Features

- 190 narrow stile has 2-1/8" vertical stile, 2-1/4" top and 3-7/8" bottom rail
- 350 medium stile has 3-1/2" vertical stile, 3-1/2" top and 6-1/2" bottom rail
- 500 wide stile has 5" vertical stile, 5" top and 6-1/2" bottom rail
- Door is 1-3/4" deep
- Dual moment welded corner construction
- Single or double acting
- Offset pivots, butt hinges, continuous geared hinge or center pivots
- Surface mounted or concealed closers
- MS locks or panic hardware
- Architects Classic push/pulls
- Infills range from 1/4" to 1"
- Adjustable astragal utilizing pile weathering with polymeric fin at meeting stiles
- Sealair® bulb polymeric weatherstripping in door frames
- Permanodic® anodized finishes in 7 choices
- Painted finishes in standard and custom choices

Optional Features

- Numerous push/pull finishes
- Paneline® exit device or Paneline® EL exit device
- Wide variety of bottom rail, cross rail and muntins

Product Applications

- 190 narrow stile - engineered for moderate traffic in applications such as offices, stores and apartment buildings
- 350 medium stile - provides extra strength for schools, institutions and other high traffic applications
- 500 wide stile - creates a monumental visual statement for banks, libraries or buildings that experience heavy traffic conditions

For specific product applications,
Consult your Kawneer representative.

LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF 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.

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

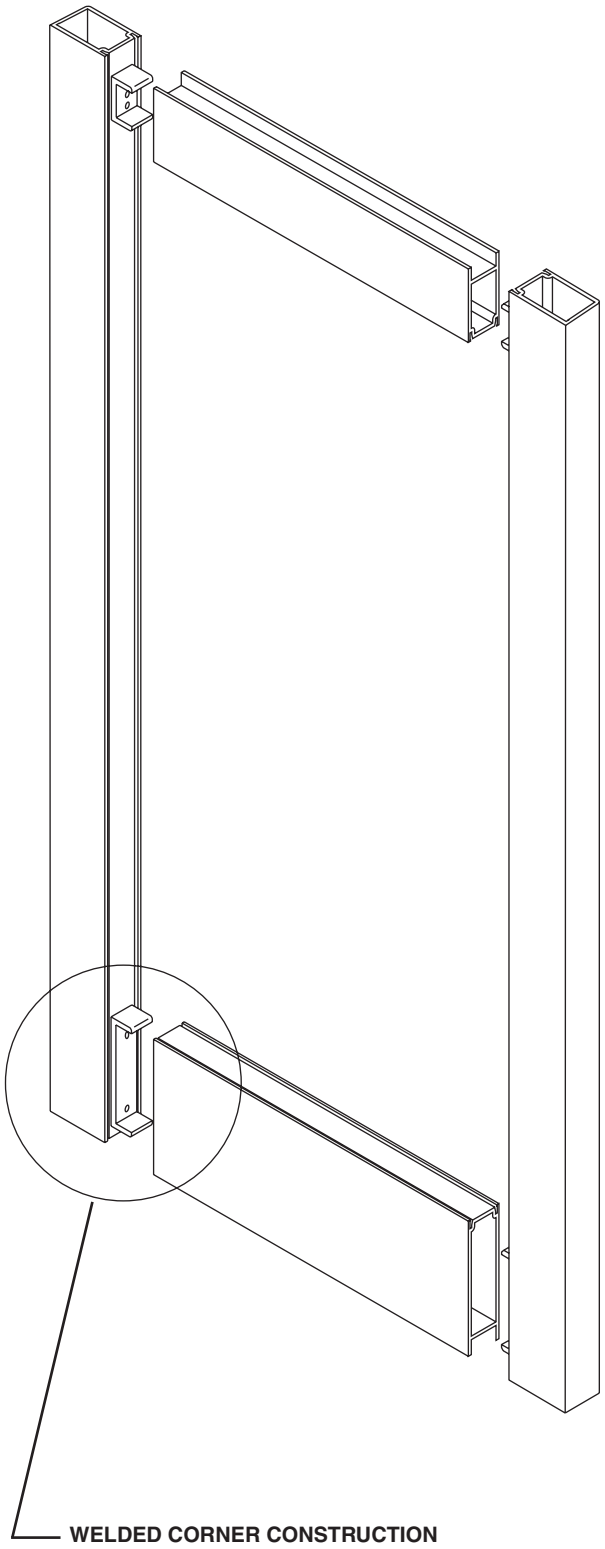
The following metric (SI) units are found in these details:

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

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

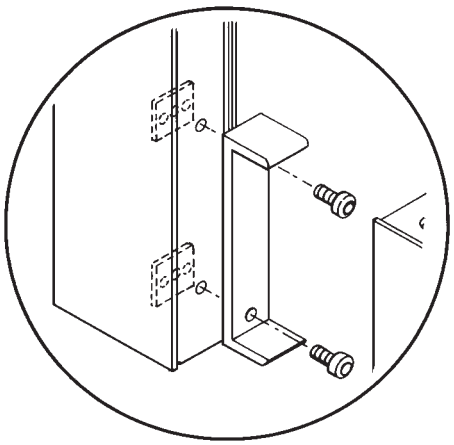
190/350/500 STANDARD ENTRANCES

PICTORIAL VIEW

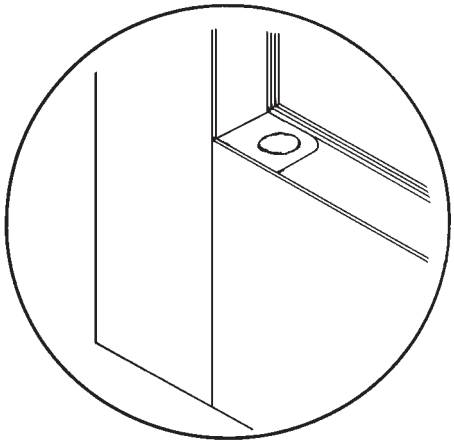


WELDED CORNER CONSTRUCTION

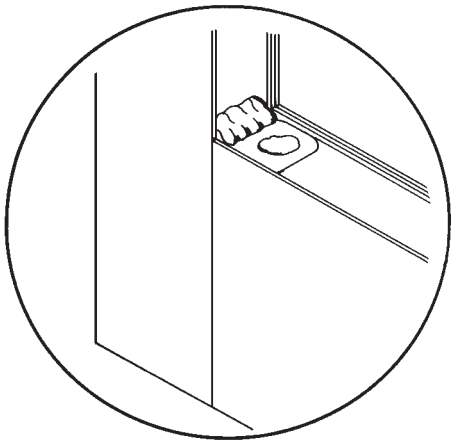
*** An arc welding process known as Shielded Inert Gas Metal Arc (SIGMA) or also known as Metal Inert Gas (MIG).**



#1 MECHANICAL FASTENING is accomplished by attaching a 5/16" (7.9) thick extruded aluminum channel clip to the vertical stile with 1/4"-20 heat strengthened bolts and 3/16" thick steel nut plates for a high strength welding base for attachment horizontal member.



#2 SIGMA* DEEP PENETRATION PLUG WELDS are made top and bottom after the horizontal is properly positioned over the channel clip to help provide the strongest door corner joint currently available.

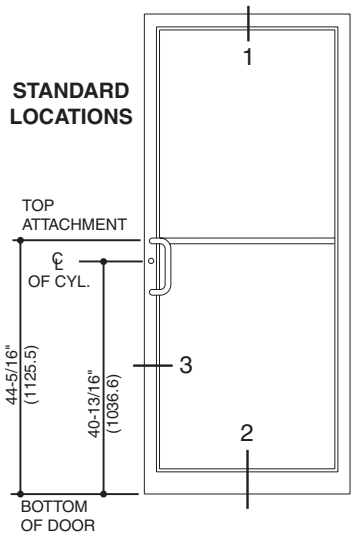


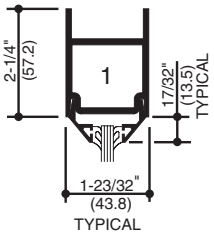
#3 SIGMA* FILLET WELDS along both top and bottom webs of the rail extrusion complete the welded corner construction.

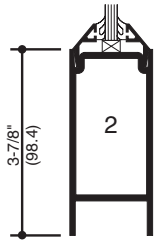
KAWNEER
AN ALCOA COMPANY

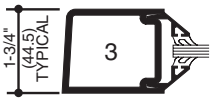
SCALE 3" = 1' 0"

190 NARROW STILE

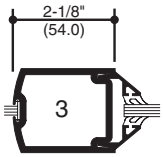






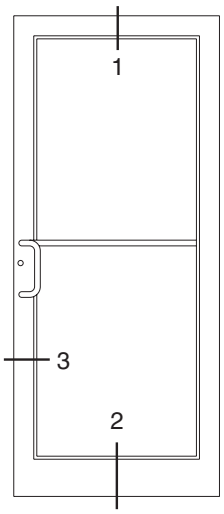


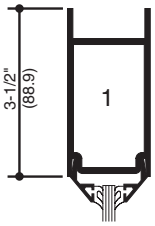
SINGLE ACTING

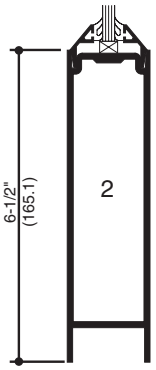


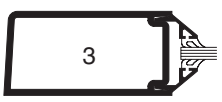
DOUBLE ACTING

350 MEDIUM STILE

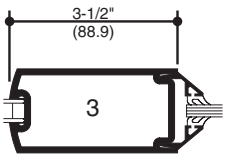






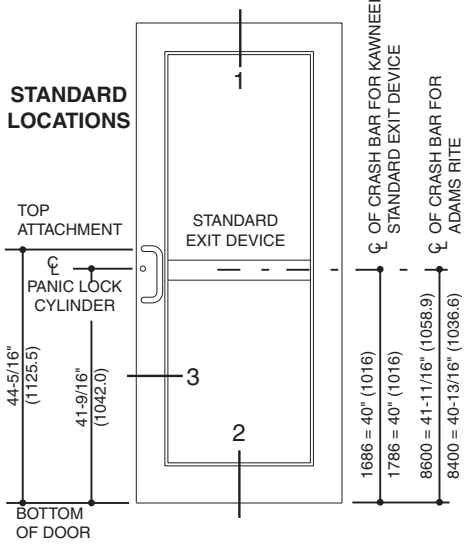


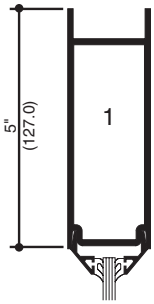
SINGLE ACTING

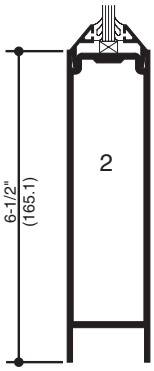


DOUBLE ACTING

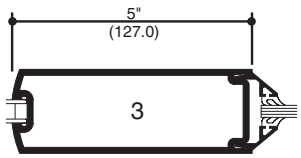
500 WIDE STILE







SINGLE ACTING



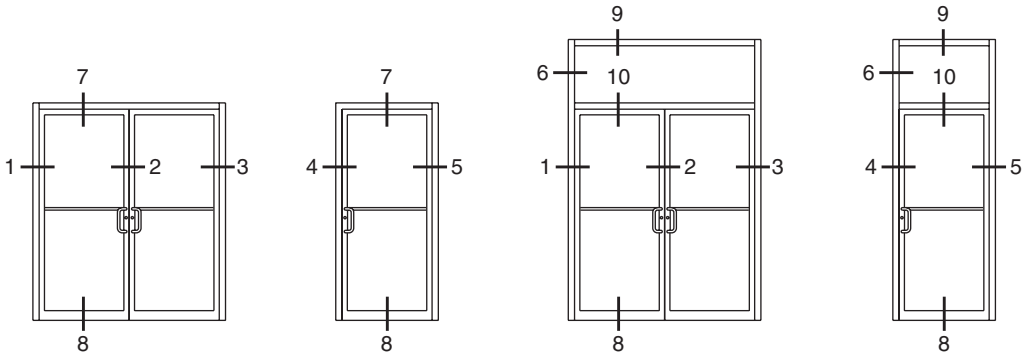
DOUBLE ACTING

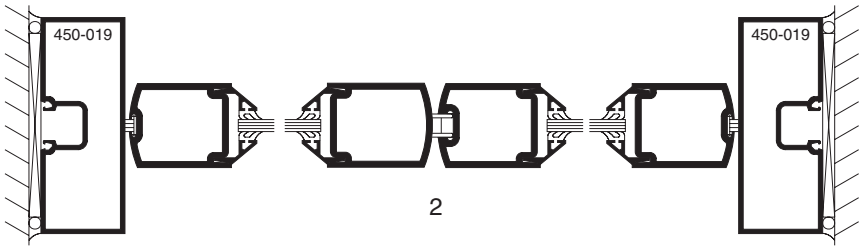
SCALE 3" = 1' 0"

NOTE:

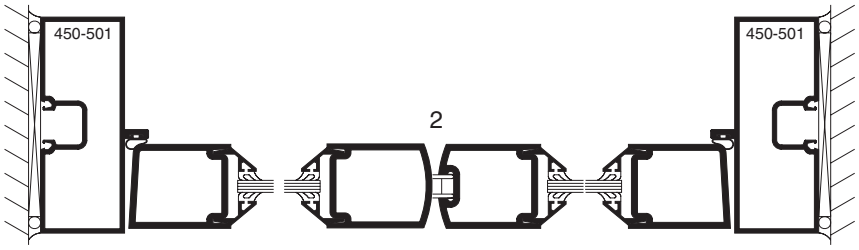
1. SERIES 190 NARROW STILE DOORS ARE DETAILED, MEDIUM STILE 350 DOORS AND WIDE STILE 500 DOORS ALSO MAY BE USED.

2. TRIFAB® VG 450 CENTER, 1-3/4" X 4-1/2" (44.5 X 114.3) FRAMING IS DETAILED WITH THE DOORS FOR REFERENCE. OTHER KAWNEER FRAMING SERIES OR CURTAIN WALL SYSTEMS MAY BE USED. REFER TO THE CATALOG INDEX FOR THE APPROPRIATE DETAIL SECTION.

