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.

EC 97911-303 INDEX

FEATURES	3
516 FIXED 4" WINDOW	4-6
518 FIXED 5" WINDOW	7
516 MISCELLANEOUS DETAILS	8
518 MISCELLANEOUS DETAILS	9
WIND LOAD CHARTS	10-13
DEAD LOAD CHARTS	14
THEDMAL CHAPTS	15 24

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



BLANK PAGE

EC 97911-303

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

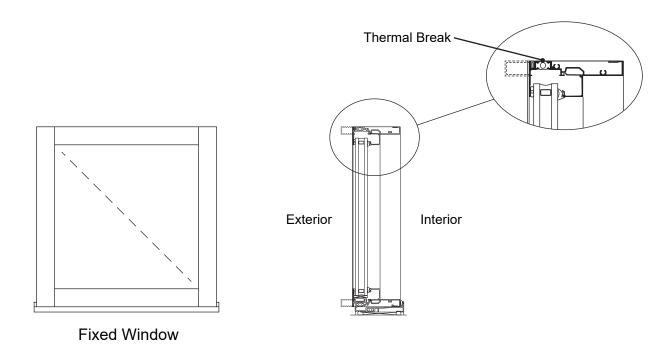
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.
© 2017, Kawneer Company, Inc.



EC 97911-303 FEATURES

Features

- 19/32" (14.6) IsoPort® glass-reinforced nylon 6/6 thermal break provides:
 - · Improved condensation resistance and thermal transmittance performance capability
 - Rigid profile with composite structural performance
 - · Exterior / interior finish options
- Meets or exceeds the highest performance levels of CSA standard CAN/CSA-A440 windows
- 516 Thermal Window has seamless coupling mullion features unbroken weather joints on exterior surface
- Provision for thermal movement
- Simple joinery with overlapping flanges for economical construction and good weathering capability
- Optional full rain screen capability
- 518 Thermal Window has distinctive "Top Hat" accent feature
- · Accommodates 1" (25.4) sealed glazing units
- · Glass installed and replaced from interior
- Exterior pre-shim butyl glazing tapes
- · Interior EPDM rubber glazing gaskets
- Lock-in glass stop
- · Companion project-out or project-in vent inserts available
- Accepts 512 Ventrow Thermal Ventilator inserts and 526 Thermal Windows operable



For specific product applications, consult your Kawneer representative.



FIXED WINDOW

EC	9791	11-303
----	------	--------

CLASS and GRADE	Fixed, B7, C5
TESTING STANDARD	CAN / CSA-A440
FRAME DEPTH	4" (516) or 5" (518)
TYPICAL WALL THICKNESS	.070" Nominal Frame
INFILL OPTIONS	1"
STANDARD HARDWARE	Not Applicable
OPTIONAL HARDWARE	Not Applicable
OTHER OPTIONS	Multi-Modular Coupling Mullion

Laws and building and safety codes governing the design and use of Kawneer 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. © 2017, Kawneer Company, Inc.



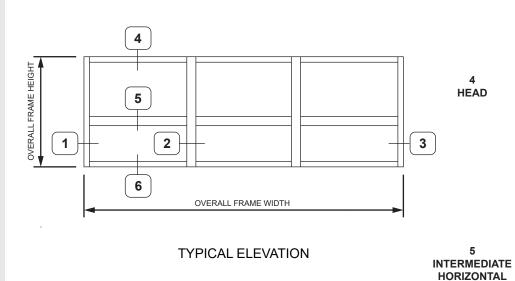
1/2"

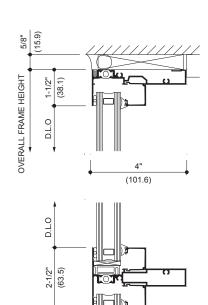
(12.7)

kawneer.com

516 FIXED 4" WINDOW

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



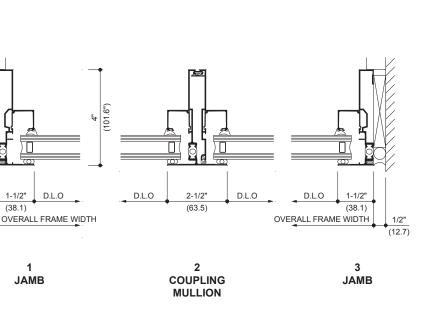


6 SILL OVERALL FRAME HEIGHT

D.L.0

1-1/2"

