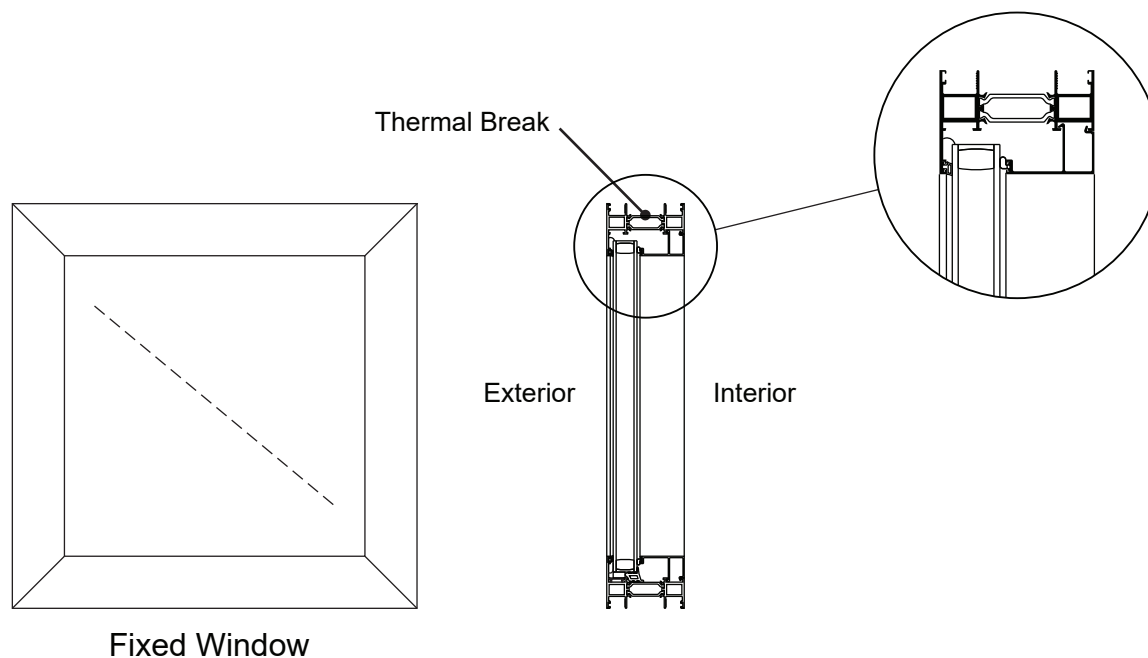
Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses () are millimeters unless otherwise noted.

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

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

Standard Features

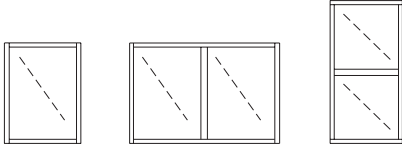
- Architectural Grade Window
- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Factory Heel Bead
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options



For specific product applications,
consult your Kawneer representative.

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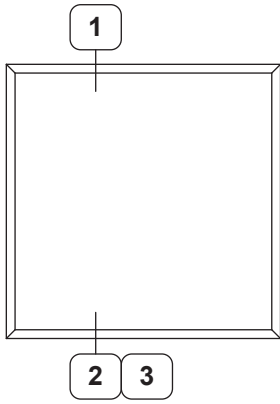
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CLASS and GRADE	Architectural Class AW-PG80-FW
TESTING STANDARD	AAMA / WDMA CSA 101 / I.S.2 / A440-05 / A440-08
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame
TYPICAL MAXIMUM SIZE	60" x 99"
TYPICAL MINIMUM SIZE	17" x 17"
TYPICAL CONFIGURATIONS	
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
STANDARD HARDWARE	Not Applicable
OPTIONAL HARDWARE	Not Applicable
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins 1" High Thermal Option

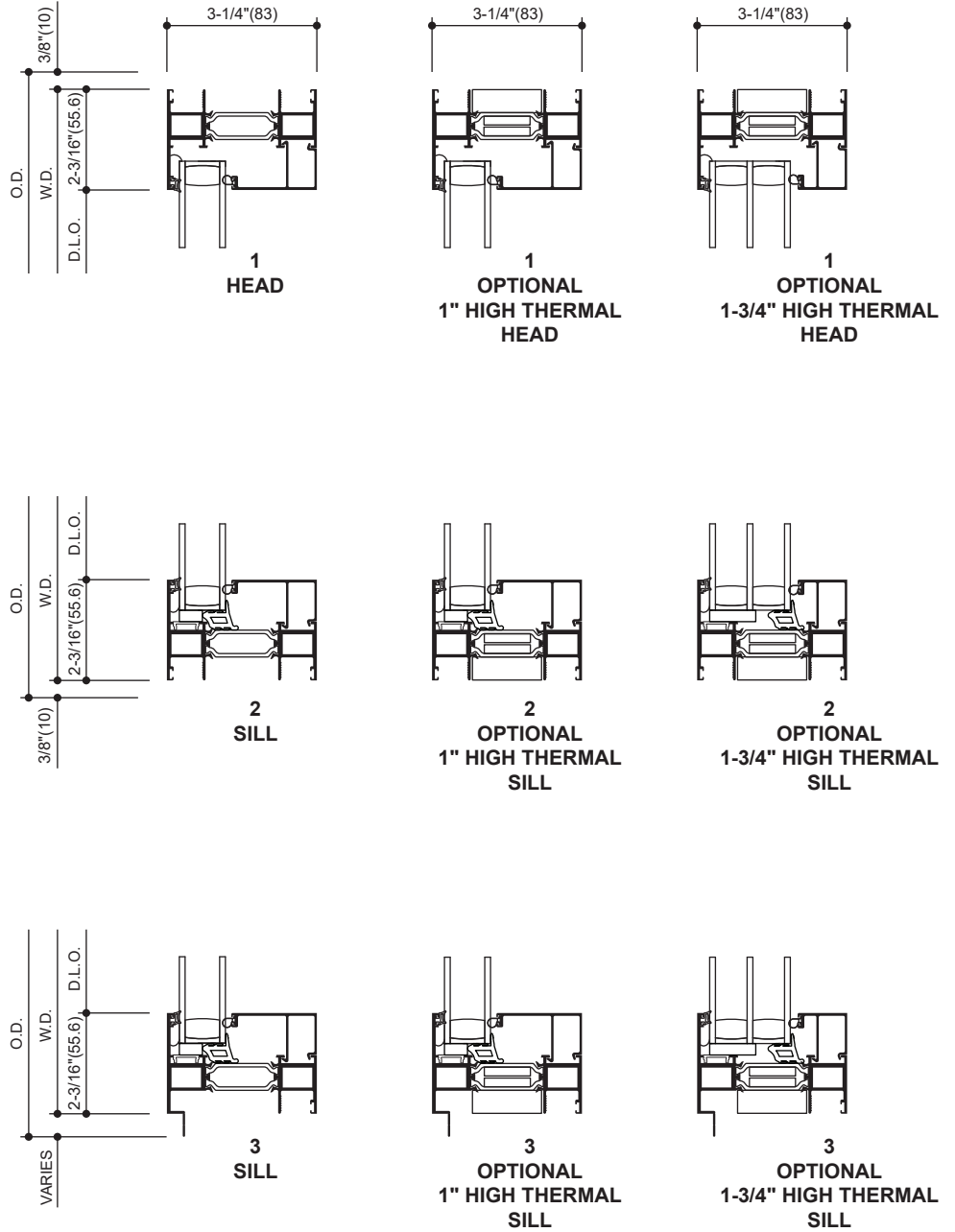
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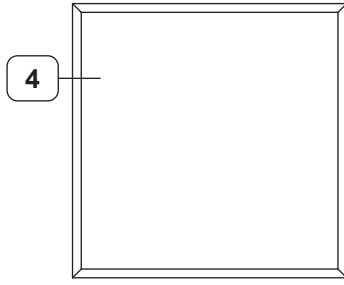
TYPICAL ELEVATION



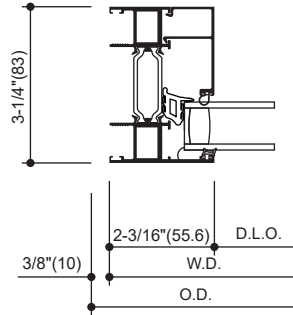
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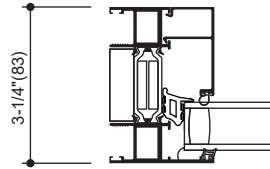
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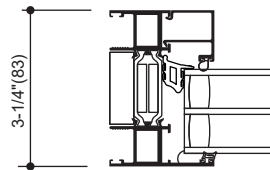
TYPICAL ELEVATION



4
JAMB



4
OPTIONAL
1" HIGH THERMAL
JAMB

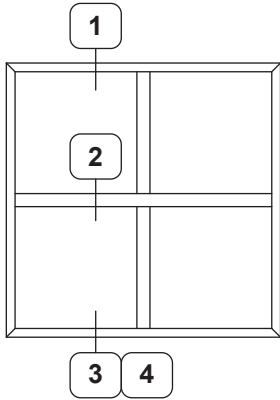


4
OPTIONAL
1-3/4" HIGH THERMAL
JAMB

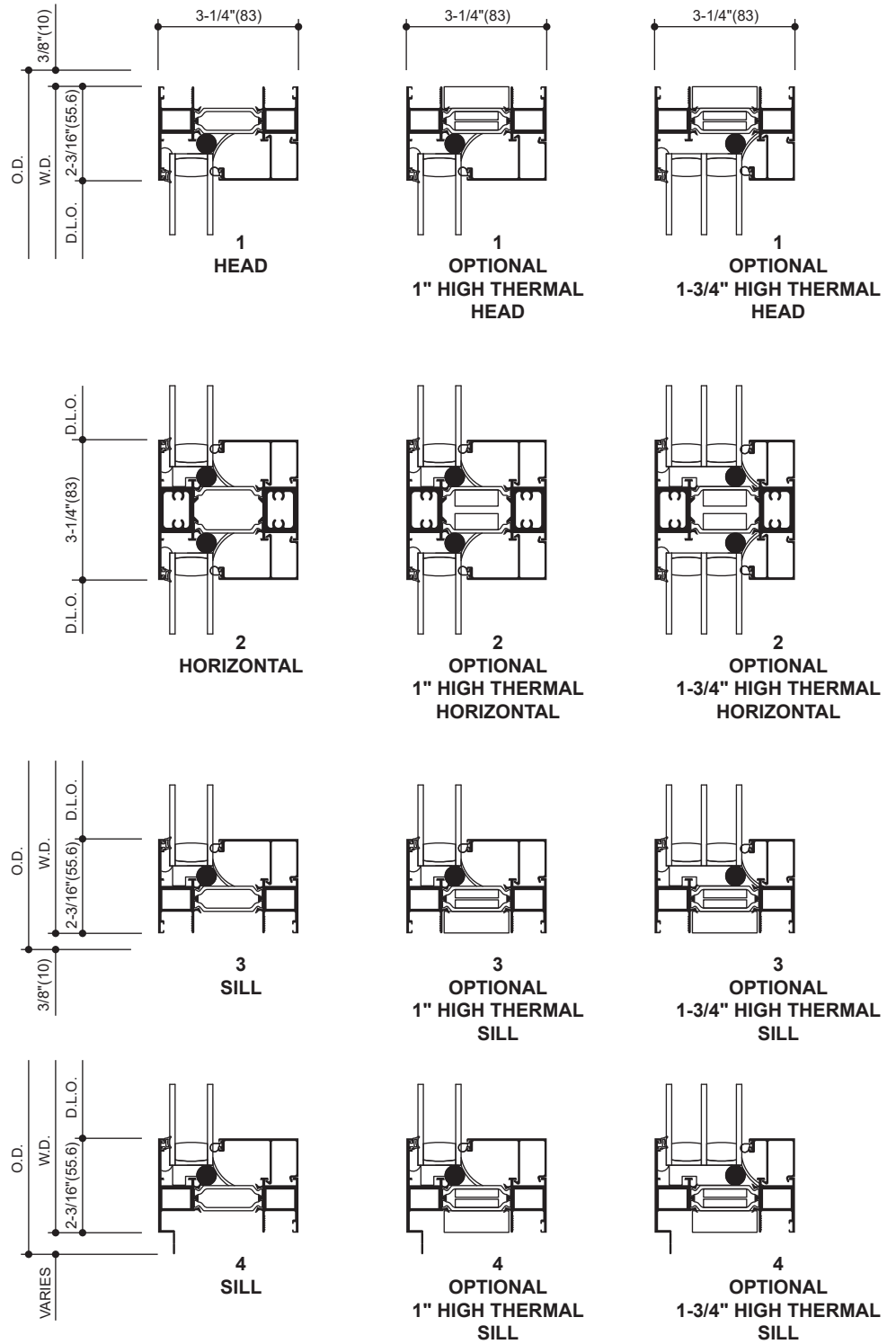
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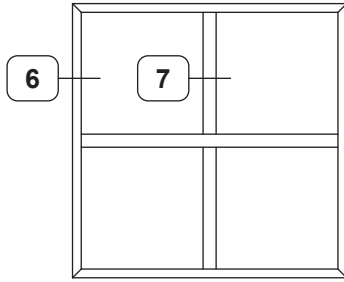
TYPICAL ELEVATION



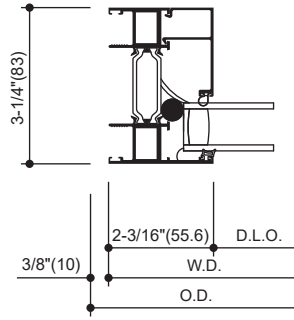
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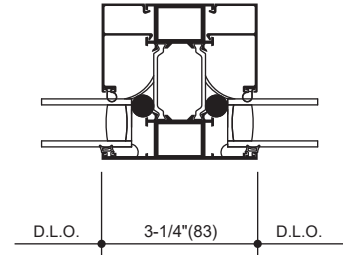
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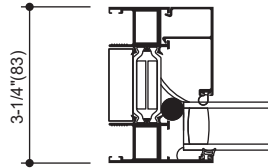
TYPICAL ELEVATION



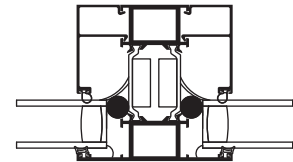
6
JAMB



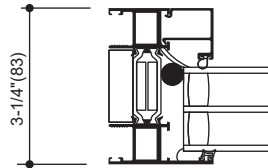
7
VERTICAL



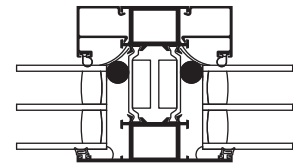
6
OPTIONAL
1" HIGH THERMAL
JAMB



7
OPTIONAL
1" HIGH THERMAL
VERTICAL



6
OPTIONAL
1-3/4" HIGH THERMAL
JAMB



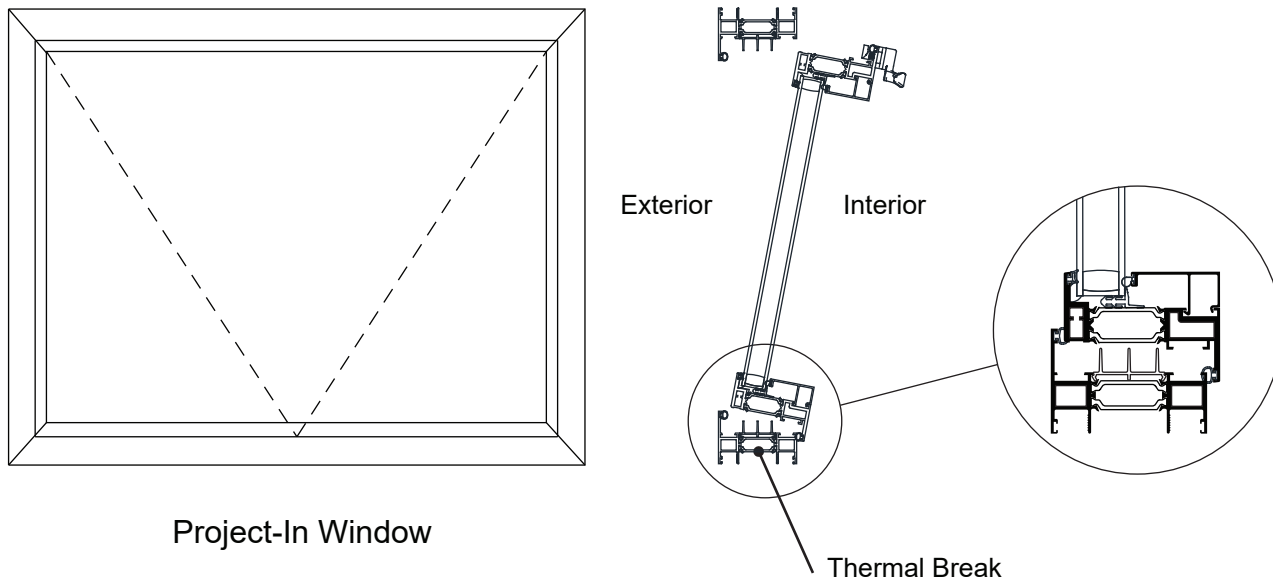
7
OPTIONAL
1-3/4" HIGH THERMAL
VERTICAL

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Standard Features

- Architectural Grade Window
- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Vent and Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Adjustable EURO-Groove Mounted Hardware
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options



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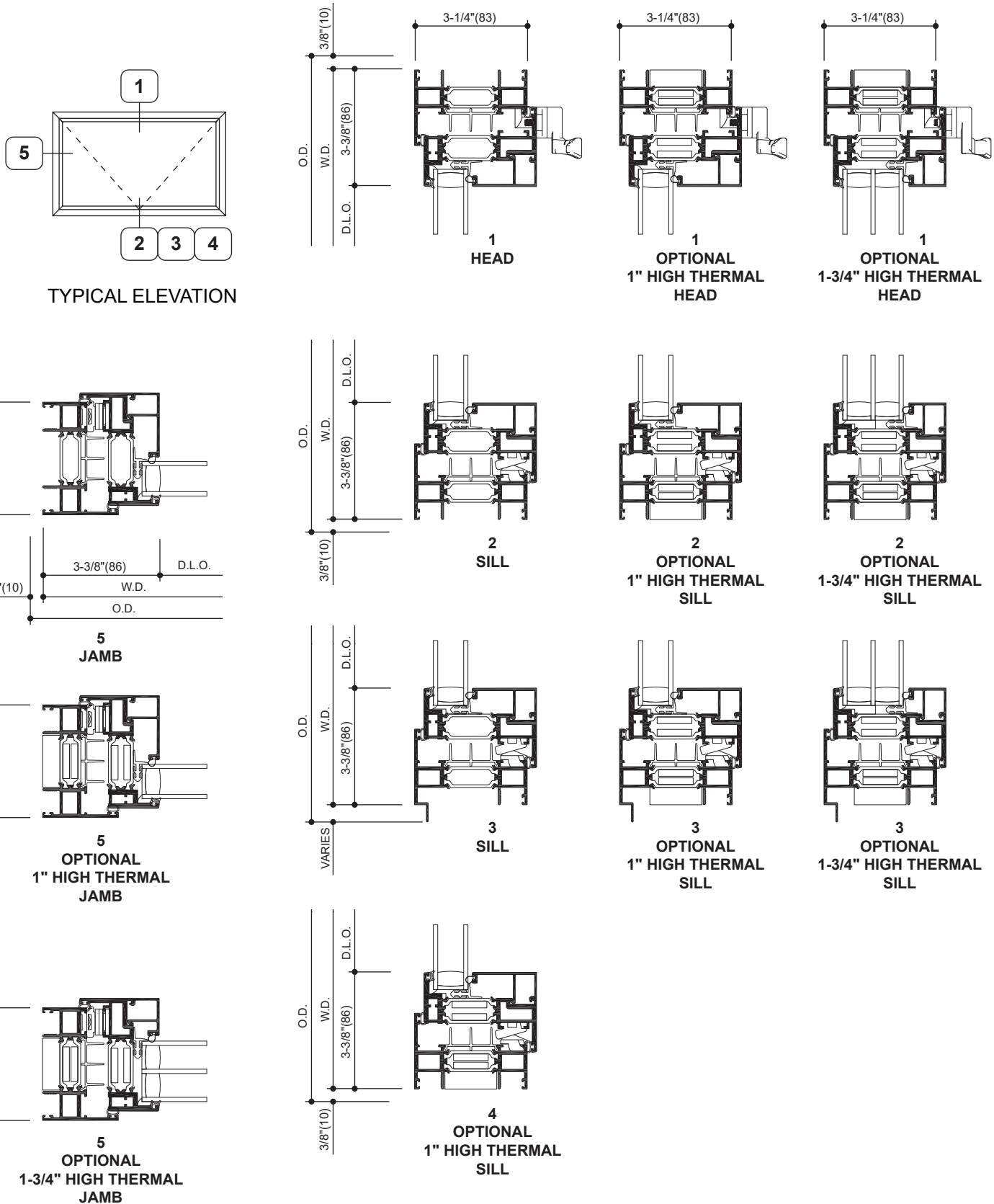
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CLASS and GRADE	Architectural Grade AW-PG80-AP
TESTING STANDARD	AAMA / WDMA CSA 101 / I.S.2 / A440-05 / A440-08
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame / .125" Nominal Vent
TYPICAL MAX. VENT SIZE	60" x 36"
TYPICAL MIN. VENT SIZE	24" x 19"
TYPICAL CONFIGURATIONS	
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
STANDARD HARDWARE	Stainless Steel 4-Bar Hinges Cast White Bronze Cam Handles
OPTIONAL HARDWARE	Access Control Locks Pole and Pole Ring Limit Stop
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Insect Screens Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins 1" High Thermal Option

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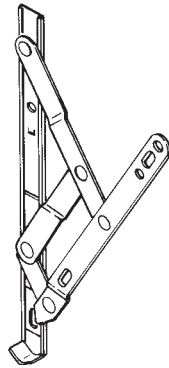
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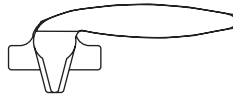
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**STAINLESS STEEL
4 BAR HINGES**



A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

CAM HANDLE



Cast white bronze cam handles are an alternative to standard multi-point locking for the operation and locking of ventilators.

**CAM HANDLE
WITH POLE RING**



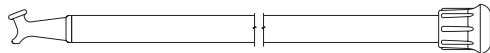
Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

POLE RING



Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

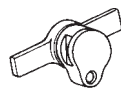
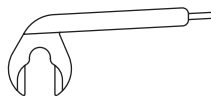


A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze Pole Hanger.

