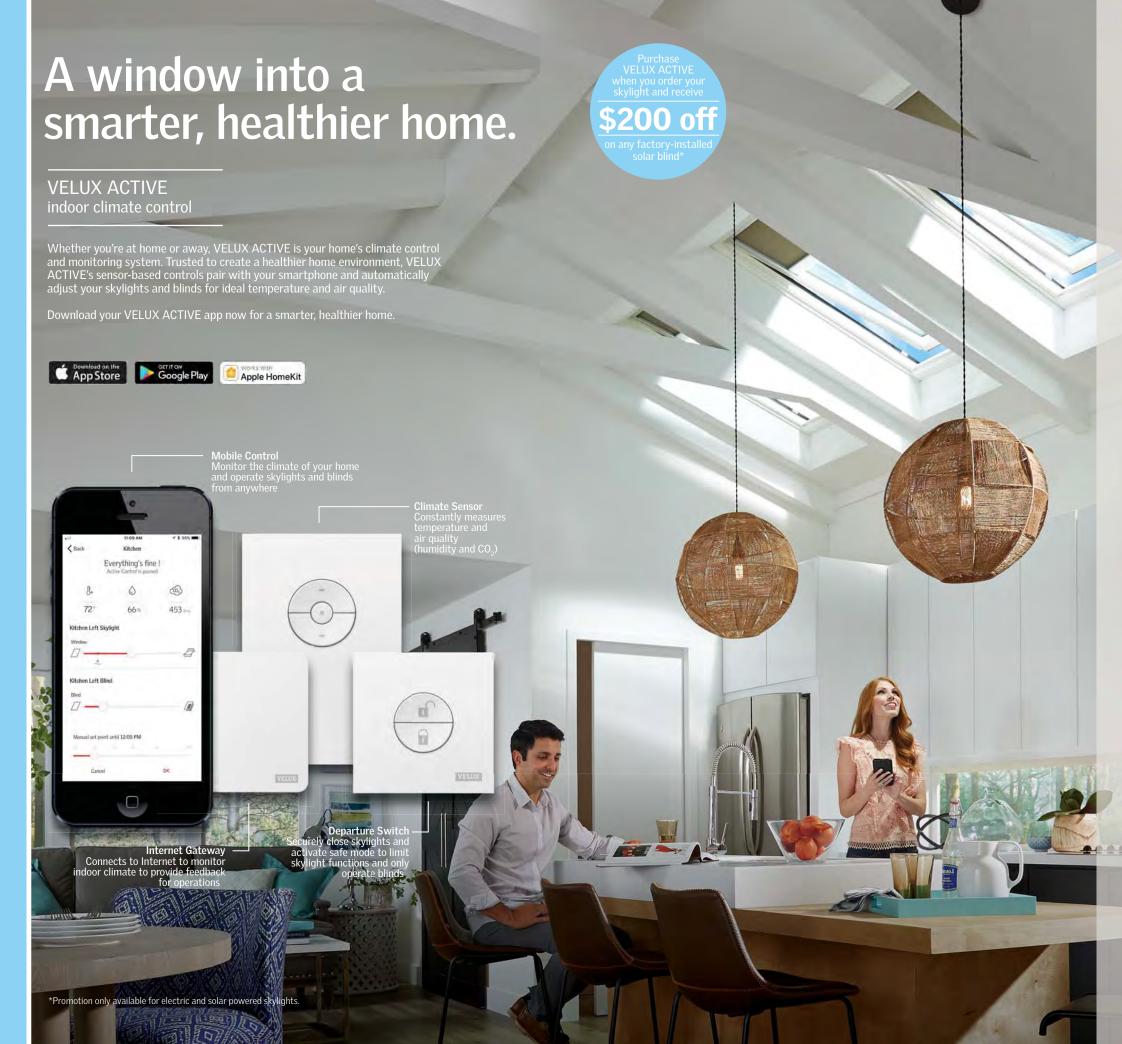


### Contents

### Testing data



### **Daily Ventilation**

Choose how often your skylight opens during the day to circulate fresh air throughout your home.





### **Sensor Based Ventilation**

Readings from your indoor climate sensors (CO2, humidity, temperature) combined with outdoor conditions will open your skylight if natural ventilation can improve room conditions.



installed soľa:

# **Smart Heat Protection**

VELUX blinds operate proactively based on local weather forecast information.



### **Stay in Control**

Operate your VELUX skylights and blinds from your smartphone.



### Say the Word

Use voice control assistance to operate your VELUX skylights and blinds.





### **Easy Departure**

Put your VELUX ACTIVE products in safe mode with just one tap.

Smart sensor-based operation of your VELUX skylights and blinds.

with **NETATMO** 

# The logical choice for any skylight installation

See how easy it is to upgrade to a Solar-Powered "Fresh Air" Skylight

Considering adding daylight and fresh air to your home? See how easy and affordable it is. With a 30% federal tax credit, homeowners receive an average of \$850 on product and installation.



Fixed Skylight

Solar-Powered "Fresh Air" Skylight

### Considering just a Fixed Skylight?

Upgrade from a fixed skylight to a Solar-Powered "Fresh Air" Skylight with all the features for around \$100 after tax credit eligibility!\*



Manual "Fresh Air" Skylight

Solar-Powered "Fresh Air" Skylight

### Considering just a Manual "Fresh Air" Skylight?

Upgrade from a Manual "Fresh Air" Skylight to a Solar-Powered "Fresh Air" Skylight with all the features and **save around** \$140 after tax credit eligibility!\*





# Clean, Quiet & Safe Glass



### Clean

Features Neat® glass coating to keep your skylight cleaner longer, leaving skylights virtually spotless



### Ouiet

Reduce unwanted outside noise by up to 25% compared to a standard double pane glass, and up to 50% compared to a plastic skylight



### Safe

VELUX recommends and building codes require laminated glass for out of reach applications

# **VELUX ACTIVE** is the new all-in-one solution for automatic control of indoor climate.



<sup>\*</sup> For more information, visit: veluxusa.com/taxcredits



# Fifth Wall Shift Your Outlook

They say the quietest people have the loudest minds. The same can be said for the most unnoticed yet impactful wall in every room - the ceiling. It's more than a roof over your head and more than a surface to be painted white and forgotten. As an unexpected design space with a direct connection to the great wide open, it's your Fifth Wall.

This untapped design opportunity has the power to completely transform spaces from top to bottom. The Fifth Wall allows you to set your sights higher than the average wall. That's why skylights are a must-have on your home renovation to-do list.

When in need of a fresh perspective, all you have to do is look up.



Clean, Quiet & Safe Glass (xx04)

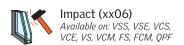
Dual pane laminated glass

Standard on: VSS, VCS, VSE, VCE skylights

When Neat® is applied to LowE glass, it combines the ultimate in low maintenance with the best energy-conserving LowE glass on the planet. So homes stay warmer in winter, cooler in summer. Neat® LowE conserves energy year-round, too, saving homeowners up to 25% annually.



Clean, Quiet & Safe Glass also available in the following options:





White laminated (xx08) Available on: VSE, VCE, VS, VCM, FS, FCM, QPF



Snowload (xx10) Available on: VSE, VCE, VS, VCM, FS, FCM, VSS

### Tempered Glass - Recommended for in-reach applications

Tempered Glass (xx05)

If your skylight is within reach, our tempered glass is dual-paned, triple-coated with LowE3, dual-sealed and injected with argon gas. This provides excellent energy efficiency and thermal performance for year-round comfort.



# **ENERGY STAR®**

Use of ENERGY STAR® products

One of the most straightforward ways to help meet energy codes as a builder or architect, while still designing bright, airy buildings, is to specify ENERGY STAR certified products.

Most VELUX residential products are ENERGY STAR certified in all 50 states, which means they meet energy efficiency standards set by the US Environmental Protection Agency (EPA). ENERGY STAR certified fenestration products must have their U-factor, Visible Transmittance, and Solar Heat Gain Coefficient ratings independently tested and approved under the FenStar<sup>SM</sup> Certification Program of the National Fenestration Rating Council (NFRC) to qualify.

By specifying or using ENERGY STAR certified products, architects and builders can use windows and skylights to bring much needed daylight and fresh air inside allowing them to create more attractive buildings and more livable spaces while still meeting the local energy codes economically.

In warmer climates, there is great potential for lighting energy savings using emerging control technologies in combination with more effective daylighting products like VELUX skylights with blinds and Sun Tunnel skylights.

Visit: energystar.gov for more information.



# Code compliance

Performance requirements

VELUX offers a broad array of skylights and Sun Tunnel skylights that meet the applicable performance requirements and testing and labeling standards written into the most current US Model Codes:

- 2018 IBC (International Building Code),
- 2018 IRC (International Residential Code), and
- 2018 IECC (International Energy Conservation Code), as well as local and regional codes that are based on the above (and earlier) codes.

In addition, electrical components built into VELUX products are UL listed.

Standard VELUX residential skylights and Sun Tunnel products also meet or exceed applicable Powersmart requirements, in addition to those of the current and prior North American Fenestration Standards (NAFS) also known as AAMA/WDMA/CSA 101/I.S.2/A440, with one exception: copper-clad versions.

To verify these attainments on-site, the products are shipped with all required labels to expedite the inspection and final acceptance process. VELUX confidently certifies through these labels that only products consistent with the tested specimens are sent to the job.