(11.1) 1/4" (6.4)

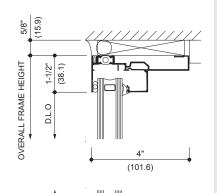




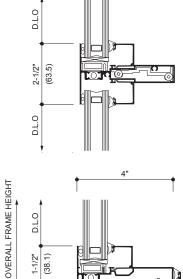
EC 97911-303

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

TYPICAL ELEVATION



INTERMEDIATE HORIZONTAL

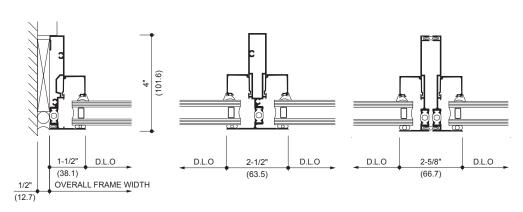


D.L.0

7/16" (11.1) 1/4" (6.4)

(38.1) 1-1/2"

6 SILL



JAMB

2 TUBULAR **MULLION**

3 MULTI-MODULAR **COUPLING MULLION**

KAWNEER

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

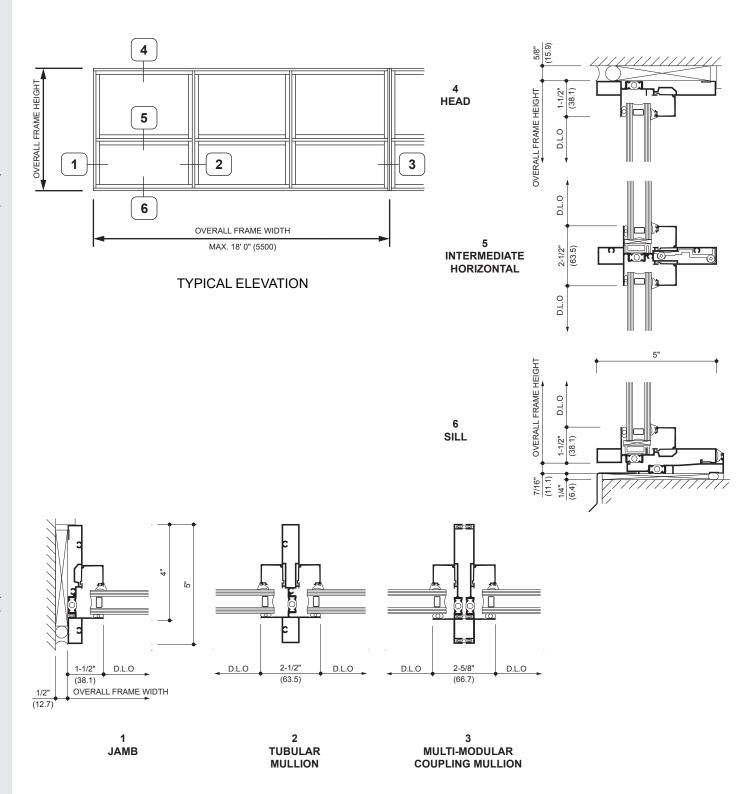
© 2017, Kawneer Company, Inc.

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.