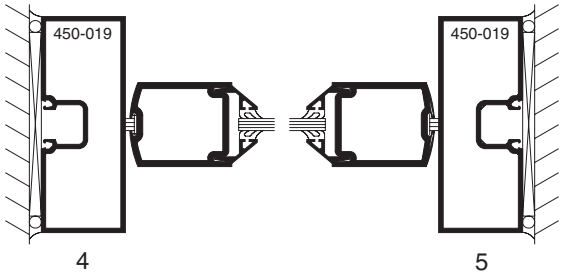




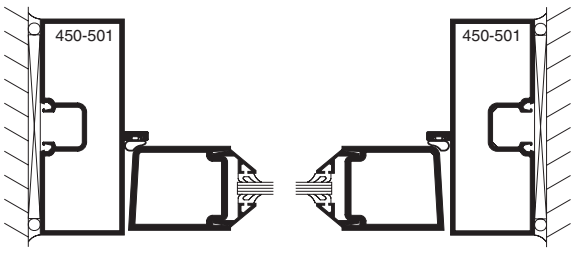
PAIR OF DOUBLE ACTING DOORS



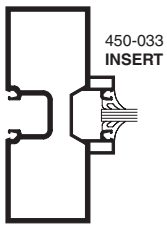
PAIR OF SINGLE ACTING DOORS



DOUBLE ACTING DOOR

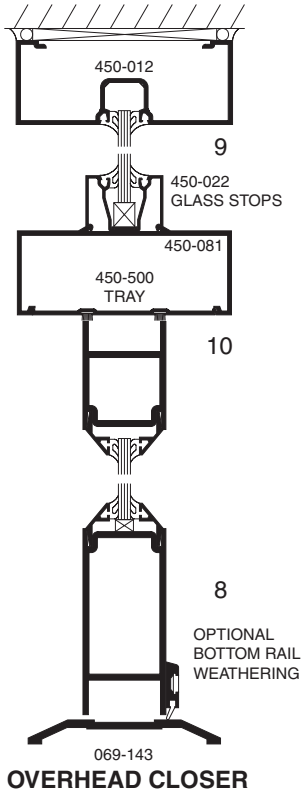


SINGLE ACTING DOOR

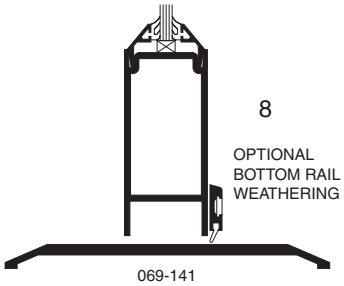


SCALE 3" = 1' 0"

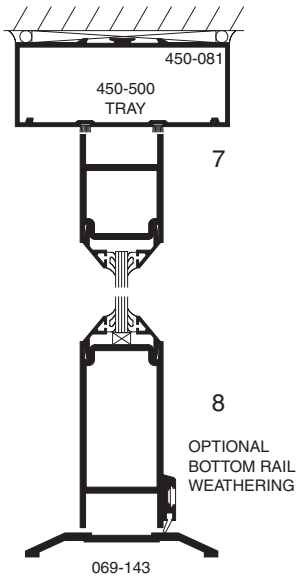
DOUBLE ACTING DOORS



OVERHEAD CLOSER

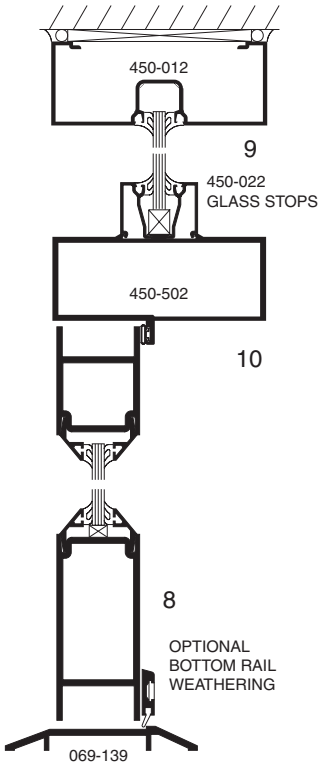


FLOOR CLOSER

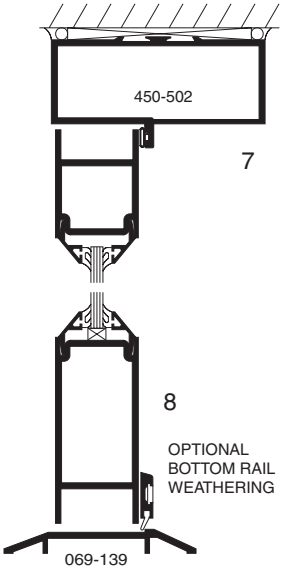


OVERHEAD CLOSER

SINGLE ACTING DOORS

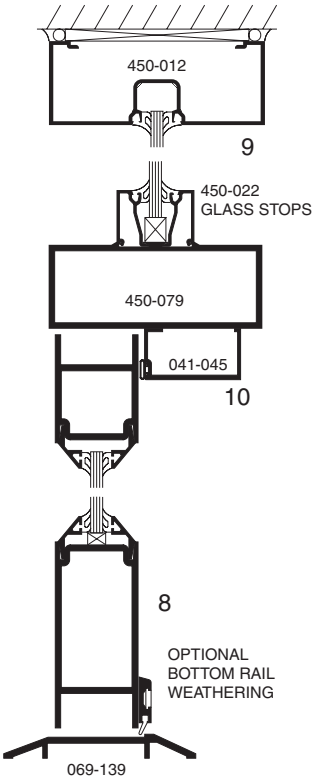


OVERHEAD CLOSER

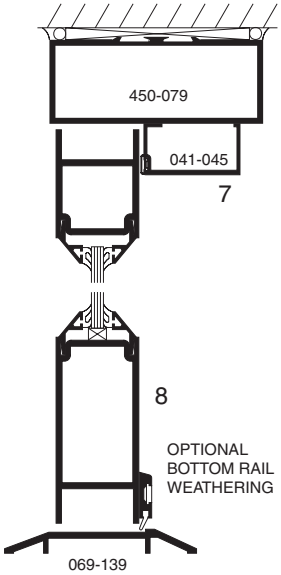


OVERHEAD CLOSER

COC WITH SINGLE ACTING OFFSET ARM



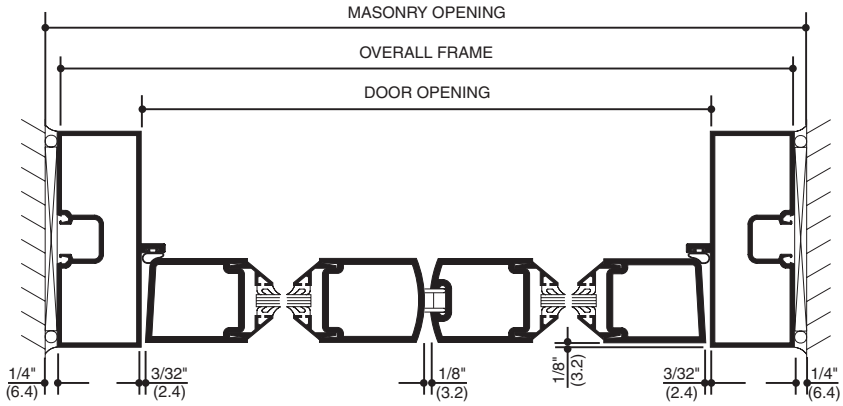
OVERHEAD CLOSER

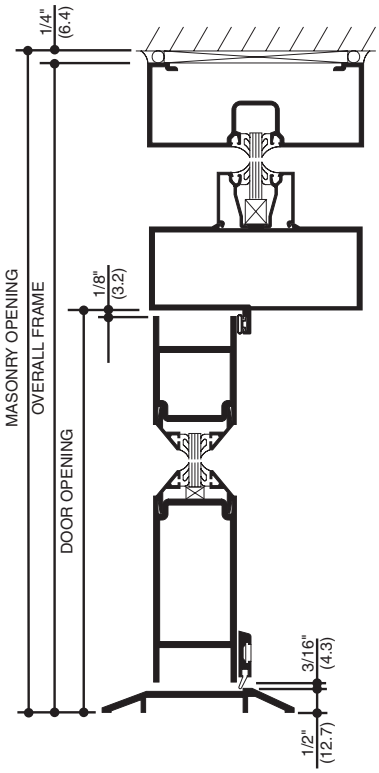


OVERHEAD CLOSER

SCALE 3" = 1' 0"

DIMENSIONS ARE NOMINAL





STOCK SIZES (TRIFAB® 400 & TRIFAB® VG 450 CENTER FRAMES)

WITHOUT TRANSOM

Door Opening Dimension	Overall Frame Dimension	Masonry Opening Dimension
3'-0" x 7'-0" (914 x 2134)	3'-3 1/2" x 7'-1 3/4" (1003 x 2178)	3'-4" x 7'-2" (1016 x 2185)
3'-6" x 7'-0" (1067 x 2134)	3'-9 1/2" x 7'-1 3/4" (1156 x 2178)	3'-10" x 7'-2" (1168 x 2185)
6'-0" x 7'-0" (1829 x 2134)	6'-3 1/2" x 7'-1 3/4" (1918 x 2178)	6'-4" x 7'-2" (1930 x 2185)

WITH TRANSOM

Door Opening Dimension	Overall Frame Dimension	Masonry Opening Dimension
Unchanged from above.	Add 3'-1 3/4" (959) to above heights.	Add 3'-1 3/4" (959) to above heights.

STOCK SIZES (TRIFAB® VG 451 CENTER FRAMES)

WITHOUT TRANSOM

Door Opening Dimension	Overall Frame Dimension	Masonry Opening Dimension
3'-0" x 7'-0" (914 x 2134)	3'-4" x 7'-2" (1016 x 2185)	3'-4 1/2" x 7'-2 1/4" (1029 x 2191)
3'-6" x 7'-0" (1067 x 2134)	3'-10" x 7'-2" (1168 x 2185)	3'-10 1/2" x 7'-2 1/4" (1181 x 2191)
6'-0" x 7'-0" (1829 x 2134)	6'-4" x 7'-2" (1930 x 2185)	6'-4 1/2" x 7'-2 1/4" (1943 x 2191)

WITH TRANSOM

Door Opening Dimension	Overall Frame Dimension	Masonry Opening Dimension
Unchanged from above.	Add 3'-1 1/2" (953) to above heights.	Add 3'-1 1/2" (953) to above heights.

	STANDARD	OPTIONAL
Doors	Narrow stile 190 doors prepared for attachment hardware.	Medium stile 350 or wide stile 500.
Door Sizes	Stock sizes shown on page 9.	Any size up to 4'-0" x 8'-0" (1219 x 2438).
Glass Stops	Beveled glass stops for 1/4" (6.4) or 3/16" (4.0) infill.	Square glass stops for 3/16" (4.0) or 1/4" (6.4) infill. Also 1" (25.4) stops.
Door Frames	**Trifab® 400** - 1-3/4" x 4" (44.5 x 101.6) for single glazing. **Trifab® VG 450** Center - 1-3/4" x 4-1/2" (44.5 x 114.3) for single glazing or **Trifab® VG 451** Center - 2" x 4-1/2" (50.8 x 114.3) for double glazing.	Any Kawneer framing system suitable for door frames may be selected, but manufactured per order.
Push-Pulls	**Single Acting:** - Architects Classic Hardware "CO-9" Pull and "CP-II" Push Bar. - Architects Classic Hardware "CO-9" Pull and "CP" Push Bar. **Double Acting:** - Architects Classic Hardware "CP" Push Bars.	**Single Acting:** - Architects Classic Hardware "CO-12" and "CP-II" push bar. - Architects Classic Hardware "CO-12" and "CP" push bar. - Architects Classic Hardware "CO-9"/"CO-9" Pulls. - Architects Classic Hardware "CO-12"/"CO-12" Pulls. **Double Acting:** - Architects Classic Hardware "CO-9"/"CO-9" Pulls. - Architects Classic Hardware "CO-12"/"CO-12" Pulls.
Door Closers	**Single Acting:** - Norton 1601 adjustable or 1601 BF adjustable surface closer with back-check and with or without adjustable hold-open. - Standard concealed overhead closer with single acting offset arm. **Double Acting:** Standard concealed overhead closer with 90 degree or 105 degree hold-open or without hold open. For heavy traffic & high wind applications, a supplemental door stop is recommended.	**Single Acting:** - LCN 4040 surface closer with or without adjustable hold-open. - LCN 2010, 2030 or 5010 concealed overhead closers with or without hold-open. - LCN 1260 adjustable surface closer. - Norton 8100 surface closer with a 50% spring power adjustment (for opening forces of less than 8 pounds). Closer is available with standard back-checks and with or without the hold-open feature. - International single acting concealed overhead closer. - DOM/Falcon SC 60 Surface closer. **Double Acting:** International overhead concealed closer.
Pivots / Butts	**Single Acting:** Kawneer top and bottom offset pivots (or) Kawneer top and bottom 4 1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with non-removable pin (NRP). **Double Acting:** Kawneer bottom center pivots for use with concealed overhead closer.	**Double Acting:** Kawneer top center (walking beam) pivot for use with floor closers.
Intermediate Pivots/Butts	**Single Acting:** Kawneer intermediate offset pivot (or) Kawneer 4-1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with non-removable pin (NRP).	**Single Acting:** Rixson M-19 or IVES #7215-INT intermediate offset pivot.
Power Transfers	**Single Acting:** Kawneer EL intermediate offset pivot (or) Kawneer EL 4 1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with wire transfer or EPT (Electric Power Transfer).	
Power Supply	**SP 1000 Power Supply:** For use with EL exit devices.	**PS1, PS5-4, and PS5-6 Power Supplies:** For use with Kawneer 1686 EL and 1786 EL exit devices only.
Locks - Active Leaf	Adams-Rite MS 1850A deadlock with two 1-5/32" (29.4) diameter 5 pin cylinders.	Adams-Rite #4510 latch lock. Adams-Rite #1850A-500 short throw deadlock. Adams-Rite #1850A-505 hookbolt lock. Adams-Rite #4015 two-point Lock. Adams-Rite #4085 three-point Lock. Adams-Rite #4089 exit indicator. Kawneer cylinder guard. Kawneer thumbturn (in lieu of cylinder).

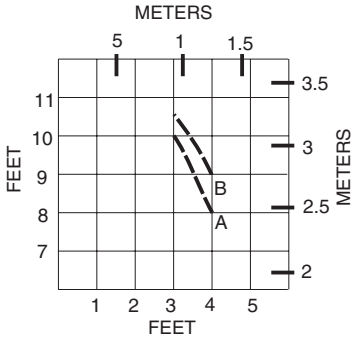
	STANDARD	OPTIONAL
Locks - Inactive Leaf	One pair of Kawneer flush bolts in the inactive leaf of a pair of doors.	**Controller®** is a 3-point locking system consisting of a two point locking device in the inactive leaf in lieu of flush bolts, working in conjunction with the MS 1850A deadlock in the active leaf. This combination provides for greater security than possible with flush bolts and complies with the life safety considerations of building codes which prohibit the use of flush bolts.
Thresholds	A 1/2" x 4" (12.7 x 101.6) aluminum mill finish threshold.	A 1/2" x 6-3/4" (12.7 x 171.5) aluminum mill finish threshold.
Weathering	**Single Acting:** SEALAIR® weathering system in the door and frame consisting of a dense, bulb polymeric material, which remains resilient and retains its weathering ability under temperature extremes. (The system is complete with an optional EPDM blade gasket sweep strip applied to the bottom door rail with concealed fasteners). **Double Acting:** Pile cloth weathering in the door and frame.	Bottom Door Sweep
Exit Device	**Kawneer 1686 Concealed Rod Exit Device** with or without a mortised type cylinder. **Kawneer 1786 Rim Exit Device** is a rim type exit device with or without a rim type cylinder. Pairs of doors require a Kawneer RM-86 removable mullion.	**Kawneer 1686 EL Concealed Rod Exit Device** electric modification is available. **Kawneer 1786 EL Rim Exit Device** electric modification is available. **Dor-O-Matic/Falcon EL 1690** electric modification is also available. **Dor-O-Matic/Falcon EL 1790** electric modification is also available **Paneline® EL** exit device is a concealed rod exit device applicable to single or pairs of doors. It features an activating panel contained within the door cross rail. **Paneline® EL** electric modification is also available. **Dor-O-Matic/Falcon 1490 and 1990** are concealed rod exit devices with or without a rim type cylinder. **Dor-O-Matic/Falcon 1590 and 2090** are rim type exit devices with or without a rim type cylinder. Pairs of doors require a removable aluminum mullion. Mullion RM-150 with the DOM/Falcon 1590 exit device and RM-70 with the DOM/Falcon 2090 exit device.
	Exit Device Pulls: Architects Classic "CO-9" pull handle with Dor-O-Matic/Falcon 1690 and 1790 exit devices. Kawneer "CPN" pull handle with Paneline exit device. The overall height of the pull matches the height of the Paneline cross rail.	**Optional Exit Device Pulls:** Kawneer Architects Classic "CO-12" pull handle with Dor-O-Matic/Falcon 1690 and 1790 exit devices.

APPLICATION CRITERIA

As indicated on Page 9, the standard sizes of swing doors are 3'-0" x 7'-0" (914.4 x 2133.6) or 3'-6" x 7'-0" (1067 x 2134) for single doors and 6'-0" x 7'-0" (1828.8 x 2133.6) for pairs of doors. When these sizes are exceeded the following criteria should be administered.

1. Larger doors should not be subject to heavy traffic or strong prevailing wind conditions.
2. Larger doors should use a door closer with a good back check action.
3. When a door exceeds 9'-0" (2743.2) in height, a cross rail or push bar is recommended to reinforce the vertical stiles.
4. When an offset hung door exceeds 7'-6" (2286.0) in height, an intermediate butt or offset pivot should be used.
5. Tall doors should be prevented from racking by proper utilization of hardware, including door closers, door holders and door stops.