**HANGER
FOR SASH POLE**



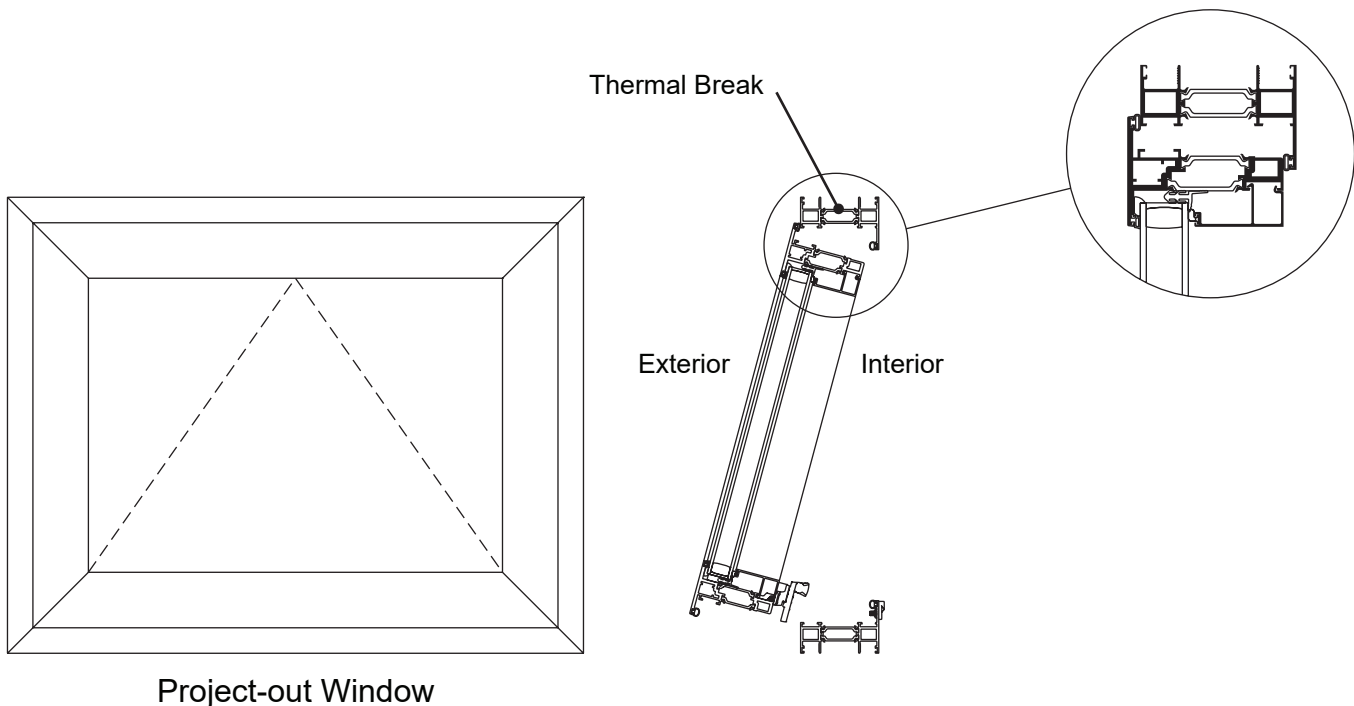
**ACCESS CONTROL
LOCK**



In lieu of cam handles and multi-point locking cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.

Standard Features

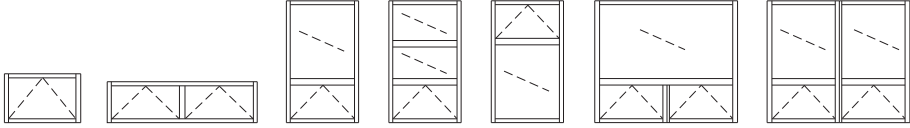
- Architectural Grade Window
- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Vent and Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Adjustable EURO-Groove Mounted Hardware
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options



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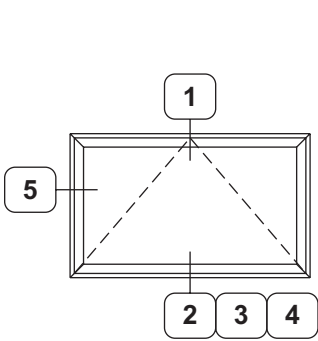
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CLASS and GRADE	Architectural Grade AW-PG80-AP
TESTING STANDARD	AAMA / WDMA / CSA 101 / I.S.2 / A440-05 / A440-08
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame / .125" Nominal Vent
TYPICAL MAX. VENT SIZE	60" x 36"
TYPICAL MIN. VENT SIZE	24" x 19"
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
TYPICAL CONFIGURATIONS	
STANDARD HARDWARE	Stainless Steel 4-Bar Hinges Cast White Bronze Cam Handles
OPTIONAL HARDWARE	Access Control Locks Pole and Pole Ring Limit Stop Roto Operator Omni Drive Hardware (5 lb) operating force. (Consult Application Engineering on project specific application.)
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Insect Screens Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins 1" High Thermal Option

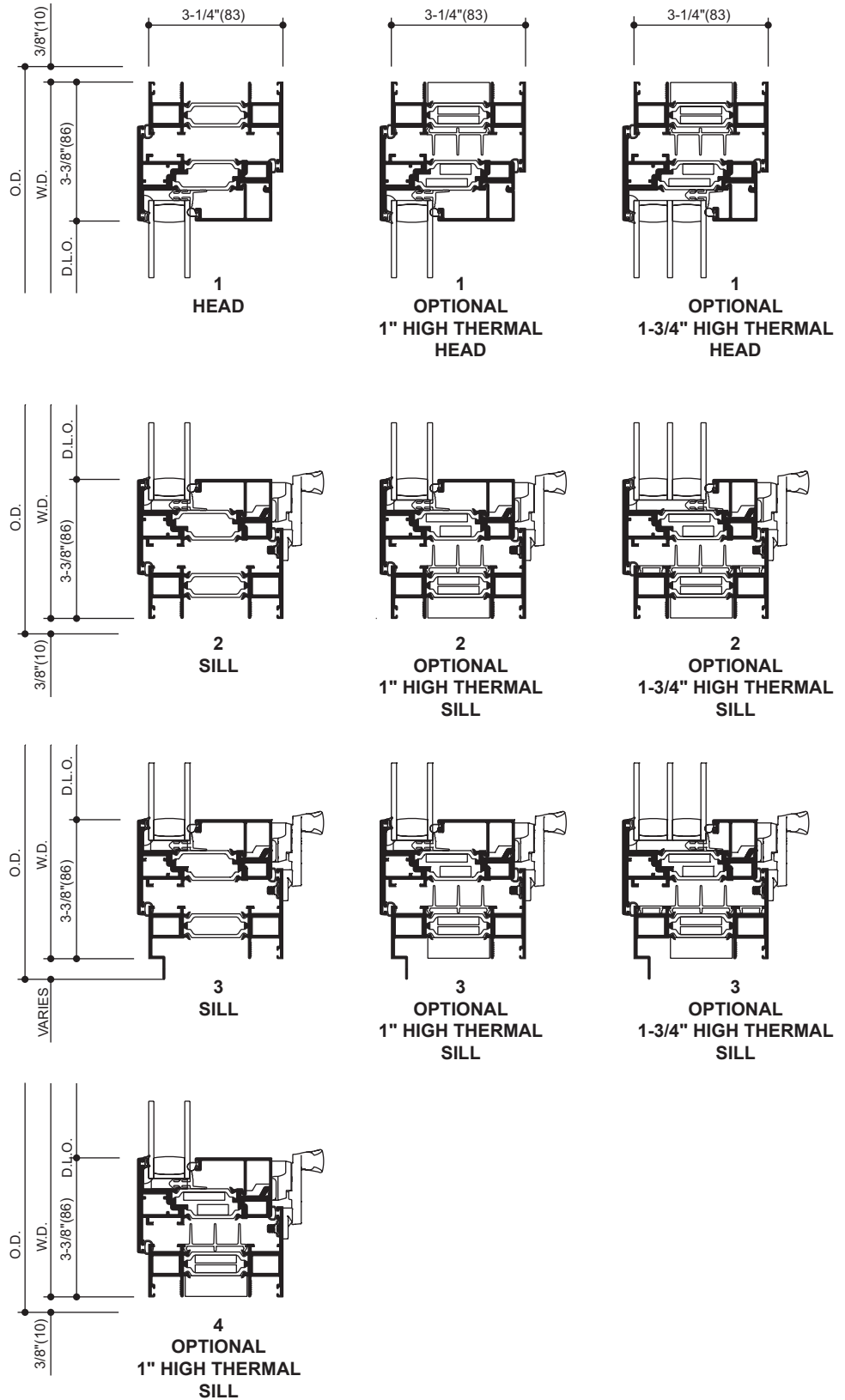
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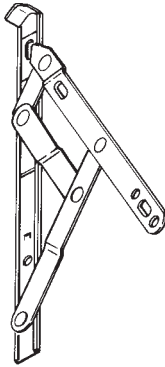
TYPICAL ELEVATION



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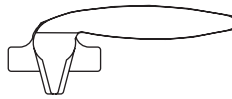
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**STAINLESS STEEL
4 BAR HINGES**



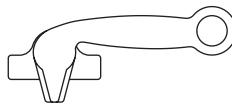
A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

CAM HANDLE



Cast white bronze cam handles are an alternative to standard multi-point locking for the operation and locking of ventilators.

**CAM HANDLE
WITH POLE RING**



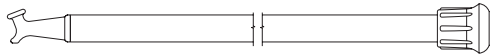
Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

POLE RING



Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

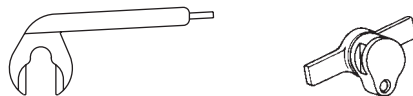


A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze Pole Hanger.

**HANGER
FOR SASH POLE**

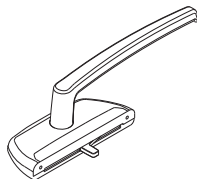


**ACCESS CONTROL
LOCK**



In lieu of cam handles and multi-point locking cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.

**OMNI DRIVE
HANDLE**



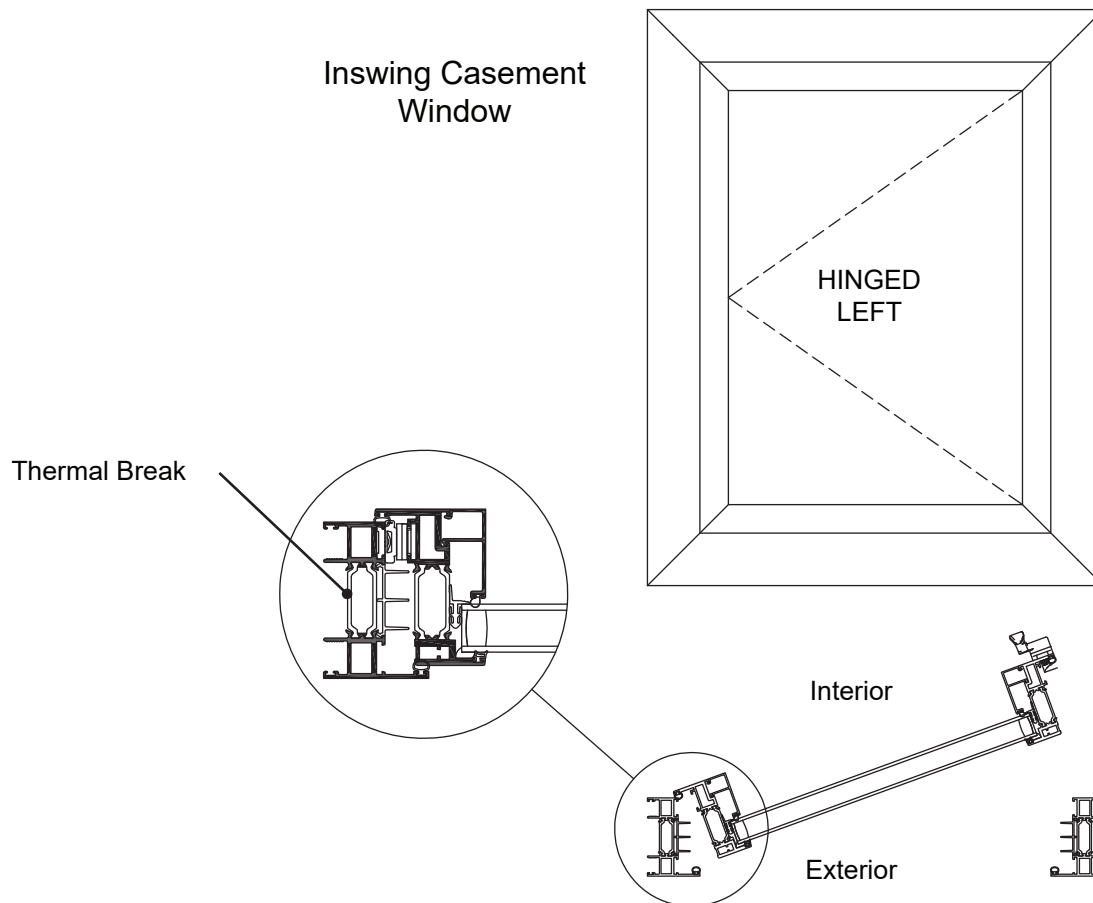
Omni Drive hardware to support 5 lb operating force lock handle. Powder coat: black or white.

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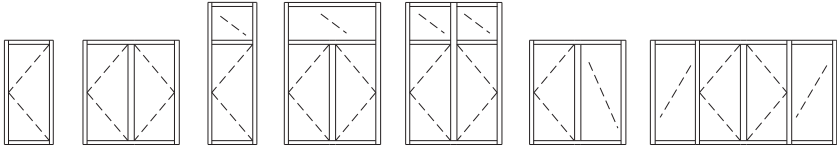
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Standard Features

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- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Vent and Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Adjustable EURO-Groove Mounted Hardware
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options



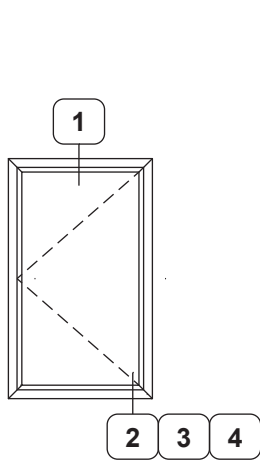
For specific product applications,
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CLASS and GRADE	Architectural Grade AW-PG80-C
TESTING STANDARD	AAMA / WDMA / CSA 101 / I.S.2 / A440-05 / A440-08
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame / .125" Nominal Vent
TYPICAL MAX. VENT SIZE	36" x 60"
TYPICAL MIN. VENT SIZE	19" x 24"
TYPICAL CONFIGURATIONS	
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
STANDARD HARDWARE	Stainless Steel 4-Bar Hinges Cast White Bronze Cam Handles
OPTIONAL HARDWARE	Access Control Locks Pole and Pole Ring Limit Stop Butt Hinges with Friction Adjusters Savio Hardware (5 lb) operating force. (Consult Application Engineering on project specific application.)
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Insect Screens Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins 1" High Thermal Option

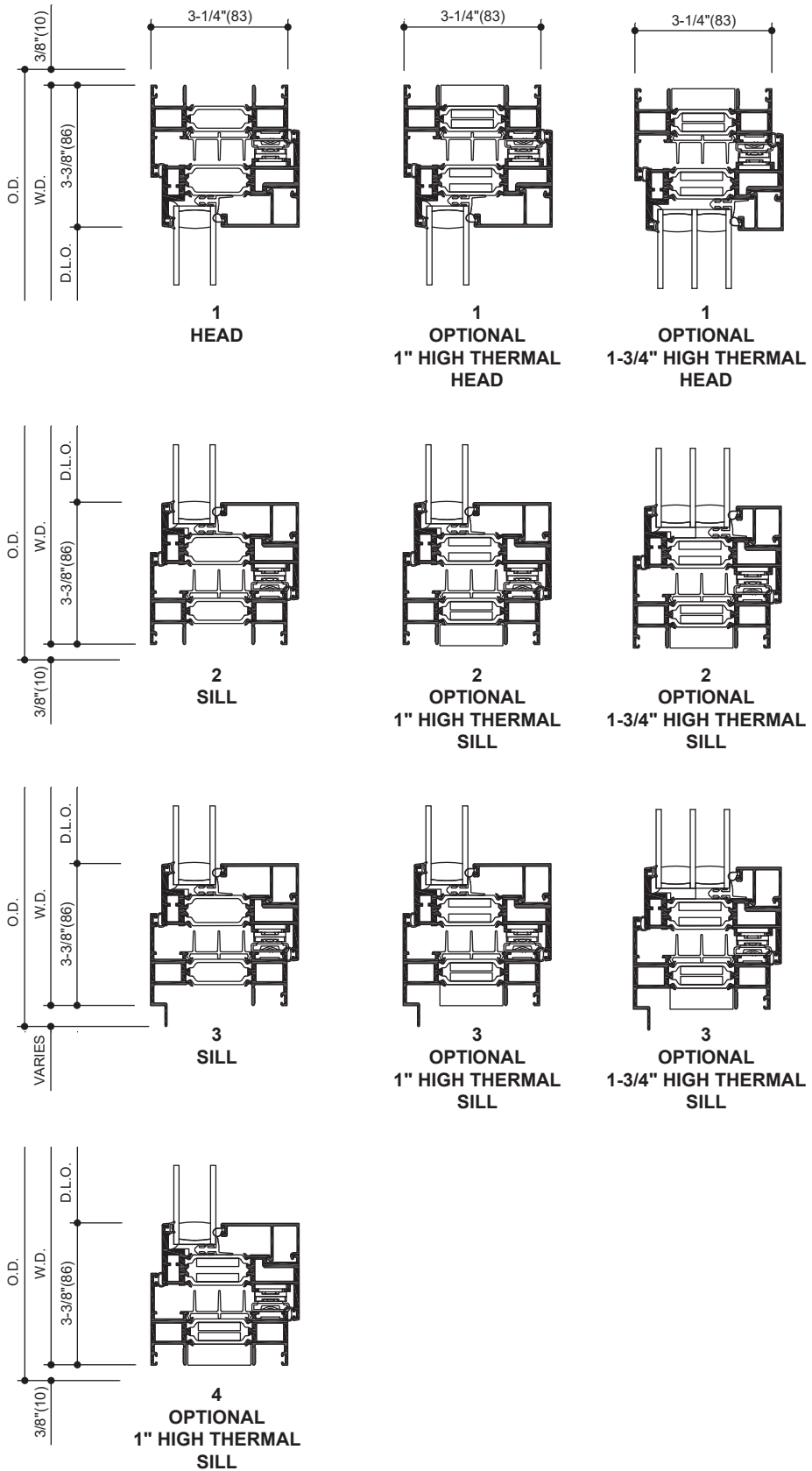
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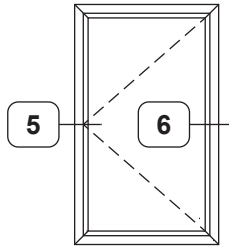
TYPICAL ELEVATION



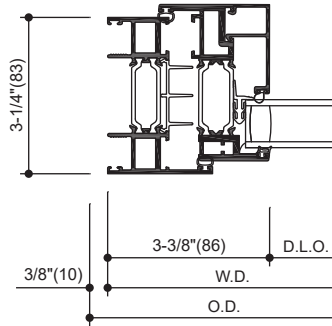
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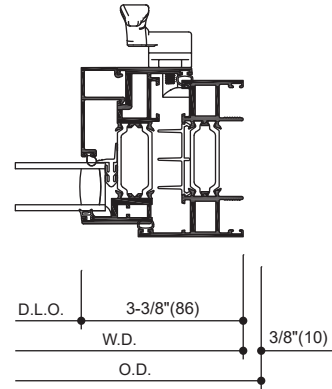
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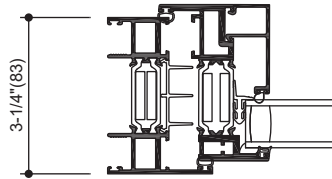
TYPICAL ELEVATION



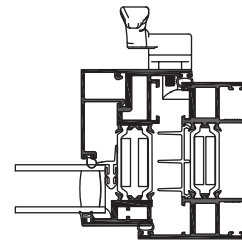
5 JAMB



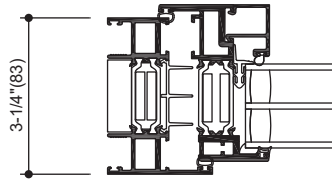
6 JAMB



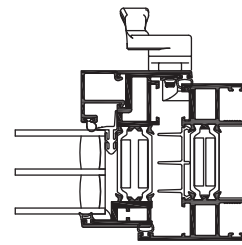
5 OPTIONAL 1" HIGH THERMAL JAMB



6 OPTIONAL 1" HIGH THERMAL JAMB



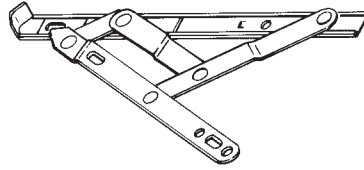
5 OPTIONAL 1-3/4" HIGH THERMAL JAMB



6 OPTIONAL 1-3/4" HIGH THERMAL JAMB

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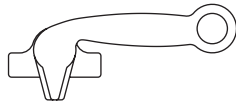
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**STAINLESS STEEL
4 BAR HINGES**

A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

CAM HANDLE

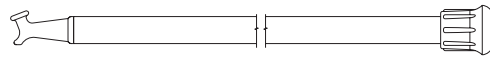
Cast white bronze cam handles are an alternative to standard multi-point locking for the operation and locking of ventilators.

**CAM HANDLE
WITH POLE RING**

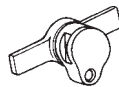
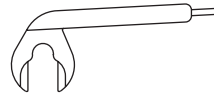
Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

POLE RING

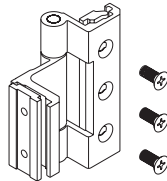
Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

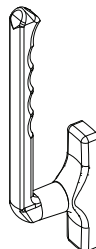
A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze Pole Hanger.

**HANGER
FOR SASH POLE****ACCESS CONTROL
LOCK**

In lieu of cam handles and multi-point locking cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.

BUTT HINGE

An optional hinge available in clear or bronze anodized finishes or painted to match window. Must be used with Friction Adjusters.

SAVIO HANDLE

Savio hardware to support 5 lb operating force lock handle. Powder coat: black, white, bronze and silver.

