FDR ENGINEERS

Glass Flooring System Inc.:

Walkable Aluminum Skylight Rafter System

General Notes and Assumptions:

1. Calculations based on ASCE7/10 and 2010 ADM
2. Deflection limitations are based on L/500 for the total load (TL)
3. Mullions and structural members and components shall be 6063-T6 unwelded aluminum (min)
4. "I" and "T" Rafters shall have section properties as shown on the following sheet
5. Glass lights were assumed to be 30" maximum width
6. For multiple light conditions, the girder mullions are assumed to be continuous, spanning in the short direction of overall opening with intermediate rafters notched to fit at the point of intersection. No notching of the girder mullion is allowed
7. Aluminum perimeter zee shapes are assumed to be in constant bearing with structural steel or concrete and anchored at 24" o.c. min.
8. Mullions assumed to be connected to perimeter zee with (2) 1/4" thick aluminum angle with 5/8" fasteners each end
9. Span tables are for reference only, project specific engineering shall be required for unique project conditions and loading prior to ordering of materials.

	Exterior - Roof Applications (20 psf Live Load)					
	Single Light		Double Light		Triple Light	
	Max Length	Max End Reaction	Max Length	Max End Reaction	Max Length	Max End Reaction
I Rafter	13'-1"	772 (lbf)	12'-6"	818 (lbf)	11'-9"	853 (lbf)
T Rafter	8'-3"	493 (lbf)	7'-7"	535 (lbf)	7'-5"	603 (lbf)

- Max span based on 20psf dead load, 20 psf live load, 25psf wind uplift and 30psf snow load
- Max end reaction indicates the max bearing or uplift each end of rafter

	Residential Applications (40 psf Live Load)					
	Single Light		Double Light		Triple Light	
	Max Length	Max Reaction	Max Length	Max End Reaction	Max Length	Max End Reaction
I Rafter	13'-8"	949 (lbf)	13'-0"	986 (lbf)	12'-8"	1047 (lbf)
T Rafter	8'-9"	595 (lbf)	8'-2"	639 (lbf)	8'-0"	711 (lbf)

- Max span based on 20psf dead load, 40 psf live load, and 5psf wind uplift
- Max end reaction indicates the max bearing each end of rafter

	Residential Balcony Applications (60 psf Live Load)					
	Single Light		Double Light		Triple Light	
	Max Length	Max End Reaction	Max Length	Max End Reaction	Max Length	Max End Reaction
I Rafter	12'-10"	1142 (lbf)	12'-0"	1171 (lbf)	11'-8"	1246 (lbf)
T Rafter	8'-2"	715 (lbf)	7'-8"	775 (lbf)	7'-6"	864 (lbf)

- Max span based on 20psf dead load, 60 psf live load, and 25psf wind uplift
- Max end reaction indicates the max bearing each end of rafter

Physical | 2012 TW Alexander Drive | Durham, NC 27703
Mailing | 13200 Strickland Road, Suite 114, Box 332, Raleigh, NC 27613
P: 919-957-5100 | F: 919-957-5101 | www.fdr-eng.com

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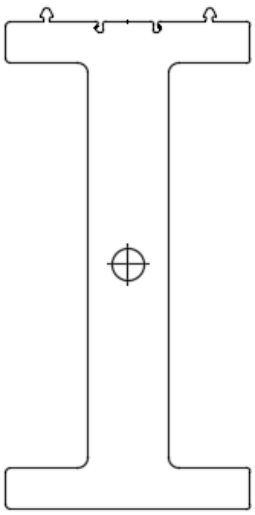
	Commercial Load Applications (100 psf Live Load)					
	Single Light		Double Light		Triple Light	
	Max Length	Max End Reaction	Max Length	Max End Reaction	Max Length	Max End Reaction
I Rafter	11'-3"	1435 (lbf)	10'-6"	1498 (lbf)	10'-0"	1593 (lbf)
T Rafter	7'-6"	946 (lbf)	6'-11"	1032 (lbf)	6'-9"	1169 (lbf)

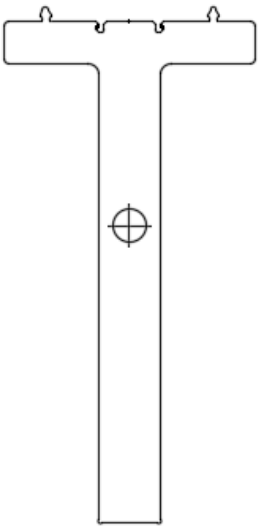
- Max span based on 20psf dead load, 100 psf live load, and 5psf wind uplift
- Max end reaction indicates the max bearing each end of rafter

"I" Rafter



---------- REGIONS ----------
Area: 8.0221
Perimeter: 22.7803
Bounding box: X: -1.5000 -- 1.5000
Y: -3.0053 -- 3.1597
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 33.3564
Y: 2.6920
Product of inertia: XY: 0.0000
Radii of gyration: X: 2.0391
Y: 0.5793

"T" Rafter



---------- REGIONS ----------
Area: 5.6415
Perimeter: 18.9306
Bounding box: X: -1.5000 -- 1.5000
Y: -3.5585 -- 2.6065
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 20.4275
Y: 1.3457
Product of inertia: XY: 0.0000
Radii of gyration: X: 1.9029
Y: 0.4884