NOTE:
SOME OF THESE CRITERIA ARE OF A SUBJECTIVE NATURE, CONTACT YOUR FACTORY REPRESENTATIVE FOR APPLICATION ASSISTANCE.



MAXIMUM SIZE DOOR LEAFS GLAZED WITH 1/4" (6.4) GLASS

A = NARROW STILE 190

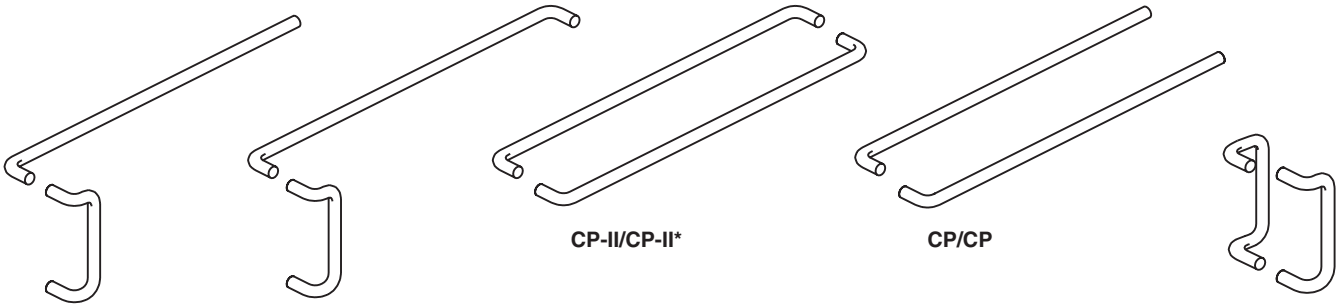
B = MEDIUM STILE 350 OR WIDE STILE 500

MAXIMUM DOOR HEIGHT FOR PANELINE EL = 8'-0"

REFER TO **HARDWARE SECTION** FOR COMPLETE HARDWARE INFORMATION.

ARCHITECTS CLASSIC (PUSH PULL SETS)

SINGLE ACTING DOORS USE A PULL HANDLE AND PUSH BAR AS STANDARD
DOUBLE ACTING DOORS USE CP PUSH BARS BACK TO BACK AS STANDARD.



CO-9/CP
CO-12/CP

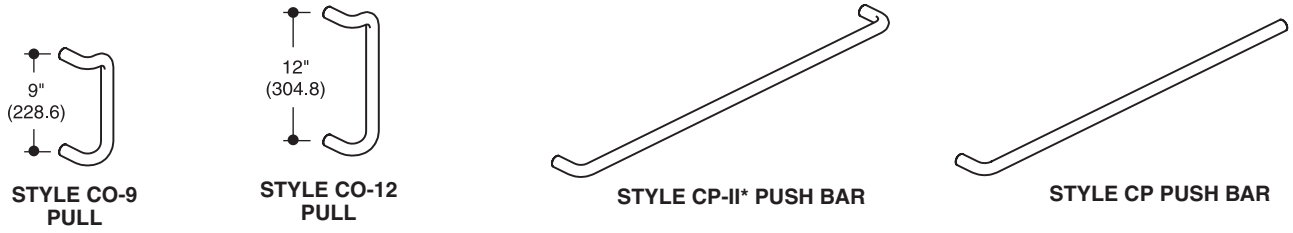
CO-9/CP-II
CO-12 /CP-II

CP-II/CP-II*

CP/CP

CO-9/CO-9
CO-12/CO-12

ARCHITECTS CLASSIC (COMPONENTS)



STYLE CO-9 PULL

STYLE CO-12 PULL

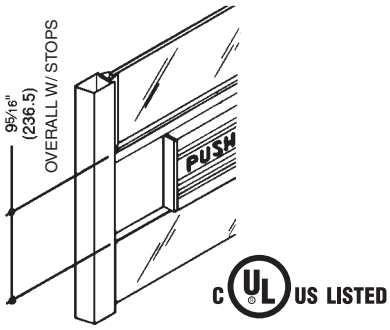
STYLE CP-II* PUSH BAR

STYLE CP PUSH BAR

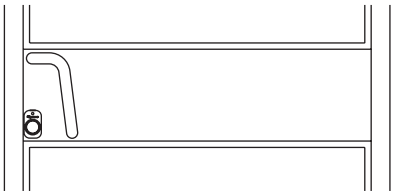
* CP-II PUSH BAR IS NOT TO BE USED FOR BACK TO BACK MOUNTING ON D/A DOORS.

EXIT DEVICES

KAWNEER PANELINE® / PANELINE® EL



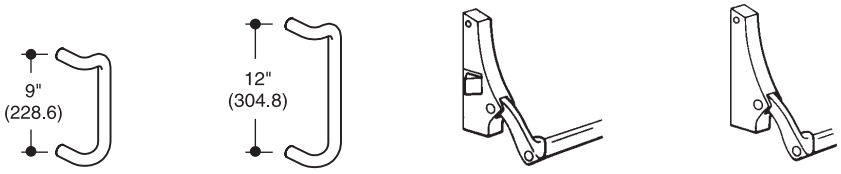
STYLE"CPN" PULL ON EXTERIOR OF DOOR



EXTERIOR VIEW OF 190 DOOR (350/500 SIMILAR)
"CPN" PULL AND OPTIONAL CYLINDER GUARD SHOWN.

SEE PAGE 13 FOR COMPLETE PANELINE® INFORMATION

PANICS AND PULLS

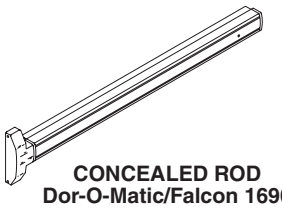


STYLE "CO-9" PULL

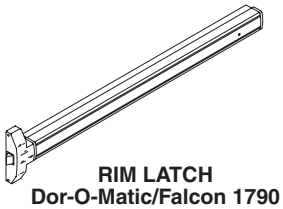
STYLE "CO-12" PULL

RIM LATCH
Dor-O-Matic/
Falcon 2090

CONCEALED ROD
Dor-O-Matic/
Falcon 1990

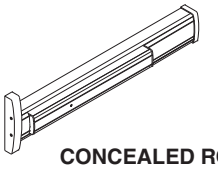


CONCEALED ROD
Dor-O-Matic/Falcon 1690
Dor-O-Matic/Falcon EL 1690

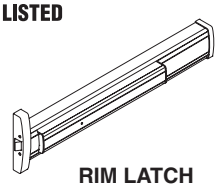


RIM LATCH
Dor-O-Matic/Falcon 1790
Dor-O-Matic/Falcon EL 1790

c UL US LISTED



CONCEALED ROD
Kawneer 1686
Kawneer 1686 EL



RIM LATCH
Kawneer 1786
Kawneer 1786 EL

190/350/500 STANDARD ENTRANCES

The Paneline concealed rod exit device for 190, 350 and 500 doors will accommodate variations in stile width and door width as shown in the following illustrations. Sidelites adjacent to Paneline equipped doors not requiring exit devices may be fitted with fixed panels as detailed below to match the general appearance of the Paneline cross rail.

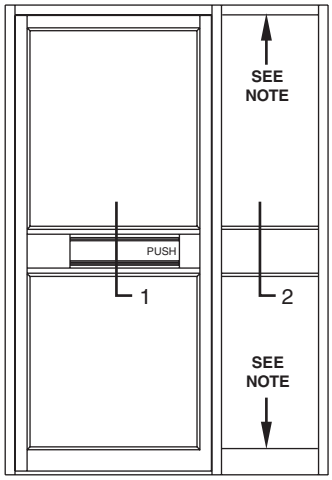
The Optional Paneline® EL device is designed for electrified access control and is compatible with most key pad and card reader systems.

See **Hardware Section** for complete description of Paneline hardware, including finish of units.

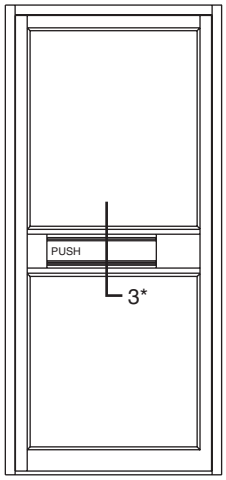
Paneline uses mortise cylinder in lieu of the normal rim-type.
Dummy Paneline units are not for use with any type of lock.

INTERIOR ELEVATIONS

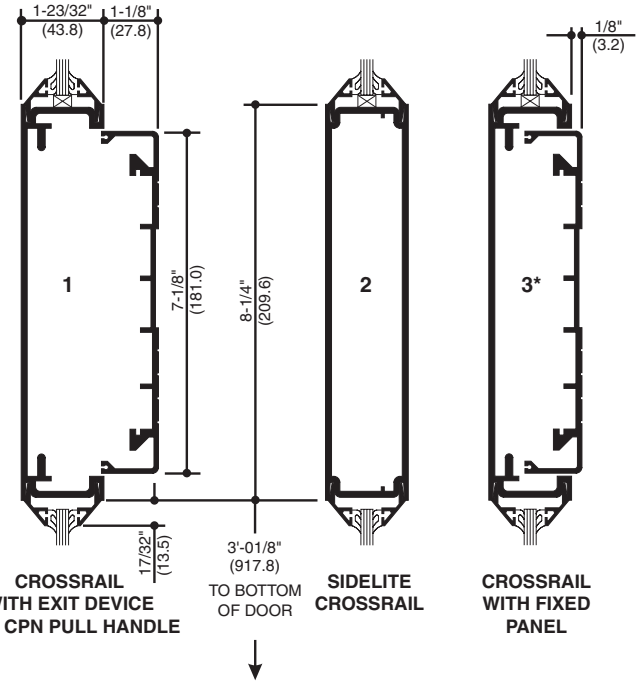
NOTE: Sidelites must be stop glazed above and below rail.



ACTIVE DOOR **SIDELITE**



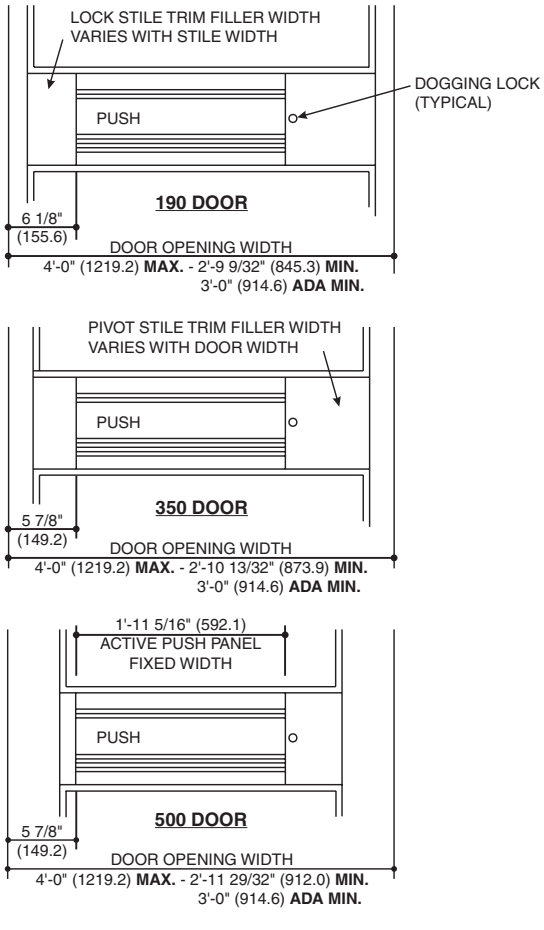
***VESTIBULE DOOR**
(Without Exit Device or Lock)



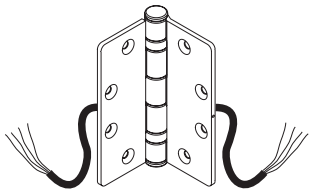
CROSSRAIL WITH EXIT DEVICE AND CPN PULL HANDLE

SIDELITE CROSSRAIL

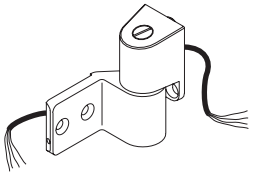
CROSSRAIL WITH FIXED PANEL



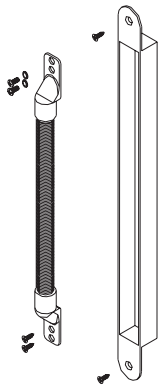
PANELINE® EL COMPONENTS



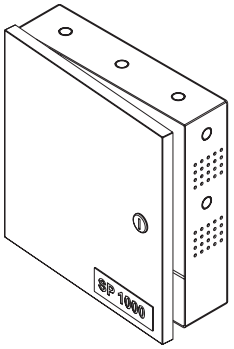
POWER TRANSFER INTERMEDIATE BUTT HINGE



POWER TRANSFER INTERMEDIATE OFFSET PIVOT



ELECTRIC POWER TRANSFER (EPT)



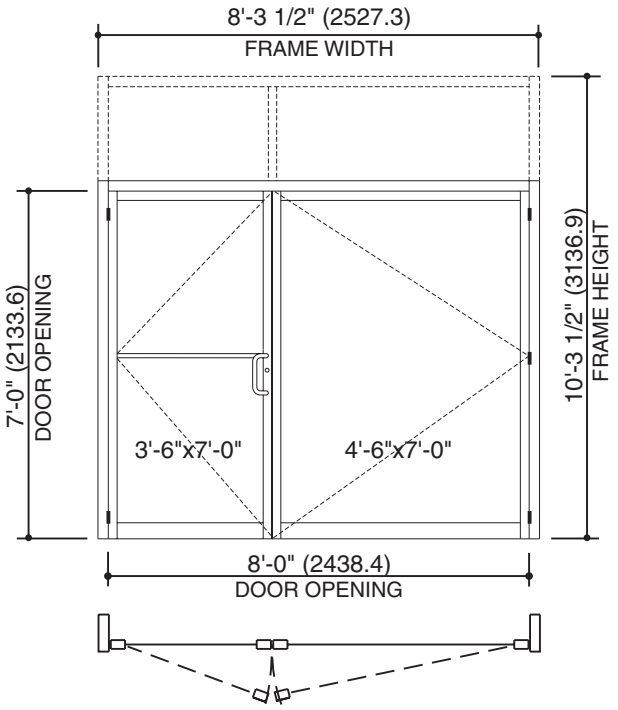
SP 1000 POWER SUPPLY

KAWNEER
AN ALCOA COMPANY

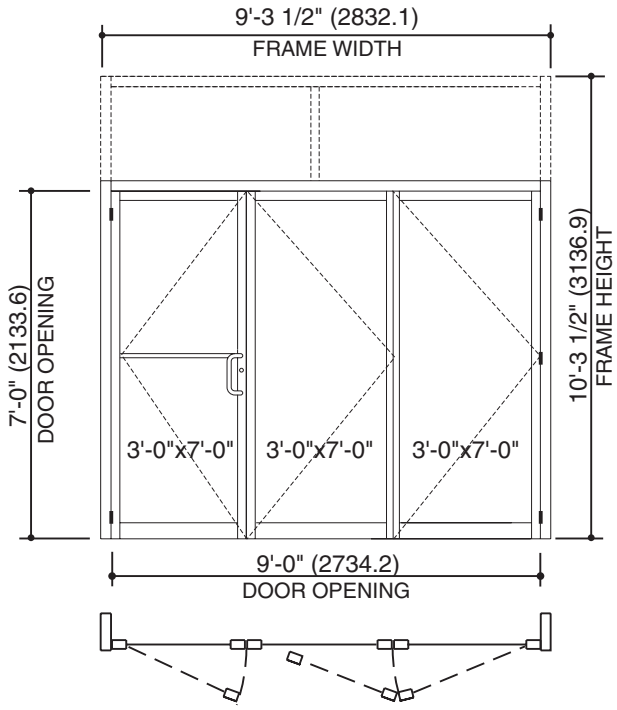
SCALE 3" = 1'-0"

NOTE: 1/4" GLAZING INFILL ONLY

SWING TYPE



BIFOLD TYPE



MAXIMUM ALLOWABLE SIZES

- DOOR OPENING WIDTH TO 9'-0" (2743.2)
- DOOR OPENING HEIGHT TO 8'-0" (2438.4)
- OVERALL FRAME HEIGHT TO 8'-1 3/4" (2482.9) W/O TRANSOM
- OVERALL FRAME HEIGHT TO 12'-0" (3657.6) WITH TRANSOM

AUTO SHOWROOM PACKAGE

DOORS ..... 190 NARROW STILE, 350 MEDIUM STILE AND 500 WIDE STILE DOORS.

