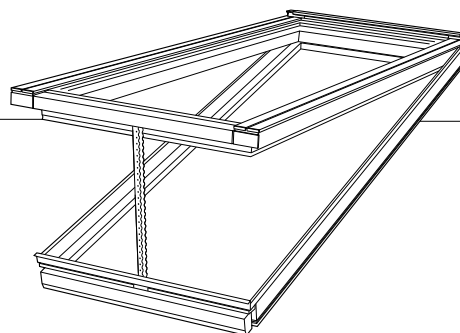


Technical data for VELUX Modular Skylights

VELUX Modular Skylights is a skylight system for commercial and public building. The system consists of a complete product range with prefabricated modular skylights, including profiles, panes,

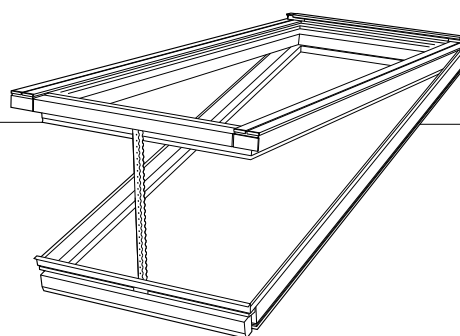
flashing, control systems for comfort and smoke ventilation and roller blinds. Every part produced and provided from one supplier.

Modular skylight



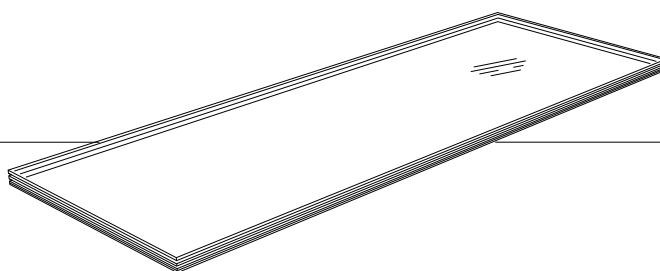
Performance area			Technical value		
Property	Standard	Symbol and Unit	Pane variant		
			2-layer pane		3-layer pane
			8H-20G1-33.2F Low E Variant 10	8H-20G1-33.2F LSUN1 Variant 11	8H-12G1-8HS-12G1-33.2F Low E Variant 16
Roof Windows & Skylights (EN 14351-1:2006+A1:2010)					
Resistance to wind load	EN 12211 / EN 12210	Class	C5		
Water tightness	EN 12208 / EN 1027	Class	E900		
Air permeability	EN 12207 / EN 1026	Class	4		
Sound insulation	EN ISO 717-1 / EN ISO 140-3	Rw (C; Ctr) [dB]	35		
Thermal transmittance	EN ISO 10077-2	Uw [W/(m²K)]	1,4		1,0
Radiation – Solar factor	EN 410	-	0,58	0,27	0,47
Radiation – Light transmittance	EN 410	-	0,77	0,48	0,68
Resistance to snow load	-	IGU	8/20/33.2		8/12/8/12/33.2
Reaction to fire	EN 13501-1	Class	B, s1-d2		
External fire performance	EN 13501-5 / BS 476-3	Class	Npd		

Modular skylight



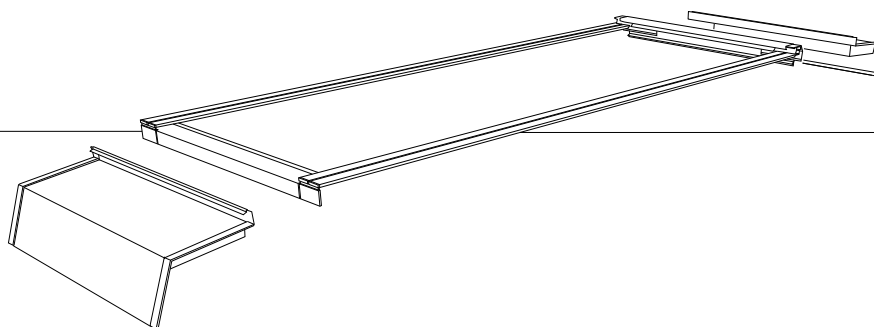
Performance area			Technical value		
Property	Standard	Symbol and Unit	Pane variant		
			2-layer pane		3-layer pane
			8H-20G1-33.2F Low E Variant 10	8H-20G1-33.2F LSUN1 Variant 11	8H-12G1-8HS-12G1-33.2F Low E Variant 16
NSHEV (Natural Heat and Smoke Exhaust Ventilators EN 12101-2:2003)					
Geometric area	-	Av [m ²]	0,462 - 1,436 depending on size		
Aerodynamic area	EN 12101-2 Annex B	Aa [m ²]	0,19-0,65 depending on size		
Aerodynamic value	EN 12101-2 Annex B	Cv0	0,44 - 0,57 depending on size		
Opening speed (smoke vent.)	EN 12101-2	[Sec]	< 60		
Snow load (SL)	EN 12101-2 Annex E	SL [N/m ²]	750 N/m ²		
Wind load (WL)	EN 12101-2 Annex F	WL [N/m ²]	3000 N/m ²		
Low ambient temperature (T)	EN 12101-2 Annex E	T [°C]	T -15		
Reliability (RE) (Dual purpose) (smoke vent. + comfort vent.)	EN 12101-2 Annex C	RE [No of opening]	1000 + 10000		
Resistance to heat (B)	EN 12101-2 Annex C EN 13823 ISO 11925-2	B [°C]	B300		
Reaction to fire for NSHEV	EN 13501-1	Class	B, s1-d2)		
Minimum installation height	60335-2-103	Height (m)	2.5 m		
Other relevant properties (discussed outside EN 14351-1:2006+A1:2010)					
Resistance to fire	EN 13501-2	Class	Npd		