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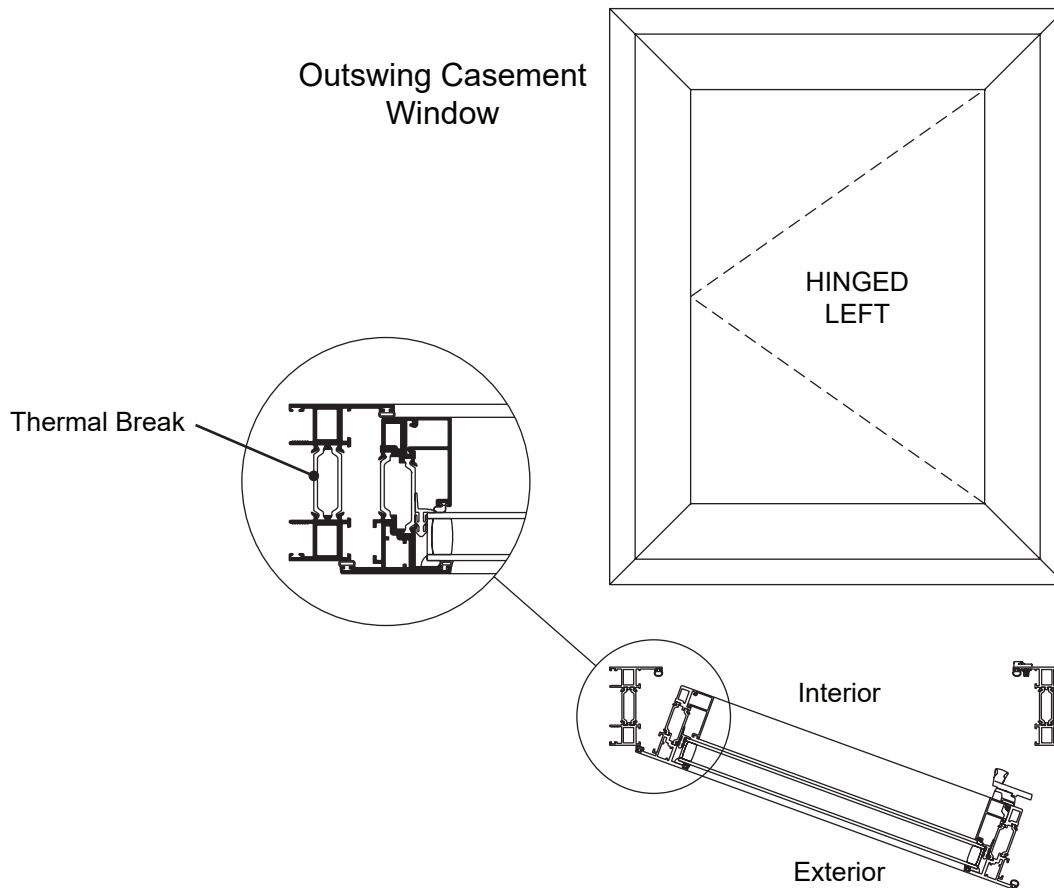
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Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing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

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Standard Features

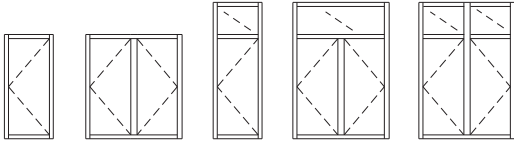
- Architectural Grade Window
- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Vent and Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Adjustable EURO-Groove Mounted Hardware
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options



For specific product applications,
consult your Kawneer representative.

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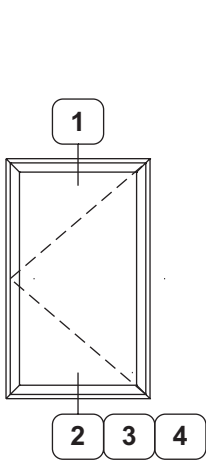
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CLASS and GRADE	Architectural Grade AW-PG80-C
TESTING STANDARD	AAMA / WDMA / CSA 101 / I.S.2 / A440-05 / A440-08
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame / .125" Nominal Vent
TYPICAL MAX. VENT SIZE	36" x 60"
TYPICAL MIN. VENT SIZE	19" x 24"
TYPICAL CONFIGURATIONS	
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
STANDARD HARDWARE	Stainless Steel 4-Bar Hinges Cast White Bronze Cam Handles
OPTIONAL HARDWARE	Access Control Locks Pole and Pole Ring Limit Stop Roto Operators Multi-Point Locks
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Insect Screens Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins 1" High Thermal Option

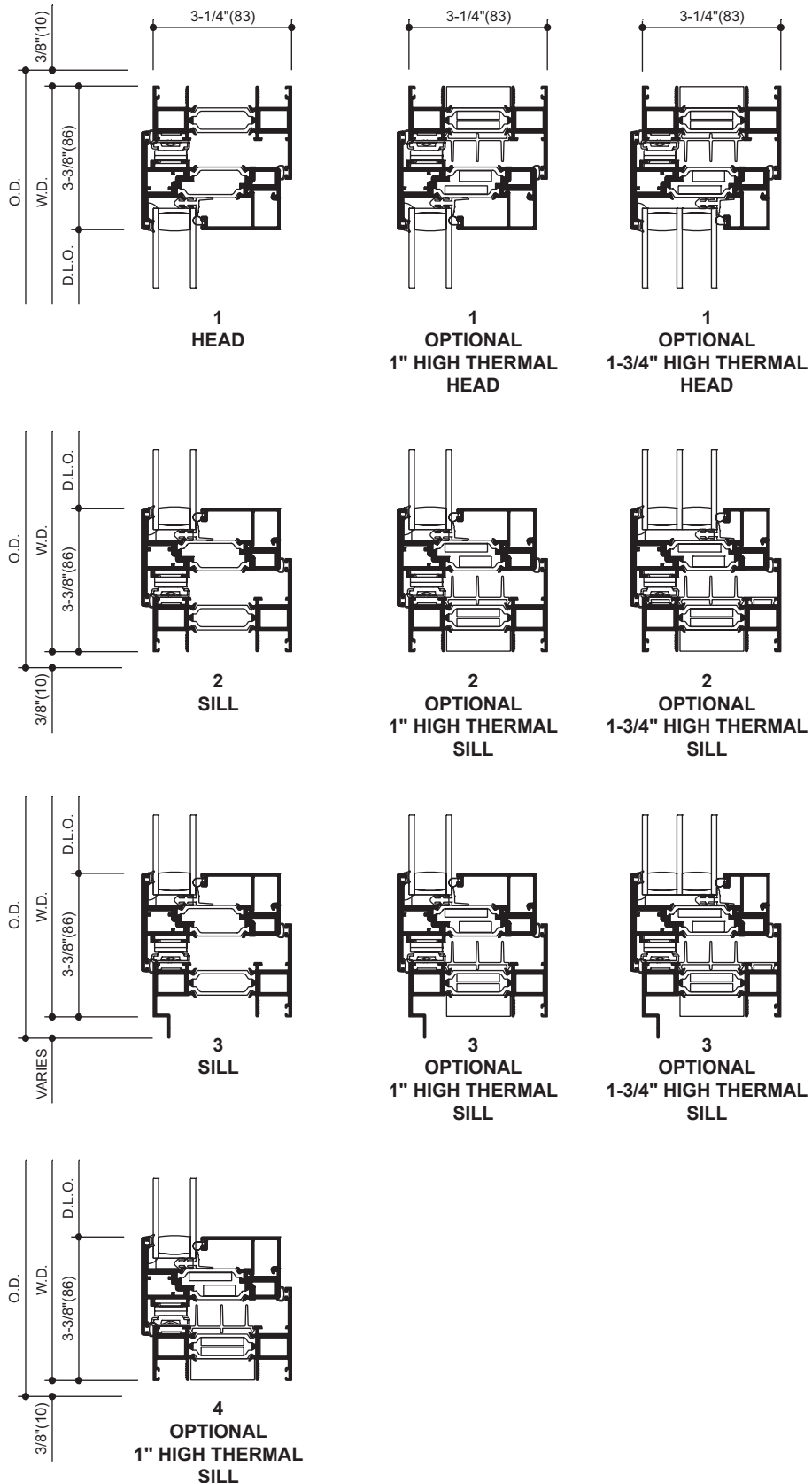
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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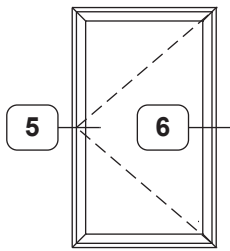
TYPICAL ELEVATION



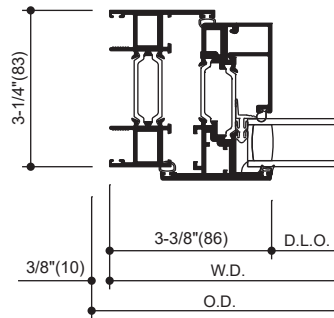
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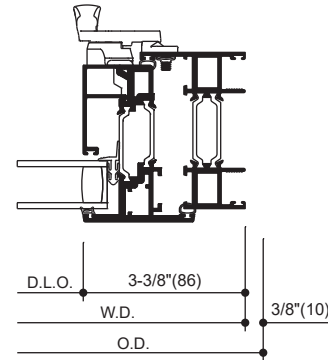
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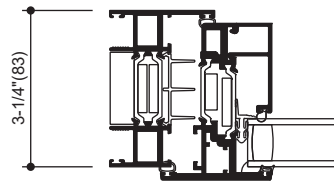
TYPICAL ELEVATION



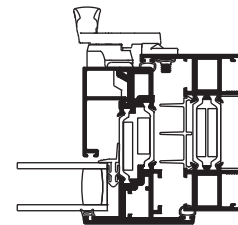
5
JAMB



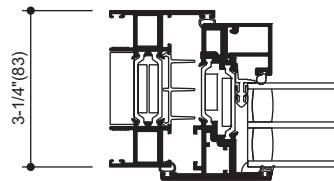
6
JAMB



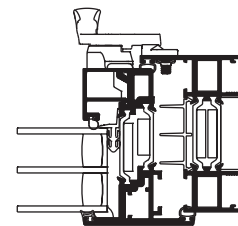
5
OPTIONAL
1" HIGH THERMAL
JAMB



6
OPTIONAL
1" HIGH THERMAL
JAMB



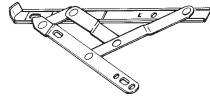
5
OPTIONAL
1-3/4" HIGH THERMAL
JAMB



6
OPTIONAL
1-3/4" HIGH THERMAL
JAMB

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.

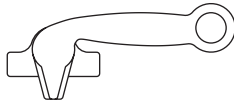
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**STAINLESS STEEL
4 BAR HINGES**

A standard hinge for ventilators providing an opening of up to 45°. An optional limit stop is available to restrict hinge travel and limit vent opening.

CAM HANDLE

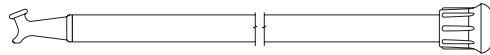
Cast white bronze cam handles are an alternative to standard multi-point locking for the operation and locking of ventilators.

**CAM HANDLE
WITH POLE RING**

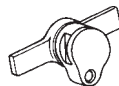
Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

POLE RING

Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze Pole Hanger.

**HANGER
FOR SASH POLE****ACCESS CONTROL
LOCK**

In lieu of cam handles and multi-point locking cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.

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.

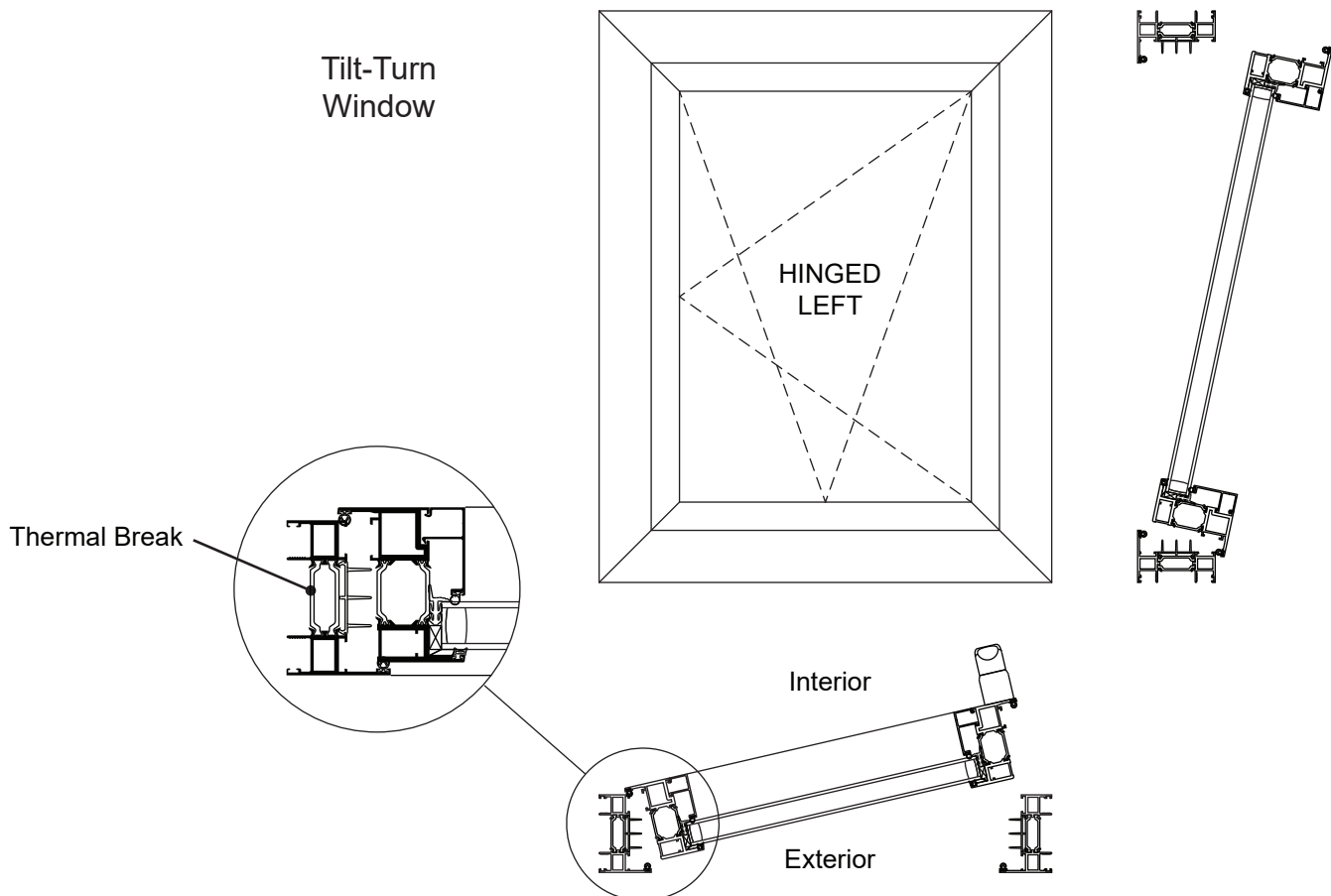
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Standard Features

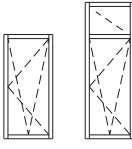
- Architectural Grade Window
- Tested to US and Canadian Standards
- Polyamide Thermal Break
- Tubular Profiles
- 45° Mitered Vent and Frame Corners
- Staked Corner Joinery
- Factory Silicone Glazed
- Adjustable EURO-Groove Mounted Hardware
- Interior Applied Glazing Bead
- Architectural Anodized Finishes and Applied Coatings
- Interior and Exterior Dual Finish Options
- Tilt-Turn Locking Hardware



For specific product applications,
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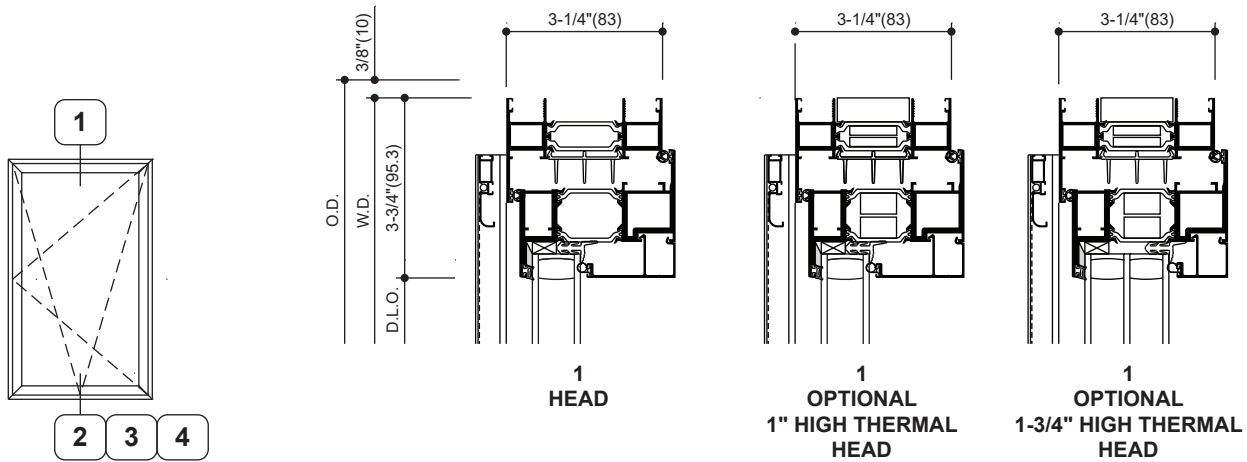
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CLASS and GRADE	Architectural Grade AW-PG50-DAW
TESTING STANDARD	AAMA / WDMA / CSA 101 / I.S.2 / A440-05 / A440-17
FRAME DEPTH	3-1/4" Overall Frame Depth
TYPICAL WALL THICKNESS	.080" Nominal Frame / .125" Nominal Vent
TYPICAL MAX. VENT SIZE	57-7/8" x 96-7/8" (60" x 99" Window frame size)
TYPICAL MIN. VENT SIZE	24-3/8" x 27-7/8" (26-1/2" x 30" Window frame size)
TYPICAL CONFIGURATIONS	
INFILL OPTIONS	1" and 1-3/4" (Other infill options available upon request.)
STANDARD HARDWARE	Stainless Steel Concealed Hinges Multi-Point Lock Handle (Non-keyed)
OPTIONAL HARDWARE	Keyed Handle for Tilt Only Keyed custodial Handle Access Control Lock Handle Multi-Point Locks
OTHER OPTIONS	Structural Mullions Vertically or Horizontally Stacked Insect Screens Receptor and Sub Sill Panning Internal Blinds Exterior or Interior Muntins Internal Blind Covers 1" High Thermal Option

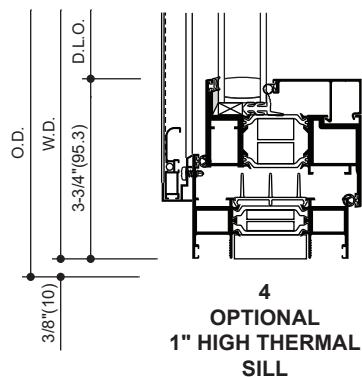
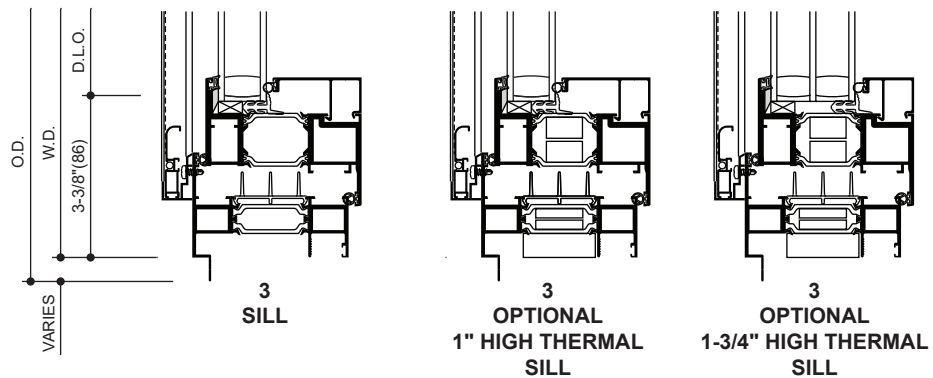
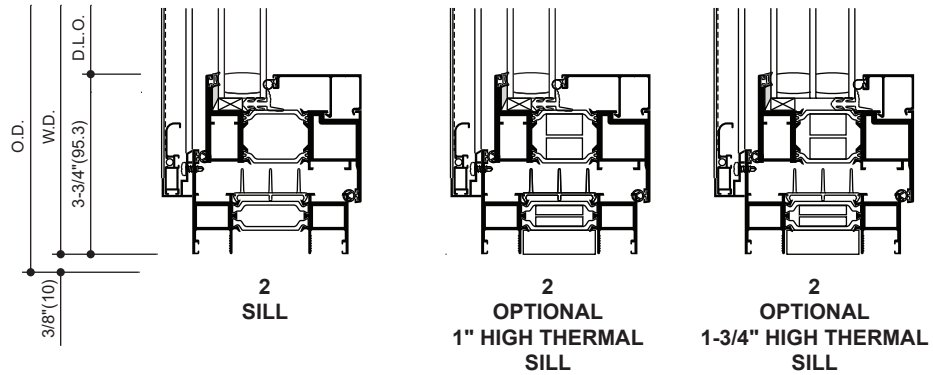
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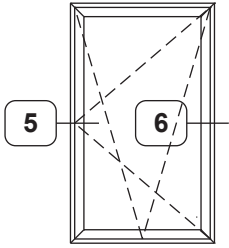
TYPICAL ELEVATION



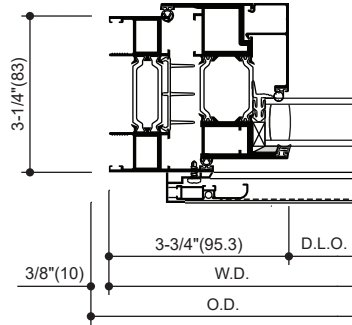
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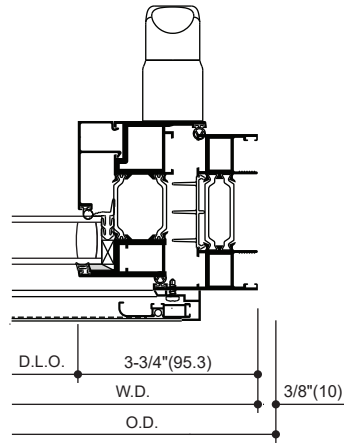
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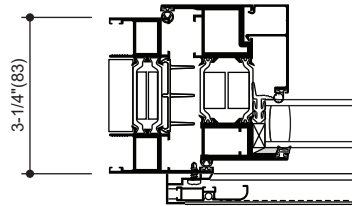
TYPICAL ELEVATION



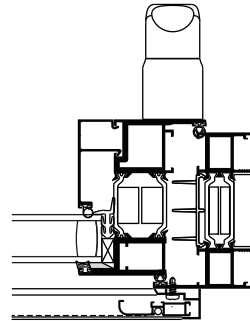
5
JAMB



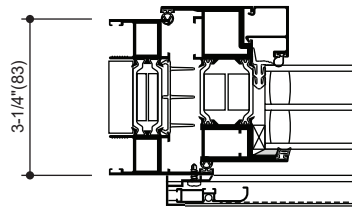
6
JAMB



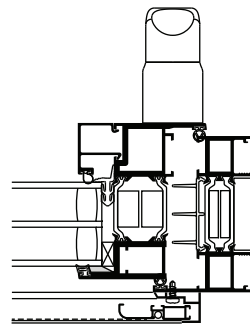
5
OPTIONAL
1" HIGH THERMAL
JAMB



6
OPTIONAL
1" HIGH THERMAL
JAMB



5
OPTIONAL
1-3/4" HIGH THERMAL
JAMB

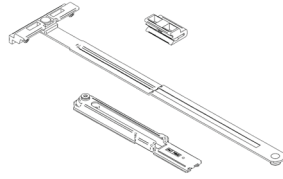


6
OPTIONAL
1-3/4" HIGH THERMAL
JAMB

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CONCEALED HINGES AND TILT-TURN ARMS



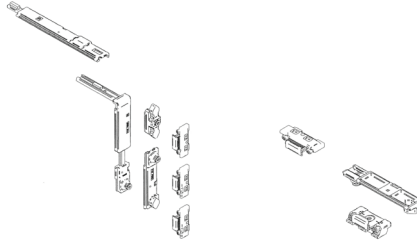
A standard hinge for ventilators providing an opening of up to 45°. In cleaning mode, tilt-in mode provides approximately 4" of vent opening.