FRAME..... TRIFAB® VG 450 CENTER.

CLOSER..... NORTON 1601 ADJUSTABLE OR 1601 BF ADJUSTABLE SURFACE CLOSER (ACTIVE LEAF ONLY).

BUTT HINGES ..... ONE PAIR 4-1/2" x 4" (114.3 x 101.6) BALL BEARING BUTTS ON ACTIVE LEAF, ONE AND ONE HALF PAIR ON INACTIVE LEAVES AT HINGE JAMB. CONTINUOUS HINGE ON INACTIVE LEAVES.

LOCKS..... ADAMS-RITE MS1850A WITH (2) CYLINDERS ON ACTIVE LEAF.

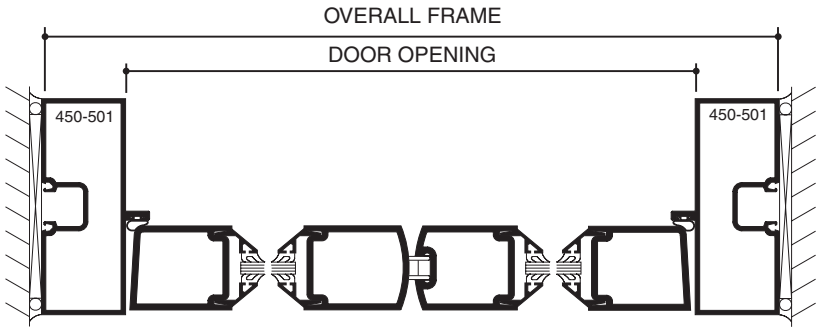
FLUSHBOLTS..... ONE PAIR EDGE MOUNTED FOR INACTIVE LEAVES (FACE MOUNTED ON #2 INACTIVE LEAF OF BIFOLD TYPE).

THRESHOLD ..... 1/2" x 4" (12.7 x 101.6) ALUMINUM.

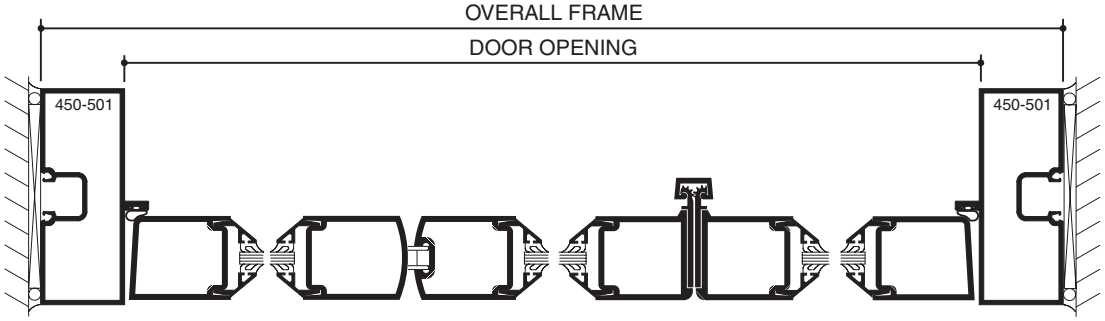
RISER BLOCK..... EXTRUDED ALUMINUM BLOCK APPLIED TO BOTTOM RAIL OF EACH INACTIVE LEAF.

OPTIONAL CASTER ..... IN LIEU OF RISER BLOCK, FACE APPLIED CASTER TO LEADING STILE OF INACTIVE LEAF.

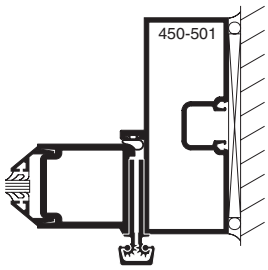
SCALE 3" = 1' 0"



SWING TYPE



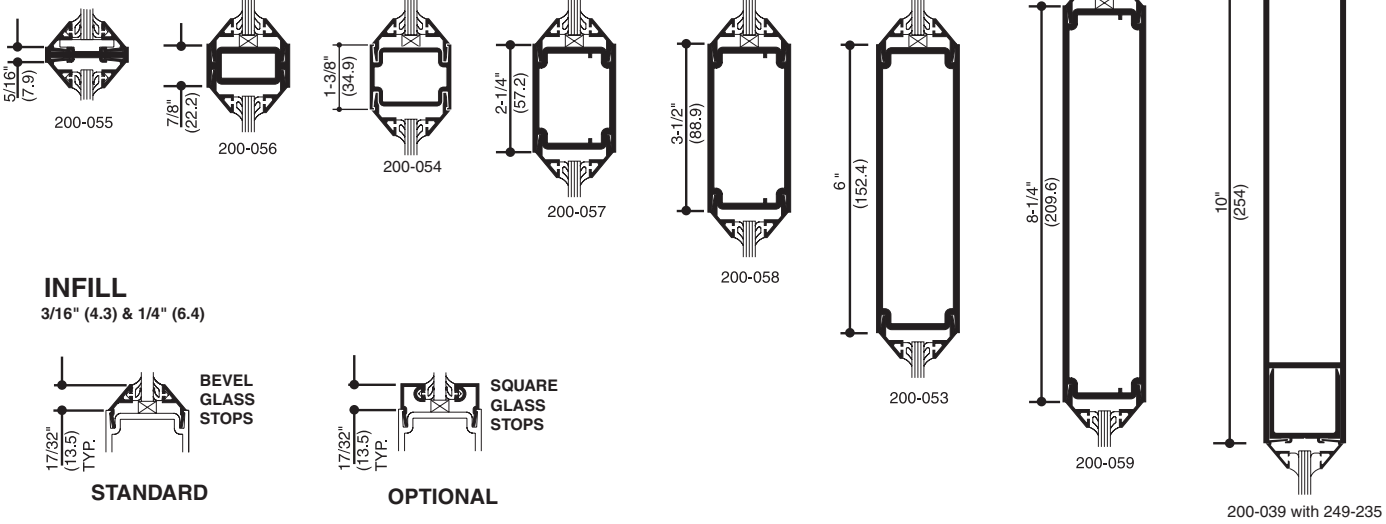
BIFOLD TYPE



OPTIONAL CONTINUOUS HINGE JAMB

SCALE 3" = 1' 0"

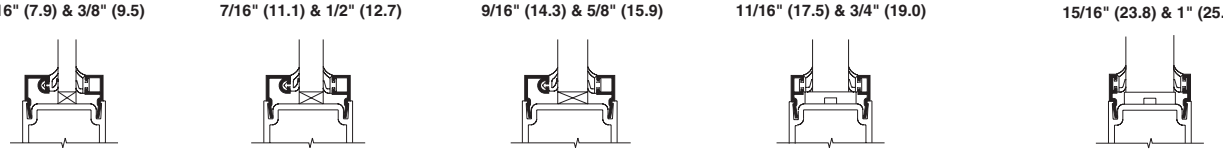
HORIZONTAL / VERTICAL INTERMEDIATE RAILS



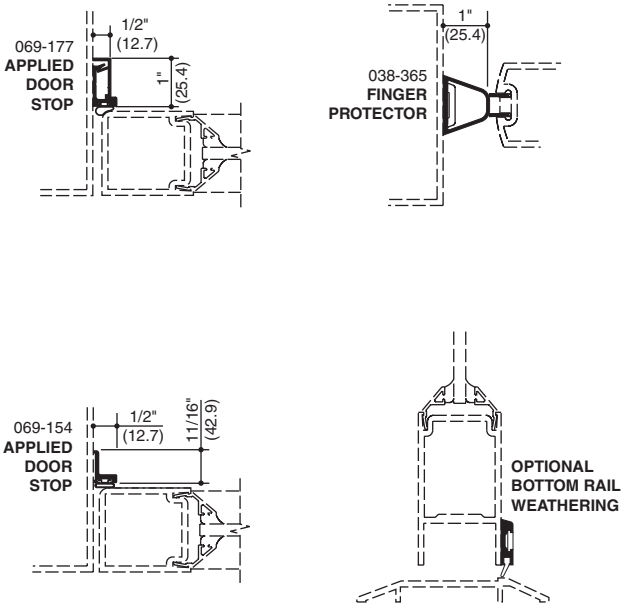
INFILL

3/16" (4.3) & 1/4" (6.4)

INFILL OPTIONS



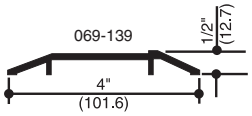
ACCESSORY ITEMS



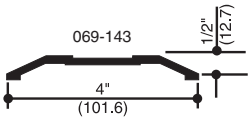
THRESHOLDS

APPLICATION

FOR SINGLE ACTING DOOR

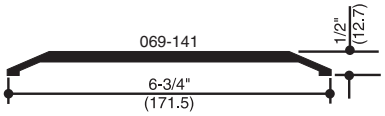


FOR CENTER HUNG CONCEALED CLOSER



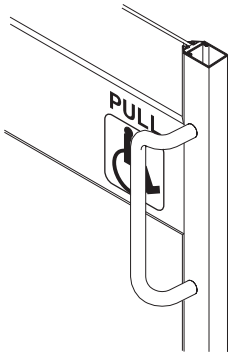
APPLIED STOP FOR SINGLE ACTING DOOR

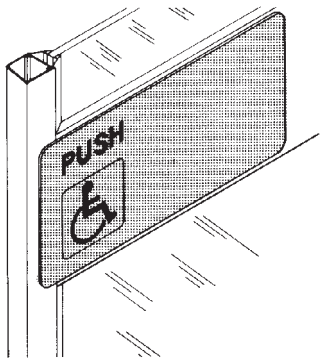
FOR CENTER HUNG FLOOR CLOSERS



***SOME BUILDING CODES LIMIT THRESHOLD HEIGHT TO 1/2" (12.7) MAX.**

PUSH-PULLS
STYLE



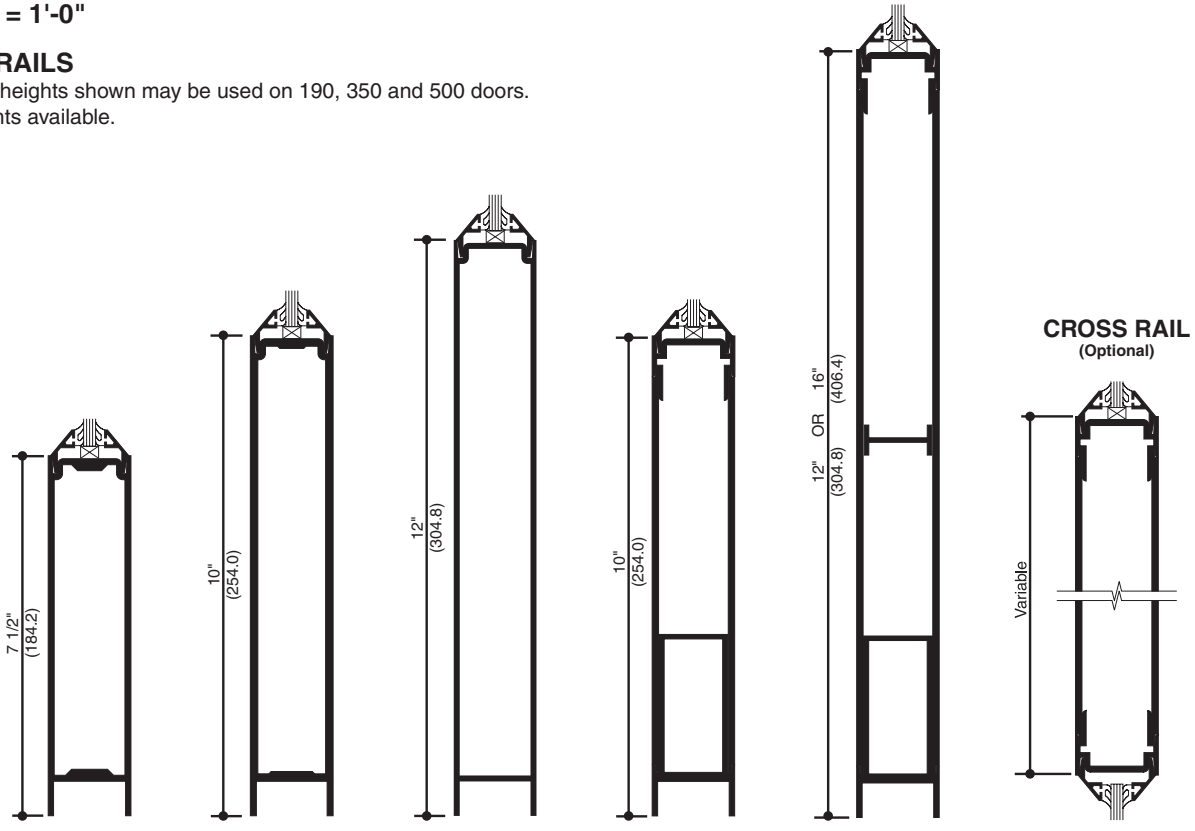


Description	Architects Classic CO-12 Pull	BF3 Push Shield with symbol
Application	Door with or without exit device	Door cross rail (omit w/exit device)
Length/Size	12" OC Pull attachment	15-7/8" x 7-7/8" (403.2 x 200.0) 1/8" (3.2) Thick
Height Location	44-5/16" from Top Mounting Hole to Btm. of Door	
Total Projection	3-1/4" (82.6) Projection	1/8" (3.2)
Material / Finish	See Hardware Section A8	Black Plastic Pebble Finish

Note: The word "Pull" and the symbol of access anodized on the exterior surface of the optional cross rail are standard - black on clear rail, clear on dark bronze or black rail. Anodized letters on push bar accent are clear on black. Letters and symbols on plastic push shield are engraved and filled with white epoxy enamel.

SCALE 3" = 1'-0"

BOTTOM RAILS
Standard rail heights shown may be used on 190, 350 and 500 doors.
Custom heights available.

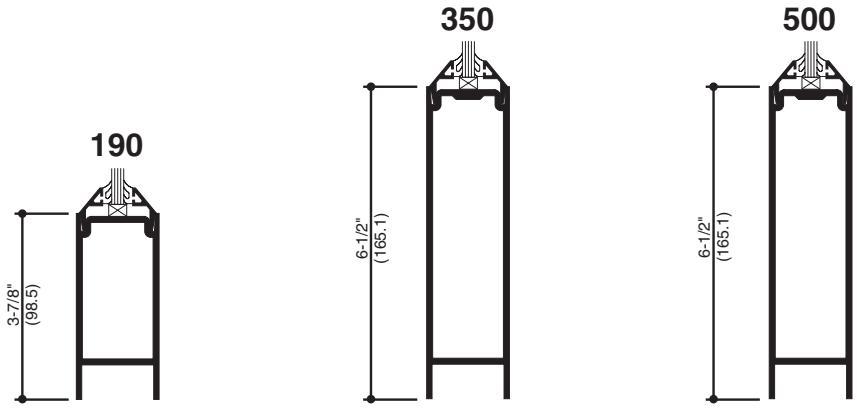


190/350/500 STANDARD ENTRANCES

BOTTOM RAILS

SCALE 3" = 1' 0"

NOTE:
See Page 16 for available Intermediate Horizontal Members.



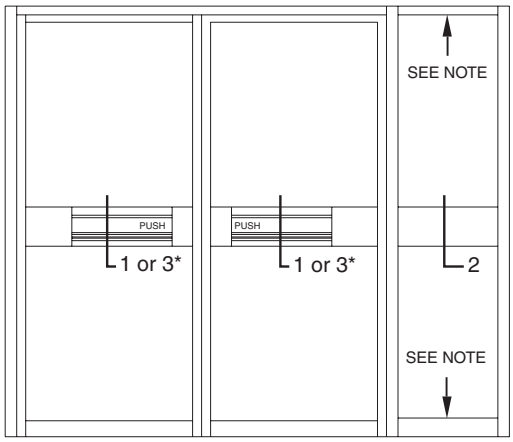
Sidelites adjacent to Paneline equipped doors not requiring exit devices may be fitted with fixed panels as detailed below to match the general appearance of the Paneline cross rail.