# **VELUX ACTIVE** is the new all-in-one solution system for automatic control of indoor climate.





Check status of

Download your VELUX ACTIVE app now for a smarter, healthier home.

Whether you're at home or away, VELUX ACTIVE is your home's climate control and monitoring system. Trusted to create a healthier home environment, VELUX ACTIVE's sensor-based controls pair with your smartphone and automatically adjust your skylights and blinds for ideal temperature and air quality.



Internet Gateway Connects to Internet to monitor indoor climate to provide feedback for operations

> Departure Switch Securely close skylights and activate safe mode to limit skylight functions and only operate blinds

Climate Sensor Constantly measures temperature and air quality (humidity and CO<sub>2</sub>)



\*Promotion only available for electric and solar powered skylights.

### **VELUX ACTIVE**

Smart sensor-based operation of your VELUX skylights,

**NETATMO** 



# Solar-Powered "Fresh Air" Skylights

Deck-Mounted - VSS Curb-Mounted - VCS



30%







KLI 110 Remote

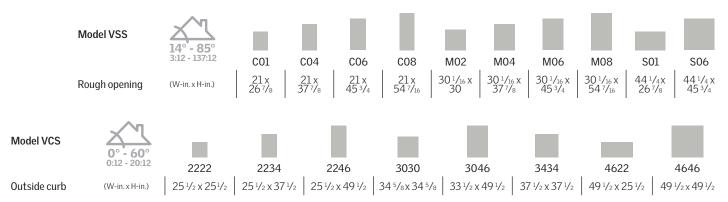
Solar-Powered "Fresh Air" Curb-Mounted No Leak Skylight - VCS

### Benefits:

• With a 30% federal tax credit, homeowners receive an average of \$850\* in savings with federal tax credit eligibility.

Solar-Powered "Fresh Air" Deck-Mounted No Leak Skylight - VSS

- Features a solar panel that captures any available daylight to recharge a highly efficient, fully concealed, battery-powered operator and control system.
- Replace a fixed or manual skylight easily because no wiring is required.
- KLI 110 remote and insect screen included with skylight.
- Available in deck and curb-mounted applications.



\*For more information visit: veluxusa.com/taxcredits





# **VELUX ACTIVE** is the new all-in-one solution system for automatic control of indoor climate.





Check status of

Download your VELUX ACTIVE app now for a smarter, healthier home.

Whether you're at home or away, VELUX ACTIVE is your home's climate control and monitoring system. Trusted to create a healthier home environment, VELUX ACTIVE's sensor-based controls pair with your smartphone and automatically adjust your skylights and blinds for ideal temperature and air quality.



Internet Gateway Connects to Internet to monitor indoor climate to provide feedback for operations

> Departure Switch Securely close skylights and activate safe mode to limit skylight functions and only operate blinds

Climate Sensor Constantly measures temperature and air quality (humidity and CO<sub>2</sub>)



\*Promotion only available for electric and solar powered skylights.

### **VELUX ACTIVE**

Smart sensor-based operation of your VELUX skylights and blinds.

of VELUX ACTIVE with based on local weather forecast information. **NETATMO** 



# Electric "Fresh Air" Skylights

Deck-Mounted - VSE Curb-Mounted - VCE











KLI 110 Remote

### Benefits:

- A pre-installed concealed motor and control system powered by VELUX INTEGRA® allows you to enjoy the one-touch convenience of a remote control.
- With the integrated rain sensor, electric skylights will close automatically in case of inclement weather.
- Pre-mounted Pick&Click!™ system brackets make the installation of sunscreen blinds a snap.
- Factory pre-finished white frames and sashes provide a high quality finish that eliminates the need for secondary, high cost trips by a painter.
- KLI 110 remote and insect screen included with skylight.

Rough opening (W-in.x H-in.) 21 x 26<sup>7</sup>/<sub>8</sub> 21 x 37<sup>7</sup>/<sub>8</sub> 21 x 45<sup>3</sup>/<sub>4</sub> 21 x 54<sup>7</sup>/<sub>16</sub> 30<sup>1</sup>/<sub>16</sub> x 37<sup>7</sup>/<sub>8</sub> 30<sup>1</sup>/<sub>16</sub> x 45<sup>3</sup>/<sub>4</sub> 30<sup>1</sup>/<sub>16</sub> x 54<sup>7</sup>/<sub>16</sub> 44<sup>1</sup>/<sub>4</sub> x 26<sup>7</sup>/<sub>8</sub> 44<sup>1</sup>/<sub>4</sub> x 45<sup>3</sup>/<sub>4</sub> Model VCE  $(W-in.xH-in.) \quad 25\frac{1}{2}x25\frac{1}{2} \quad 25\frac{1}{2}x37\frac{1}{2} \quad 25\frac{1}{2}x37\frac{1}{2} \quad 25\frac{1}{2}x49\frac{1}{2} \quad 34\frac{5}{8}x34\frac{5}{8} \quad 33\frac{1}{2}x49\frac{1}{2} \quad 37\frac{1}{2}x37\frac{1}{2} \quad 49\frac{1}{2}x49\frac{1}{2}$ Outside curb





# Manual "Fresh Air" Skylights

Deck-Mounted - VS Curb-Mounted - VCM

**NEW** VS & VCM Energy Performance Model







Manual "Fresh Air" Deck-Mounted No Leak Skylight - VS

Manual "Fresh Air" Curb-Mounted No Leak Skylight - VCM

### **UPGRADE**

to the Energy Performance Model

Boost energy performance up to 40%

Reduce energy dependency and maximize efficiency by automatically controlling blind position based on seasons.







30% ederal Tax See page 30

### Benefits:

- Factory pre-finished white frames and sashes provide a high quality finish that eliminates the need for secondary, high cost trips by a painter.
- Pre-mounted Pick&Click!™ system brackets make the installation of sunscreen blinds a snap.
- Replacement kits (ZZZ 238) are available and sold separately for all VS skylights. The kit allows the installer to use a standard size VELUX VS on a non-standard opening while minimizing the amount of interior trim work needed. For more information, see page 49.

Models VS & VS Energy Performance Rough opening













2234





















2222







2246



3030













Models VCM & **VCM** Energy Performance









# Fixed Skylights

### Deck-Mounted - FS

**NEW** FS Energy Performance Model

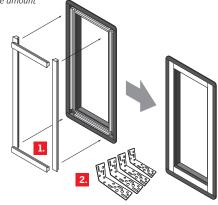




### Replacement Kits for FS and VS ( ZZZ 238)

This replacement kit will be available for all sizes of VS and most FS skylights. This will allow the installer to use a standard size VELUX VS or FS skylight on a non-standard opening while minimizing the amoun of interior trim work needed.

- 1. (4) pre-cut drywall groove filler pieces minimizes interior trim work needed.
- 2. (4) structural mounting brackets allows skylight to be used in applications with an oversized rough opening.



Fixed Deck-Mounted No Leak Skylight - FS

### **UPGRADE**

to the Energy Performance Model

Boost energy performance up to 40%

Reduce energy dependency and maximize efficiency by automatically controlling blind position based on seasons.





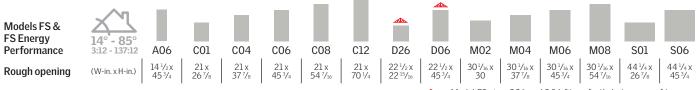


30% Federal Tax

See page 30

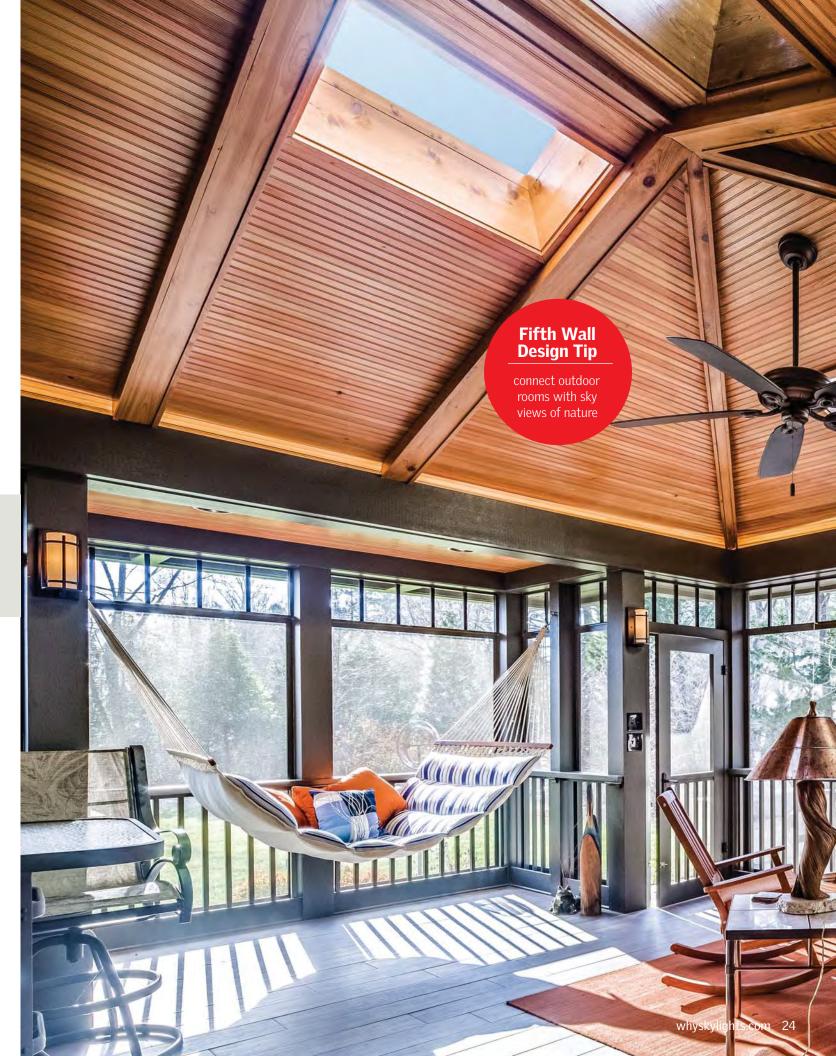
### Benefits:

- Pre-finished white wood frame and protective aluminum or copper cladding.
- Integrated gaskets drain condensation to the outside.
- Streamlined exterior profile does not obstruct your roofline.
- Pre-mounted Pick&Click!™ system brackets make the installation of sunscreen blinds a snap.