MULTI-POINT HANDLE



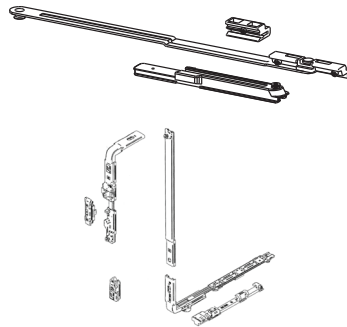
Cast aluminum handle for use with multi-point locks.

ADDITIONAL SIX LOCK POINTS ADDITIONAL EIGHT LOCK POINTS



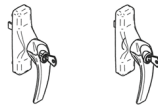
Zinc die cast keeper and lock point.

SUPPLEMENTARY SUPPORT ARM



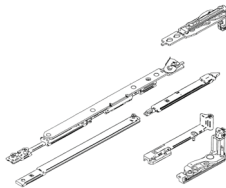
For vent widths greater than 47-3/8".

CUSTODIAL AND KEYED HANDLES



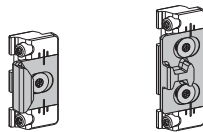
White bronze access control locks are offered for managed control of vent operations. Cast aluminum handles are keyed for either tilt only or custodial access control.

STAINLESS STEEL CORNER DRIVES



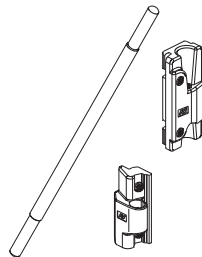
Corner drives provide a transition at the vent corners for the multi-point and tilt-turn system.

ADJUSTABLE KEEPERS



Zinc die cast keepers adjustable to provide gasket compression for improved air/water and operating performance.

CONCEALED HINGE REINFORCING

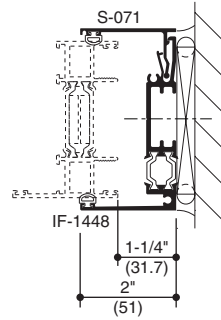
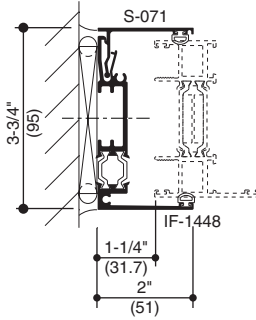
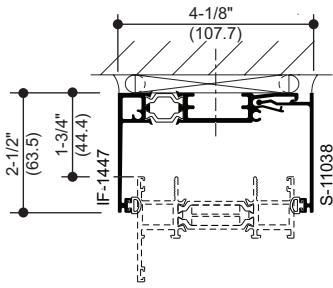


Cast zinc/aluminum reinforcing is required on all vent weighing greater than 200 lbs.

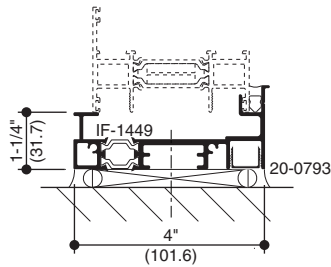
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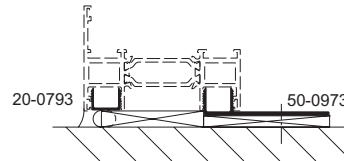
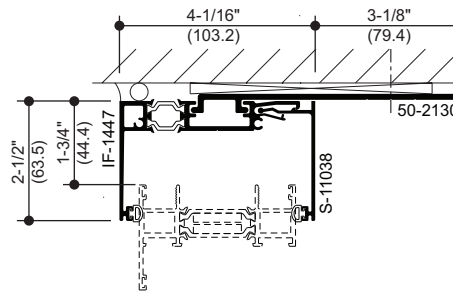
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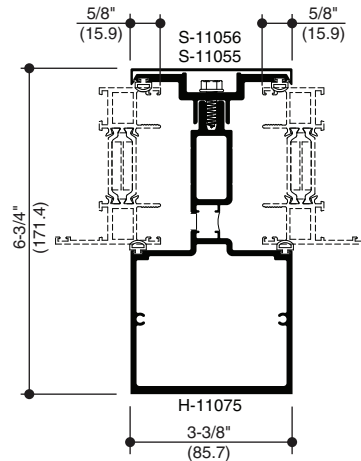
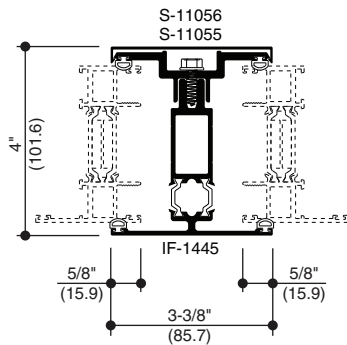
**HEAD & JAMB RECEPTORS
(INTERIOR INSTALLED)**



SUB SILL



ANCHOR



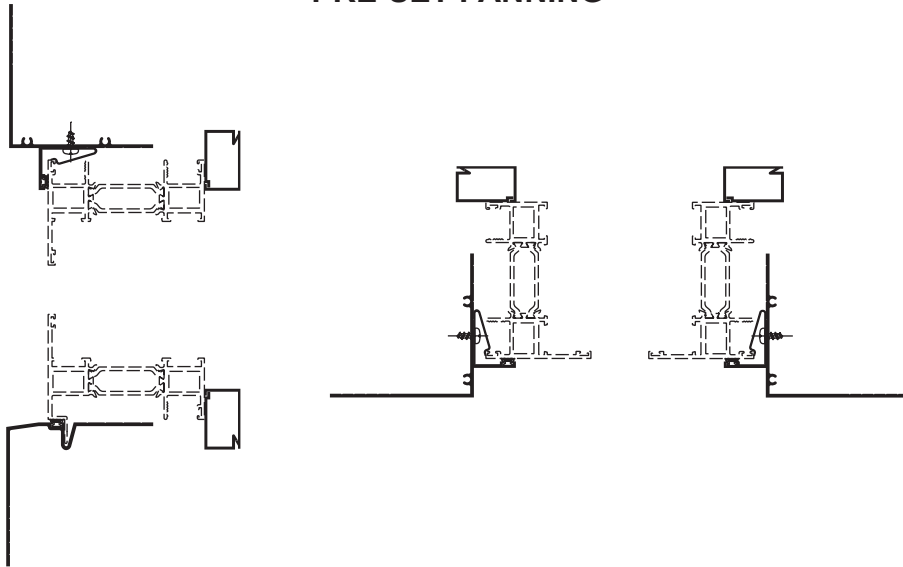
3-PIECE MULLIONS

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.

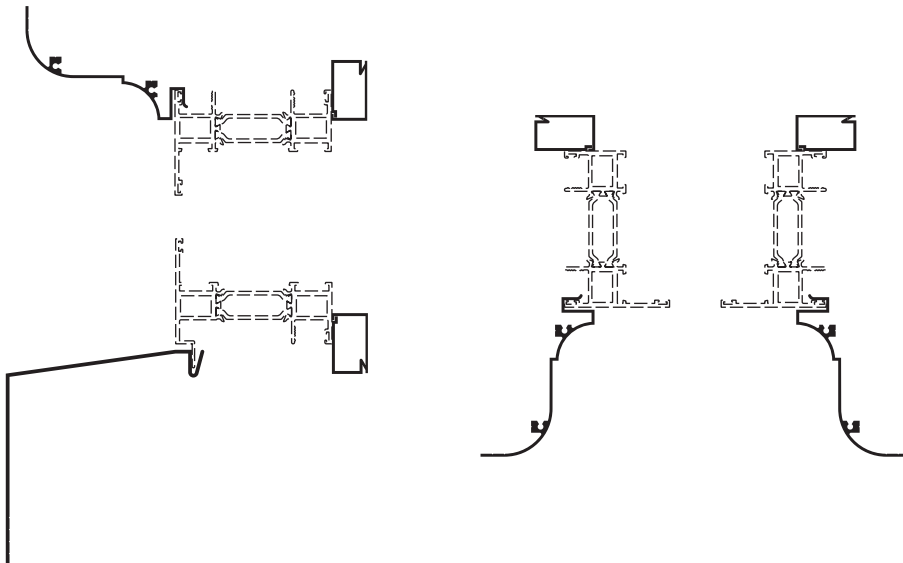
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PRE-SET PANNING



WRAP AROUND PANNING



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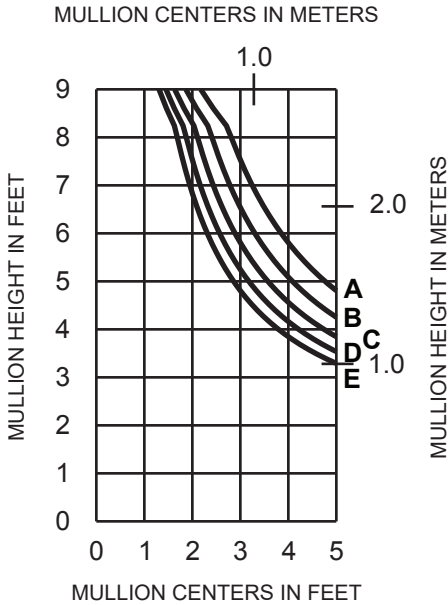
WIND LOAD CHARTS

Mullions are designed for deflection limitations in accordance with AAMA TIR-A11 of L/175 up to 13' 6" and L/240 +1/4" above 13' 6". These curves are for mullions WITH HORIZONTALS and are based on engineering calculations for stress and deflection. Allowable wind load stress for ALUMINUM 15,152 psi (104MPa), STEEL 30,000 psi (207MPa). Charted curves, in all cases are for the limiting value. Wind load charts contained herein are based upon nominal wind load utilized in allowable stress design. A conversion from Load Resistance Factor Design (LRFD) is provided. To convert ultimate wind loads to nominal loads, multiply ultimate wind loads by a factor of 0.6 per ASCE/SEI 7. A 4/3 increase in allowable stress has not been used to develop these curves. For special situations not covered by these curves, contact your Kawneer representative for additional information.

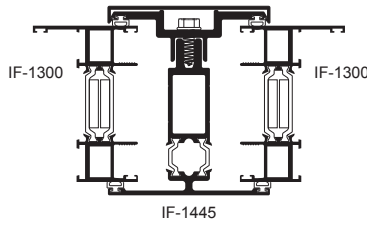
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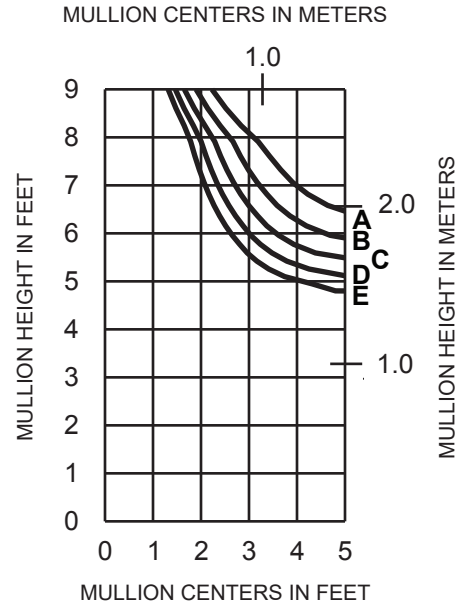
	Allowable Stress Design Load	LRFD Ultimate Design Load
A =	60 PSF (2880)	100 PSF (4790)
B =	70 PSF (3360)	117 PSF (5600)
C =	80 PSF (3830)	133 PSF (6380)
D =	90 PSF (4310)	150 PSF (7200)
E =	100 PSF (4790)	167 PSF (7980)



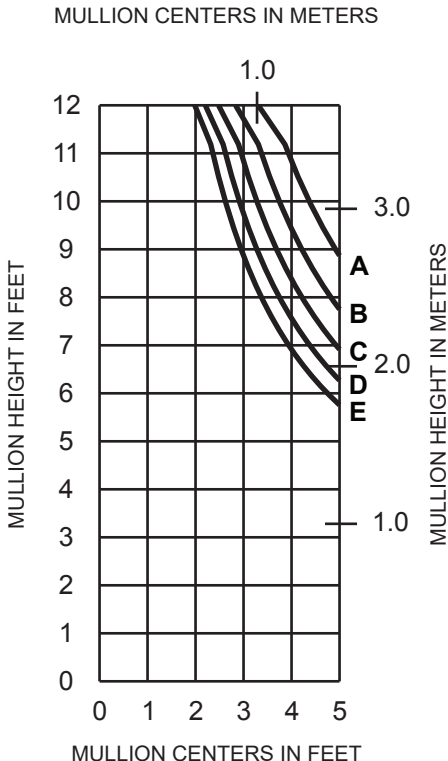
WITH HORIZONTALS
FIXED AND CASEMENT WINDOWS



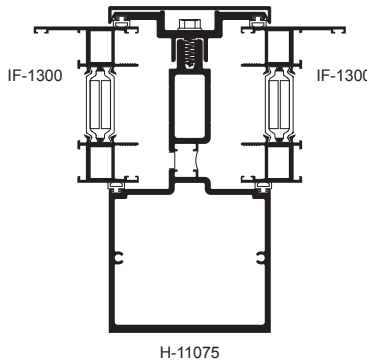
WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-8 AND AAMA 505



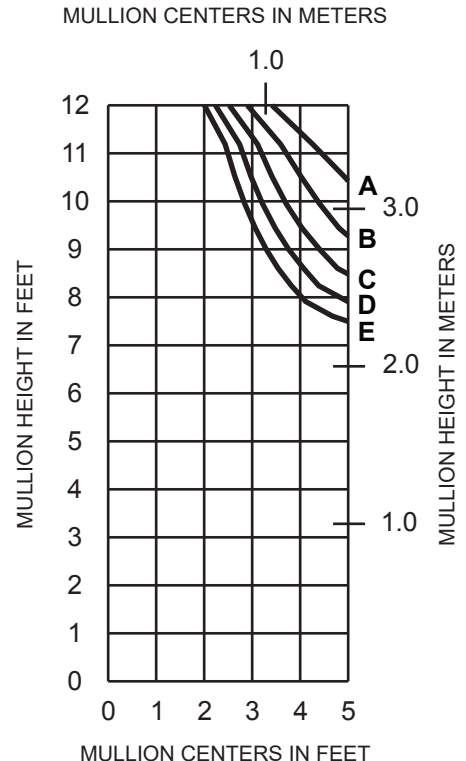
WITHOUT HORIZONTALS
FIXED AND CASEMENT WINDOWS



WITH HORIZONTALS
FIXED AND CASEMENT WINDOWS



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-8 AND AAMA 505

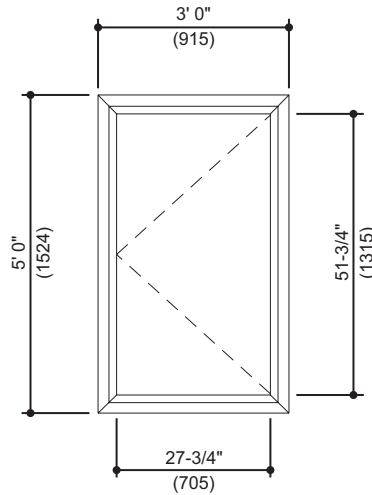


WITHOUT HORIZONTALS
FIXED AND CASEMENT WINDOWS

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Generic Project Specific U-factor Example Calculation
 (Percent of Glass will vary on specific products depending on sitelines)



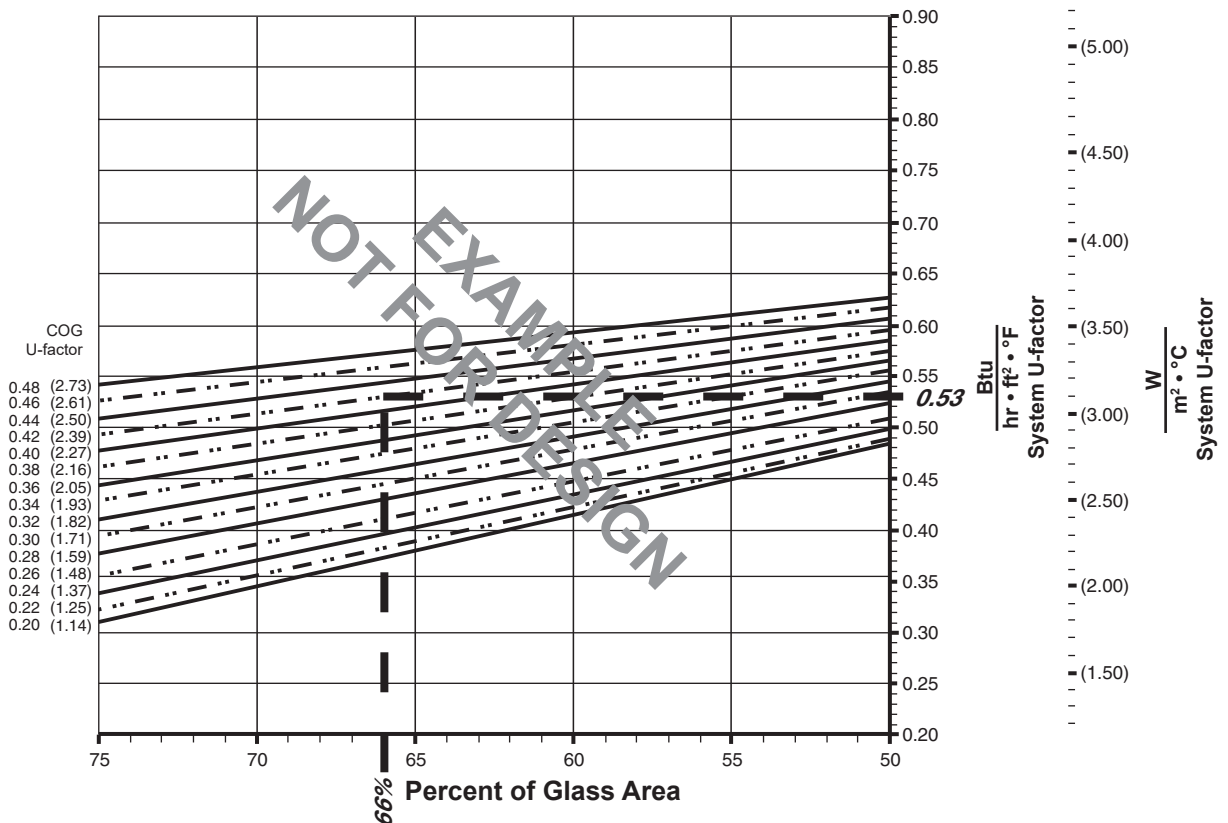
Example Glass U-Factor = 0.42 Btu/hr • ft² • °F

Total Daylight Opening = 27-3/4" • 51-3/4" = 9.97ft²

Total Projected Area = 3' 0" • 5' 0" = 15 ft²

Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)100
 = (9.97 ÷ 15)100 = 66%

System U-factor vs Percent of Glass Area



Based on 66% glass and center of glass (COG) U-factor of 0.42
 System U-factor is equal to 0.53 Btu/hr • ft² • °F

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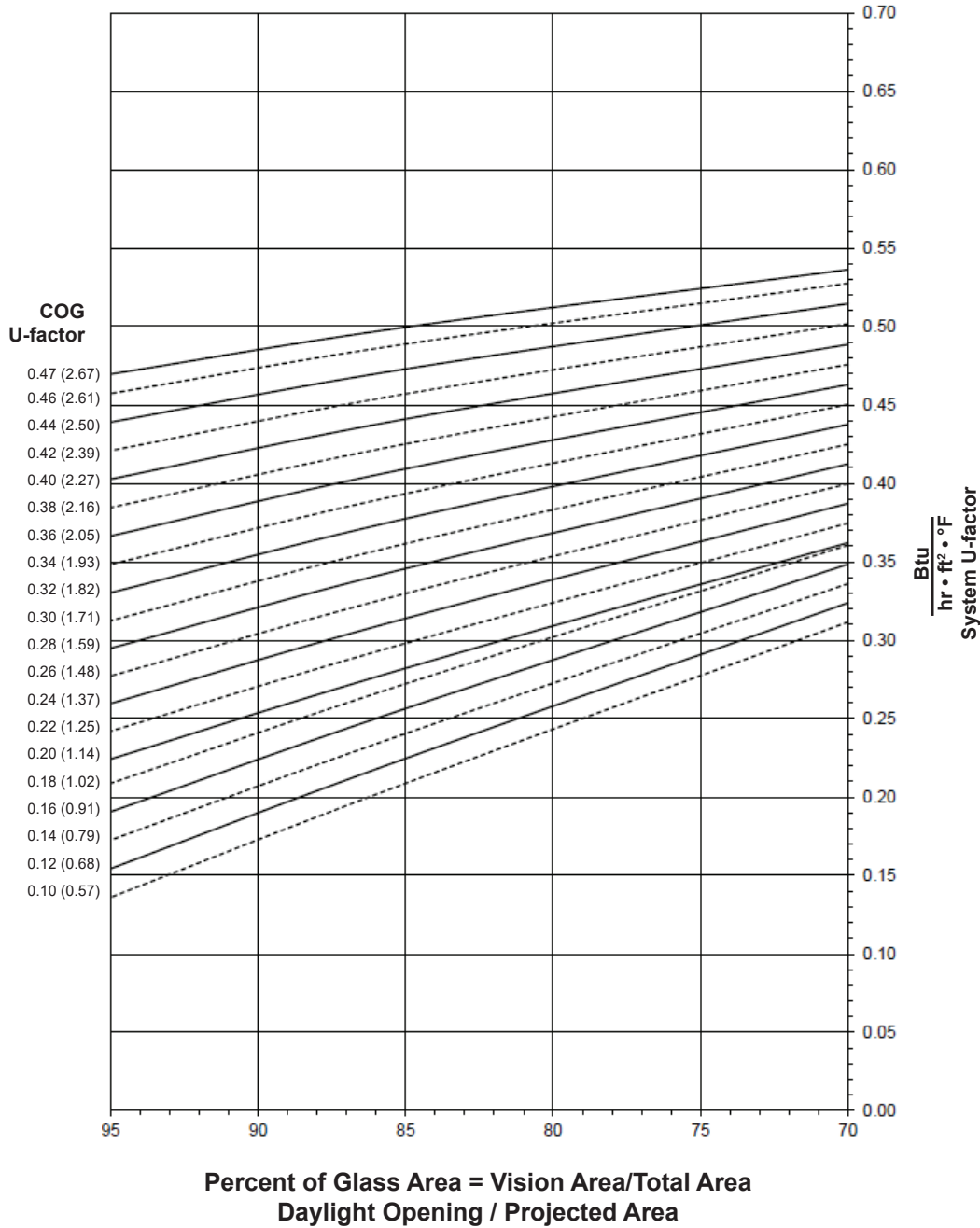
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FIXED WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