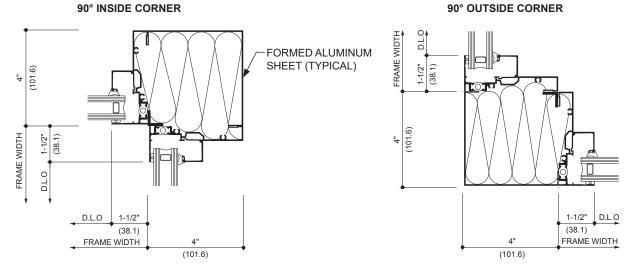
ADME100EN

518 FIXED 5" WINDOW

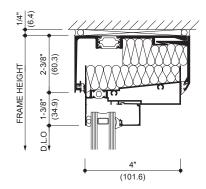
Additional information and CAD details are available at www.kawneer.com







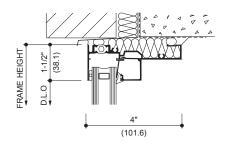
DEFLECTION HEAD [ALLOWS ± 5/8" (15.9) MOVEMENT]

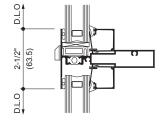


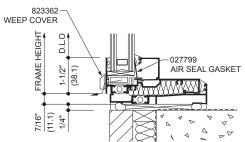
RAIN SCREEN WINDOW

NOTE:

SIMPLIFIED HERE FOR CLARITY. VARY WIDELY AND ARE **BUILDING INTERFACE DETAILS**









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

© 2017, Kawneer Company, Inc.

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.

5"

(127)

FRAME WIDTH

516/518 Thermal Windows

© 2017, Kawneer Company, Inc.

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

90° INSIDE CORNER 90° OUTSIDE CORNER D.L.O FRAME WIDTH FORMED ALUMINUM SHEET (TYPICAL) 1-1/2" (38.1) (127) 5. (127) FRAME WIDTH (38. D.L.0 D.L.O D.L.O 1-1/2" (38.1) (38.1)

DEFLECTION HEAD [ALLOWS ± 5/8" (15.9) MOVEMENT]

(127)

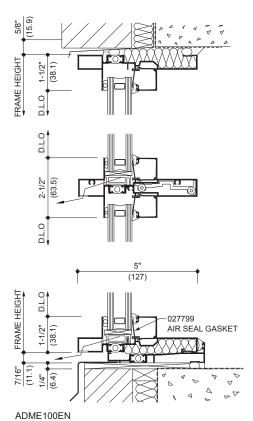
2-3/8" (60.3) FRAME HEIGHT (34.9) D.L.0



NOTE:

FRAME WIDTH

SIMPLIFIED HERE FOR CLARITY. VARY WIDELY AND ARE **BUILDING INTERFACE DETAILS**





516/518 Thermal Windows

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.

DEADLOAD CHARTS

Horizontal or deadload limitations are based upon 1/16" (1.6) at operable vents or 1/8" (3.2) at fixed openings, maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass supported on two setting blocks placed at the loading points shown.

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.

2017, Kawneer Company,

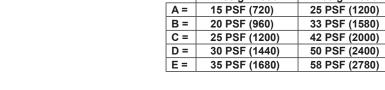


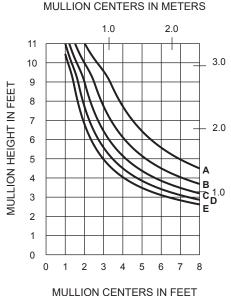
Laws and building and safety codes governing the design and use of Kawneer products, vary and safed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

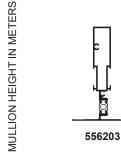
© 2017, Kawneer Company, Inc.

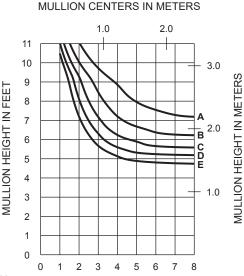
WIND LOAD CHARTS EC 97911-303

	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	35 PSF (1680)	58 PSF (2780)









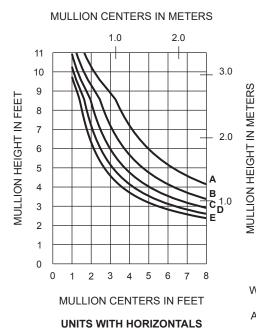
UNITS WITH HORIZONTALS

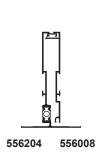
WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-8 AND AAMA 505