See **Hardware Section** for complete description of Paneline hardware, including finish of units.

Paneline uses mortise cylinder in lieu of the normal rim-type.
Dummy Paneline units should not use any type of lock.

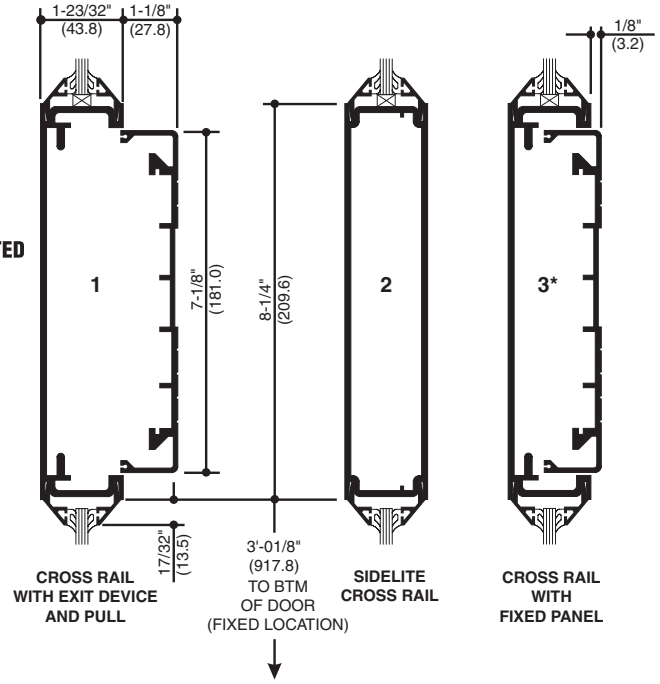
INTERIOR ELEVATION

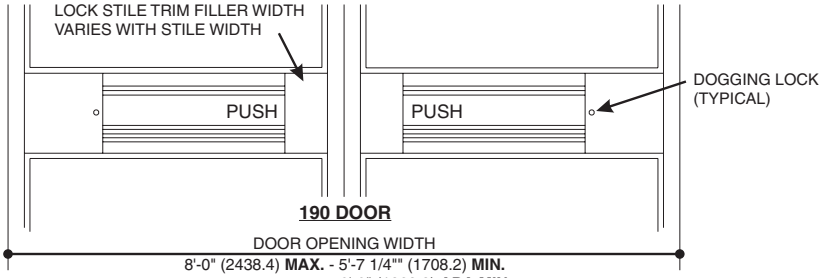
NOTE: Sidelites must be stop glazed above and below rail.

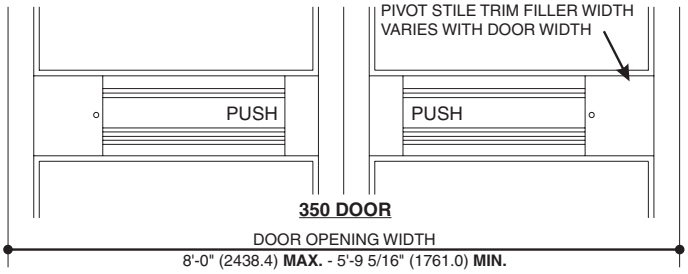


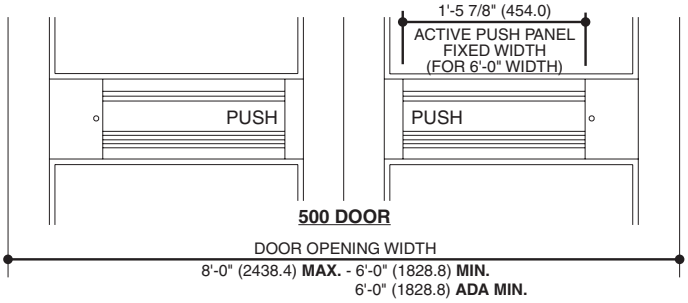
*** ALTERNATE CROSSRAIL FOR VESTIBULE DOORS (Without Exit Device or Lock)**

c UL US LISTED

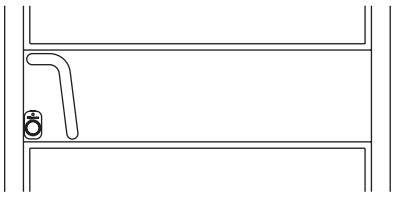






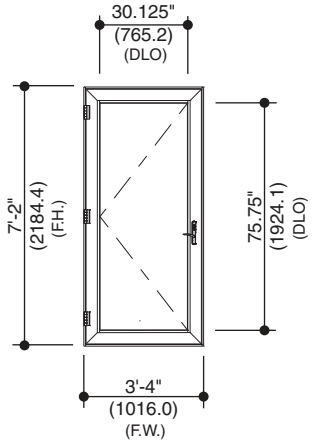


STYLE"CPN" PULL ON EXTERIOR OF DOOR



EXTERIOR VIEW OF 190 DOOR (350-500 SIMILAR) WITH "CPN" PULL AND STANDARD CYLINDER GUARD SHOWN

Project Specific U-Factor Example Calculation



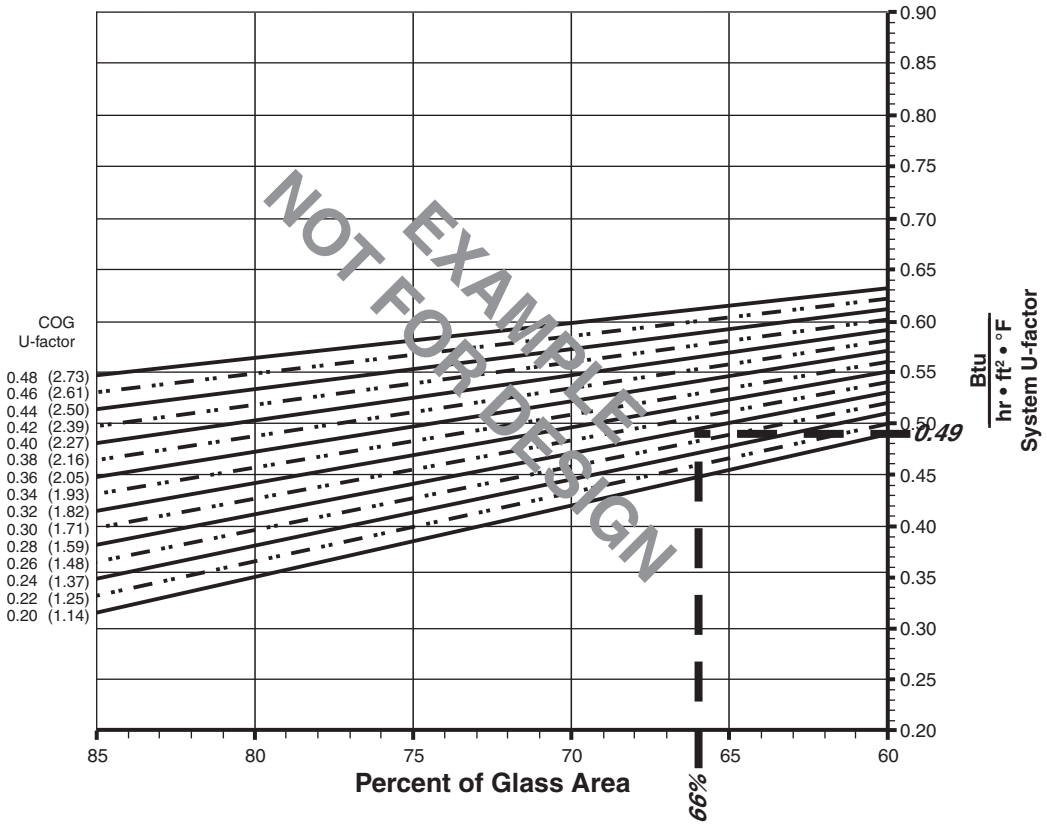
Example Glass U-Factor = 0.28 Btu/hr • ft² • °F

Total Daylight Opening = 30.125" x 75.75" = 15.85 ft²

Total Projected Area = 3'-4" x 7'-2" = 23.9 ft²

Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)100
= (15.85 ÷ 23.9)100 = 66%

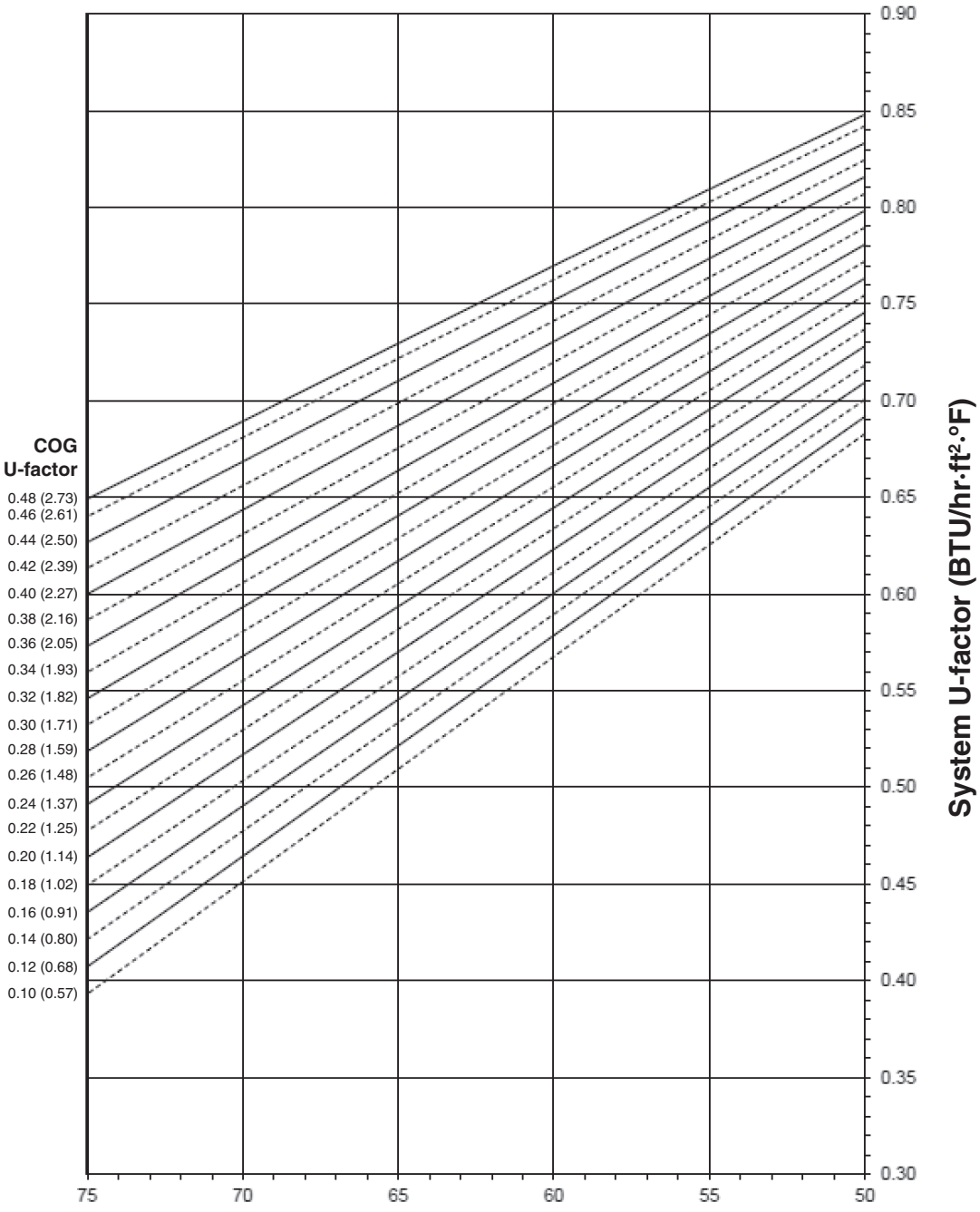
System U-factor vs Percent of Glass Area



Based on 66% glass and center of glass (COG) U-factor of 0.28
System U-factor is equal to 0.49 Btu/hr • ft² • °F

190 (SINGLE DOOR)

System U-factor vs Percent of Glass Area



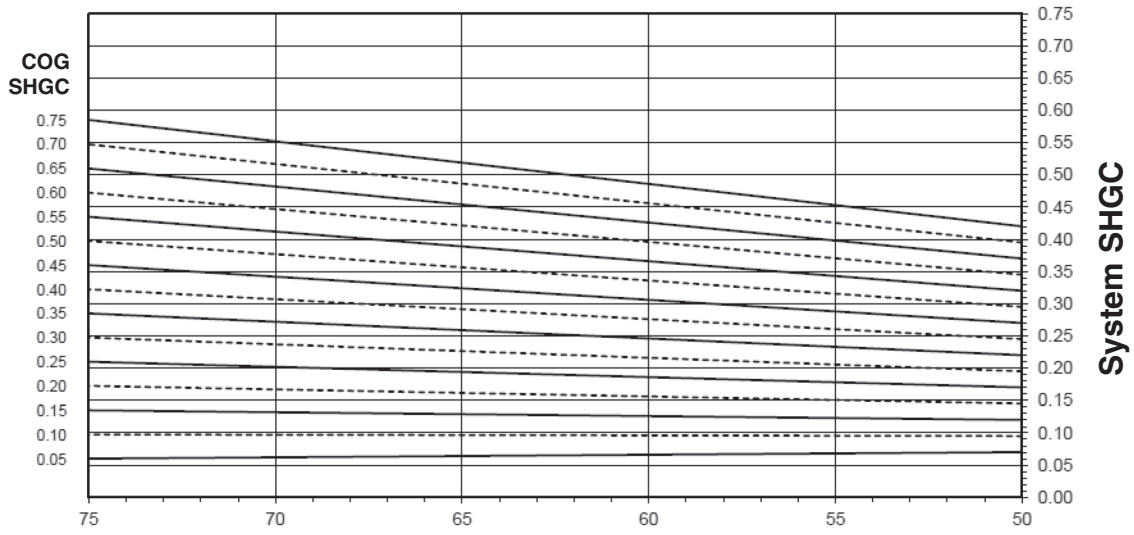
Percent of Glass = Vision Area/Total Area
(Total Daylight Opening / Projected Area)

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

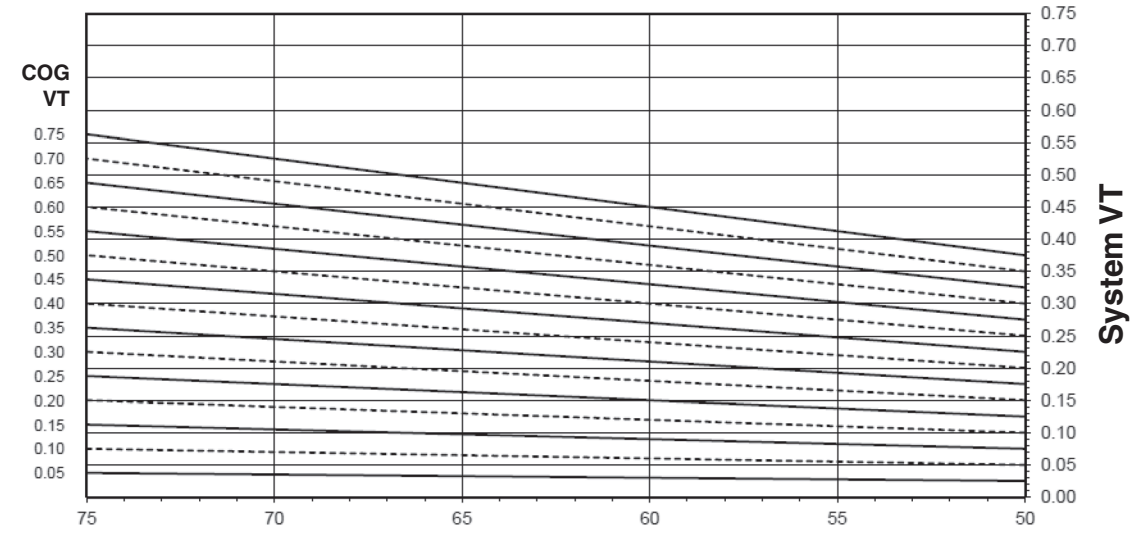
For glass values that are not listed, linear interpolation is permitted.
Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

190 (SINGLE DOOR)

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



System Visible Transmittance (VT) vs Percent of Vision Area



190 (SINGLE DOOR)

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

Glass U-Factor [3]	Overall U-Factor [4]
0.48	0.78
0.46	0.77
0.44	0.76
0.42	0.75
0.40	0.74
0.38	0.73
0.36	0.72
0.34	0.71
0.32	0.70
0.30	0.69
0.28	0.68
0.26	0.67
0.24	0.66
0.22	0.65
0.20	0.64
0.18	0.63
0.16	0.61
0.14	0.60
0.12	0.59
0.10	0.58

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 960mm wide by 2090mm high (37-3/4" by 82-3/8").

