

VMS (VELUX Modular Skylight)
Thermal and Other Testing
Technical Data

July 2018

VMS Modules - Thermal Performance Test Results					
Glazing Type	Glazing Description	Module Type	U-Factor arg/xenon	SHGC	VT clr/wht
Type 10	Low Energy Dual Pane at 20° above horiz. 8mm Temp exterior with Lami interior	Fixed (HFC)	0.34/0.25	0.46	0.64/0.46
	Low Energy Dual Pane at vertical 8mm Temp exterior with Lami interior	Fixed (HFC)	0.28/0.23	0.46	0.64/0.46
Type 11	Low Energy with HanGlas Dual Pane at 20° 8mm Temp exterior with Lami interior	Fixed (HFC)	0.33/0.24	0.25	0.46/0.33
	Low Energy with HanGlas Dual Pane at vert. 8mm Temp exterior with Lami interior	Fixed (HFC)	0.27/0.22	0.24	0.46/0.33
Type 16	Super Low Energy Triple Pane at 20° 8mm Temp, 8mm center and Lami interior	Fixed (HFC)	0.21/ -	0.36	0.55/0.40
	Super Low Energy Triple Pane at vert. 8mm Temp, 8mm center and Lami interior	Fixed (HFC)	0.16/ -	0.36	0.56/0.40
Type 10	Low Energy Dual Pane at 20° above horiz. 8mm Temp exterior with Lami interior	Venting (HVC)	0.35/0.25	0.46	0.64/0.46
	Low Energy Dual Pane at vertical 8mm Temp exterior with Lami interior	Venting (HVC)	0.29/0.24	0.46	0.64/0.46
Type 11	Low Energy with HanGlas Dual Pane at 20° 8mm Temp exterior with Lami interior	Venting (HVC)	0.34/0.24	0.24	0.46/0.33
	Low Energy with HanGlas Dual Pane at vert. 8mm Temp exterior with Lami interior	Venting (HVC)	0.28/0.24	0.24	0.46/0.33
Type 16	Super Low Energy Triple Pane at 20° 8mm Temp, 8mm center and Lami interior	Venting (HVC)	0.22/ -	0.36	0.55/0.40
	Super Low Energy Triple Pane at vert. 8mm Temp, 8mm center and Lami interior	Venting (HVC)	0.17/ -	0.36	0.56/0.40

Tested in accordance with NFRC requirements per standards NFRC 100-2010, NFRC 200-2010 and NFRC 500-2010

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VMS Product Performance - Other Test Results				
HFC/HVC Module Type 11 Glazing 1m x 2.4m	Acoustics Testing per ASTM E 90 and ASTM E 413		STC (Interior Noise)	37
	Acoustics Testing per ASTM E 90 and ASTM E 1332		OITC (Exterior Noise)	28
	Burning Brand Test ASTM E 108		Class B Burning Brand	Passed
HFC/HVC Module Type 16T Glazing 1m x 1.8m	Acoustics Testing per ASTM E 90 and ASTM E 413		STC (Interior Noise)	40
	Acoustics Testing per ASTM E 90 and ASTM E 1332		OITC (Exterior Noise)	34
HVC Module Type 10C Glazing 1m x 2.4m	OSHA and Cal/OSHA Fall Resistance test: 200 lb. weight was dropped from 1 ft. and then 2 ft. Then a 400 lb weight was rested on the glass, then dropped from 1 ft. and 2 ft. all with no damage resulting. The interior glass fractured with the 400 lb. weight dropped from 3 ft., and at 6 ft. drop the weight penetrated the glass.		OSHA Fall Resistance CalOSHA Fall Resistance	1200 lb-ft Minimum 400 lbs
HFC Module Type 10T Glazing 1m x 3m	OSHA and Cal/OSHA Fall Resistance test: 200 lb. weight was dropped from 1 ft. and then 2 ft. Then a 400 lb weight was rested on the glass, then dropped from 1 ft. and 2 ft. all with no damage resulting. The interior glass fractured with the 400 lb. weight dropped from 3 ft., and at 4 ft. drop the weight penetrated the glass.		OSHA Fall Resistance CalOSHA Fall Resistance	1200 lb-ft Minimum 400 lbs
Pultruded Composite VMS Frame	Self Ignition Temperature ASTM D 1929			510° C
	Flash Ignition Temperature ASTM D 1929			430° C
	Average Smoke Density Rating ASTM D 2843			37.0
	Linear Rate of Burn ASTM D 635			Class CC1
Bracket Loads (Ridgelight, Longlight and lower Northlight)	Bottom Bracket - Horizontal Orientation	Safety Factor: 2.21	Capacity:	1,403 lbs.
	Top Bracket - Horizontal Orientation	Safety Factor: 2.37	Capacity:	1,138 lbs.
	Bottom Bracket - Vertical Orientation	Safety Factor: 2.03	Capacity:	2,111 lbs.
	Top Bracket - Vertical Orientation	Safety Factor: 2.03	Capacity:	2,237 lbs.

VMS - Air, Water and Structural Performance Test Results				
Product Tested	Performance Test	Description	Tested Result	NAFS-17 Rating
HVC Module Type 10 Glazing 1.1m x 2.5m (61" x 118")	Uniform Load Structural ASTM E 330	Max Uplift	65	50 psf
	Uniform Load Structural ASTM E 330	Max Download	100	95 psf
	Water Penetration with No Leak ASTM E 331	Max Pressure	15 psf	15 psf
	Air Leakage at 1.57 psf ASTM E 283	Max Leakage	0.25 cfm/sf	0.25 cfm/sf
HFC Module Type 10T Glazing 1.1m x 3.1m (61" x 141")	Uniform Load Structural ASTM E 330	Max Uplift	150 psf	100 psf
	Uniform Load Structural ASTM E 330	Max Download	120 psf	60 psf
	Water Penetration with No Leak ASTM E 331	Max Pressure	25 psf	25 psf
	Air Leakage at 1.57 psf ASTM E 283	Max Leakage	0.20 cfm/sf	0.20 cfm/sf
2 Unit Northlight Type 10T Glazing HFC/HFC 2m x 3 m (90" x 146")	Uniform Load Structural ASTM E 330	Max Uplift	100 psf	65 psf
	Uniform Load Structural ASTM E 330	Max Download	150 psf	75 psf
	Water Penetration with No Leak ASTM E 331	Max Pressure	15 psf	15 psf
	Air Leakage at 1.57 psf ASTM E 283	Max Leakage	0.16 cfm/sf	0.16 cfm/sf
4 Unit Ridgelight Type 10 Glazing HFC/HVC x HFC/HFC 1m x 2.4 m (100" x 218")	Uniform Load Structural ASTM E 330	Max Uplift	100 psf	65 psf
	Uniform Load Structural ASTM E 330	Max Download	140 psf	70 psf
	Water Penetration with No Leak ASTM E 331	Max Pressure	15 psf	15 psf
	Air Leakage at 1.57 psf ASTM E 283	Max Leakage	0.10 cfm/sf	0.10 cfm/sf