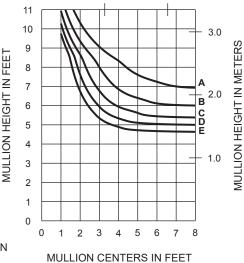
MULLION CENTERS IN FEET **UNITS WITHOUT HORIZONTALS**

MULLION CENTERS IN METERS

2.0







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

UNITS WITHOUT HORIZONTALS

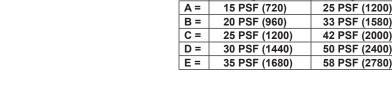


ADME100EN kawneer.com

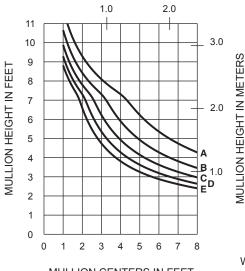
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

EC 97911-303

	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	35 PSF (1680)	58 PSF (2780)





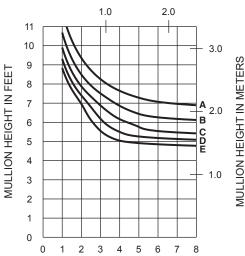


MULLION CENTERS IN FEET **UNITS WITH HORIZONTALS**

556205 556205

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

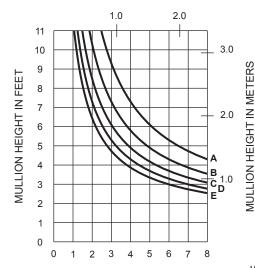
MULLION CENTERS IN METERS



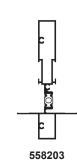
MULLION CENTERS IN FEET

UNITS WITHOUT HORIZONTALS

MULLION CENTERS IN METERS

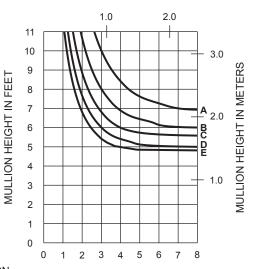


MULLION CENTERS IN FEET **UNITS WITH HORIZONTALS**



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

MULLION CENTERS IN METERS



MULLION CENTERS IN FEET

UNITS WITHOUT HORIZONTALS



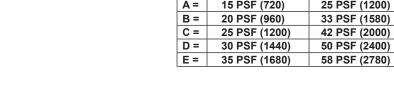
© 2017, Kawneer Company, Inc

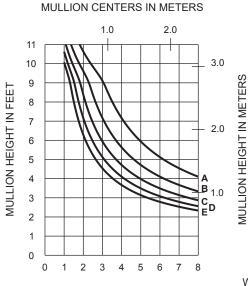
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

© 2017, Kawneer Company, Inc.

EC 97911-303 WIND LOAD CHARTS

	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	35 PSF (1680)	58 PSF (2780)