SHGC Matrix [2]

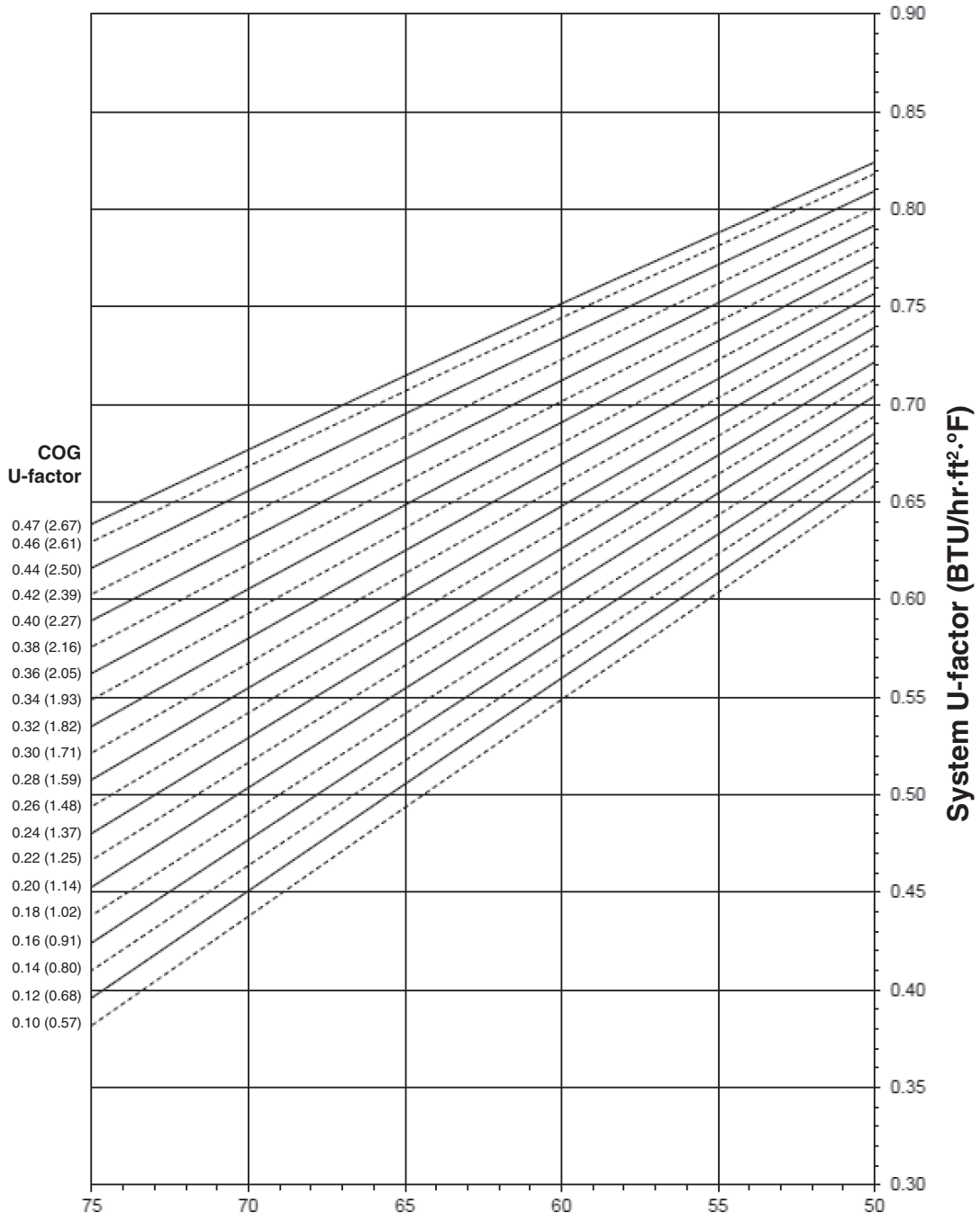
Glass SHGC [3]	Overall SHGC [4]
0.75	0.48
0.70	0.45
0.65	0.42
0.60	0.39
0.55	0.36
0.50	0.33
0.45	0.30
0.40	0.27
0.35	0.24
0.30	0.21
0.25	0.18
0.20	0.15
0.15	0.13
0.10	0.10
0.05	0.07

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.44
0.70	0.41
0.65	0.38
0.60	0.35
0.55	0.32
0.50	0.29
0.45	0.26
0.40	0.23
0.35	0.21
0.30	0.18
0.25	0.15
0.20	0.12
0.15	0.09
0.10	0.06
0.05	0.03

190 (PAIR OF DOORS)

System U-factor vs Percent of Glass Area



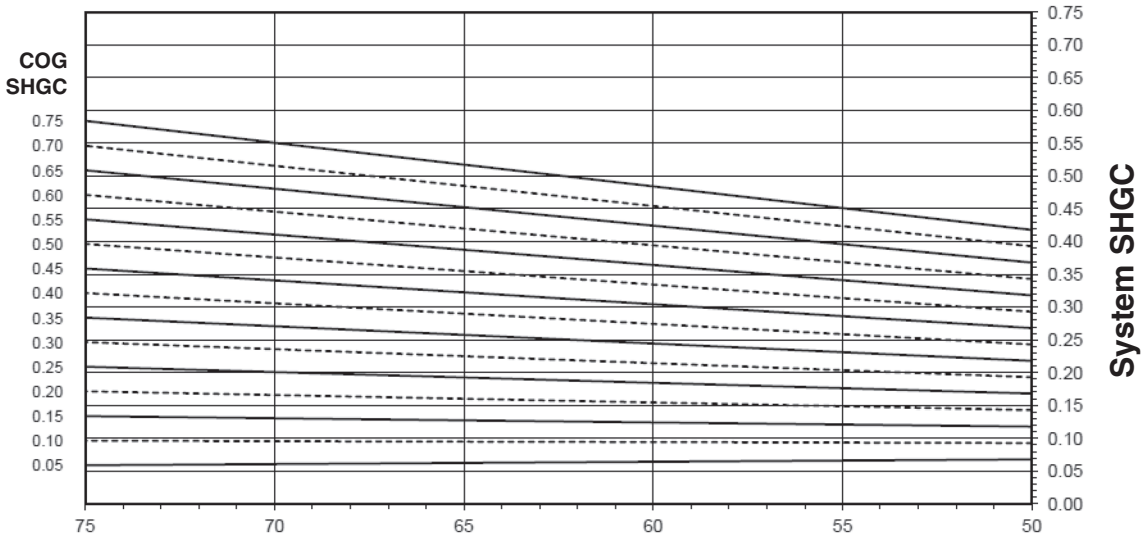
Notes for System U-Factor, SHGC and VT charts:

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

Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

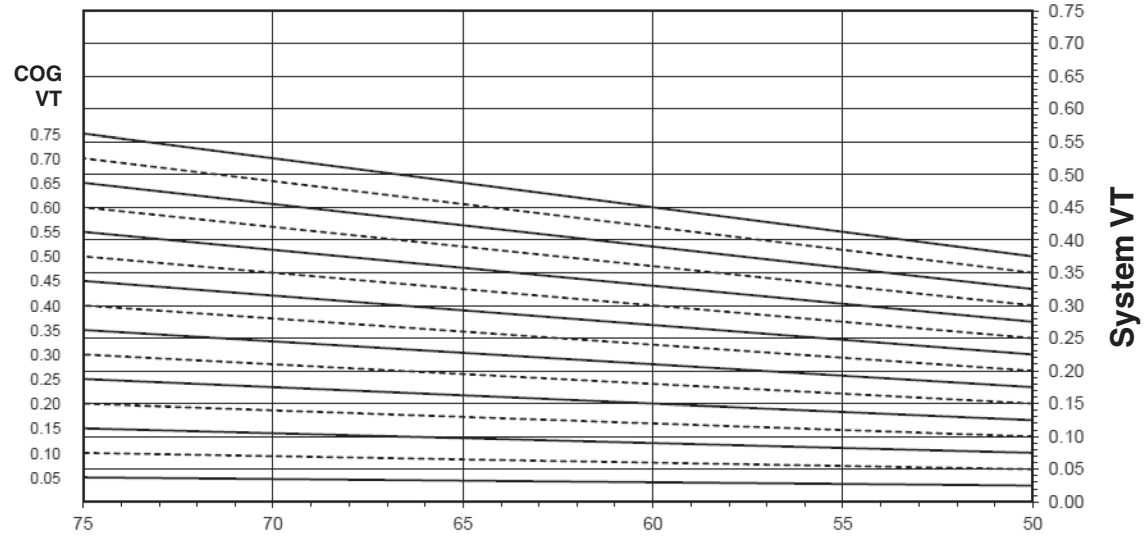
190 (PAIR OF DOORS)

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



Vision Area / Total Area (%)

System Visible Transmittance (VT) vs Percent of Vision Area



Vision Area / Total Area (%)

190 (PAIR OF DOORS)

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

Glass U-Factor [3]	Overall U-Factor [4]
0.47	0.73
0.46	0.72
0.44	0.71
0.42	0.70
0.40	0.69
0.38	0.68
0.36	0.67
0.34	0.66
0.32	0.64
0.30	0.63
0.28	0.62
0.26	0.61
0.24	0.60
0.22	0.59
0.20	0.58
0.18	0.56
0.16	0.55
0.14	0.54
0.12	0.53
0.10	0.52

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 1920mm wide by 2090mm high (75-1/2" by 82-3/8").

SHGC Matrix [2]

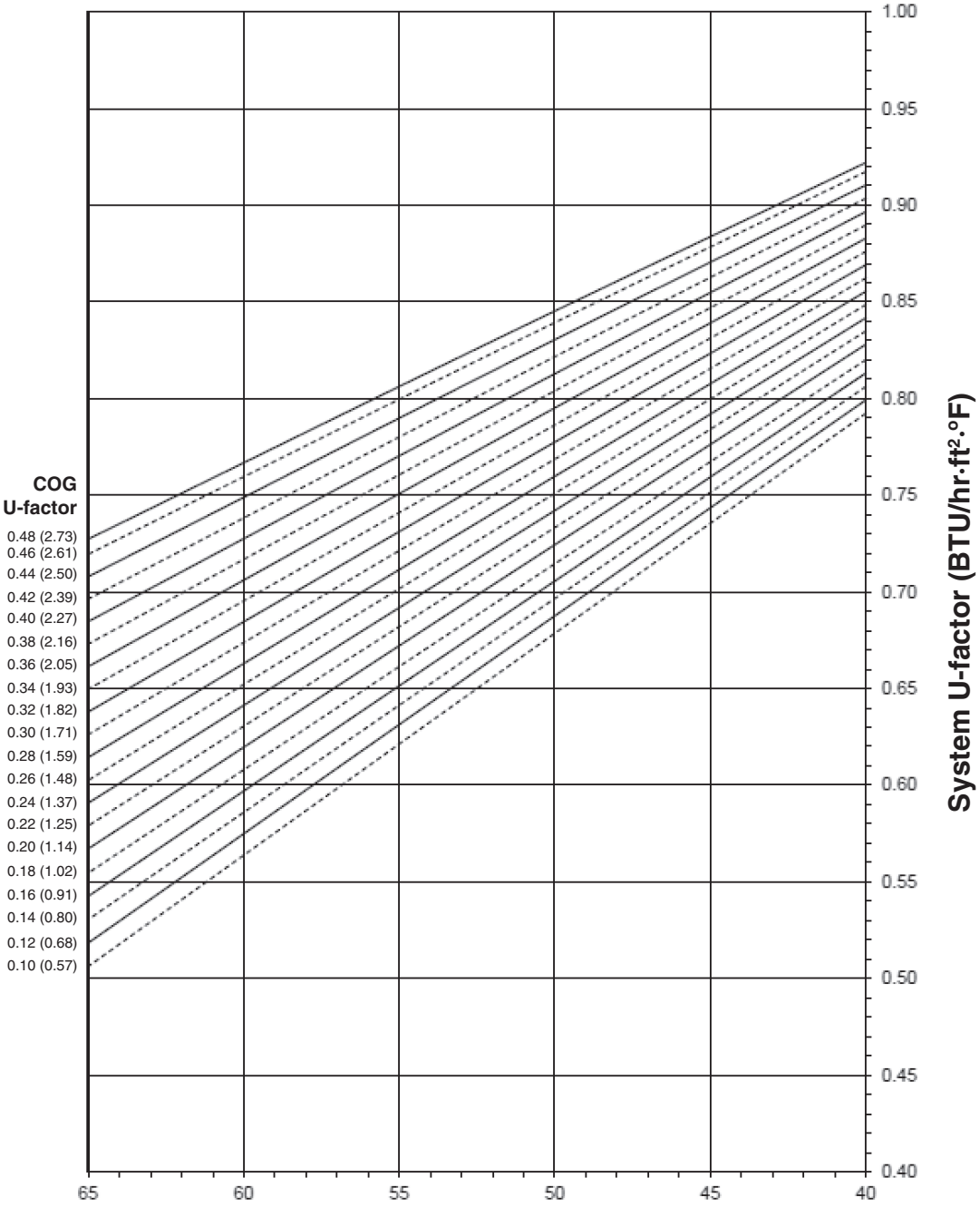
Glass SHGC [3]	Overall SHGC [4]
0.75	0.50
0.70	0.47
0.65	0.44
0.60	0.41
0.55	0.38
0.50	0.35
0.45	0.31
0.40	0.28
0.35	0.25
0.30	0.22
0.25	0.19
0.20	0.16
0.15	0.13
0.10	0.09
0.05	0.06

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	0.31
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

350 (SINGLE DOOR)

System U-factor vs Percent of Glass Area



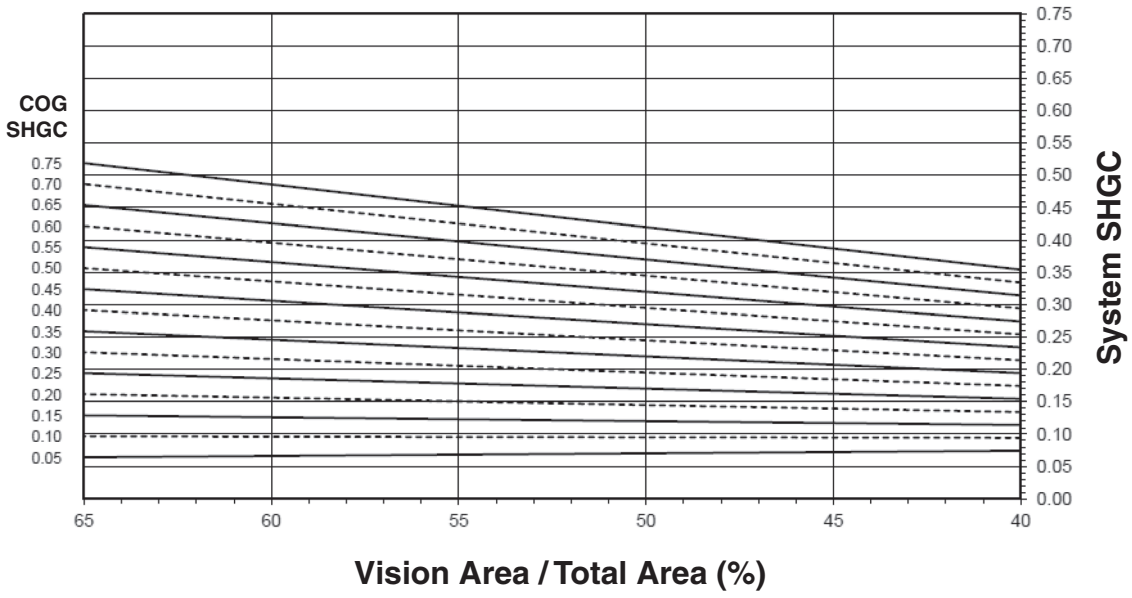
Percent of Glass = Vision Area/Total Area
(Total Daylight Opening / Projected Area)