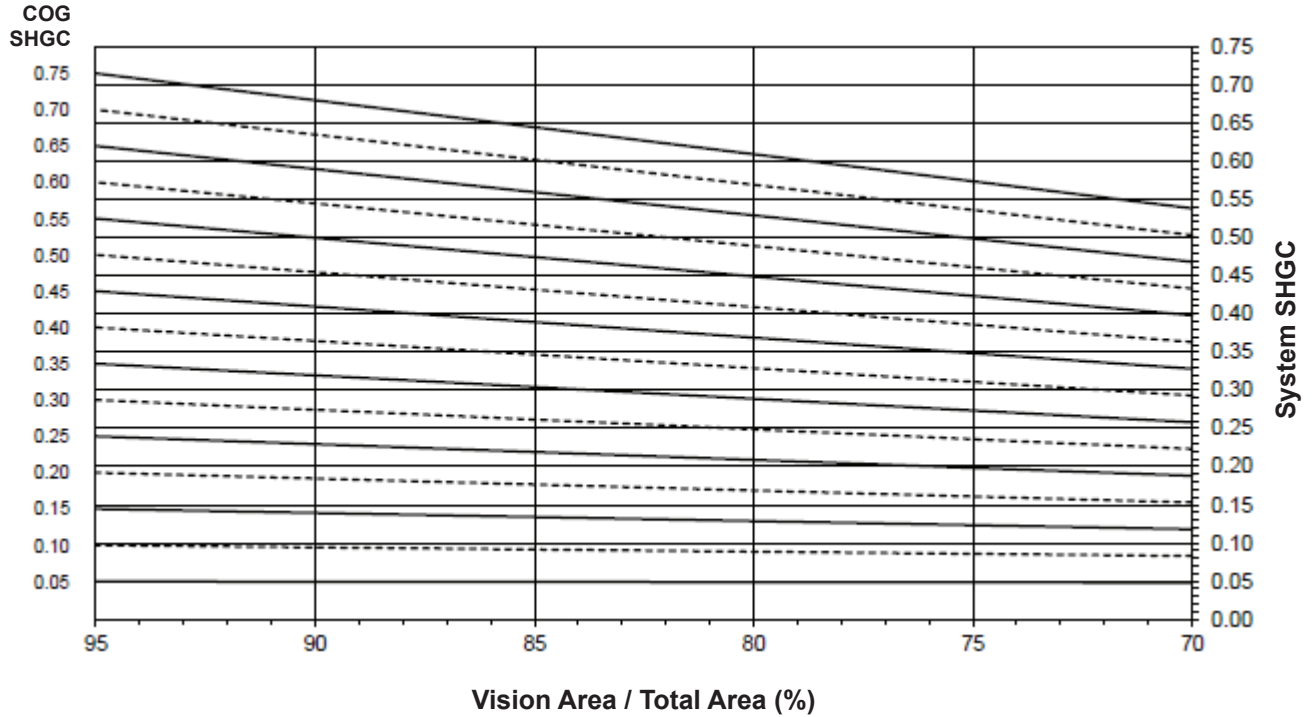
Notes for System U-factor, SHGC and VT charts:
 For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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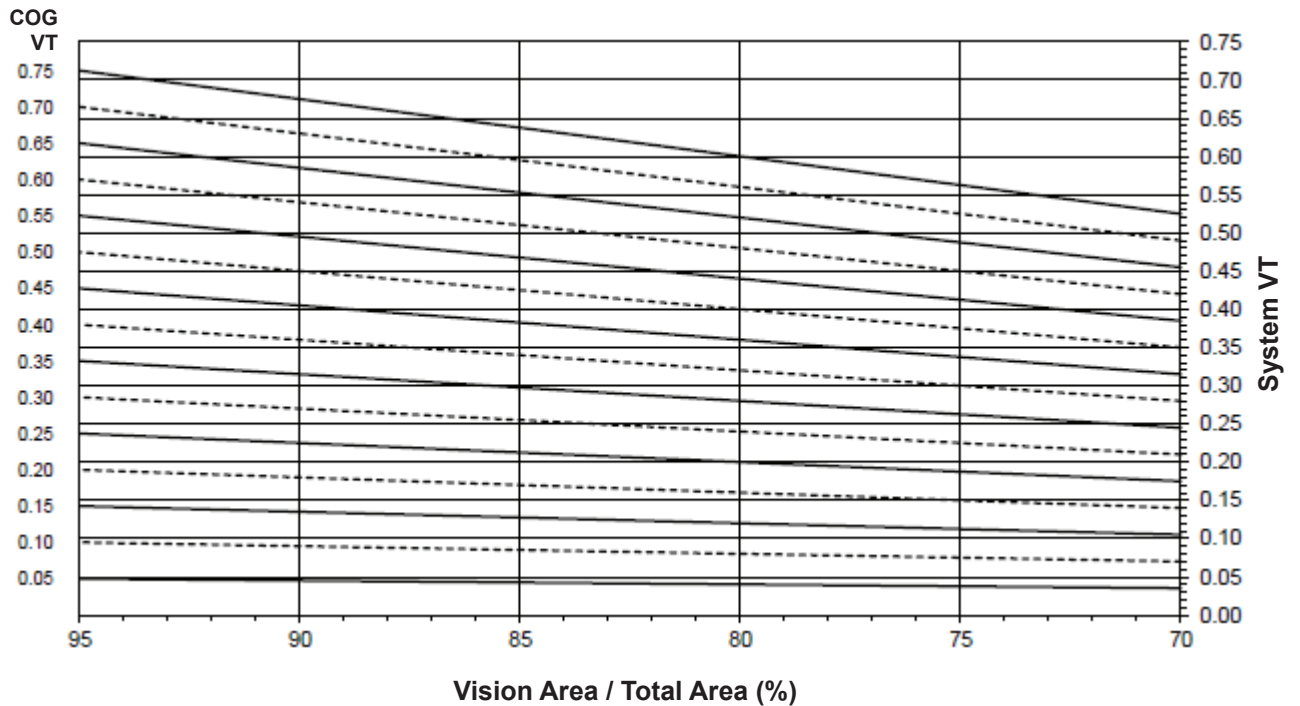
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FIXED WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.50
0.46	0.49
0.44	0.47
0.42	0.46
0.40	0.44
0.38	0.42
0.36	0.41
0.34	0.39
0.32	0.38
0.30	0.36
0.28	0.35
0.26	0.33
0.24	0.31
0.22	0.30
0.20	0.28
0.18	0.27
0.16	0.26
0.14	0.24
0.12	0.22
0.10	0.21

FIXED WINDOW WITH 1" GLAZING

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 1,200 mm wide by 1,500 mm high (47-1/4" by 59-1/16").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.64
0.70	0.60
0.65	0.56
0.60	0.52
0.55	0.47
0.50	0.43
0.45	0.39
0.40	0.35
0.35	0.30
0.30	0.26
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.64
0.70	0.60
0.65	0.55
0.60	0.51
0.55	0.47
0.50	0.43
0.45	0.38
0.40	0.34
0.35	0.30
0.30	0.26
0.25	0.21
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.04

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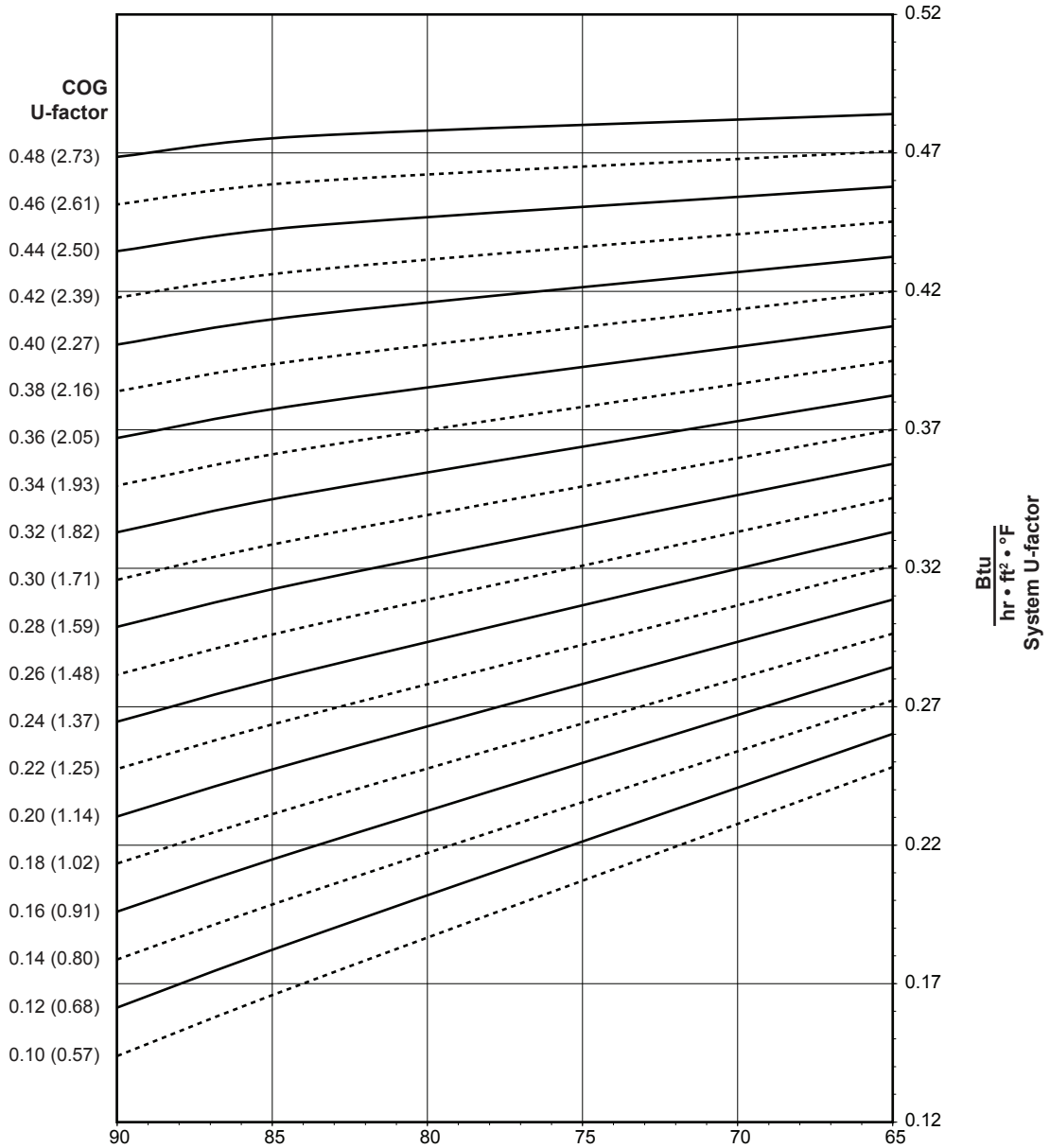
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FIXED HIGH THERMAL WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



**Percent of Glass Area = Vision Area/Total Area
 Daylight Opening / Projected Area**

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

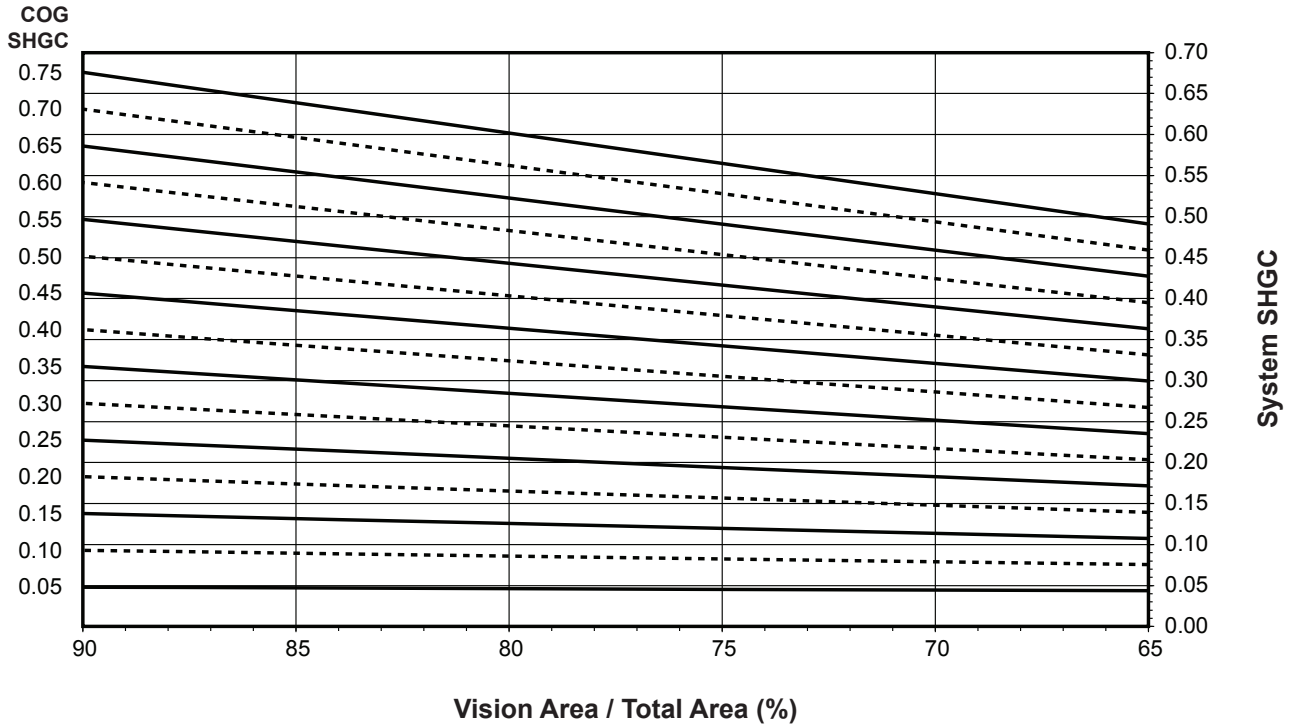
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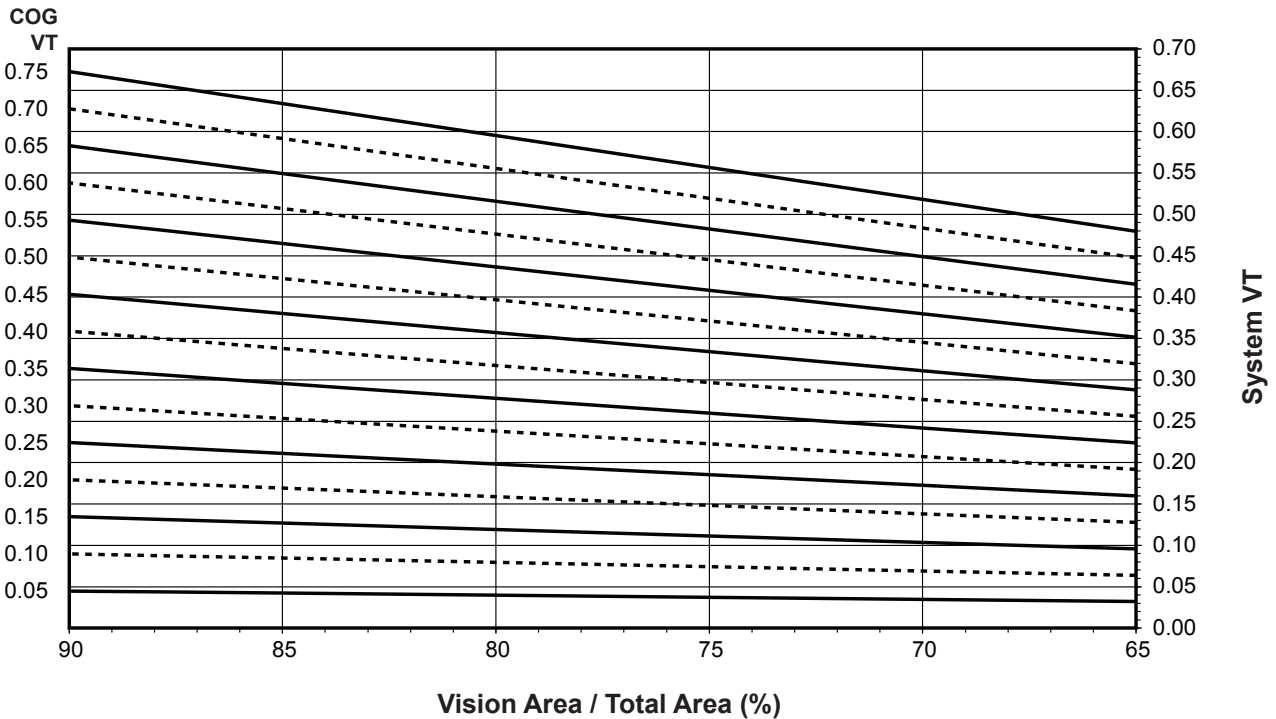
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FIXED HIGH THERMAL WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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Thermal Transmittance ¹ (BTU/hr • ft ² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.48
0.46	0.46
0.44	0.44
0.42	0.43
0.40	0.41
0.38	0.40
0.36	0.38
0.34	0.36
0.32	0.35
0.30	0.33
0.28	0.31
0.26	0.30
0.24	0.28
0.22	0.27
0.20	0.25
0.18	0.23
0.16	0.22
0.14	0.20
0.12	0.19
0.10	0.17

FIXED HIGH THERMAL WINDOW WITH 1" GLAZING

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 1,200 mm wide by 1,500 mm high (47-1/4" by 59-1/16").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.63
0.70	0.59
0.65	0.55
0.60	0.51
0.55	0.46
0.50	0.42
0.45	0.38
0.40	0.34
0.35	0.30
0.30	0.26
0.25	0.21
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.63
0.70	0.58
0.65	0.54
0.60	0.50
0.55	0.46
0.50	0.42
0.45	0.38
0.40	0.33
0.35	0.29
0.30	0.25
0.25	0.21
0.20	0.17
0.15	0.13
0.10	0.08
0.05	0.04

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.

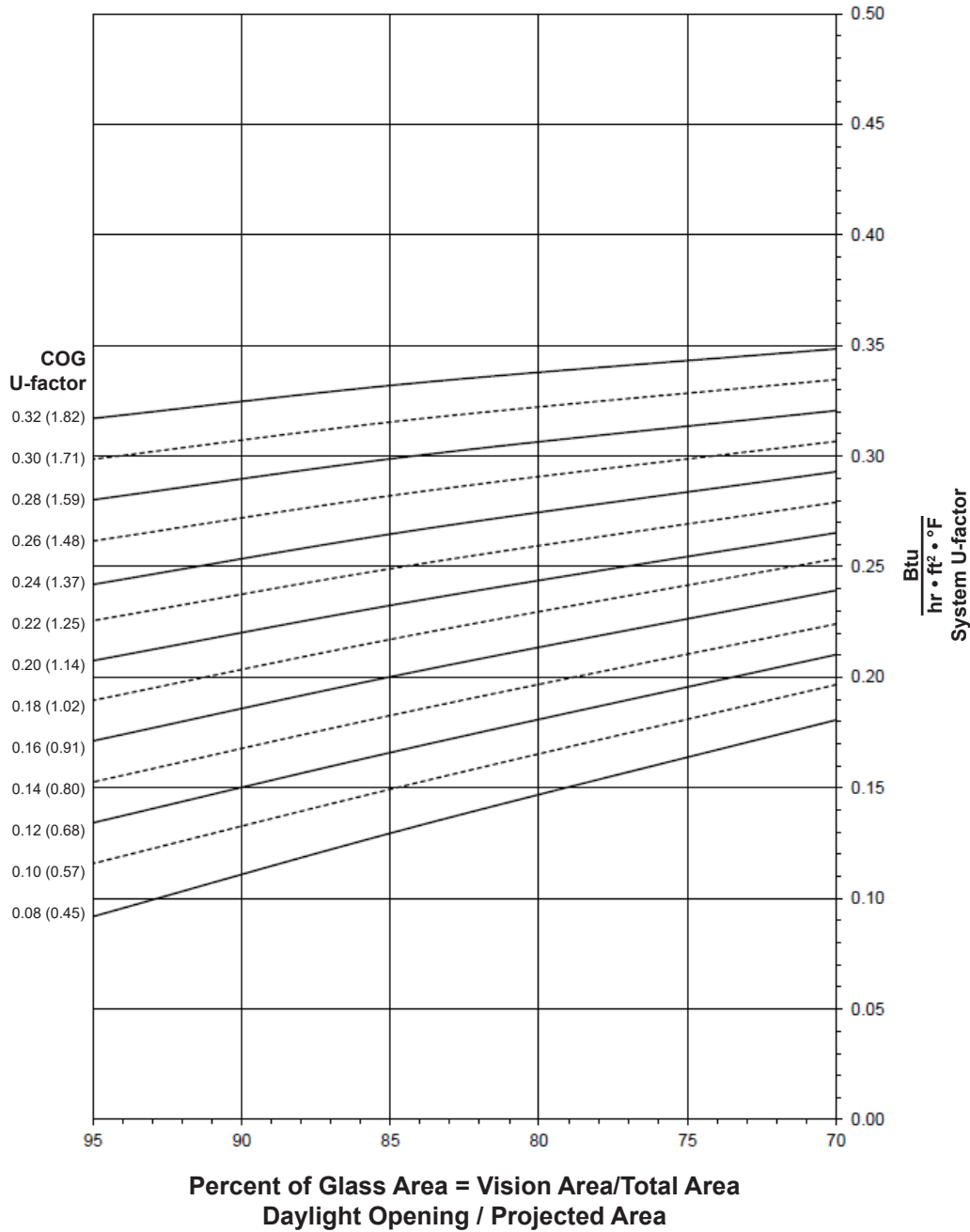
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FIXED WINDOW WITH 1-3/4" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