Model FS sizes D26 and D06 fit perfectly between roof trusses.

\*For more information visit: veluxusa.com/taxcredits



# Fixed Skylights

Curb-Mounted - FCM

**NEW** FCM Energy Performance Model





# **Triple Pane**

Fixed Curb-Mounted No Leak Skylight - FCM



Accessory tray is required for blind installation.

### **UPGRADE**

to the Energy Performance Model

Boost energy performance up to 40%

Reduce energy dependency and maximize efficiency by automatically controlling blind position based on seasons.









See page 30

### Benefits:

- Integrated gaskets drain condensation to the outside.
- Streamlined exterior profile does not obstruct your roofline.
- A sunscreen accessory tray for standard site-built curbs allows for installation of VELUX Pick&Click!™ blinds.

### Custom Size Fixed Curb-Mounted Skylights - Custom FCM

### Shipping

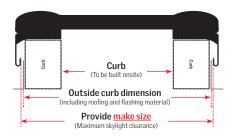
Width:  $18^{3}/_{4} - 50^{3}/_{4}$ **Height:** 18<sup>3</sup>/<sub>4</sub> - 72

**Delivered:** 8-14 days

Width: 18<sup>3</sup>/<sub>4</sub> - 50<sup>3</sup>/<sub>4</sub>

**Height:**  $72^{1/4} - 76^{1/2}$ Delivered: 20 days

Note: Custom size flashing kits and custom size blinds are not available. Note: Some specialty glass options require longer lead times.



Models FCM & FCM Energy Performance

















25 ½ x 37 ½













































\*For more information visit: veluxusa.com/taxcredits



Outside curb

# Self-Flashed Skylights

Self-Flashed - QPF

**NEW** QPF Energy Performance Model



Self-Flashed Skylight - QPF

### **UPGRADE**

to the Energy Performance Model

Boost energy performance up to 40%

Reduce energy dependency and maximize efficiency by automatically controlling blind position based on seasons.





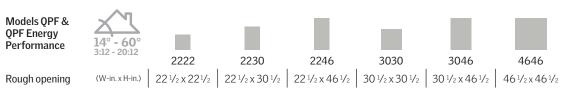




See page 30

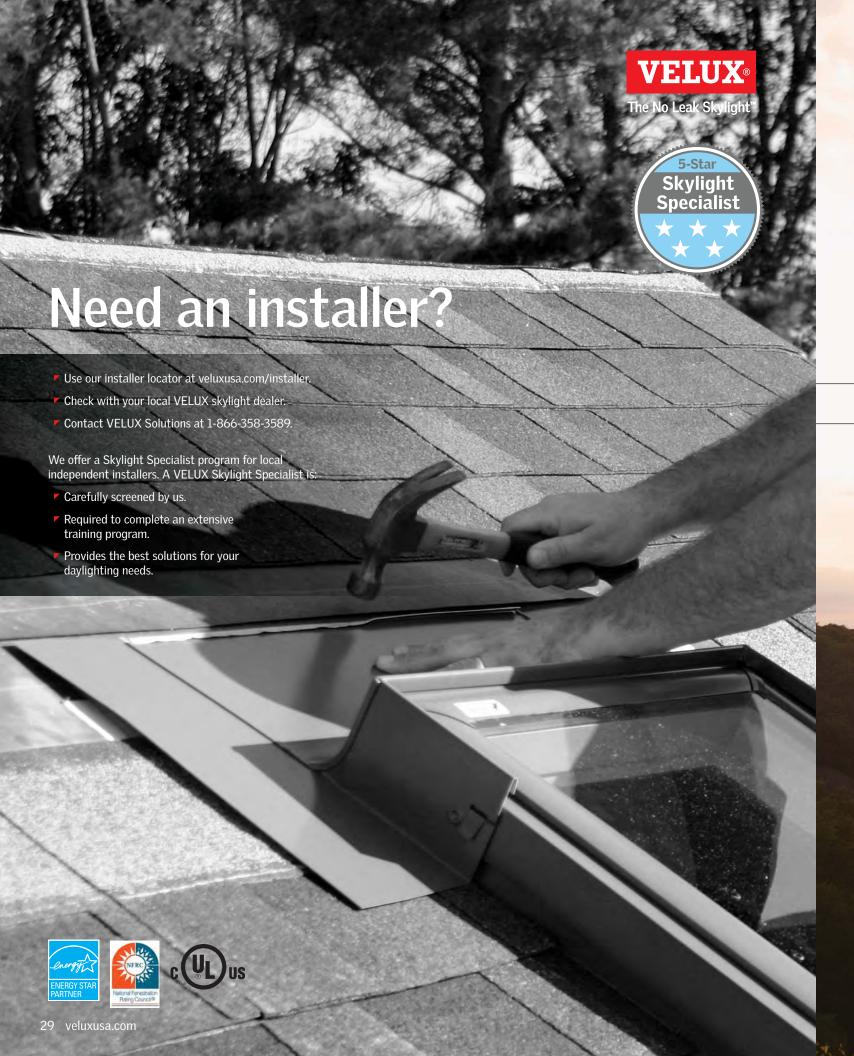
### Benefits:

- Pre-finished white wood frame and protective aluminum exterior.
- Integrated gaskets drain condensation to the outside.
- Streamlined exterior profile does not obstruct your roofline.
- Pre-mounted Pick&Click!™ system brackets make the installation of sunscreen blinds a snap.



\*For more information visit: veluxusa.com/taxcredits





# Energy performance and tax savings all in one box

- ✓ Skylight
- ✓ Solar Blind
- ✓ Remote Control

Available for the following models: VS, VCM, FS, FCM, QPF



# **Seasonal** automation optimizes energy efficiency

Reduce energy dependency and maximize efficiency by allowing the homeowner or system to control blind positioning based on outside conditions.

Choose from 5 color blinds. Double-pleated, room darkening, solar-powered blind improves energy performance up to 40%.



### Easy programmable remote control for winter and summer modes.



Blinds automatically close at night during winter months to maximize energy



Blinds automatically close during the daytime in warm summer months to maximize energy efficiency and reduce

\*For more information, please visit veluxusa.com/taxcredits. All calculations are based on the estimated cost of both the product and installation. These estimates were generated assuming a typical installation and used national averages for a new skylight cut-in. Actual installation costs will vary from these estimations based on common variables in roof construction and shaft construction.

# 30% Federal Tax Credit\*

Receive an average of \$730 on product and installation with federal tax credit eligibility.



# Factory-Installed Blinds

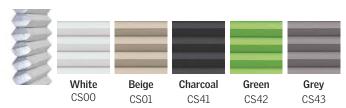
Ten factory-installed blinds are available to include with the purchase of your skylight. Most models are available in either manual or solar powered. The solar-powered blind uses its own independent, built-in solar panel and power system.

### In-stock room darkening - double-pleated blinds

Room darkening Blackout cloth with honeycomb structure.

Energy efficient Aluminum coating inside improves the insulation effect.

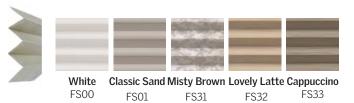
Sleek design Neat pleats.



### In-stock light filtering - single-pleated blinds

Light dimming Softens incoming light.

Sleek design Neat pleats.





33 veluxusa.com

# Special Order Blinds

Blackout 24/7

Solar-powered or manual

Pale Blue

4555

Dark Brown

4559

4562

Olive Green

4567

Flash Red

4572

1025

Essential

Pattern

4558

Grey

Light Blue

4571

35 veluxusa.com

Dark Purple Dark Pattern

Blackout even when the sun is shining.

Beige

1085

Blue

1100

Curry

4563

Vegetal

Pattern

4568

Black

3009

Beige

4556

Dark Red

4560

**Orange** 

4564

Pale Green

Graphic Pattern

4573

Light Grey

1705

Blue

2055

Pale Pink

4565

Bright

Yellow

4570

# Blackout blinds - flat Light filtering - single-pleated blinds

Colorful light effects
Softens incoming light.