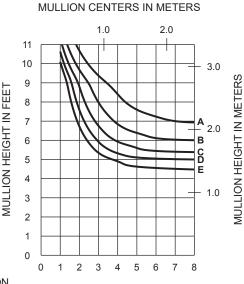
MULLION CENTERS IN FEET

UNITS WITH HORIZONTALS



558205

558205



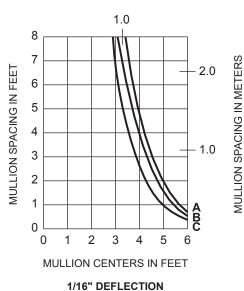
MULLION CENTERS IN FEET **UNITS WITHOUT HORIZONTALS**



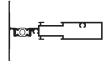
DEADLOAD CHARTS

EC 97911-303

MULLION CENTERS IN METERS

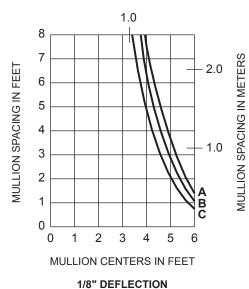


A = 1/8 POINT LOADING **B = 1/6 POINT LOADING** C = 1/4 POINT LOADING

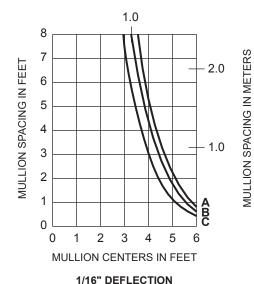


556203

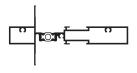
MULLION CENTERS IN METERS



MULLION CENTERS IN METERS



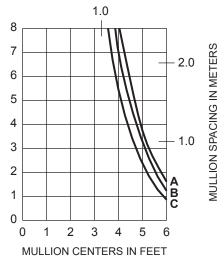
A = 1/8 POINT LOADING **B = 1/6 POINT LOADING** = 1/4 POINT LOADING



MULLION SPACING IN FEET

558203

MULLION CENTERS IN METERS



1/8" DEFLECTION

KAWNEER

© 2017, Kawneer Company, Inc

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.

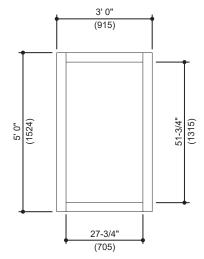
Laws and building and safety codes governing the design and use of Kawneer products, varue as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

© 2017, Kawneer Company, Inc.

EC 97911-303 THERMAL CHARTS

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

516/518 Thermal Windows



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

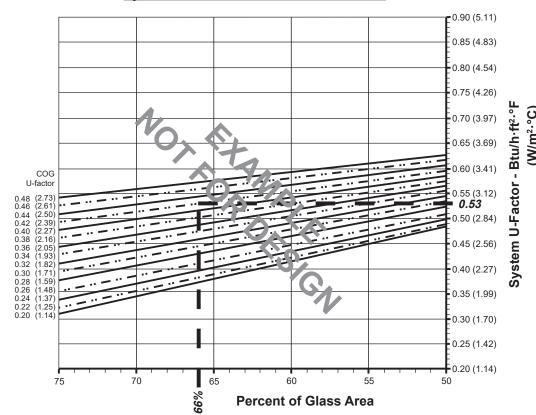
Total Daylight Opening = 27-3/4" • 51-3/4" = 9.97ft²

Total Projected Area = $3' \ 0'' \cdot 5' \ 0'' = 15 \ \text{ft}^2$

Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)100

 $= (9.97 \div 15)100 = 66\%$

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



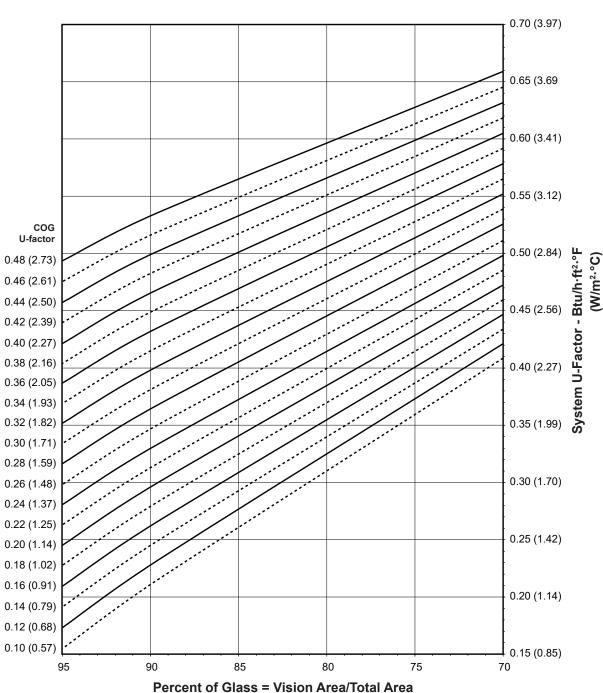
EC 97911-303

Note: Values in parentheses are metric. COG=Center of Glass.