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

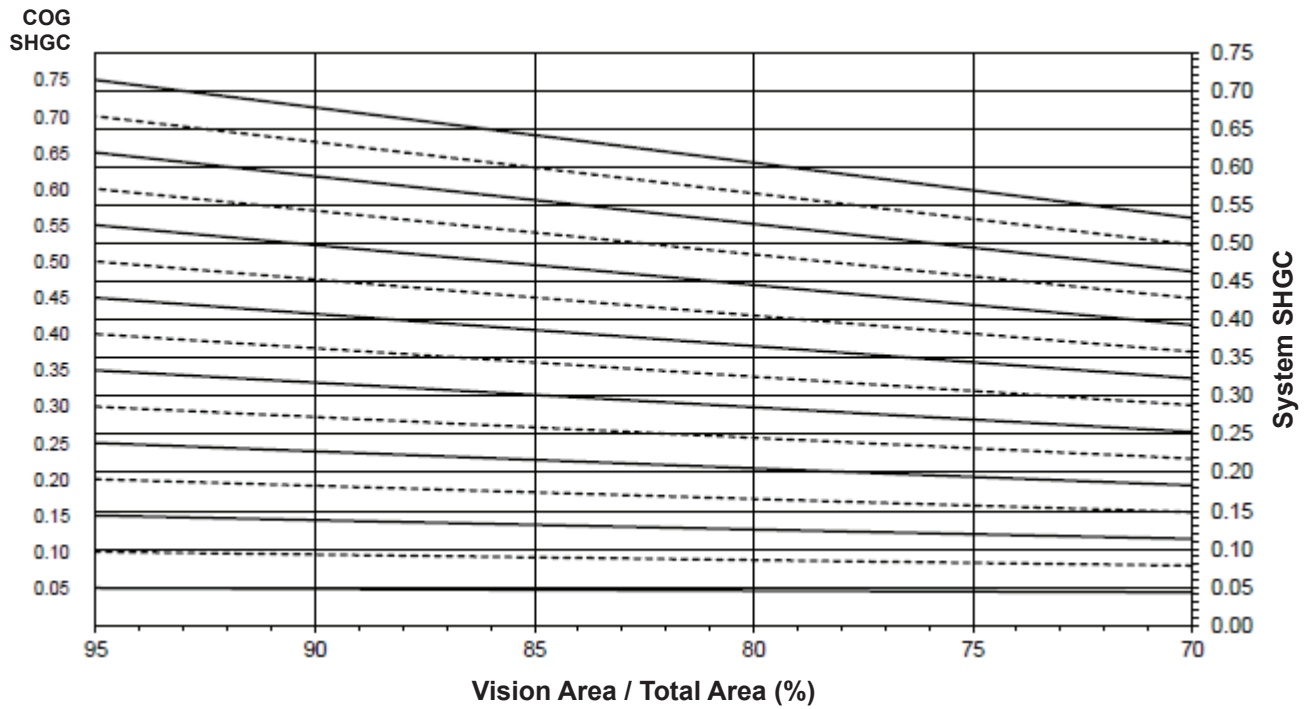
For glass values that are not listed, linear interpolation is permitted.
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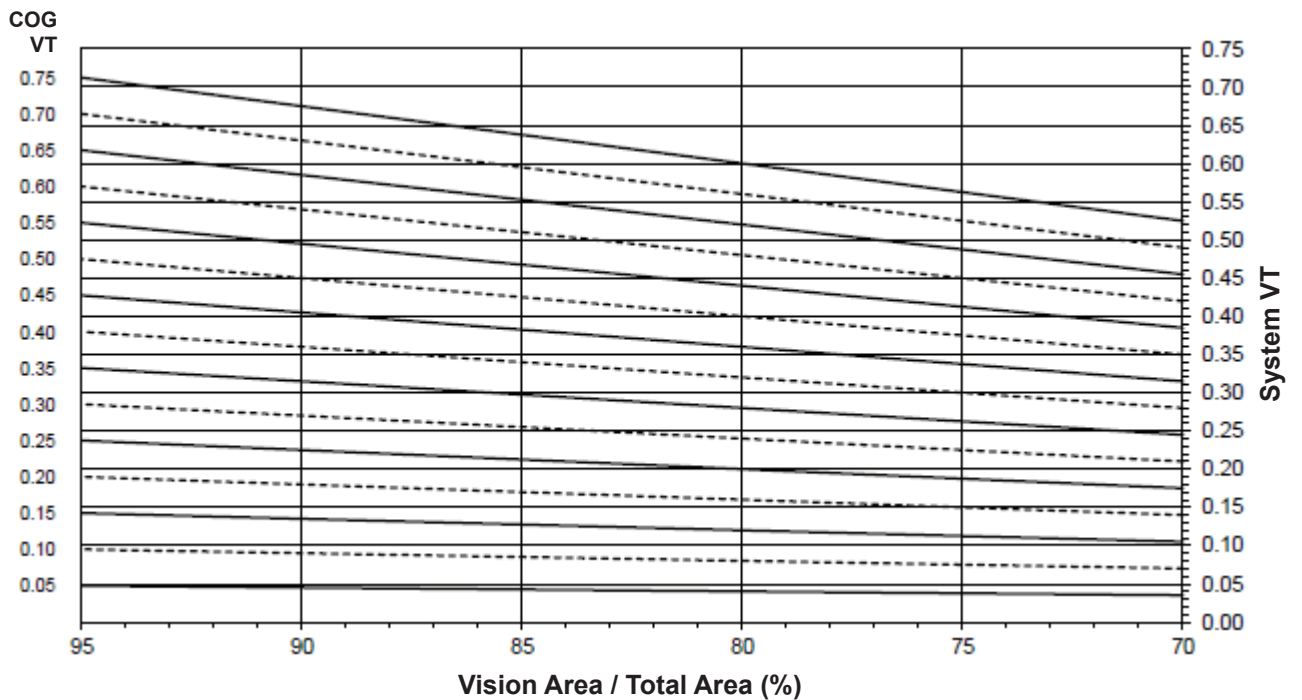
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FIXED WINDOW WITH 1-3/4" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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FIXED WINDOW WITH 1-3/4" GLAZING

Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.32	0.33
0.30	0.32
0.28	0.30
0.26	0.28
0.24	0.27
0.22	0.25
0.20	0.23
0.18	0.22
0.16	0.20
0.14	0.19
0.12	0.17
0.10	0.15
0.08	0.13

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 1,200 mm wide by 1,500 mm high (47-1/4" by 59-1/16").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.63
0.70	0.59
0.65	0.55
0.60	0.51
0.55	0.47
0.50	0.42
0.45	0.38
0.40	0.34
0.35	0.30
0.30	0.26
0.25	0.21
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.63
0.70	0.59
0.65	0.55
0.60	0.50
0.55	0.46
0.50	0.42
0.45	0.38
0.40	0.34
0.35	0.29
0.30	0.25
0.25	0.21
0.20	0.17
0.15	0.13
0.10	0.08
0.05	0.04

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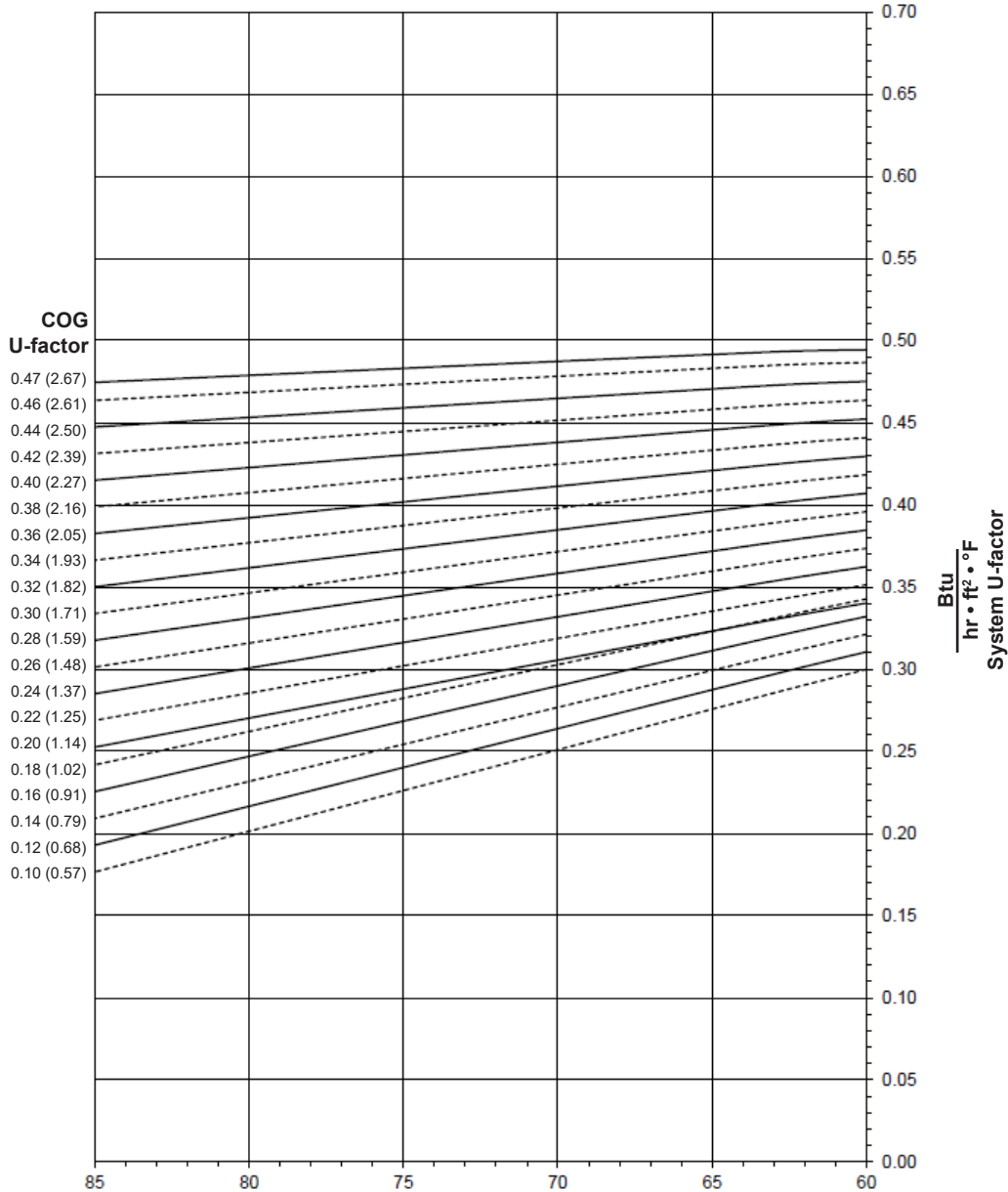
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PROJECT-IN WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



**Percent of Glass Area = Vision Area/Total Area
 Daylight Opening / Projected Area**

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

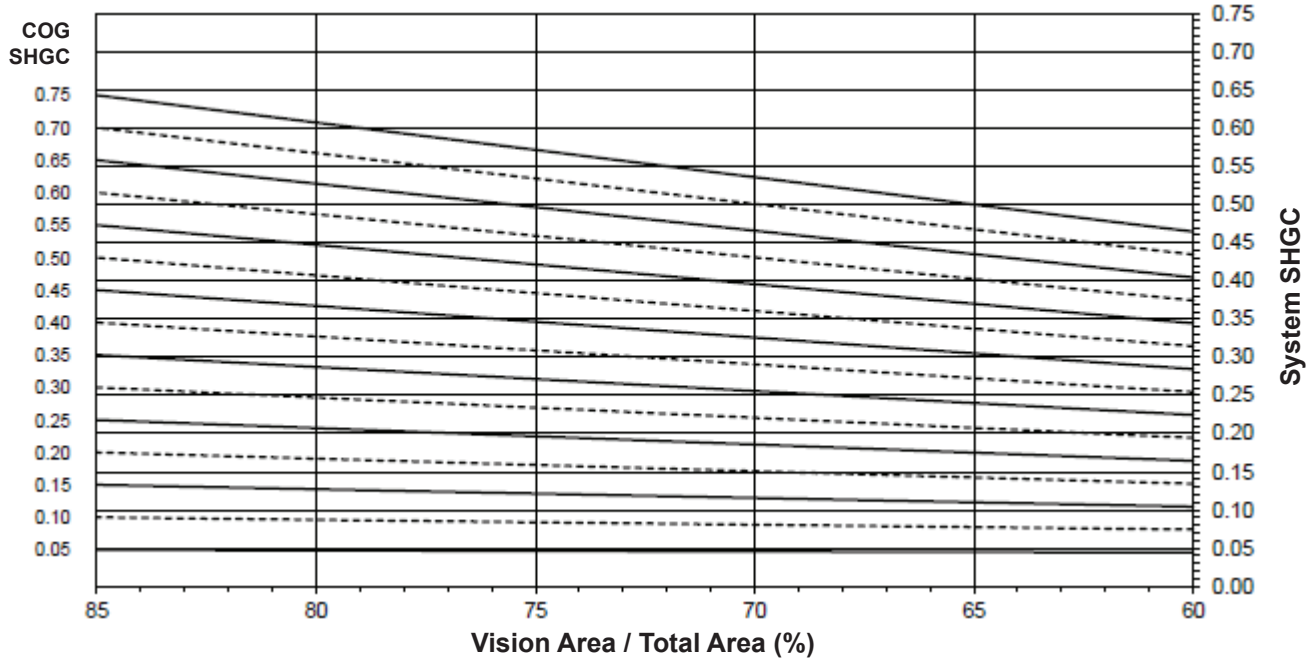
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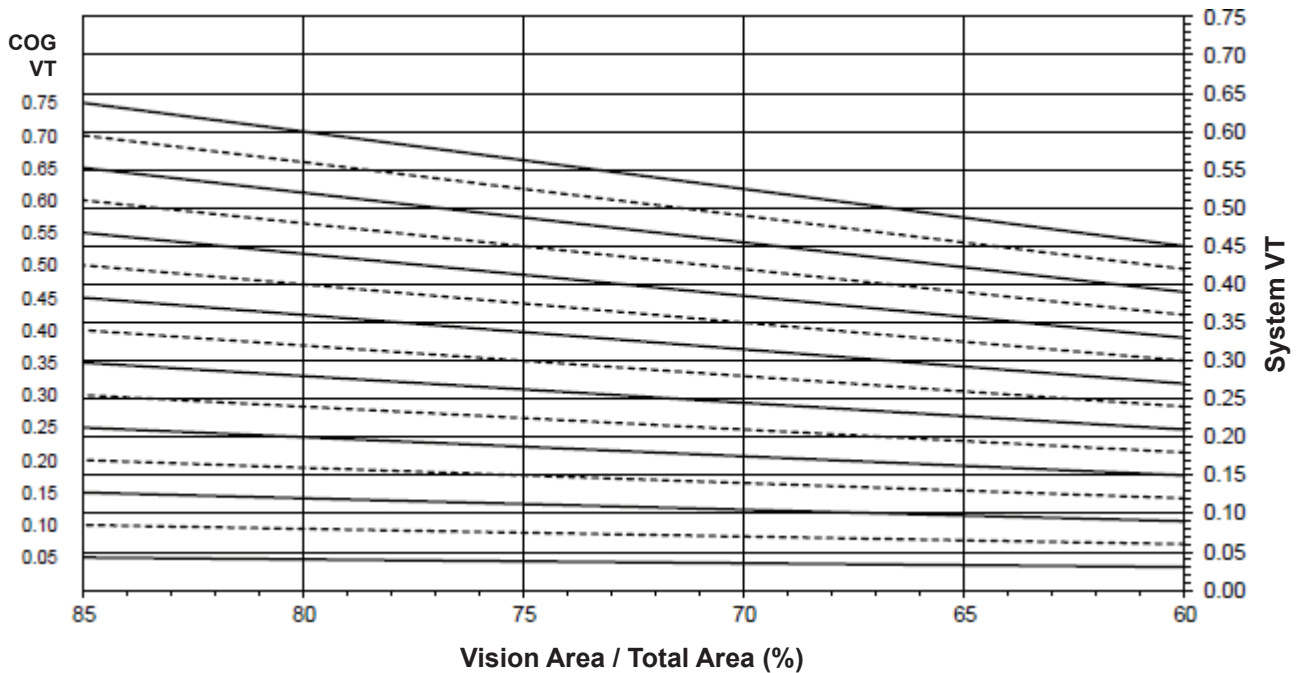
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PROJECT-IN WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.47	0.49
0.46	0.48
0.44	0.47
0.42	0.46
0.40	0.45
0.38	0.44
0.36	0.42
0.34	0.41
0.32	0.40
0.30	0.39
0.28	0.38
0.26	0.36
0.24	0.35
0.22	0.34
0.20	0.33
0.18	0.33
0.16	0.32
0.14	0.31
0.12	0.30
0.10	0.28

PROJECT-IN WINDOW WITH 1" GLAZING

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.49
0.70	0.46
0.65	0.42
0.60	0.39
0.55	0.36
0.50	0.33
0.45	0.30
0.40	0.27
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.14
0.15	0.11
0.10	0.08
0.05	0.04

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.38
0.55	0.35
0.50	0.32
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.13
0.15	0.09
0.10	0.06
0.05	0.03

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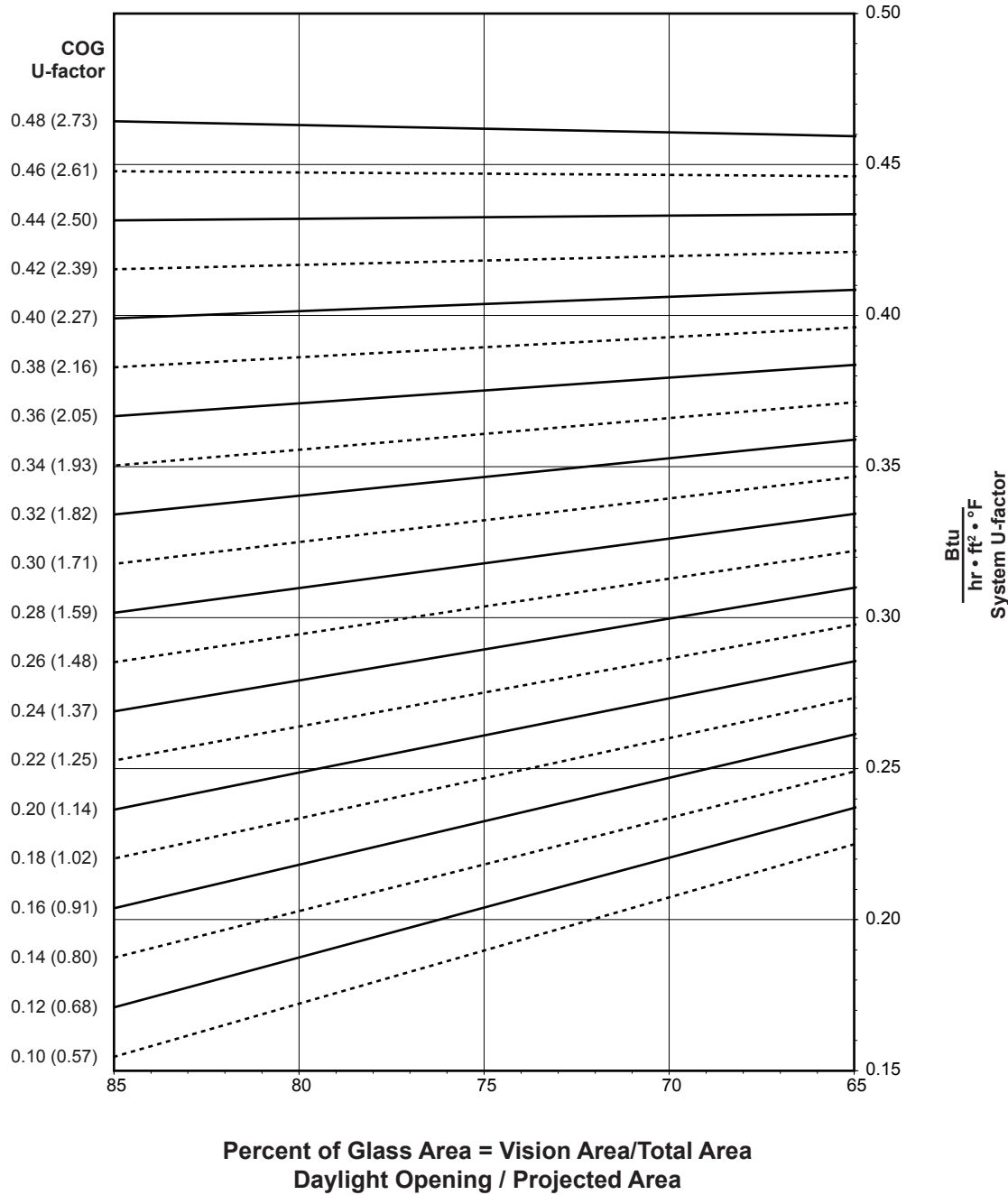
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PROJECT-IN HIGH THERMAL WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