Solar-powered or manual





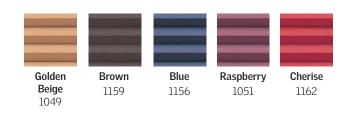
Federal tax credit on solar-powered blinds\*

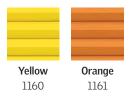
Available in room darkening - double-pleated blinds, blackout blinds, light filtering - single-pleated blinds and light filtering blinds

Note: Special order blinds ship separately from your skylight. Please allow 14 working days for delivery. \*For more information visit: veluxusa.com/taxcredits

### Room darkening - double-pleated blinds

- Double-pleated blinds
  Blackout cloth with honeycomb structure.
- Energy efficient
  40% improvement in U-value energy performance.
- Sleek design
  Neat pleats.
- Easy installation
  Installs in minutes with VELUX Pick&Click!™ system.
- Solar-powered or manual

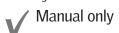




Venetian blinds

Complete light control

Control amount and direction of incoming light and shadows.





whyskylights.com 36







### Natural ventilation with a closed window

Let fresh air into your home without having to worry about security or bad weather, even when you are away or sleeping. Pull the unique top control bar once and you will allow fresh, filtered air to enter through the ventilation flap.



### White Polyurethane

Perfect for contemporary interiors and white ceilings. The polyurethane molding has no visible joints, and therefore ensures a moisture resistant finish that requires less maintenance than lacquered natural pine.



More access to the outdoors

All of our roof windows make it easier to gain access to the outdoors.

# **Roof Windows**

Top-Hinged Roof Window - GPU Center-Pivot Roof Window - GGU



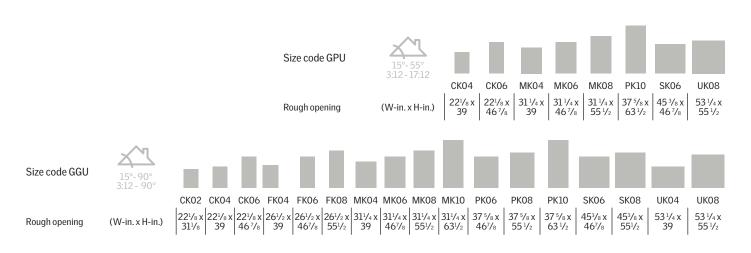




### Benefits:

- · Enjoy panoramic views while increasing your energy efficiency and natural ventilation.
- Greatly increase the amount of natural light in your rooms.
- Convenient bottom operation the perfect choice for loft conversions with windows in easy reach.
- GGU roof windows are only available for special order.
- Easy to open and quick to close with the top control bar.
- Low installation allows for more flexibility and better views.

Note: All cladding components for roof windows are included in the flashing box. If VELUX flashing is not used, then cladding pieces must be ordered.





# **Roof Windows**

Roof Access Window - GXU



### Benefits:

- Easy roof access for repairs, maintenance, emergency, and egress (FK06).
- Locking device keeps sash in open position.
- Slim sash and frame appearance.
- Ventilation flap.
- Can be installed as a left-hinged or right-hinged roof access window.
- Pre-installed Pick&Click!™ brackets for easy blind installation.

Note: All cladding components for roof windows are included in the flashing box. If VELUX flashing is not used, then cladding pieces must be ordered.



Size code GXU

Rough opening

(W-in. x H-in.)





22 ½ x 46 ½

26 ½ x 46 1/8



# **Balcony Roof Window**

Deck-Mounted - GDL CABRIO™



### Benefits:

- Dual-sash operation.
- Features a select wood frame with a clear finish sash coating and exterior aluminum.





Rough opening (W-in. x H-in.)

39 <sup>3</sup>/<sub>8</sub> x 101



# 10-Year Installation Warranty

Deck-Mounted - 3 layers of protection









1 Deck seal

The pre-attached deck seal on all deck-mounted skylights provides a seal between the frame and roof deck for a leak-proof installation.

2 Adhesive underlayment

Adhesive underlayment for secondary water protection against the harshest weather conditions.

Engineered flashing for easy installation and primary water protection.

 $For \ complete \ information \ visit \ the no leak sky light. com.$ 

# The No Leak Skylight

• No Leak Promise • No Worries

Curb-Mounted - 3 layers of protection









Pre-attached gasket

A pre-attached skylight gasket provides a seal between a standard site-built curb and the skylight that caps off a leak-proof installation for curb-mounted skylights.

2 Adhesive underlayment

Adhesive underlayment for secondary water protection against the harshest weather conditions for standard site-built curbs.

Flashing 

ECL shingle or ECW tile flashing must be purchased in order to qualify for the 10-year installation warranty.

Engineered flashing for easy installation and primary water protection.

For complete information visit thenoleakskylight.com.

TM

# **Deck-Mounted Flashing Systems**

Flashing must be purchased with skylights and installed properly to benefit from the No Leak Warranty



### Shingles/shakes - EDL

- Step flashing pieces interweave with roofing material for proper water drainage.
- Additional step pieces (ZZZ 200) are required for shakes and other thick roofing materials.



### Combi applications\*

- Type EKL works with groupings on low-profile roofing materials such as shingles and shakes.
- Type EKW works with groupings on high-profile roofing materials such as Spanish tile or corrugated metal roofing.

Note: VSS only available for side-by-side applications. (EKL only)



### Tile roofing - EDW

- Patented-sill flashing features pliable pleats that form to most types of tile.
- Side and head flashing pieces form a gutter to direct water away from the skylight.

Note: Not available for VSS



### Metal roofing - EDM

- Flashing pieces interlock with roofing material for a fast weather tight installation.
- Sill apron features pliable pleats that form to the roof.



# Copper cladding and flashing

- Available for select deckmounted VELUX roof windows and skylights.
- Copper products are special order items and require varying lead-times. Call for more information.



### Biepack flashing - ECB

- Used with site-built curb on low-sloped roofs.
- No bending of flashing required.
- Applied to 2-in. x 4-in. lumber and plywood.
- Download curb construction guidelines at veluxusa.com.



### \*EKL applications require 4-in. over-and-under spacing and 2.5-in. - 12-in. side-by-side spacing in $\frac{1}{2}$ -in. increments.

EKW applications require 4-in. side-by-side.

Roof window combi application is available as a special order with varying lead-times. 4-in. spacing is required for both over-and-under and side-by-side spacing.

# **Curb-Mounted Flashing Systems**

Flashing must be purchased with skylights and installed properly to benefit from the No Leak Warranty



### Shingles/shakes - ECL

- Step flashing pieces interweave with roofing material for proper water drainage.
- Additional step pieces (ZZZ 200) are required for shakes and other thick roofing materials.



### Tile roofing - ECW

- Patented-sill flashing features pliable pleats that form to most types of tile.
- Side and head flashing pieces form a gutter to direct water away from the skylight.

Note: Also available for 14" & 22" curbmount Sun Tunnel Skylight

### **Accessories**

Skylight accessories

# VELUX ACTIVE indoor climate control starter kit (KIX 300US)



This sensor-based control system monitors the climate in your home and automatically adjusts the ventilation of your skylights and position of your blinds accordingly.







# VELUX ACTIVE departure switch (KLN 300US)



Can securely close all electric/solar skylights. Safe mode limits skylight functions to only operate blinds when activated. Included in VELUX ACTIVE starter kit and can be bought separately in case extra departure switch is needed.

# Replacement Kits for FS and VS (ZZZ 238)

Replacement kit for all sizes of VS and most FS\* skylights. Allows the installer to use a standard size VELUX VS or FS skylight on a non-standard opening while minimizing the amount of interior trim work needed.

### Replacement kit (ZZZ 238) contents:

- 1. 4 pre-cut drywall groove filler pieces minimizes interior trim work needed.
- 2. 4 structural mounting brackets allows skylight to be used in applications with an oversized rough opening.
- \* Excluding FS A06, FS C12

# VELUX ACTIVE indoor climate sensor (KLA 300US)



Measures temperature, humidity, and air quality (CO<sub>2</sub> levels). It can also operate INTEGRA skylights. Included in VELUX ACTIVE starter kit and can be bought separately in case extra sensors are needed. A sensor is recommended for each room with Fresh Air skylights.

# Sun Screen Accessory Adapter Kit (ZZZ 232)



Enables prior model skylights to be fitted with any of our current model blinds. Available as a special order. For models manufactured prior to January 1, 2010.

# Instant Light Shaft (ZZZ 234)



The VELUX Instant Light Shaft simplifies the installation of a skylight by eliminating the time and costs associated with the construction of a traditional drywall light shaft.

# Angle Adapter for Chain Operator (ZZZ 203)



Extension for manual crank handle or for the manual angle adapter to make skylights easier to operate with a manual pole.

# Extension for Chain Operator (ZZZ 208)



Extension for manual crank handle or for the manual angle adapter to make skylights easier to operate.

# Trim Kit with L Parts (ZZZ 213)



Our skylight trim kit provides a clean interior finish with no trim work required. Used when replacing older style roof windows and skylights.

# Home Automation Integration Kit (KLF)



The KLF provides the means for third party sensors to send wireless commands to VELUX skylights and accessories. The interface can control up to 200 solar operated or electrically powered skylights or skylight blinds. The KLF also functions as a signal repeater that extends the operating range of standard operating controls.

### VS Replacement Hook (ZZZ 202) VCM Replacement Hook (ZZZ 211)



Available for manual venting skylights.