THERMAL CHARTS

Charts are generated per AAMA 507.

516 Fixed Window 1" Double Glazed - Warm-Edge Glazing Spacer System U-Factor for Vision Glass



Percent of Glass = Vision Area/Total Area (Total 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.



Laws and building and safety codes governing the design and use of Kawneer produc such as glazed entrance, window, and curtain wall products, vary widely. Kawneer doc surch the selection of product configurations, operating hardware, or glazing material

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

2017, Kawneer Company, Inc.

Laws and building and safety codes governing such as glazed entrannee, window, and curtain we control the selection of product configurations, and assumes no responsibility therefor.

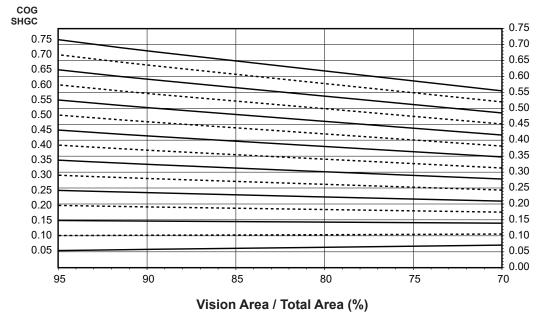
© 2017, Kawneer Company, Inc.

EC 97911-303 THERMAL CHARTS

516 Fixed Window 1" Double Glazed - Warm-Edge Glazing Spacer

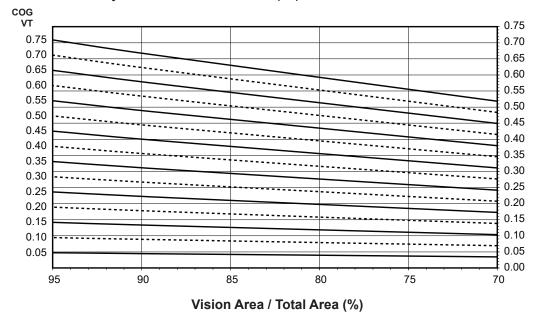
516/518 Thermal Windows

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



THERMAL PERFORMANCE MATRIX (NFRC SIZE)

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.

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

Thermal transmittance (BTO/nr • it • F)	
Glass U-Factor ³	Overall U-Factor 4
0.48	0.54
0.46	0.52
0.44	0.50
0.42	0.49
0.40	0.47
0.38	0.45
0.36	0.44
0.34	0.42
0.32	0.40
0.30	0.38
0.28	0.37
0.26	0.35
0.24	0.33
0.22	0.32
0.20	0.30
0.18	0.28
0.16	0.27
0.14	0.25
0.12	0.23
0.10	0.22

516 Fixed Window 1" Double Glazed Warm-Edge Glazing Spacer

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").

SHGC Matrix²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.68
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.46
0.45	0.41
0.40	0.37
0.35	0.32
0.30	0.28
0.25	0.23
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance 2

VISIBLE HAIISHIILLANCE		
Glass VT ³	Overall VT 4	
0.75	0.66	
0.70	0.62	
0.65	0.58	
0.60	0.53	
0.55	0.49	
0.50	0.44	
0.45	0.40	
0.40	0.35	
0.35	0.31	
0.30	0.27	
0.25	0.22	
0.20	0.18	
0.15	0.13	
0.10	0.09	
0.05	0.04	