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

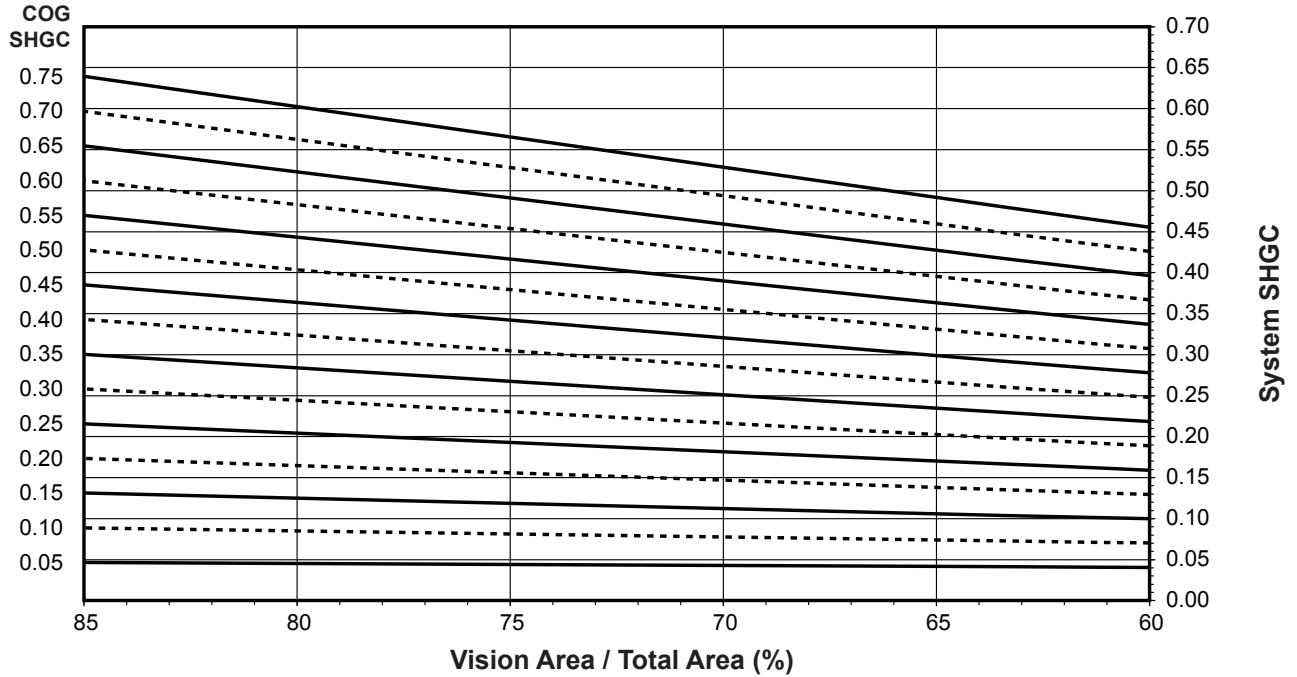
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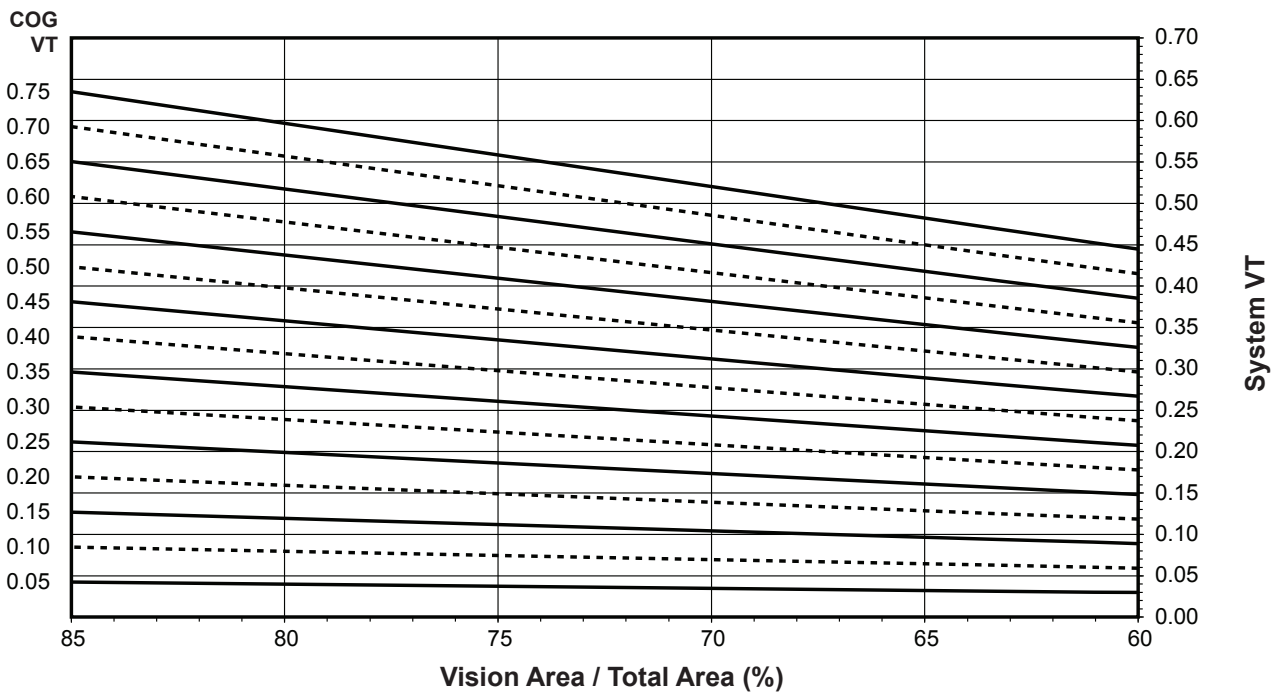
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PROJECT-IN HIGH THERMAL WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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Thermal Transmittance¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.46
0.46	0.45
0.44	0.43
0.42	0.42
0.40	0.41
0.38	0.40
0.36	0.39
0.34	0.37
0.32	0.36
0.30	0.35
0.28	0.34
0.26	0.33
0.24	0.31
0.22	0.30
0.20	0.29
0.18	0.28
0.16	0.27
0.14	0.25
0.12	0.24
0.10	0.23

**PROJECT-IN HIGH THERMAL WINDOW
WITH 1" GLAZING**

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.48
0.70	0.45
0.65	0.42
0.60	0.39
0.55	0.35
0.50	0.32
0.45	0.29
0.40	0.26
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.14
0.15	0.10
0.10	0.07
0.05	0.04

Visible Transmittance²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.38
0.55	0.34
0.50	0.31
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.13
0.15	0.09
0.10	0.06
0.05	0.03

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.

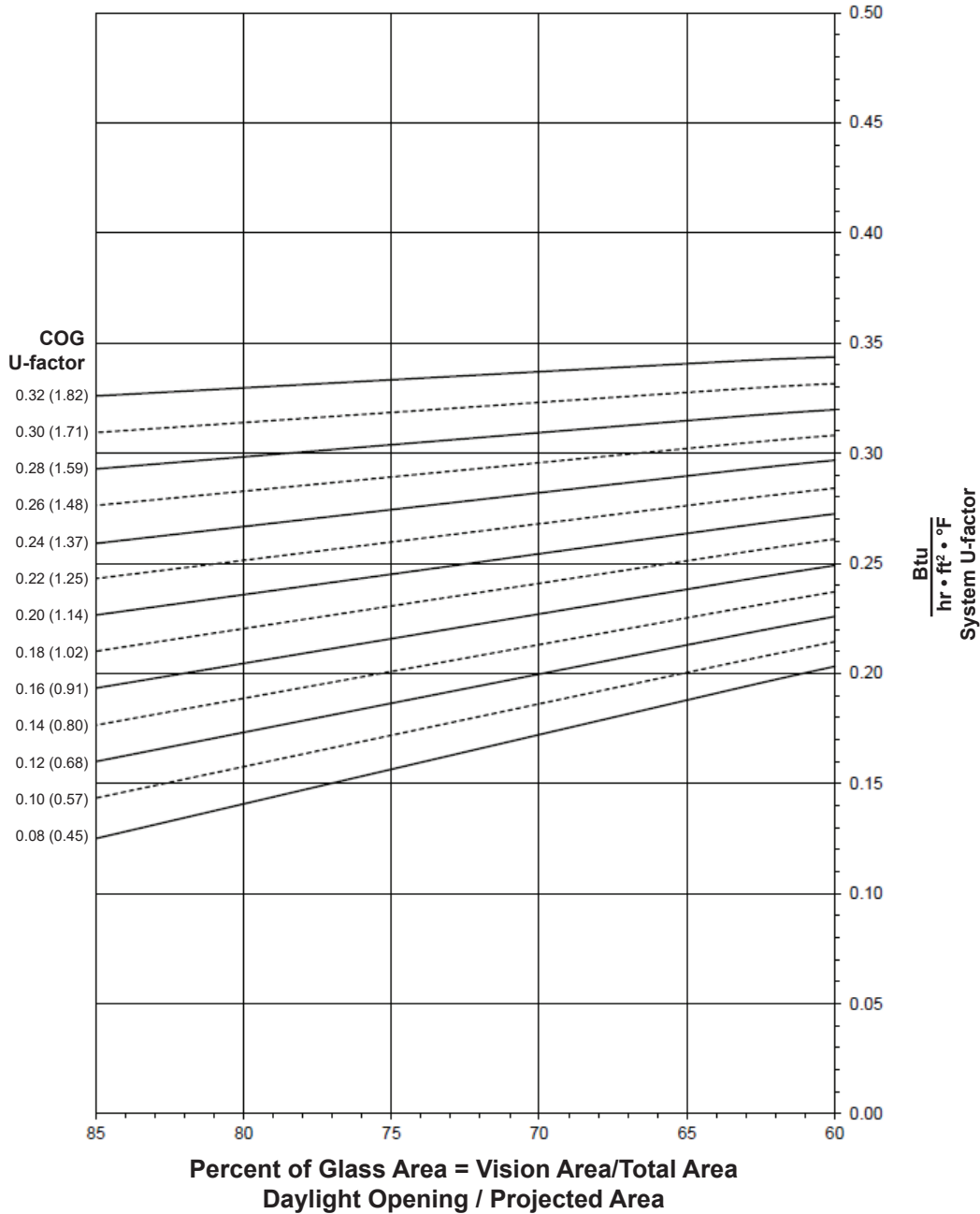
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PROJECT-IN WINDOW WITH 1-3/4" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



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

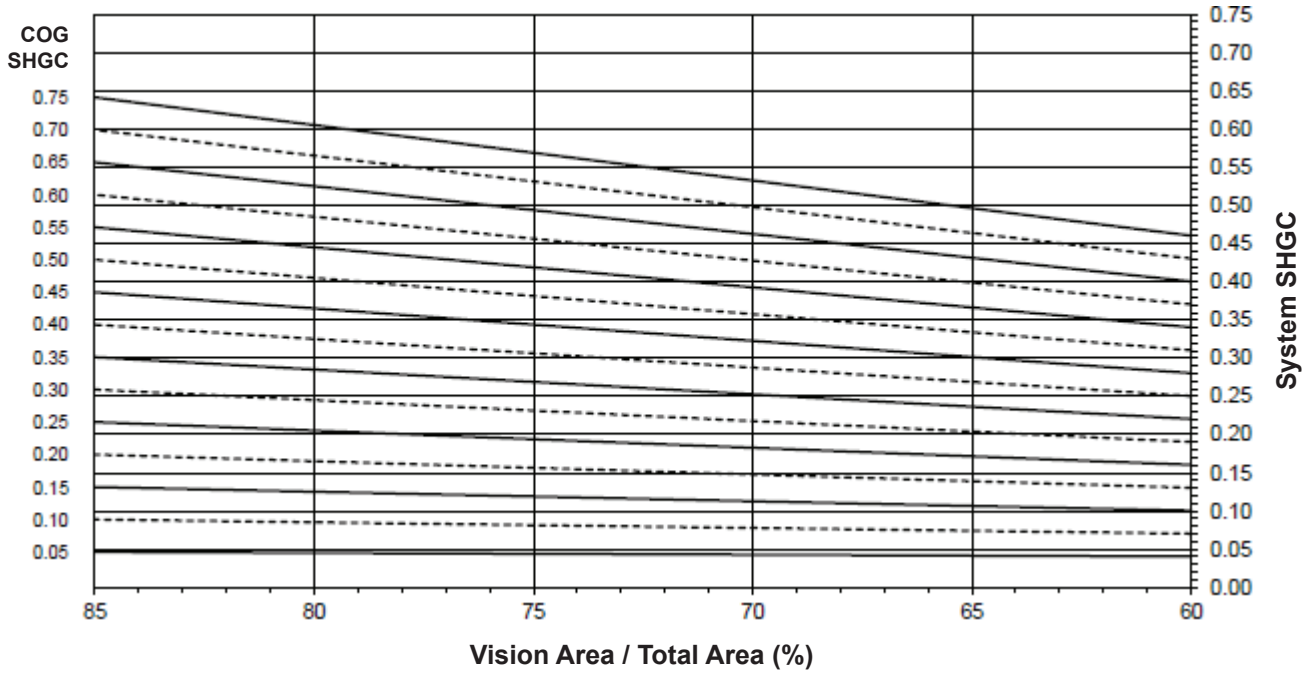
For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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.

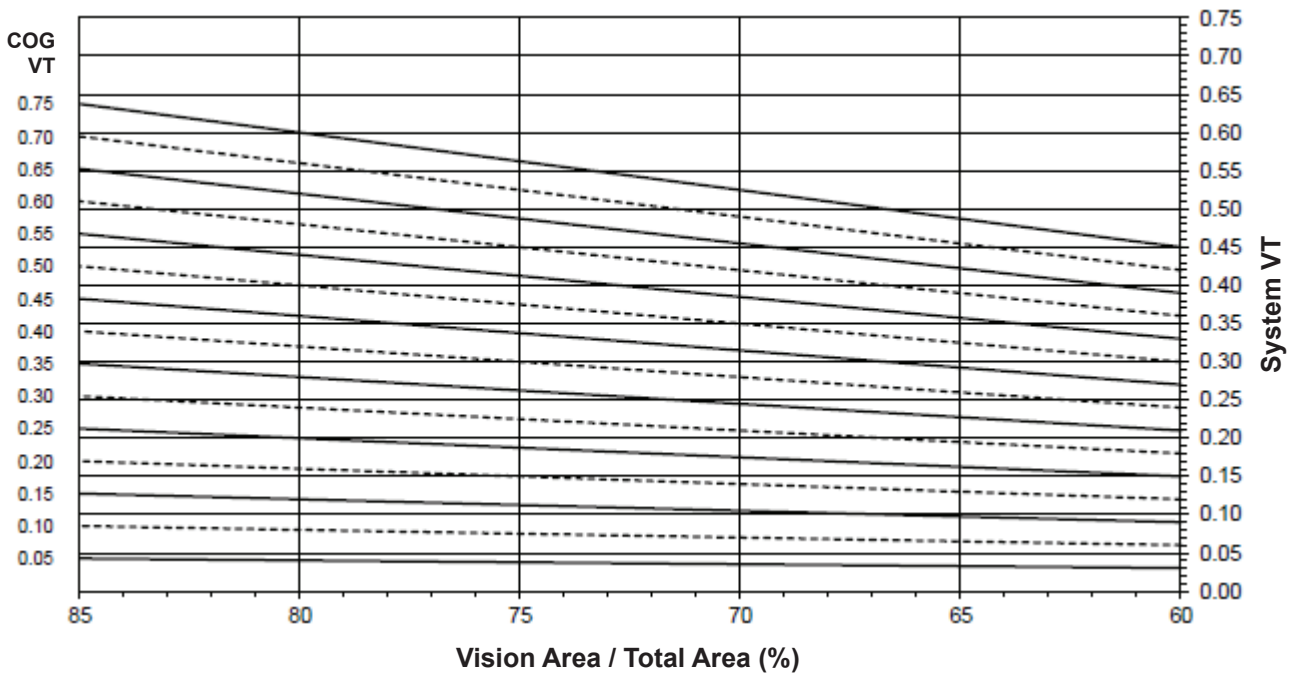
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PROJECT-IN WINDOW WITH 1-3/4" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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PROJECT-IN WINDOW WITH 1-3/4" GLAZING

Thermal Transmittance ¹ (BTU/hr • ft ² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.32	0.34
0.30	0.33
0.28	0.32
0.26	0.30
0.24	0.29
0.22	0.28
0.20	0.27
0.18	0.25
0.16	0.24
0.14	0.23
0.12	0.22
0.10	0.21
0.08	0.19

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.48
0.70	0.45
0.65	0.42
0.60	0.39
0.55	0.36
0.50	0.33
0.45	0.29
0.40	0.26
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.14
0.15	0.10
0.10	0.07
0.05	0.04

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.38
0.55	0.35
0.50	0.32
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.13
0.15	0.09
0.10	0.06
0.05	0.03

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.

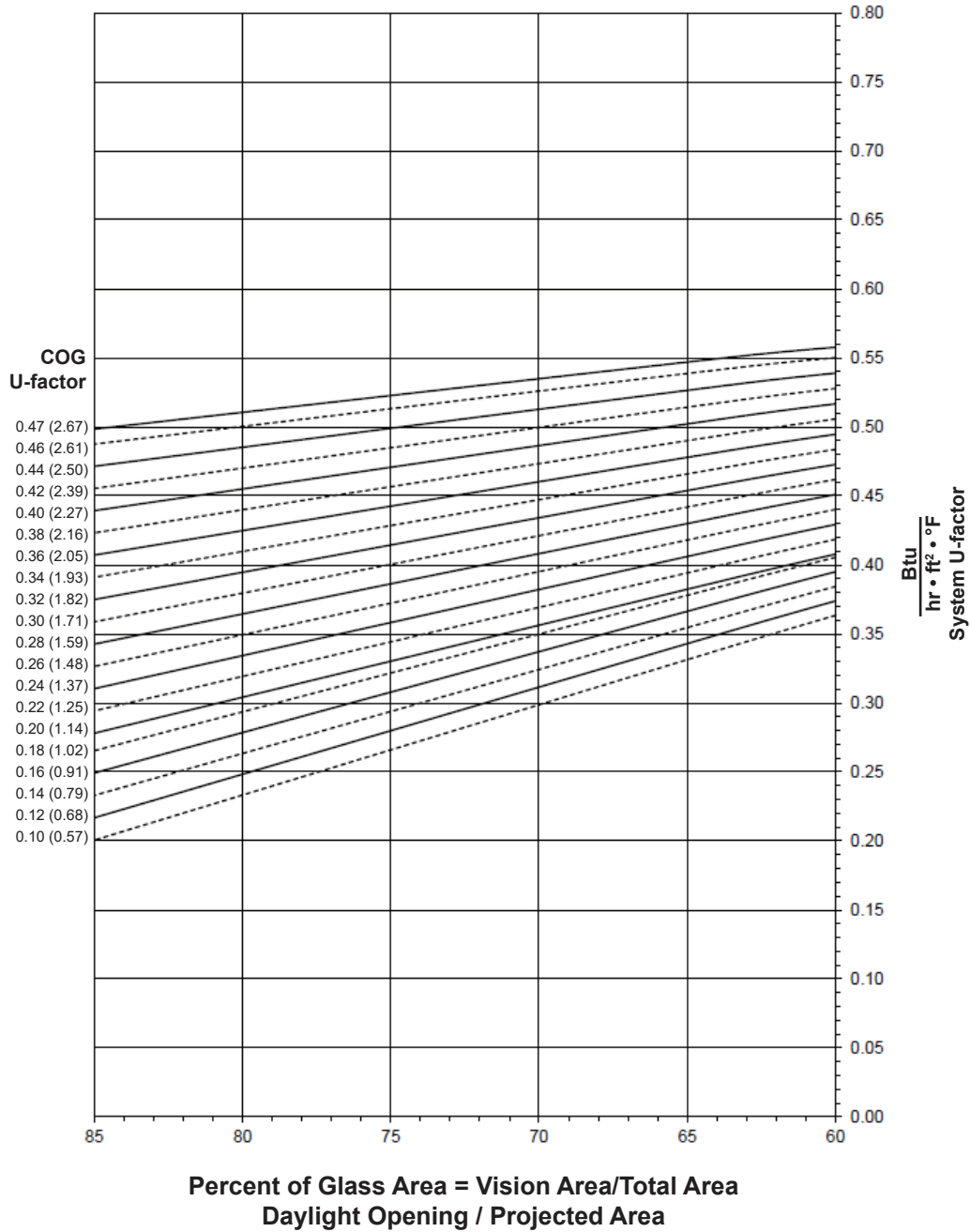
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PROJECT-OUT WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



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

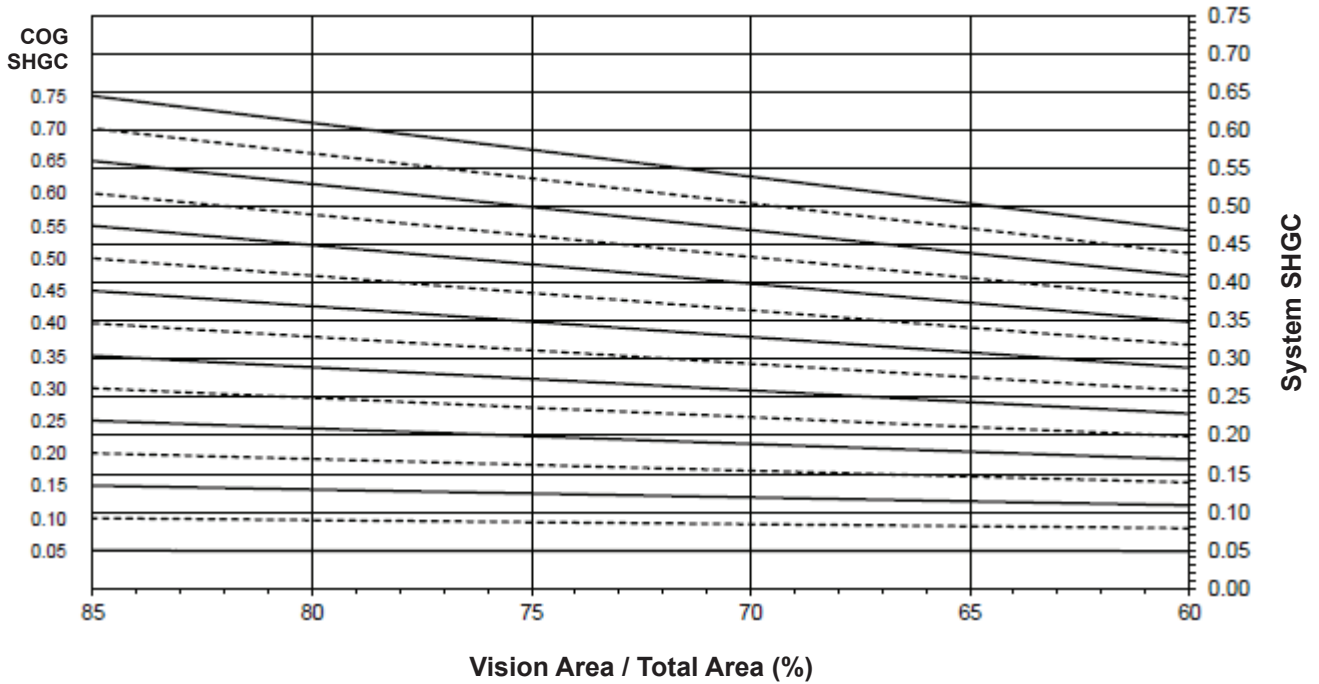
For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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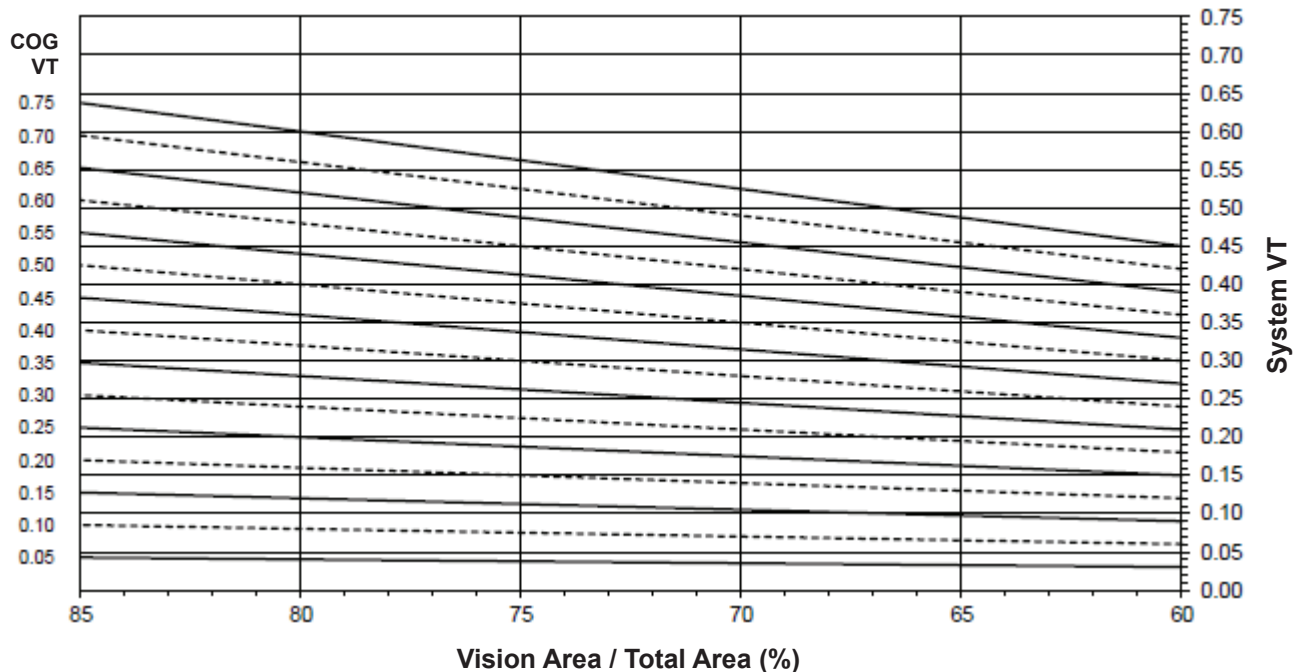
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PROJECT-OUT WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.55
0.46	0.54
0.44	0.53
0.42	0.52
0.40	0.51
0.38	0.50
0.36	0.48
0.34	0.47
0.32	0.46
0.30	0.45
0.28	0.44
0.26	0.43
0.24	0.41
0.22	0.40
0.20	0.39
0.18	0.39
0.16	0.38
0.14	0.37
0.12	0.35
0.10	0.34

PROJECT-OUT WINDOW WITH 1" GLAZING

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.49
0.70	0.46
0.65	0.43
0.60	0.40
0.55	0.37
0.50	0.33
0.45	0.30
0.40	0.27
0.35	0.24
0.30	0.21
0.25	0.18
0.20	0.14
0.15	0.11
0.10	0.08
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.38
0.55	0.35
0.50	0.32
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.13
0.15	0.09
0.10	0.06
0.05	0.03

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.