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

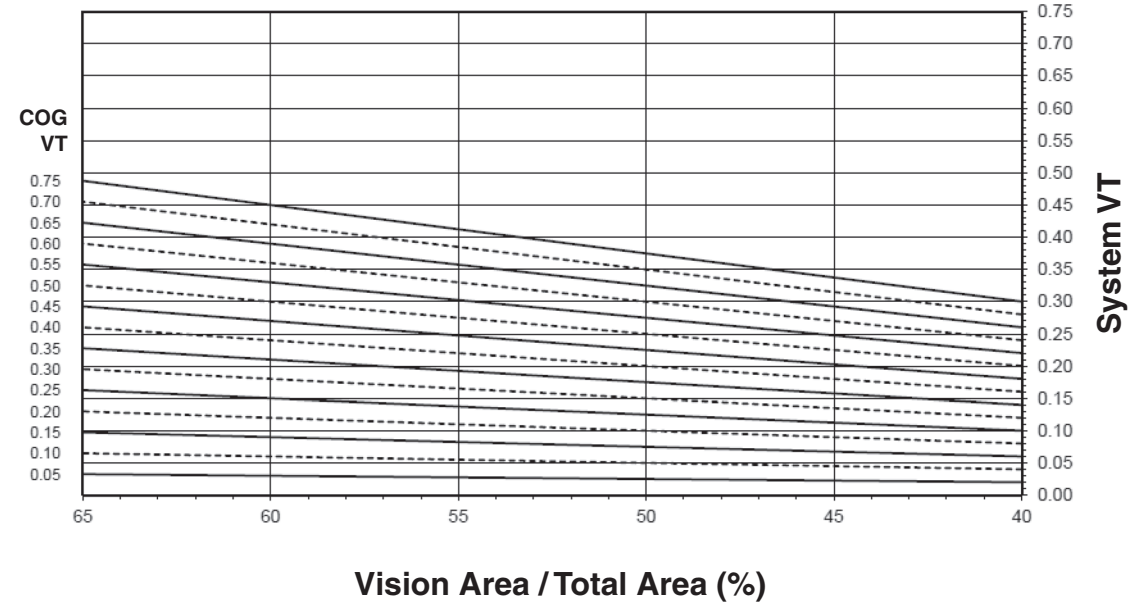
For glass values that are not listed, linear interpolation is permitted.
Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

350 (SINGLE DOOR)

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



System Visible Transmittance (VT) vs Percent of Vision Area



350 (SINGLE DOOR)

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

Glass U-Factor [3]	Overall U-Factor [4]
0.48	0.83
0.46	0.82
0.44	0.81
0.42	0.81
0.40	0.80
0.38	0.79
0.36	0.78
0.34	0.77
0.32	0.76
0.30	0.75
0.28	0.74
0.26	0.73
0.24	0.72
0.22	0.71
0.20	0.70
0.18	0.69
0.16	0.68
0.14	0.68
0.12	0.67
0.10	0.66

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 960mm wide by 2090mm high (37-3/4" by 82-3/8").

SHGC Matrix [2]

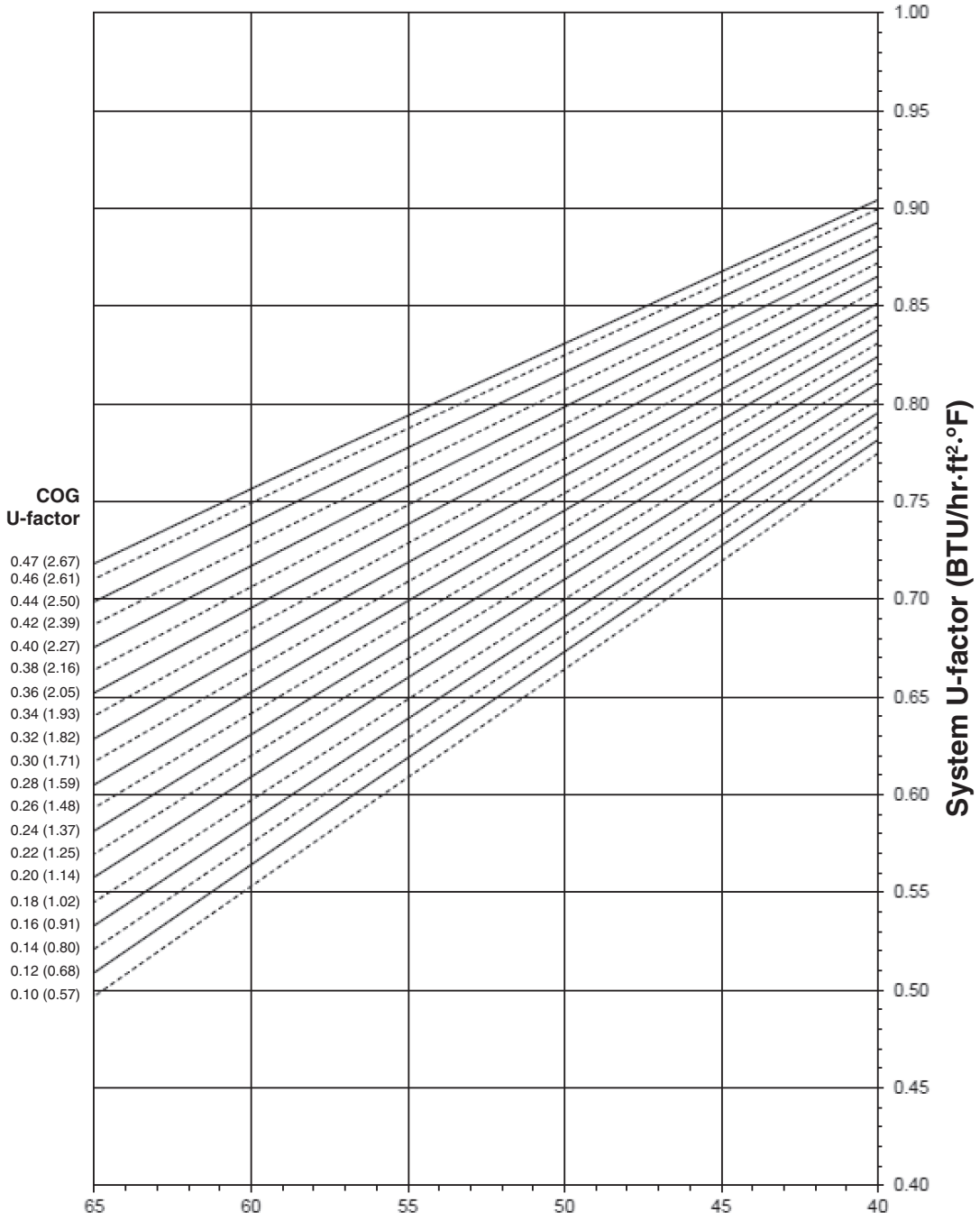
Glass SHGC [3]	Overall SHGC [4]
0.75	0.43
0.70	0.41
0.65	0.38
0.60	0.36
0.55	0.33
0.50	0.30
0.45	0.28
0.40	0.25
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.15
0.15	0.12
0.10	0.10
0.05	0.07

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.39
0.70	0.36
0.65	0.34
0.60	0.31
0.55	0.29
0.50	0.26
0.45	0.23
0.40	0.21
0.35	0.18
0.30	0.16
0.25	0.13
0.20	0.10
0.15	0.08
0.10	0.05
0.05	0.03

350 (PAIR OF DOORS)

System U-factor vs Percent of Glass Area



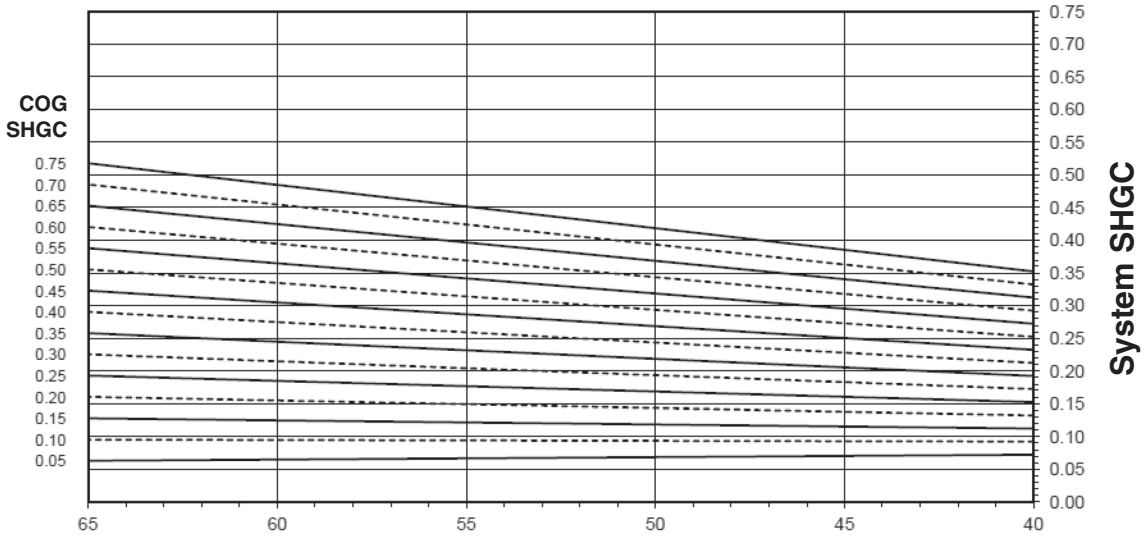
Notes for System U-Factor, SHGC and VT charts:

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

Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

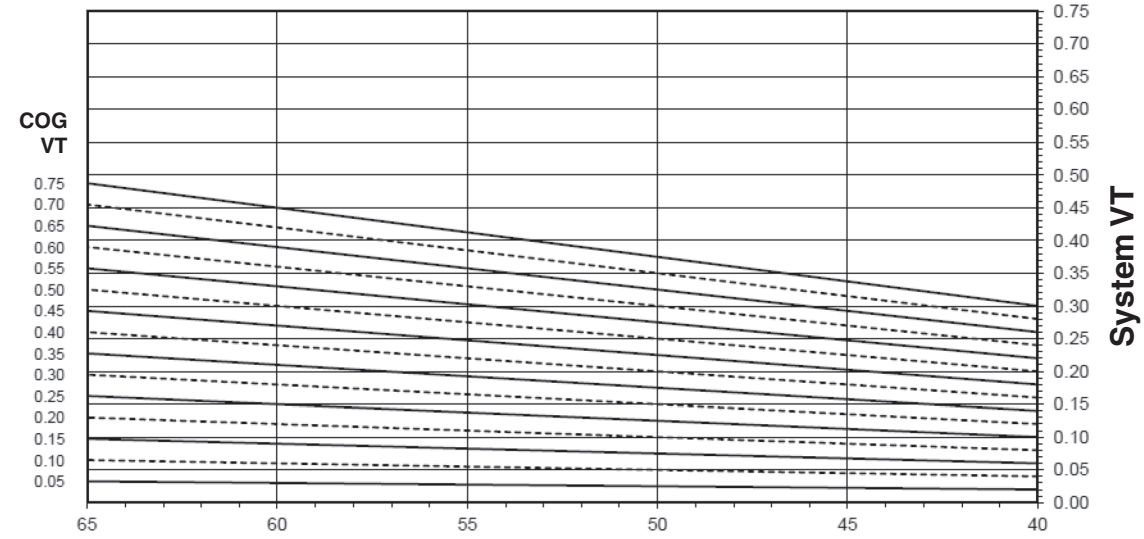
350 (PAIR OF DOORS)

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



Vision Area / Total Area (%)

System Visible Transmittance (VT) vs Percent of Vision Area



Vision Area / Total Area (%)

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

Glass U-Factor [3]	Overall U-Factor [4]
0.47	0.79
0.46	0.78
0.44	0.77
0.42	0.76
0.40	0.75
0.38	0.74
0.36	0.73
0.34	0.72
0.32	0.71
0.30	0.70
0.28	0.69
0.26	0.68
0.24	0.67
0.22	0.66
0.20	0.65
0.18	0.64
0.16	0.63
0.14	0.62
0.12	0.61
0.10	0.60

350 (PAIR OF DOORS)

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 1920mm wide by 2090mm high (75-1/2" by 82-3/8").

SHGC Matrix [2]

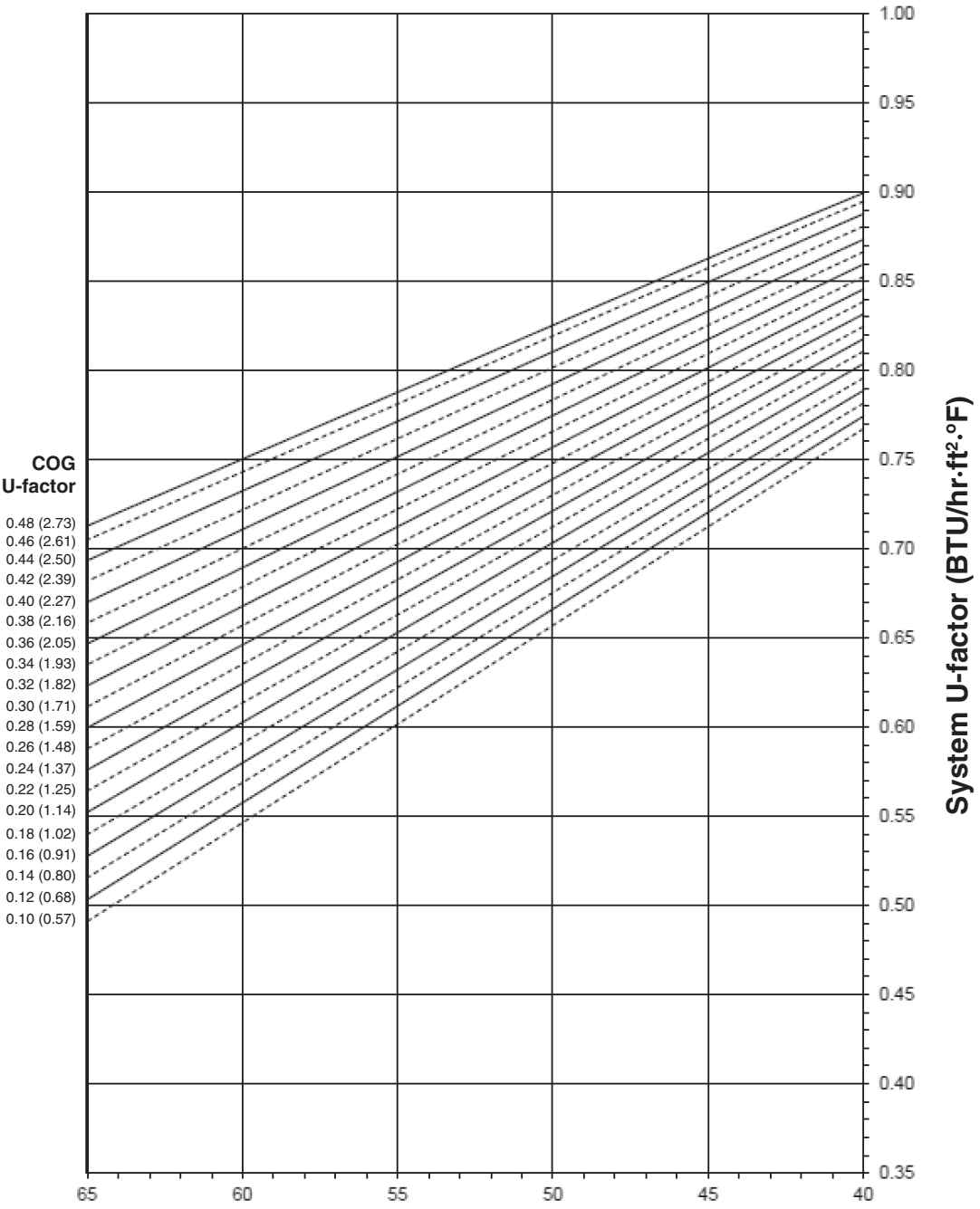
Glass SHGC [3]	Overall SHGC [4]
0.75	0.46
0.70	0.43
0.65	0.40
0.60	0.37
0.55	0.35
0.50	0.32
0.45	0.29
0.40	0.26
0.35	0.23
0.30	0.21
0.25	0.18
0.20	0.15
0.15	0.12
0.10	0.09
0.05	0.07