Pane



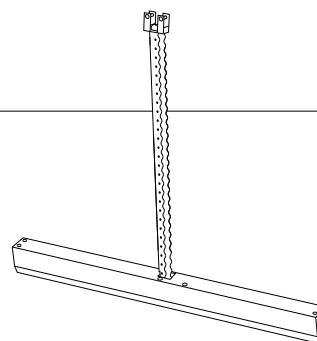
Performance area			Technical value		
Property	Standard	Symbol and Unit	Pane variant		
			2-layer pane		3-layer pane
			8H-20G1-33.2F Low E Variant 10	8H-20G1-33.2F LSUN1 Variant 11	8H-12G1-8HS-12G1-33.2F Low E Variant 16
Reaction to fire	EN 13501-1	Class	Npd	Npd	Npd
External fire performance	EN 13501-5	Class	Npd	Npd	Npd
Bullet resistance	EN 1522	Class	Npd	Npd	Npd
Explosion resistance	EN 13123-1	Class	Npd	Npd	Npd
Burglary resistance	EN 356	Class	Npd	Npd	Npd
Pendulum body impact resistance	EN 12600	Class	Npd	Npd	Npd
Resistance against sudden temperature changes and temperature differentials	ENV 13420	[K]	Npd	Npd	Npd
Wind, snow, permanent and imposed load resistance	-	IGU	8/20/33.2	8/20/33.2	8/12/8/12/33.2
Direct airborne sound insulation	EN ISO 717-1 / EN ISO 140-3	Rw (C; Ctr) [dB]	42 (-3; -8)	41 (-3; -8)	40 (-3; -8)
External fire performance	EN 13501-5 / BS 476-3	Class	Npd	Npd	Npd
Rain noise	-	?	Npd	Npd	Npd
Thermal transmittance Centre-of-Glass	EN ISO12567-2	Ug [W/(m²K)]	1,1	1,1	0,7
Light transmittance	EN 410	tV	0,77	0,48	0,68
Light reflectance	EN 410	rV (external)	Npd	Npd	Npd
Ultraviolet transmittance	EN 410	tUV	Npd	Npd	Npd
Solar direct transmittance	EN 410	te	Npd	Npd	Npd
Solar direct reflectance	EN 410	re (external)	Npd	Npd	Npd
Total solar energy transmittance	EN 410	g	0,58	0,27	0,47

Flashing



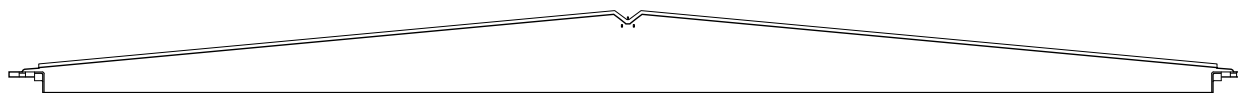
Material	Aluminium	
Material thickness	1,0 mm	
Surface	Front: Polyamide polyester lacquer	Back: PVDF/ polyester lacquer
Colour	Front: NCS standard colour: S 7500-N	Back: Unspecified

Chain actuator



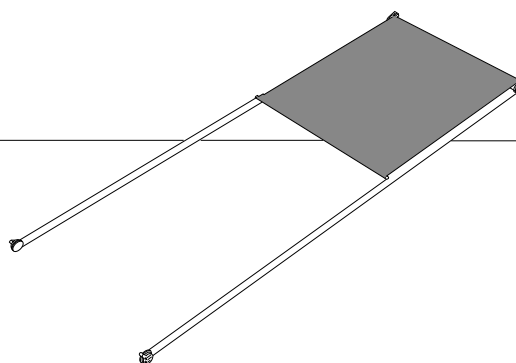
Material	Aluminium housing with steel chain
Dimensions	76 x 50 mm (W x D). L = 632
Weight	4,3 kg
Connection cable	50 mm grey silicone cable 3-core 0,34 mm ² with fast on connector
Chain stroke	410-730 mm
Speed	11,6 mm/s (full load)/full opening in 60 sek
Force (pressure/traction)	1300 N/500N
Locking force	3000 N
Temperature condensation	-5°C to +74°C max. 90% relative humidity (not condensing)
Power consumption	24 VDC
Voltage	19-32 VDC
Switch-on-duration	ED max. 20 % (2 min per 10 min.)
Open-circuit voltage	Max. 32 VDC
Current consumption	Max. 5 A.

Beam for 5 degree ridge



Material	Steel
Material thickness	3 mm
Construction	Hollow beam
Surface	Painted with white primer

Roller Blind



Sizes	Please refer to Product description for VELUX Modular Skylights. Can also be made to measure.	
Materials (Visible parts)	Fabric	Polyester
	Wire	Stainless steel
	Control bar	Anodized aluminium
	Top pulley wheels	Stainless steel (stone rumbled)
Colours (cloth)	Grey, black and white	
Installation	Please see installation instruction	
Compability	All VMS skylights	
Dimensions	Product incl. packaging: 145 mm x 105 mm x 1.210 mm (W x H x L)	
Control system	IO home control	
Power consumption	0,4 A (avg.) / 24 V	
Connection	Delivered with motor cable for direct connection in the connection box in the window frame	
Light values*	Grey:	Reflection 20 % Transmission 10% Absorption 70 %
	Black:	Reflection 20 % Transmission 10% Absorption 70 %
	White:	Reflection 50 % Transmission 45% Absorption 5 %

* Tolerance +/-5