### VS Crank Handle (ZZZ 201) VCM Crank Handle (ZZZ 212)



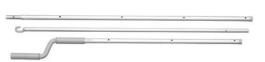
A manual crank handle used to operate deck-mounted venting skylights with a chain operator. Skylights must have been installed within reach and manufactured since 2010.

# Sunscreening Accessory Tray for Fixed Curb-mounted Skylights (ZZZ 199)



The sunscreening accessory tray combined with the revolutionary Pick&Click!™ system makes blind installation quick and easy for VELUX fixed, curb-mounted skylights. It has everything built-in.

# Extension Rods (ZCT 300, ZCT 100, ZXT 200)



6-ft. - 10-ft. rod for operation of manual skylights (ZCT 300) Available for models: VS, VCM

3-ft. extension for ZCT 300, and ZXT 200 (ZCT 100) Available for models: FS, VS, VCM, QPF

"7 hook" rod for new manual blinds (ZXT 200) Available for models: FS, FCM, QPF



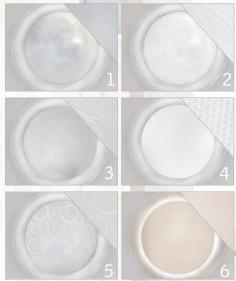


### Redesigned Ceiling Ring

Better looking

Brighter

More energy efficient



### 6 New Decorative Diffusers

1. Micro Fresnel

4. Prismatic

2. Triple Wave

5. Bubbles

3. Brushed Metal

6. Neutral Light



Flexi Loc™ system

A tunnel connection system that reduces tunnel installation time in half. Integrates highly reflective tunnels that deliver quality daylight into the space below.



# **VELUX Sun Tunnel Skylights**

Flat Glass - TLR Curb-Metal Flashing - TCR Rigid Pitched - TMR Rigid Low Profile - TGR

Kits included two 12" 45 degree adjustable elbows and one 24" tunnel extension. All kits can be ordered with a solar night light by adding "SL" to the product code.



### Benefits:

- Ultra low profile glass design creates a stealth appearance on any roof line.
- · Perfect for developments where local ordinance do not allow domed skylights.
- · Provides maximum daylight on southern exposures.
- One piece pan flashing for easy installation.



Model TLR	014
Overall flashing	25 <sup>3</sup> /8" x 30 <sup>1</sup> / <sub>2</sub> "
Rough opening (ceiling)	15
Rough opening (roof deck)	141/2"
Minimum installable length	4"
Maximum recommended install ength (orientation dependent)	30′

\*Do not cut into framing



VELUX Sun Tunnel Solar Powered Night Light For VELUX Rigid Residential Sun Tunnels (ZTZ 213)

Provides constant low-level light when the sun sets. Ensures Sun Tunnels provide light all day, every day. Available for all Rigid Sun Tunnels.



\*Tax credit based off total installation cost. Visit veluxusa.com/taxcredits.







- · Ideal for low sloped applications.
- Perfect for use with metal roofing, rolled roofing, and high profile roofing materials.
- · One piece curb mount flashing for easy installation.

- · Pitched pan flashing is ideal for sloped roof applications.
- Pitched flashing provides optimal angle for gathering daylight within sloped applications.
- Ideal for all roof exposures.
- One piece pan flashing for easy installation.
- look with the roof line. • Low profile dome - acrylic or polycarbonate.

• Low profile flashing provides and integrated

- Provides maximum daylight on southern exposures.
- One piece pan flashing for easy installation.



Model TCR	014
Overall flashing	22" x 22"
Rough opening (ceiling)	15
Rough opening (roof deck)	163/4"
Minimum installable length	8"
Maximum recommended install length	30′

\*Do not cut into framing

Model TMR	010	014
Overall flashing	24 <sup>3</sup> / <sub>4</sub> " x 26"	29" x 30 ½"
Rough opening (ceiling)	11 3/8"	15"
Rough opening (roof deck)	14¹/₂″ x 16″	14 ½ "x 20"
Minimum installable length	8"	8"
Maximum recommended install length	20′	30′

\*Do not cut into framing



Model TGR	010	014
Overall flashing	24 <sup>3</sup> / <sub>4</sub> " x 24 <sup>3</sup> / <sub>4</sub> "	29" x 29"
Rough opening (ceiling)	11 3/8"	15"
Rough opening (roof deck)	14 ½" x 16"	14 ½" x 18'
Minimum installable length	8"	8"
Maximum recommended install length	20′	30′

\*Do not cut into framing

# VELUX Sun Tunnel Skylights

Flex Pitched - TMF Flex Low Profile - TGF

Kits included 8' of flexible tunnel



### Benefits:

- Pitched pan flashing is ideal for sloped roof applications.
- Pitched flashing provides optimal angle for gathering daylight within sloped applications.
- Ideal for all roof exposures and short tunnel runs.
- One piece pan flashing for easy installation.



\*Do not cut into framing



- Low profile flashing provides and integrated look with the roof line.
- Low profile dome acrylic or polycarbonate.
- Provides maximum daylight on southern exposures.
- One piece pan flashing for easy installation.

14° - 60° 3:12 - 20:12 Model TGF	014	022
Overall Flashing size	29" x 29"	37" x 37"
Rough opening (ceiling)	15"	221/2"
Rough Opening (roof deck)	14½"x18"	221/2" x 26"
Minimum installable length	8"	8"
Maximum recommended install length	8′	8′

\*Do not cut into framing



# Accessories

Sun Tunnel Accessories



# VELUX Sun Tunnel Solar Powered Night Light (ZTZ 213)



Provides constant low-level light when the sun sets. Ensures Sun Tunnels provide light all day, every day. Available for all Rigid Sun Tunnels.

\*Tax credit based off total instsallation cost. Visit veluxusa.com/taxcredits.

# VELUX ZTL Electric Light Kit (ZTL)



Federal Tax

Credit\*

UL-approved, tubular light fixture that uses an energy efficient GU24 bulb base. Capable of accepting compact fluorescent bulbs or LED bulbs.

Available for all models.

c(UL)us

# Tile Flashing for 10" and 14" Pitched Sun Tunnel Skylights (ZTM)



Tile flashing accessory for pitched Sun Tunnel Skylights. Engineered with a painted, malleable aluminum water diverting sheet.

# Tile Flashing for 14" & 22" Curb-mounted Sun Tunnel Skylights (ECW)



A pliable, pleated, and proven curbmounted tile flashing system for VELUX curb-mounted Sun Tunnel Skylights. Engineered flashing designed for tile roofing material.

# Daylight Controller (ZTP) Power Supply for Controller (ZZZ 233)



Allows the user to control the amount of daylight that enters a room. Perfect for rooms that require room darkening.



Power supply for VELUX Sun Tunnel Skylight light control devices.

# Energy Kit (ZTC 0041US)



Designed to increase the energy efficiency of the VELUX Sun Tunnel Skylight while enabling it to be ENERGY STAR® certified.

### Diffusion Enhancer (ZTZ 209)



A highly reflective, obscure 6" band designed to diffuse direct sunlight.

### Elbows (ZTE)



A durable and easy to operate elbow that can be used at the top, bottom, or middle of your installation. Multiple elbows can be joined together with rotating couplers to form a 90° bend or any other configuration needed to maneuver around obstacles. Length 15"

# Rotating Coupler (ZTZ 211)



Easy to install tunnel and elbow coupler that enables quick tunnel connections. Rotating joint helps align tunnel sections.

Available in 10" and 14"

# Rigid Tube



24" Tunnel sections manufactured with the Flexi Loc™ tunnel connector system reduces tunnel installation time in half while delivering the highest quality daylight into the space below.

# Exterior Fire Band (ZZZ 192)



Fire band provides the dome edge protection needed for installation on Class B and C rated roofs.

### **Decorative Diffuser**

(ZTB)

Transform Sun Tunnels to match your interior décor. Select from a range of micro engineered decorative diffusers to increase interior aesthetics and visual appeal.