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.42
0.70	0.39
0.65	0.36
0.60	0.34
0.55	0.31
0.50	0.28
0.45	0.25
0.40	0.22
0.35	0.20
0.30	0.17
0.25	0.14
0.20	0.11
0.15	0.08
0.10	0.06
0.05	0.03

500 (SINGLE DOOR)

System U-factor vs Percent of Glass Area



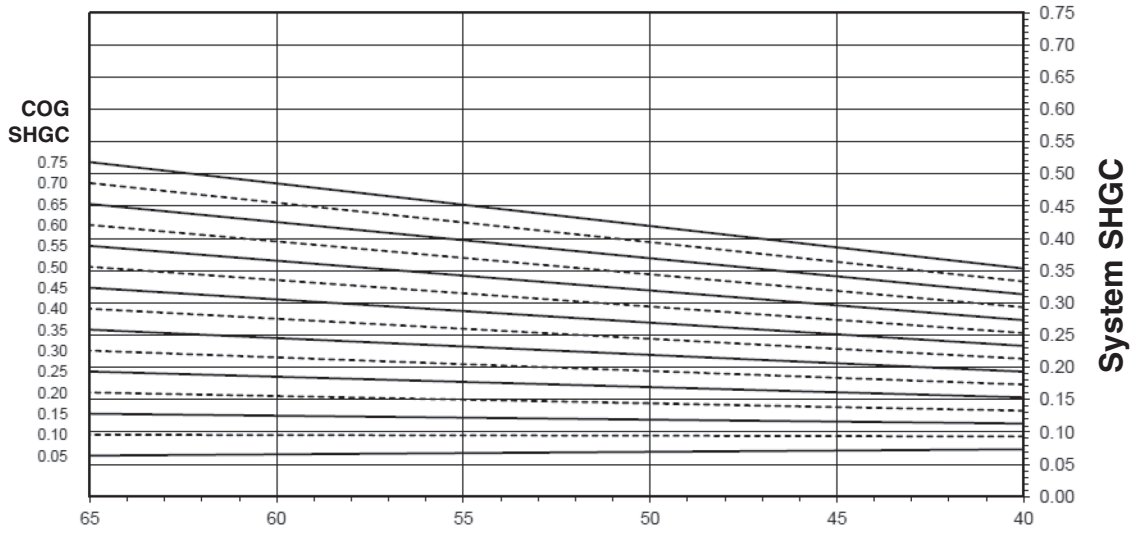
Percent of Glass = Vision Area/Total Area
(Total Daylight Opening / Projected Area)

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 (winter conditions) and are obtained from your glass supplier.

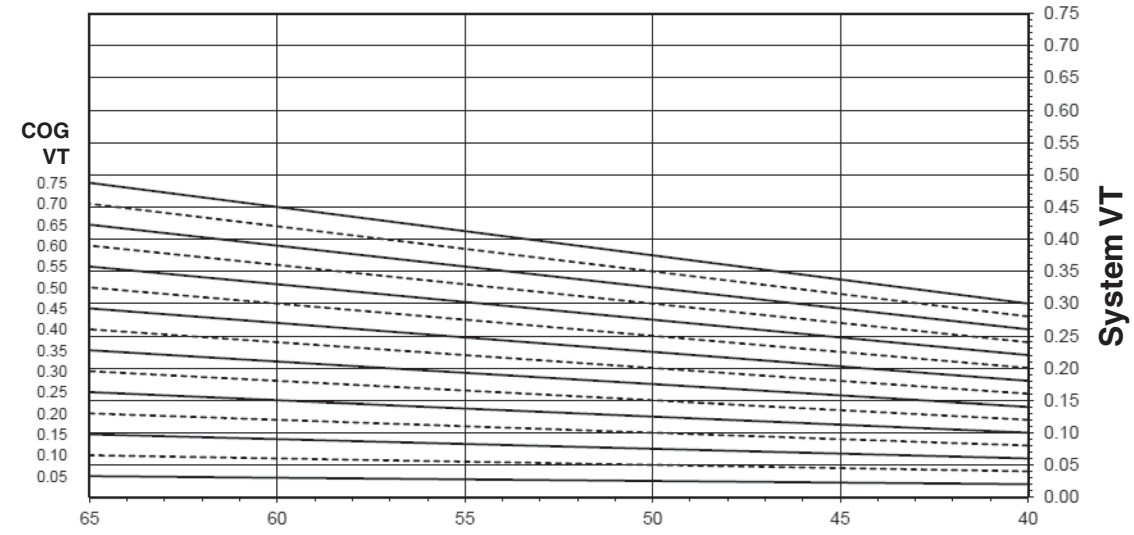
500 (SINGLE DOOR)

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



Vision Area / Total Area (%)

System Visible Transmittance (VT) vs Percent of Vision Area



Vision Area / Total Area (%)

500 (SINGLE DOOR)

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

Glass U-Factor [3]	Overall U-Factor [4]
0.48	0.87
0.46	0.86
0.44	0.85
0.42	0.84
0.40	0.84
0.38	0.83
0.36	0.82
0.34	0.81
0.32	0.81
0.30	0.80
0.28	0.79
0.26	0.78
0.24	0.77
0.22	0.77
0.20	0.76
0.18	0.75
0.16	0.74
0.14	0.73
0.12	0.73
0.10	0.72

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 960mm wide by 2090mm high (37-3/4" by 82-3/8").

SHGC Matrix [2]

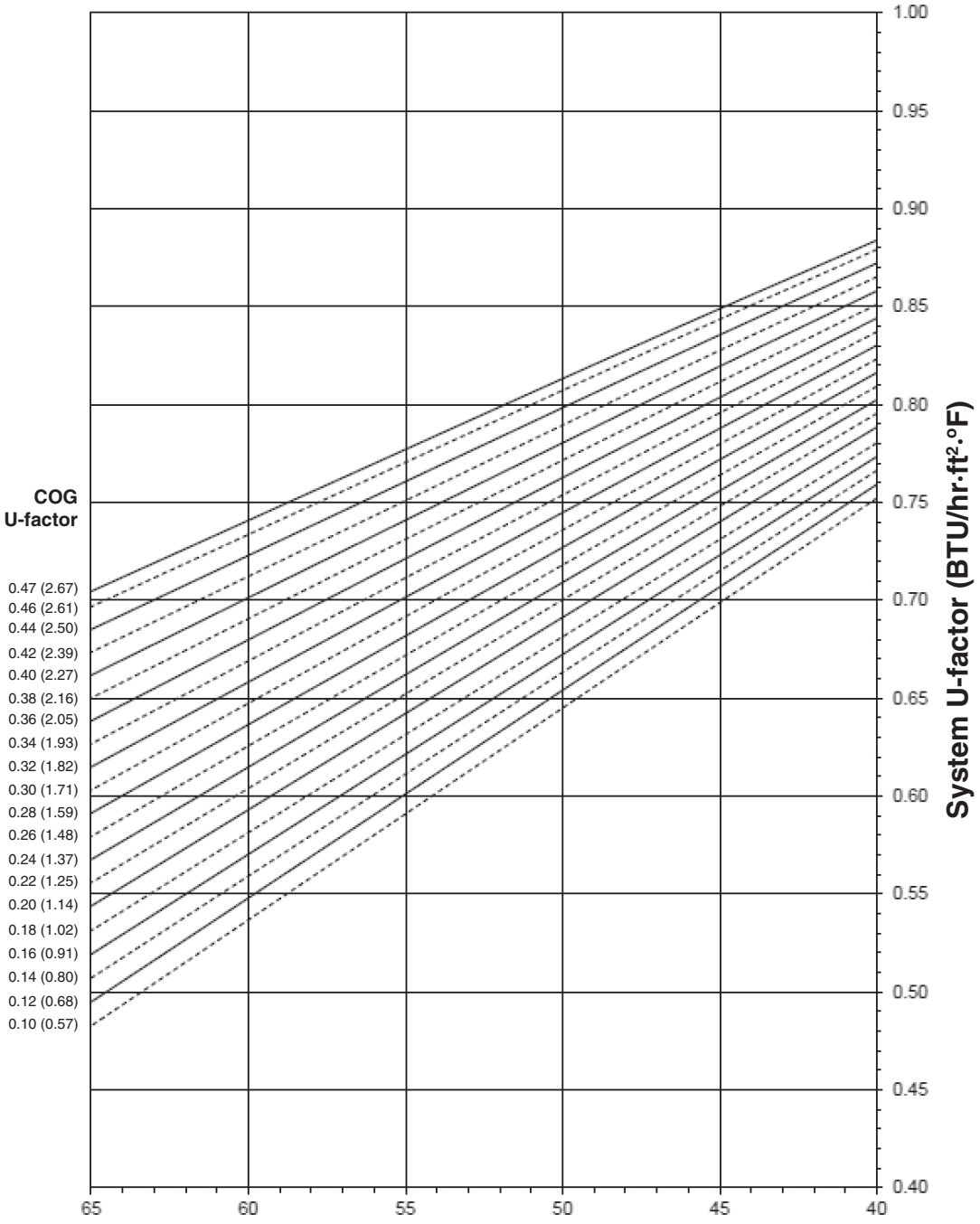
Glass SHGC [3]	Overall SHGC [4]
0.75	0.38
0.70	0.36
0.65	0.34
0.60	0.32
0.55	0.29
0.50	0.27
0.45	0.25
0.40	0.23
0.35	0.21
0.30	0.18
0.25	0.16
0.20	0.14
0.15	0.12
0.10	0.09
0.05	0.07

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.33
0.70	0.31
0.65	0.29
0.60	0.27
0.55	0.25
0.50	0.22
0.45	0.20
0.40	0.18
0.35	0.16
0.30	0.13
0.25	0.11
0.20	0.09
0.15	0.07
0.10	0.04
0.05	0.02

500 (PAIR OF DOORS)

System U-factor vs Percent of Glass Area



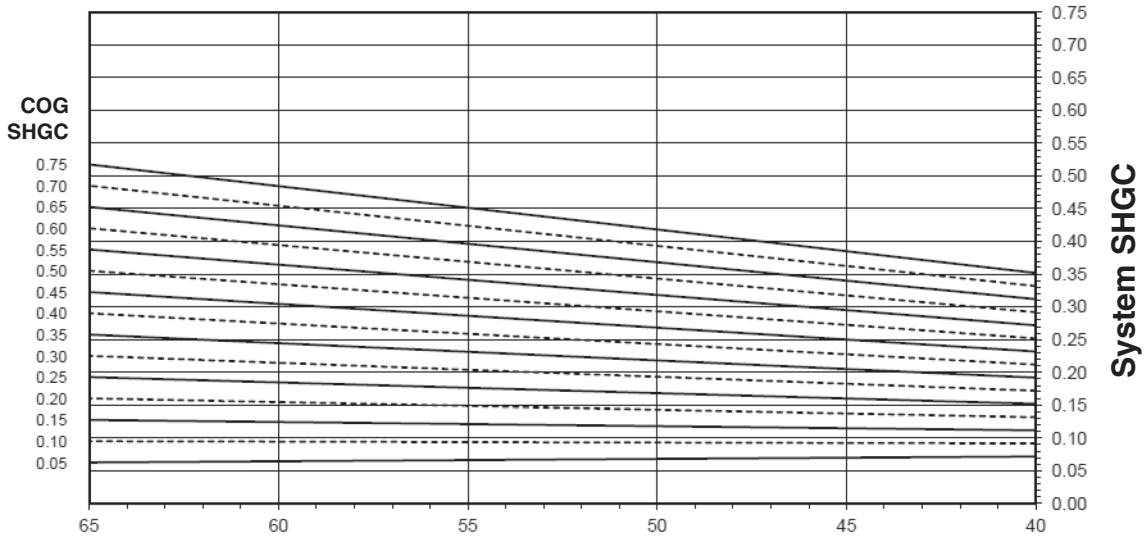
Notes for System U-Factor, SHGC and VT charts:

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

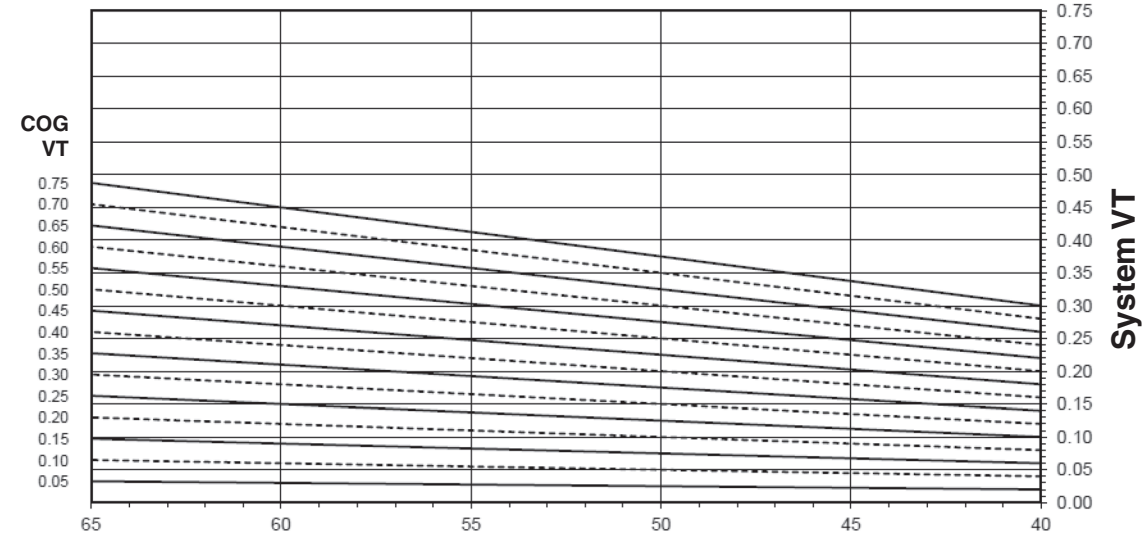
Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

500 (PAIR OF DOORS)

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



System Visible Transmittance (VT) vs Percent of Vision Area



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

Glass U-Factor [3]	Overall U-Factor [4]
0.47	0.82
0.46	0.82
0.44	0.81
0.42	0.80
0.40	0.79
0.38	0.78
0.36	0.77
0.34	0.77
0.32	0.76
0.30	0.75
0.28	0.74
0.26	0.73
0.24	0.72
0.22	0.71
0.20	0.70
0.18	0.70
0.16	0.69
0.14	0.68
0.12	0.67
0.10	0.66

500 (PAIR OF DOORS)

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 (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 1920mm wide by 2090mm high (75-1/2" by 82-3/8").

SHGC Matrix [2]

Glass SHGC [3]	Overall SHGC [4]
0.75	0.41
0.70	0.38
0.65	0.36
0.60	0.34
0.55	0.31
0.50	0.29
0.45	0.26
0.40	0.24
0.35	0.21
0.30	0.19
0.25	0.17
0.20	0.14
0.15	0.12
0.10	0.09
0.05	0.07

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.36
0.70	0.34
0.65	0.32
0.60	0.29
0.55	0.27
0.50	0.24
0.45	0.22
0.40	0.19
0.35	0.17
0.30	0.15
0.25	0.12
0.20	0.10
0.15	0.07
0.10	0.05
0.05	0.02