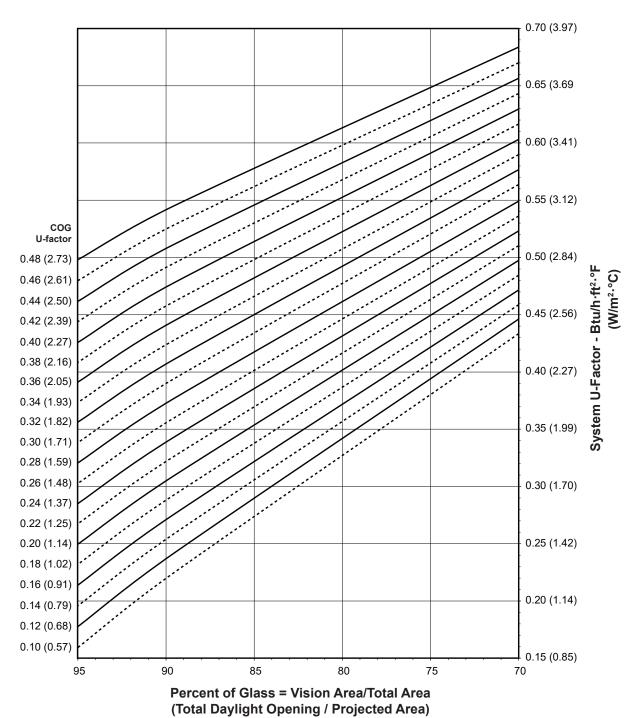
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

THERMAL CHARTS EC 97911-303

Values in parentheses are metric.

COG=Center of Glass. Charts are generated per AAMA 507.

518 Fixed Window 1" Double Glazed - Warm-Edge Glazing Spacer **System U-Factor for Vision Glass**



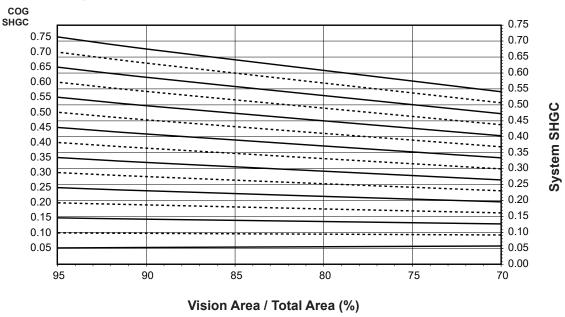
Notes for System U-factor, SHGC and VT charts: For glass values that are not listed, linear interpolation is permitted. Glass properties are based on center of glass values and are obtained from your glass supplier.



516/518 Thermal Windows

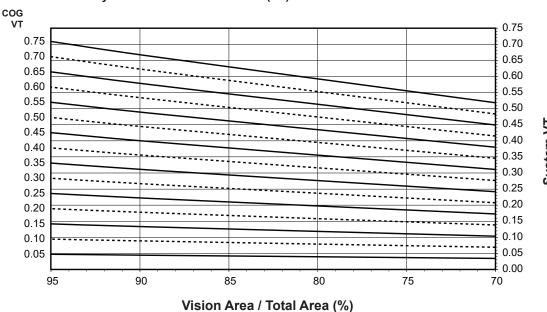
518 Fixed Window 1" Double Glazed - Warm-Edge Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



design and use of Kawneer products, products, vary widely. Kawneer does not rating hardware, or glazing materials,

© 2017, Kawneer Company, Inc.

EC 97911-303

THERMAL PERFORMANCE MATRIX (NFRC SIZE)

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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.54
0.46	0.53
0.44	0.51
0.42	0.49
0.40	0.48
0.38	0.46
0.36	0.44
0.34	0.43
0.32	0.41
0.30	0.39
0.28	0.38
0.26	0.36
0.24	0.34
0.22	0.33
0.20	0.31
0.18	0.29
0.16	0.28
0.14	0.26
0.12	0.24
0.10	0.22

518 Fixed Window 1" Double Glazed Warm-Edge Glazing Spacer

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").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.63
0.65	0.58
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	0.19
0.15	0.14
0.10	0.10
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.66
0.70	0.62
0.65	0.58
0.60	0.53
0.55	0.49
0.50	0.44
0.45	0.40
0.40	0.35
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