Micro Fresnel ZTB 4004US



Triple Wave ZTB 4005US



Brushed Metal ZTB 4006U



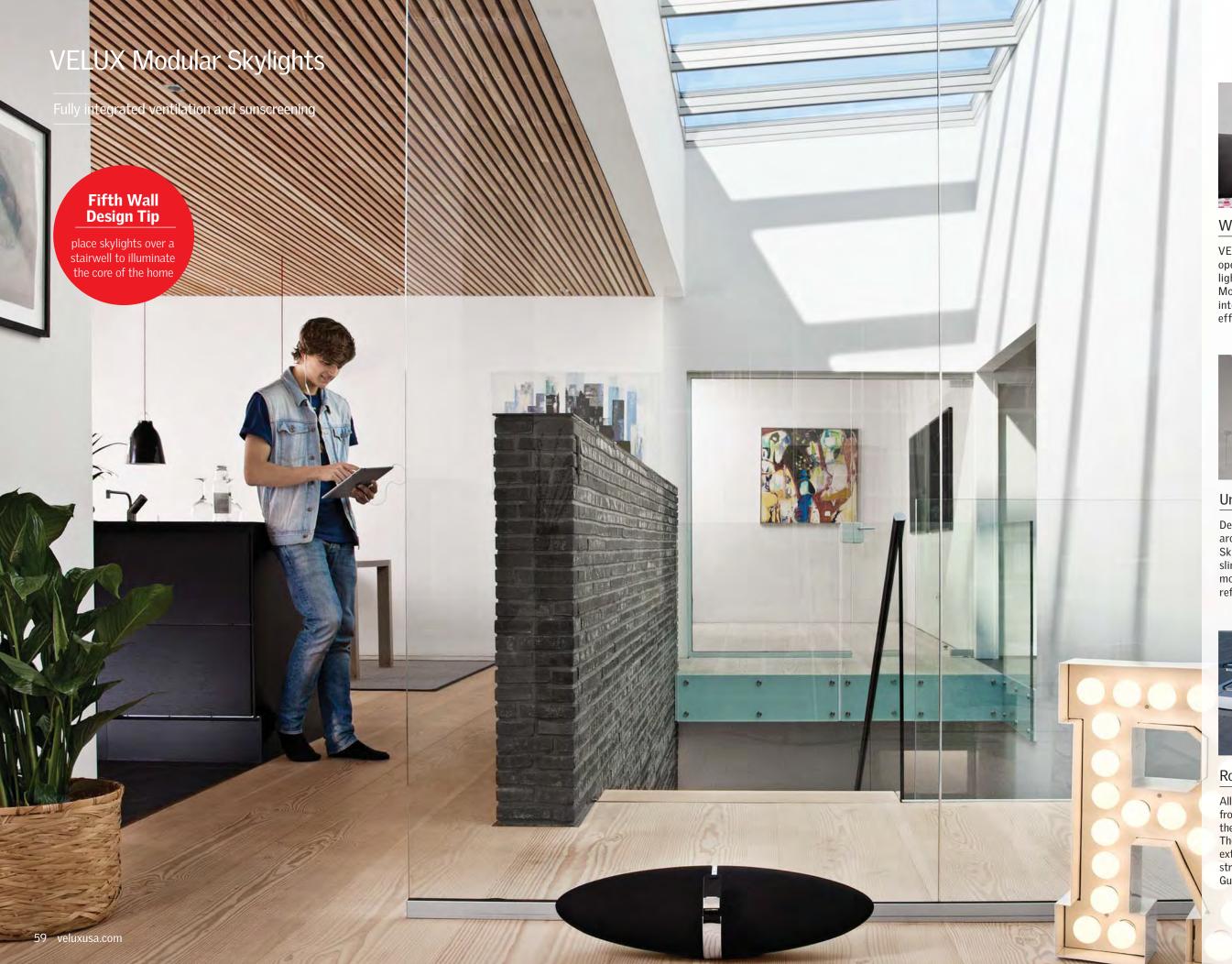
Prismatic ZTB 4007US



Bubbles ZTB 4008US



Neutral Light ZTB 4009US





### What are VELUX Modular Skylights?

VELUX Modular Skylights are the perfect way to open up large rooms in your home and create a light, bright and spacious environment. VELUX Modular Skylights combine elegant lines and intelligent design with exceptional energy efficiency.



### Unique design

Developed in collaboration with renowned architects Foster + Partners, VELUX Modular Skylights offers a minimalist design with superslim profiles. The electronics and motors in each module are concealed, creating a simple and refined look, inside and out.



### Robust and energy efficient

All VELUX Modular Skylights are constructed from an advanced composite material that makes them very strong and highly energy-efficient. The entire installation is designed to withstand extreme weather conditions, with a life expectancy stretching far into the future and a 10-Year Product Guarantee.

# **VELUX Modular Skylights**

### 5° Longlights suitable for roof pitches between 0°- 10° \*

Other longlight systems available for roof pitches betweeen 10°- 25° call 844-99-GOVMS

	Product code Ventilating	Product code all Fixed	Description	Total opening width x height
4	HVC 100120 SL0047	HFC 100120 SL0017	Fixed: One fixed longlight, complete with all flashings components.**	41 %16" x 51"
	HVC 100160 SL0047	HFC 100160 SL0017		41 <sup>9</sup> / <sub>16</sub> " x 67"
	HVC 100200 SL0047	HFC 100200 SL007	<b>Ventilating:</b> One electrically operated vented longlight, complete with all flashings components. Includes electric control system and	41 <sup>9</sup> / <sub>16</sub> " x 83"
	HVC 100240 SL0047	HFC 100240 SL0017	wind and rain sensor.**	41 <sup>9</sup> / <sub>16</sub> " x 98"
	UNO 100120 CL 00 42	UE0 100120 CL 001C	Front Too Condition Units annual state of the floations of the	03// 53//
	HVC 100120 SL0048	HFC 100120 SL0018	Fixed: Two fixed longlights, complete with flashing components.**	81" x 51"
	HVC 100160 SL0048	HFC 100160 SL0018		81" x 67"
	HVC 100200 SL0048	HFC 100200 SL0018	<b>Ventilating:</b> Two longlights, one fixed, one electrically operated vented, complete with flashing components. Includes electric control sys-	81" x 83"
<b>V</b>	HVC 100240 SL0048	HFC 100240 SL0018	tem and wind and rain sensor.**	81" x 98"
	HVC 100120 SL0049	HFC 100120 SL0019	Fixed: Three fixed longlights, complete with flashing components.**	120 <sup>4</sup> /16" x 51"
	HVC 100160 SL0049	HFC 100160 SL0019		120 <sup>4</sup> / <sub>16</sub> " x 67"
	HVC 100200 SL0049	HFC 100200 SL0019	<b>Ventilating:</b> Three longlights, two fixed, one electrically operated vented, complete with flashing components. Includes electric control	120 <sup>4</sup> /16" x 83"
	HVC 100240 SL0049	HFC 100240 SL0019	system and wind and rain sensor.**	120 <sup>4</sup> / <sub>16</sub> " x 98"
	HVC 100120 SL0050	HFC 100120 SL0020	Fixed: Four fixed longlights, complete with flashing components.**	159 <sup>10</sup> / <sub>16</sub> " x 51"
	HVC 100160 SL0050	HFC 100160 SL0020	The state of the s	159 <sup>10</sup> / <sub>16</sub> " x 67"
	HVC 100200 SL0050	HFC 100200 SL0020	Ventilating: Four longlights, two fixed, two electrically operated	159 <sup>10</sup> / <sub>16</sub> " x 83"
	HVC 100240 SL0050	HFC 100240 SL0020	vented, complete with flashing componets. Includes electric control system and wind and rain sensor.**	159 10/16" x 98"
	HVC 100120 SL0051	HFC 100120 SL0021	Fixed: 10 fixed longlights, complete with flashing components.**	395 14/16" x 51"
	HVC 100160 SL0051	HFC 100160 SL0021		395 <sup>14</sup> / <sub>16</sub> " x 67"
	HVC 100200 SL0051	HFC 100200 SL0021	<b>Ventilating:</b> Ten longlights, seven fixed, three electrically operated vented, complete with flashing components. Includes electric control	395 <sup>14</sup> / <sub>16</sub> " x 83"
	HVC 100240 SL0051	HFC 100240 SL0021	system and wind and rain sensor.**	$395^{14}/_{16}$ " x $98$ "

Delivery time is approximately 8-10 weeks

**Double-glazing unit** 

All configurations come standard with Type 10 Glass – Dual pane, low energy, clear exterior over laminated interior.

Also available:

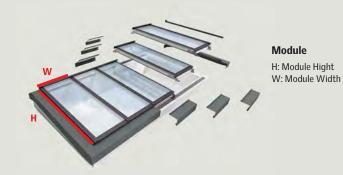
Type 11 Dual pane, low energy, with solar protection exterior over laminated interior.

Type 16 Super low energy, triple pane.



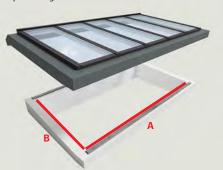
### **Modular concept**

VELUX Modular Skylights is based on a strictly modular concept. All components are prefabricated to ensure consistent quality throughout the build, fast and easy installation and a perfect fit every time.



### **Individual sub-construction**

To ensure a precise and trouble-free installation process, the sub-construction needs to meet the individual demands of your roof construction. Consequently, the sub-construction is not part of the modular system, but has to be constructed on site. Ask your installer to recommend the best sub-construction for your installation project. Sub-construction document will be provided on all quotes and orders providing exact dimensions.



### **Sub-construction**

A: Opening Width B: Opening Length

### More VMS configurations are available.

Please call 844-99-GOVMS for pricing and product availability or email vmsmodularskylightsusa@velux.com.





<sup>\*\*</sup>The installer is responsible for curb flashing material and installation of the curb to the roof. Installer may want to consider the use of a water diverter above the longlight system when installed on a pitched roof.

# Testing data

VSE/VSS Technical Information										
Glass	04	06**	08	10	9994					
			<b>/exfiltration</b> t²) differentia							
l/s/m²	0.2	0.4	0.2	0.3	0.2					
cfm/ft²	cfm/ft <sup>2</sup> 0.03 0.07 0.03 0.06 0.03									
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]										
Pascals	720	720	720	720	720					
lbs/ft²	15	15	15	15	15					
	(Ce	Thermal pe ertified, compl	r <b>formance</b> ete unit values	s)						
	, ,		slope and labo the NFRC Cer							
U-Factor	0.42	0.40	0.42	0.41	0.37					
SHGC	0.23	0.23	0.22	0.23	0.23					
VT	0.53	0.52	0.39	0.52	0.52					
		UV prote	ction, %							
300-380 nm	99.9	99.9	99.9	99.9	99.9					
F	ading protec	tion, % (Kro	chmann dama	ge function)						
300-600 nm	83.1	84.6	88.4	83.2	85.1					
S	tructural Per		erformance G		•					
Tested size			Uplift (lbs/ft²)							
S06	65	65	65	80	65					
M08	105	65	105	85	105					
C06	n.r.	n.r.	n.r.	90	n.r.					
Tested size		Do	ownload (lbs/f	t <sup>2</sup> )						
S06	370	300	370	860	370					
M08	440	360	440	1090	440					
C06	n.r.	n.r.	n.r.	1200	n.r.					