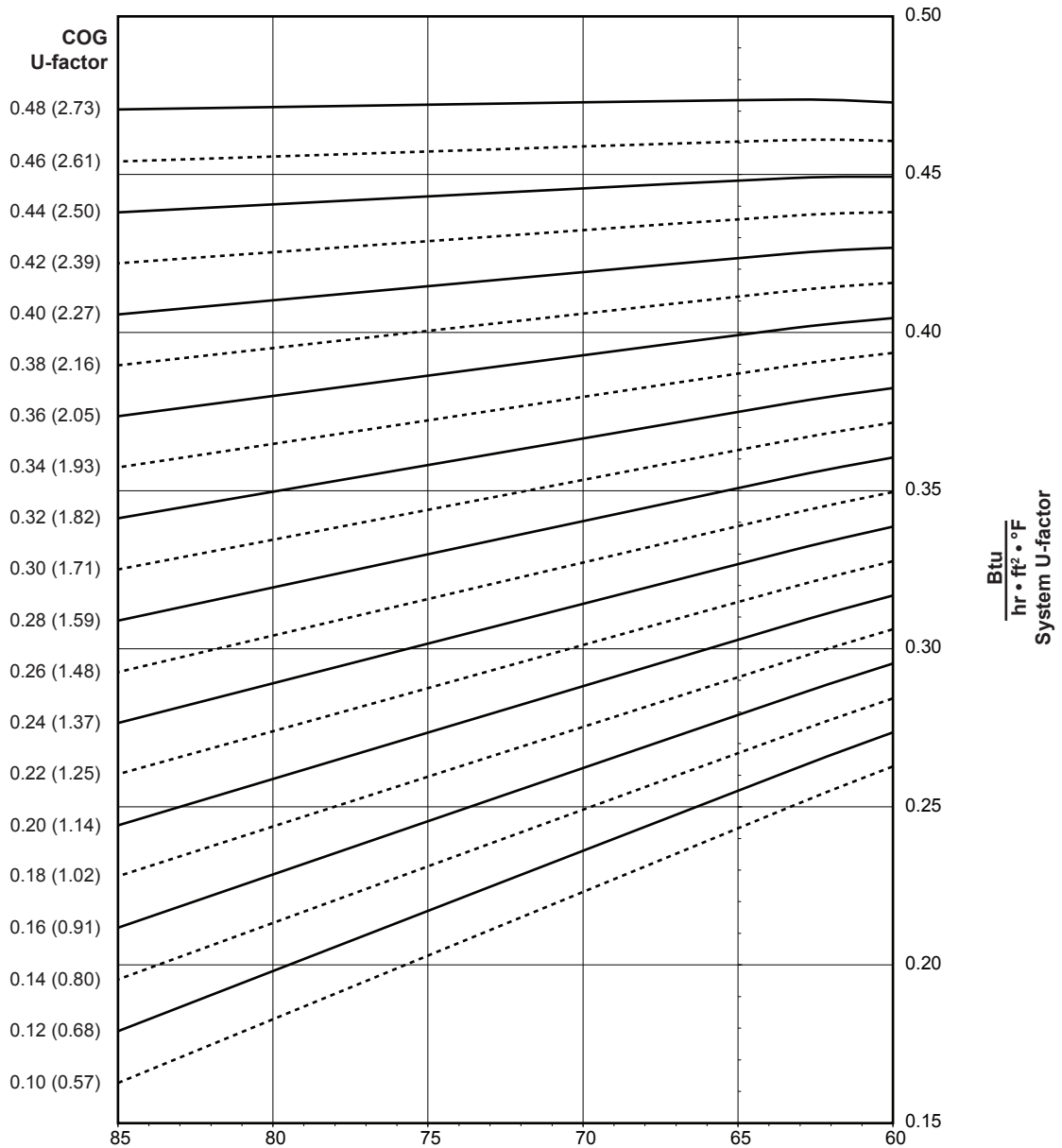
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PROJECT-OUT HIGH THERMAL WINDOW WITH 1" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



**Percent of Glass Area = Vision Area/Total Area
 Daylight Opening / Projected Area**

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

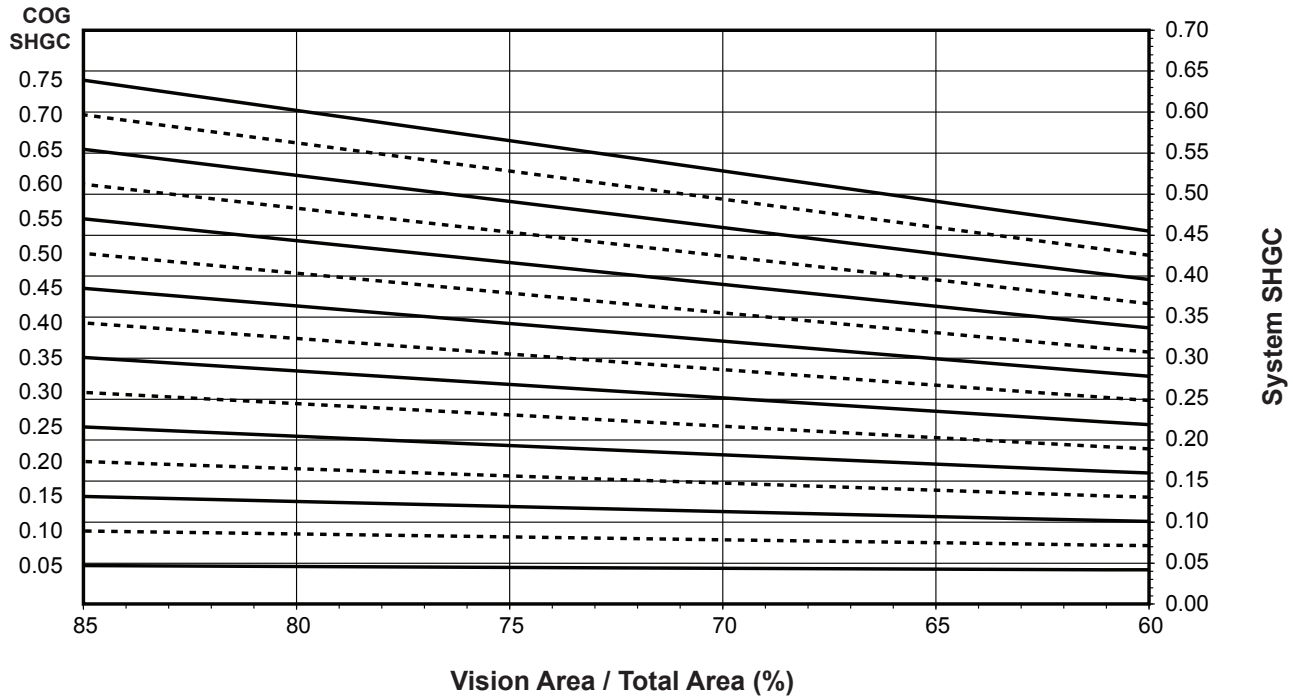
For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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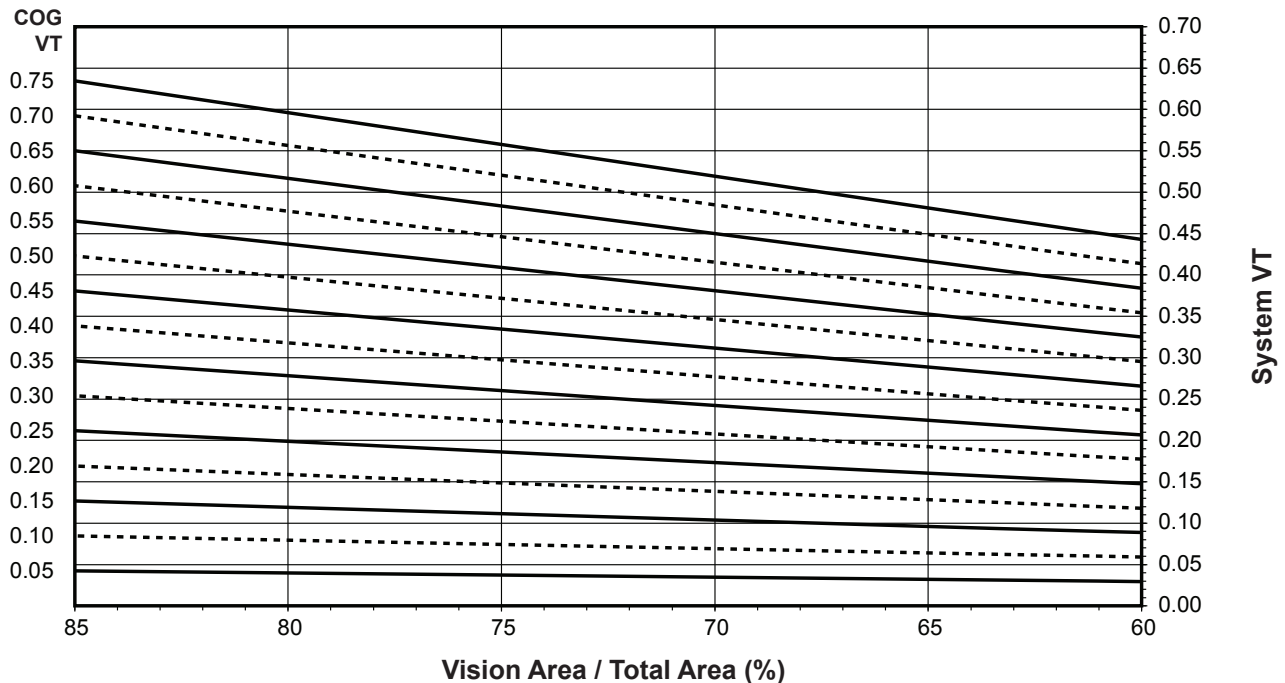
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PROJECT-OUT HIGH THERMAL WINDOW WITH 1" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.47
0.46	0.46
0.44	0.45
0.42	0.44
0.40	0.43
0.38	0.41
0.36	0.40
0.34	0.39
0.32	0.38
0.30	0.37
0.28	0.35
0.26	0.34
0.24	0.33
0.22	0.32
0.20	0.31
0.18	0.30
0.16	0.28
0.14	0.27
0.12	0.26
0.10	0.25

PROJECT-OUT HIGH THERMAL WINDOW WITH 1" GLAZING

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.48
0.70	0.45
0.65	0.42
0.60	0.39
0.55	0.35
0.50	0.32
0.45	0.29
0.40	0.26
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.14
0.15	0.10
0.10	0.07
0.05	0.04

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.37
0.55	0.34
0.50	0.31
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.12
0.15	0.09
0.10	0.06
0.05	0.03

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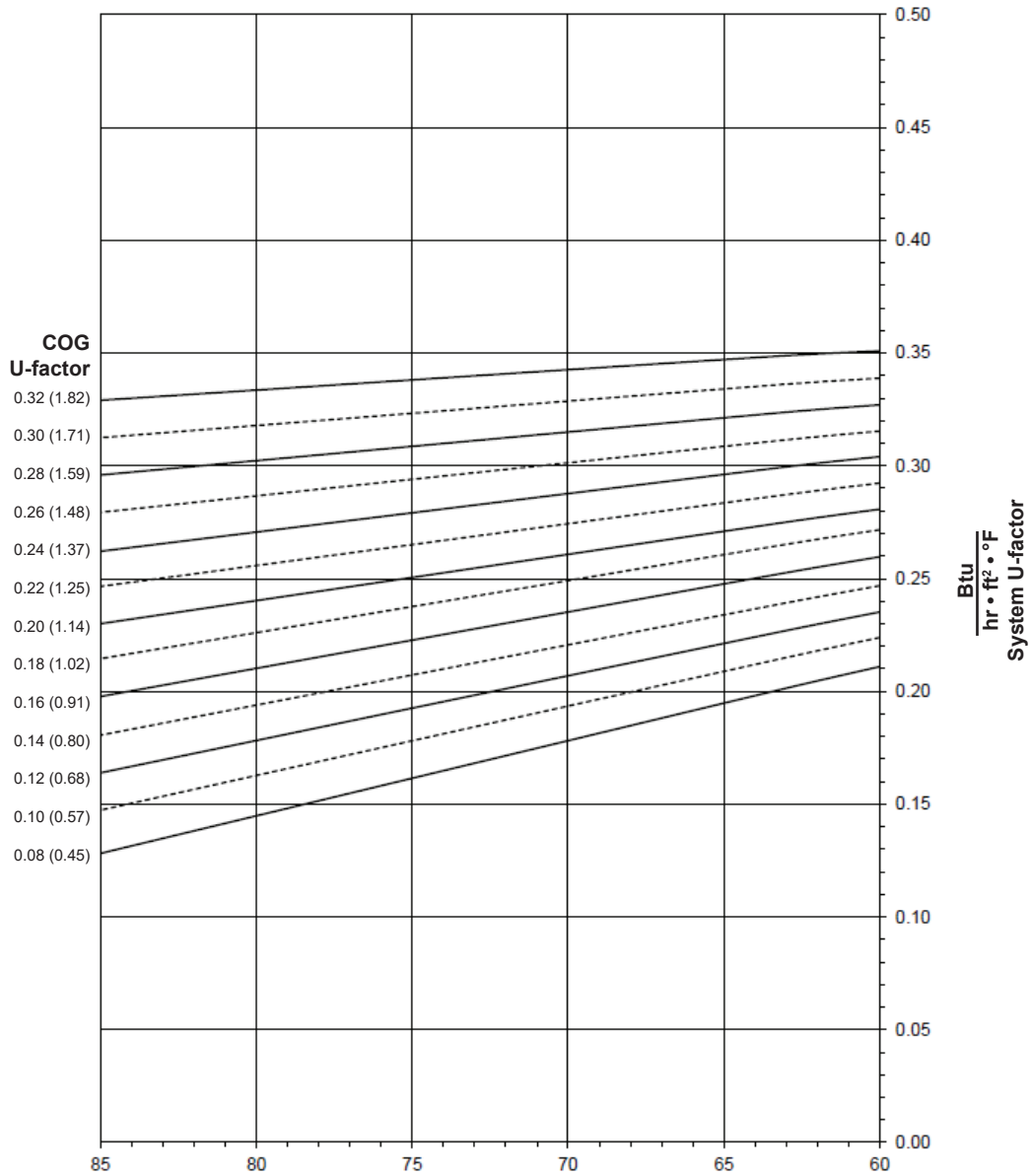
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PROJECT-OUT WINDOW WITH 1-3/4" GLAZING

Note:

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

System U-factor vs Percent of Glass Area



Percent of Glass Area = Vision Area/Total Area
 Daylight Opening / Projected Area

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

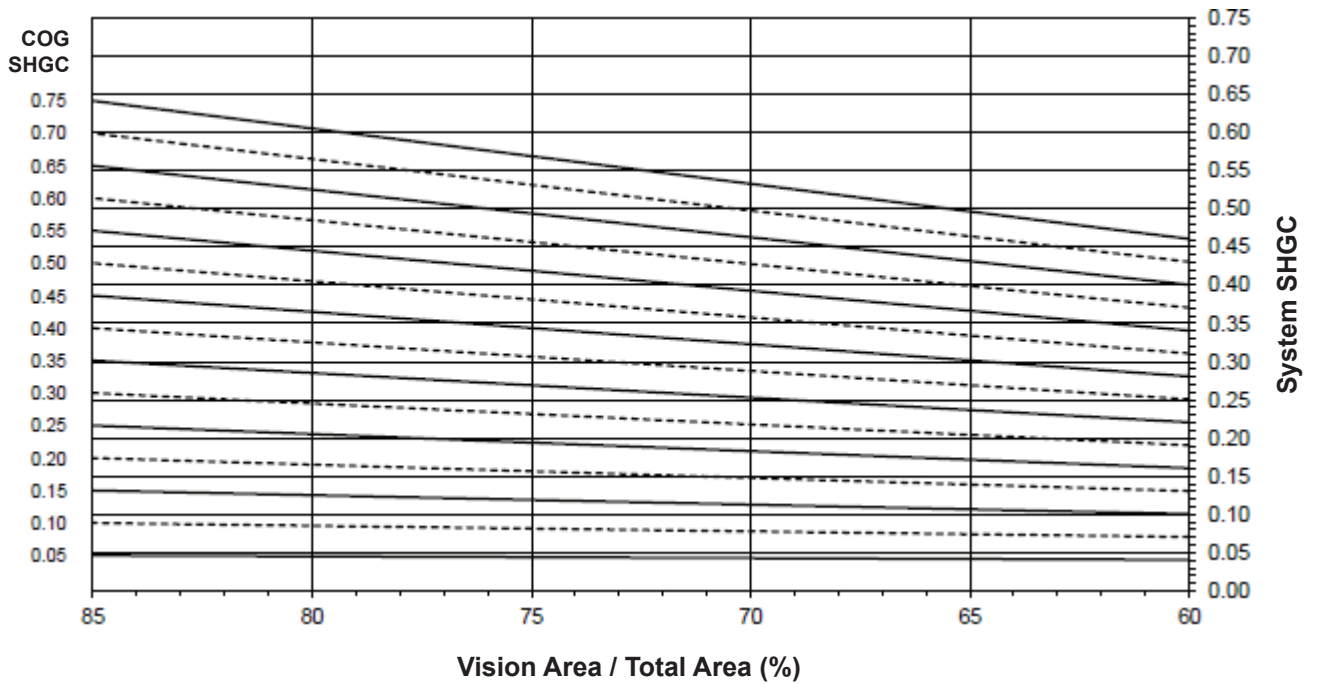
For glass values that are not listed, linear interpolation is permitted.
 Glass properties are based on center of glass values and are obtained from your glass supplier.

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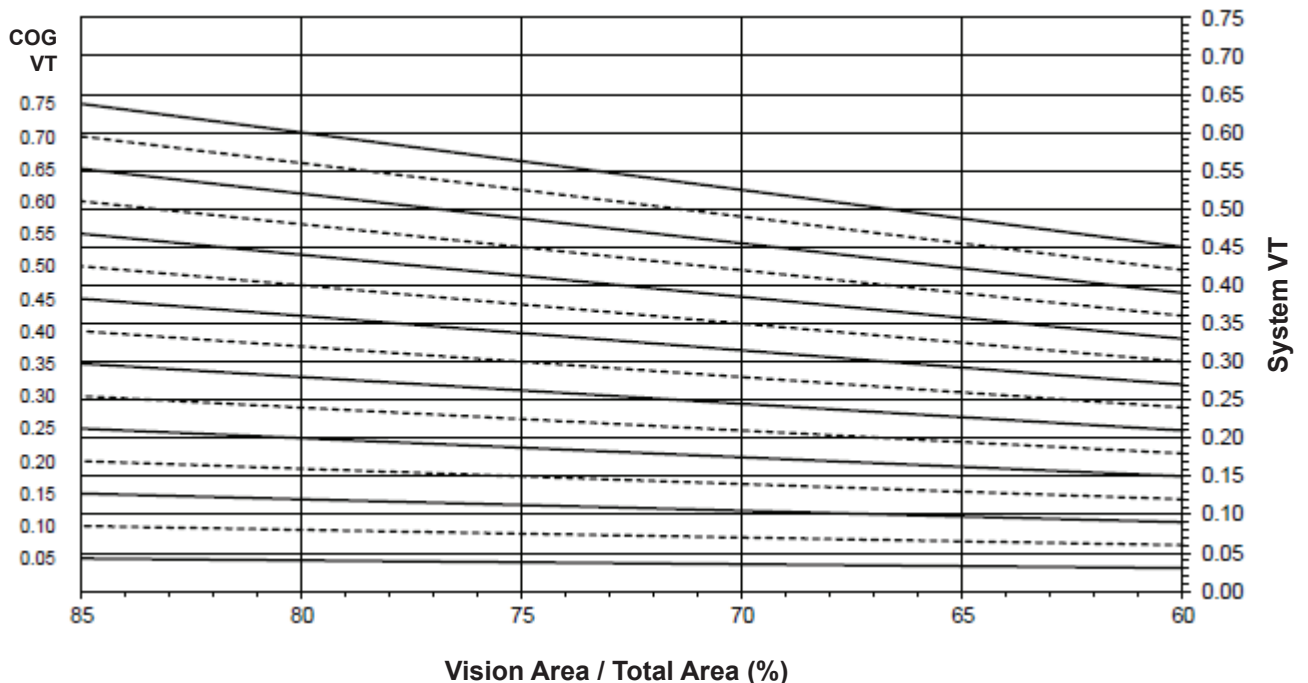
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PROJECT-OUT WINDOW WITH 1-3/4" GLAZING

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



System Visible Transmittance (VT) vs Percent of Vision Area



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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PROJECT-OUT WINDOW WITH 1-3/4" GLAZING

Thermal Transmittance ¹ (BTU/hr • ft² • °F)

Glass U-Factor ³	Overall U-Factor ⁴
0.32	0.35
0.30	0.34
0.28	0.32
0.26	0.31
0.24	0.30
0.22	0.29
0.20	0.27
0.18	0.26
0.16	0.25
0.14	0.24
0.12	0.23
0.10	0.21
0.08	0.20

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 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.48
0.70	0.45
0.65	0.42
0.60	0.39
0.55	0.36
0.50	0.33
0.45	0.29
0.40	0.26
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.14
0.15	0.10
0.10	0.07
0.05	0.04

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.47
0.70	0.44
0.65	0.41
0.60	0.38
0.55	0.35
0.50	0.32
0.45	0.28
0.40	0.25
0.35	0.22
0.30	0.19
0.25	0.16
0.20	0.13
0.15	0.09
0.10	0.06
0.05	0.03

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