THERMAL CHARTS

EC 97911-303

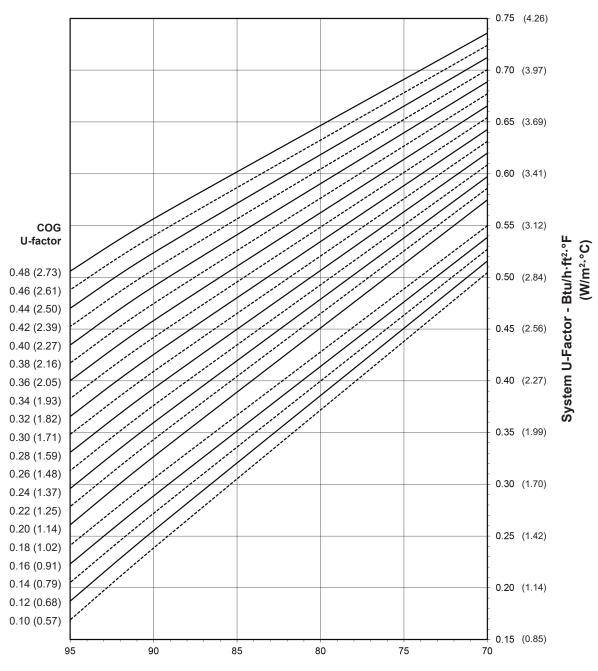
Note:

Values in parentheses are metric. COG=Center of Glass.

Charts are generated per AAMA 507.

516/518 Fixed Window 1" Double Glazed - Aluminum Glazing Spacer

System U-Factor for Vision Glass



Percent of Glass = Vision Area/Total Area (Total 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.



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,

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

© 2017, Kawneer Company, Inc.

Laws and building and safety codes governing such as glazed entrannee, window, and curtain we control the selection of product configurations, and assumes no responsibility therefor.

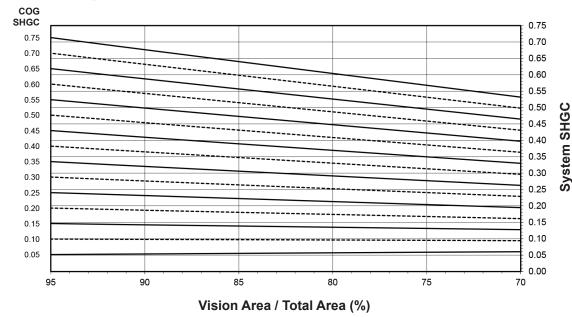
© 2017, Kawneer Company, Inc.

THERMAL CHARTS

516/518 Thermal Windows

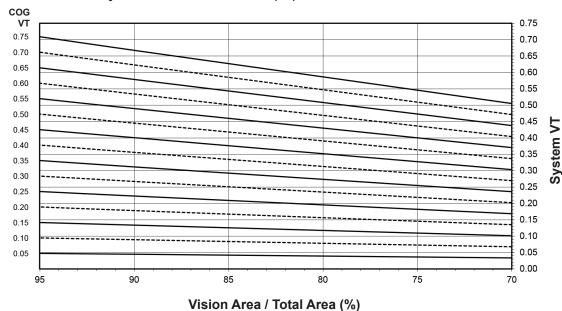
516/518 Fixed Window 1" Double Glazed - Aluminum Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



THERMAL PERFORMANCE MATRIX (NFRC SIZE)

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

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.56
0.46	0.54
0.44	0.53
0.42	0.51
0.40	0.50
0.38	0.48
0.36	0.46
0.34	0.45
0.32	0.43
0.30	0.41
0.28	0.40
0.26	0.38
0.24	0.36
0.22	0.35
0.20	0.33
0.18	0.31
0.16	0.29
0.14	0.28
0.12	0.26
0.10	0.24

516/518 Fixed Window 1" Double Glazed **Aluminum Glazing Spacer**

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").

SHGC Matrix²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
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	0.28
0.25	0.23
0.20	0.19
0.15	0.14
0.10	0.10
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.66
0.70	0.62
0.65	0.58
0.60	0.53
0.55	0.49
0.50	0.44
0.45	0.40
0.40	0.35
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



ADME100EN