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size VSE and VSS skylights are WDMA Hallmark certified: **Product 426-H-670** (not applicable to copper-clad variants)

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-borne debris impact, in accordance with ASTM E 1886 and ASTM E 1996. Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

04 glass: Tempered over laminated HS (0.030" interlayer)
06 glass: Tempered over laminated HS (0.090" interlayer)
08 glass: Same as 04, with white interlayer
10 glass: Tempered over laminated Tempered (0.030" interlayer)
9994 glass: Same as 04, with i89 coating on interior surface

VS Technical Information								
Glass	04	05	06**	08	10	9993	9994	
Air infiltration/exfiltration* [max. @ 75 Pa (1.57 lbs/ft²) differential pressure]								
l/s/m²	0.2	0.5	0.4	0.2	0.3	0.5	0.2	
cfm/ft²	0.03	0.09	0.07	0.03	0.06	0.09	0.03	
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]								
Pascals	720	720	720	720	720	720	720	
lbs/ft²	15	15	15	15	15	15	15	
		(Certif	nermal per Tied, comple	ete unit valı	-			
	,	ights are ra <b>1d VT</b> ratin						
U-Factor	0.42	0.43	0.40	0.42	0.41	0.38	0.37	
SHGC	0.23	0.23	0.23	0.22	0.23	0.23	0.23	
VT	0.53	0.54	0.52	0.39	0.52	0.52	0.52	
			UV protec	tion, %				
00-380 nm	99.9	95.2	99.9	99.9	99.9	95.3	99.9	
Fading protection, % (Krochmann damage function)								
	Fading	protection	, % (Kroc	hmann daı	nage funct	ion)		
00-600 nm	Fading 83.1	protection 79.2	1 <b>, % (Kroc</b> 84.6	hmann dai 88.4	nage funct 83.2	ion) 81.6	85.1	
00-600 nm	83.1		84.6	88.4	83.2	81.6	85.1	
	83.1	79.2	84.6 mance [Pe	88.4	83.2 Grade or I	81.6	85.1	
	83.1	79.2	84.6 mance [Pe	88.4 erformance	83.2 Grade or I	81.6	85.1	
Tested size	83.1 Structu	79.2 Iral Perfori	84.6 <b>nance [Pe</b>	88.4 e <b>rformance</b> plift (lbs/ft	83.2 • <b>Grade or I</b>	81.6 <b>DP]</b> *		
Tested size	83.1 <b>Struct</b> u	79.2 Iral Perform	84.6 mance [Pe	88.4 e <b>rformance</b> plift (lbs/ft 65	83.2 • Grade or I  2)  80	81.6 <b>DP] *</b>	65	
M08	83.1 Structu  65  105	79.2 Iral Perform 90 120	84.6 mance [Pe  U  65  65  n.r.	88.4 erformance plift (lbs/ft 65 105	83.2 e Grade or I 2 <sup>2</sup> ) 80 85 90	81.6 <b>DP]</b> *  90  120	65 105	
Tested size S06 M08 C06	83.1 Structu  65  105	79.2 Iral Perform 90 120	84.6 mance [Pe  U  65  65  n.r.	88.4 erformance plift (lbs/ft 65 105 n.r.	83.2 e Grade or I 2 <sup>2</sup> ) 80 85 90	81.6 <b>DP]</b> *  90  120	65 105	
Tested size S06 M08 C06 Tested size	83.1 Structu  65  105  n.r.	79.2 ral Perform  90  120  n.r.	84.6  mance [Pe  U  65  65  n.r.  Dow	88.4 erformance plift (lbs/ft 65 105 n.r. vnload (lbs/	83.2 e Grade or I 2) 80 85 90	81.6 OP] *  90 120 n.r.	65 105 n.r.	

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size VS skylights are WDMA Hallmark certified: **Product 426-H-670** (not applicable to copper-clad variants)

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-borne debris impact, in accordance with ASTM E 1886 and ASTM E 1996.

Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

**04 glass:** Tempered over laminated HS (0.030" interlayer)

9994 glass: Same as 04, with i89 coating on interior surface

05 glass: Tempered over tempered
06 glass: Tempered over laminated HS (0.090" interlayer)
08 glass: Same as 04, with white interlayer
10 glass: Tempered over laminated Tempered (0.030" interlayer)
29 glass: Tempered over tempered over laminated HS (0.030" interlayer)
9993 glass: Same as 05, with i89 coating on interior surface

FS Technical Information									
Glass	04	05	06**	08	10	9993	9994		
Air infiltration/exfiltration* [max. @ 75 Pa (1.57 lbs/ft²) differential pressure]									
l/s/m²	0.1	0.7	0.1	0.1	0.1	0.7	0.1		
cfm/ft²	0.01	0.14	0.01	0.01	0.01	0.14	0.01		
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]									
Pascals	720	720	720	720	720	720	720		
lbs/ft²	15	15	15	15	15	15	15		
			nermal per fied, comple	<b>formance</b> ete unit valu	ıes)				
	,	_		slope and la the NFRC C					
U-Factor	0.44	0.45	0.42	0.44	0.42	0.39	0.38		
SHGC	0.26	0.26	0.26	0.25	0.26	0.26	0.26		
VT	0.60	0.61	0.60	0.44	0.60	0.60	0.60		
			UV protec	tion, %					
300-380 nm	99.9	95.2	99.9	99.9	99.9	95.3	99.9		
	Fading	Fading protection, % (Krochmann damage function)							
			, (	hmann dar	nage funct	ion)	99.9		
300-600 nm	83.1	79.2	84.6	hmann dar 88.4	nage funct 83.2	t <b>ion)</b> 81.6	85.1		
300-600 nm			84.6		83.2	81.6			
300-600 nm Tested size			84.6 mance [Pe	88.4	83.2 Grade or I	81.6			
			84.6 mance [Pe	88.4 erformance	83.2 Grade or I	81.6			
Tested size	Structu	ıral Perfor	84.6 mance [Pe	88.4 erformance plift (lbs/ft	83.2 • <b>Grade or I</b>	81.6 DP] *	85.1		
Tested size	Structu 70	ral Perfor	84.6 mance [Pe	88.4 erformance plift (lbs/ft 70	83.2 • Grade or I  2)  65	81.6 <b>DP] *</b>	85.1		
Tested size S06 M08	70 105	45 90	84.6 mance [Pe  U  65  120  n.r.	88.4 erformance plift (lbs/ft 70 105	83.2 e Grade or l 2 <sup>2</sup> ) 65 100 65	81.6 DP] * 45 90	70 105		
Tested size S06 M08 C06	70 105	45 90	84.6 mance [Pe  U  65  120  n.r.	88.4 erformance plift (lbs/ft 70 105 n.r.	83.2 e Grade or l 2 <sup>2</sup> ) 65 100 65	81.6 DP] * 45 90	85.1 70 105		
Tested size S06 M08 C06 Tested size	70 105 n.r.	45 90 n.r.	84.6  mance [Pe  U  65  120  n.r.  Dov	88.4 erformance plift (lbs/ft 70 105 n.r. vnload (lbs/	83.2 e Grade or I 2) 65 100 65 (ft²)	81.6 DP] *  45  90  n.r.	70 105 n.r.		

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size FS skylights are WDMA Hallmark certified: **Product 426-H-669** (not applicable to copper-clad variants)

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-borne debris impact, in accordance with ASTM E 1886 and ASTM E 1996.

Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

04 glass: Tempered over laminated HS (0.030" interlayer)
05 glass: Tempered over tempered
06 glass: Tempered over laminated HS (0.090" interlayer)
08 glass: Same as 04, with white interlayer

10 glass: Tempered over laminated Tempered (0.030" interlayer)
29 glass: Tempered over tempered over laminated HS (0.030" interlayer)
9993 glass: Same as 05, with i89 coating on interior surface

9994 glass: Same as 04, with i89 coating on interior surface

	VCE /V	CS Techni	ical Inforn	nation				
Glass	04	06**	08	10	9994			
			<b>/exfiltration</b> t²) differentia					
l/s/m²	0.1	0.1	0.41	<0.1	0.1			
cfm/ft²	0.02	0.01	0.02	<0.01	0.02			
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]								
Pascals	720	720	720	720	720			
lbs/ft²	15	15	15	15	15			
	(Ce	Thermal pertified, compl	rformance ete unit values	5)				
	s Skylights ard I <b>GC, and VT</b> ra							
U-Factor	0.53	0.50	0.53	0.51	0.48			
SHGC	0.24	0.24	0.23	0.24	0.22			
VT	0.55	0.54	0.40	0.54	0.49			
		UV prote	ction, %					
300-380 nm	99.9	99.9	99.9	99.9	99.9			
F	ading protec	tion, % (Kro	chmann dama	ge function)				
300-600 nm	83.1	84.6	88.4	83.2	85.1			
S	tructural Per	formance [P	erformance G	irade or DP] *	•			
Tested size			Uplift (lbs/ft²)					
4646	45	60	45	40	45			
2246	n.r.	n.r.	n.r.	65	n.r.			
Tested size		Do	ownload (lbs/f	t <sup>2</sup> )				
4646	230	230	230	620	230			
2246	n.r.	n.r.	n.r.	1150	n.r.			
4-			// . /		110			

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size VCE and VCS skylights are WDMA Hallmark certified: **Product 426-H-695** 

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-borne debris impact, in accordance with ASTM E 1886 and ASTM E 1996. Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

04 glass: Tempered over laminated HS (0.030" interlayer)
06 glass: Tempered over laminated HS (0.090" interlayer)
08 glass: Same as 04, with white interlayer
10 glass: Tempered over laminated Tempered (0.030" interlayer)
9994 glass: Same as 04, with i89 coating on interior surface

# Testing data

Glass	04	0.5							
		05	06**	10	9993	9994			
Air infiltration/exfiltration* [max. @ 75 Pa (1.57 lbs/ft²) differential pressure]									
l/s/m²	0.1	<0.1	0.1	<0.1	<0.1	0.1			
cfm/ft²	0.02	<0.01	0.01	<0.01	<0.01	0.02			
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]									
Pascals	720	720	720	720	720	720			
lbs/ft²	15	15	15	15	15	15			
			n <b>al perform</b> complete un						
				and labeled v FRC Certifie					
U-Factor	0.53	0.53	0.50	0.51	0.48	0.48			
SHGC	0.24	0.24	0.24	0.24	0.22	0.22			
VT	0.55	0.56	0.54	0.54	0.50	0.49			
		UV	protection,	%					
300-380 nm	99.9	95.2	99.9	99.9	95.3	99.9			
	Fading pro	otection, %	(Krochman	ın damage f	unction)				
300-600 nm	83.1	79.2	84.6	83.2	81.6	85.1			
	Structural	Performan	ce [Perforn	nance Grade	or DP] *				
Tested size			Uplift (	lbs/ft²)					
4646	45	30	60	40	30	45			
2246	n.r.	n.r.	n.r.	65	n.r.	n.r.			
Tested size			Download	d (lbs/ft²)					
4646	230	230	230	620	230	230			
2246	n.r.	n.r.	n.r.	1150	n.r.	n.r.			

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size VCM skylights are WDMA Hallmark certified: **Product 426-H-695** 

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-borne debris impact, in accordance with ASTM E 1886 and ASTM E 1996. Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

**04 glass:** Tempered over laminated HS (0.030" interlayer) **05 glass:** Tempered over tempered **06 glass:** Tempered over laminated HS (0.090" interlayer) 08 glass: Same as 04, with white interlayer **10 glass:** Tempered over laminated Tempered (0.030" interlayer) **9993 glass:** Same as 05, with i89 coating on interior surface

9994 glass: Same as 04, with i89 coating on interior surface

FCM Technical Information								
Glass	04	05/05C	06**	80	10	29/30	9993	9994
	[ma	<b>Air i</b> aax. @ 75 Pa		on/exfilt s/ft²) diff		ressure]		
l/s/m²	0.2	<0.1	<0.1	0.2	0.1	0.3	<0.1	0.2
cfm/ft²	0.03	<0.01	<0.01	0.03	0.01	0.05	<0.01	0.03
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]								
Pascals	720	720	720	720	720	720	720	720
lbs/ft²	15	15	15	15	15	15	15	15
				<b>performa</b> iplete uni				
	,	lights are ra I <b>nd VT</b> ratii						
U-Factor	0.48	0.49/0.45	0.46	0.48	0.47	0.38	0.43	0.43
SHGC	0.27	0.27/0.28	0.27	0.26	0.27	0.25	0.25	0.25
VT	0.63	0.64/0.63	0.62	0.46	0.62	0.57	0.57	0.57
			UV pro	tection, <sup>9</sup>	%			
300-380 nm	99.9	95.2	99.9	99.9	99.9	95.2	95.3	99.9
	Fading	g protectio	n, % (Kı	rochman	n damag	e functio	n)	
300-600 nm	83.1	79.2	84.6	88.4	83.2	79.2	81.6	85.1
	Struct	ural Perfo	rmance			de or DP	]*	
Tested size		ı		Uplift (l				
4672	80	n.r.	n.r.	80	n.r.	n.r.	n.r.	80
4646	120	140	80	120	135	60	140	120
2270	100	n.r.	n.r.	100	n.r.	n.r.	n.r.	100
Tested size	70			Download 70				70
4646	250	n.r.	n.r.	250	n.r. 970	n.r. 75	n.r.	250
2270	200	n.r.	n.r.	200	970 n.r.	n.r.	n.r.	200
2210	200	11.1.	11.1.	200	11.1.	11.1.	11.1.	200

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Structural performance ratings also apply to sizes smaller than the Tested Size FCM skylights are WDMA Hallmark certified: **Product 426-H-701** 

\*\* 06 variant is tested and WDMA Hallmark certified for Wind-Borne debris impact, Florida HVHZ: Large Missile Level D, Cycle Pressure +50/-50, tested per TAS 201, 202 and 203 (Wind Zone 4) Large Missile Level C, Cycle Pressure +50/-50, tested per ASTM E 1886 and ASTM E 1996

**04 glass:** Tempered over laminated HS (0.030" interlayer) **05** glass: Tempered over tempered **06 glass:** Tempered over laminated HS (0.090" interlayer) **08 glass:** Same as **04**, with white interlayer 10 glass: Tempered over laminated Tempered (0.030" interlayer) **29 glass:** Tempered over tempered over laminated HS (0.030" interlayer) **30 glass:** Tempered over tempered over tempered 9993 glass: Same as 05, with i89 coating on interior surface 9994 glass: Same as 04, with i89 coating on interior surface

Note: The FCM 4646 (or smaller) 06 is the only VELUX skylight currently qualified for use in Florida HVHZ (High Velocity Hurricane Zone).

QPF Technical Information											
Glass	04	05	06**	08	9993	9994					
Air infiltration/exfiltration* [max. @ 75 Pa (1.57 lbs/ft²) differential pressure]											
l/s/m²	0.5	0.3	0.4	0.5	0.3	0.5					
cfm/ft²	0.09	0.06	0.08	0.09	0.06	0.09					
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr) * [max. tested differential pressure with no leakage]											
Pascals	580	720	720	580	720	580					
lbs/ft²	12	15	15	12	15	12					
Thermal performance (Certified, complete unit values)											
QPF Skylights are rated and labeled per NFRC Procedures (VEL-N-17) U-Factor, SHGC, and VT ratings listed in the NFRC Certified Products Directory											
U-factor (Btu/[hr*ft²*F°]) @20° slope	0.42	0.43	0.40	0.42	0.38	0.37					
SHGC	0.25	0.24	0.25	0.24	0.24	0.24					
VT	0.57	0.57	0.57	0.40	0.56	0.56					
		UV pro	tection, %								
300-380 nm	99.9	95.2	99.9	99.9	95.3	99.9					
Fadi	ng protect	ion, % (Kr	ochmann (	damage fu	nction)						
300-380 nm	83.1	79.2	84.6	88.4	81.6	85.1					
Struc	ctural Perf	formance [	Performa	nce Grade	or DP] *						
Tested size	Uplift (lbs/ft²)										
4646	80	80	100	80	80	80					
Tested size	Download (lbs/ft²)										
4646	320	300	300	320	300	320					
* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)  Structural performance ratings also apply to sizes smaller than the Tested Size											
<b>QPF</b> skylights are certified per WDMA Hallmark: <b>Product 426-H-677</b> Florida Product Approval FL-13300											

Texas Dept. of Insurance Reports: SK-03 and SK-14

\*\*06 variant is tested and certified per WDMA Hallmark for Wind-borne debris, in accordance with ASTM E 1886 and ASTM E 1996. Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50/-50

**04 glass:** Tempered over laminated HS (0.030" interlayer) **05 glass:** Tempered over tempered **06 glass:** Tempered over laminated HS (0.090" interlayer) **08 glass:** Same as 04, with white interlayer 9993 glass: Same as 05, with i89 coating on interior surface 9994 glass: Same as 04, with i89 coating on interior surface

### Testing data notes

- a) Production samples structurally tested and labeled in accordance with one or more of: AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS), various ASTM methods.
- b) Thermal and optical performance data are verified by accredited entities.
- c) Most variants with WDMA Hallmark certification are also recognized under Uniform-ES report #ER 0199 (IAPM0-ES).

NOTICE: ALL GLASS MAY BE SUBJECT TO UNEXPECTED AND SPONTANEOUS BREAKAGE in rare circumstances due to imperfections in the alass that are undetectable during the manufacturing and inspection process by the manufacturer of the glass and VELUX.

Residential Sun Tunnel Skylights Technical Information												
Model	TLR	TSR	TCR	TGF	TGR	TMF	TMR/THR					
Air infiltration/exfiltration* [max. @ 75 Pa (1.57 lbs/ft²) differential pressure]												
l/s/m²	0.1	0.3	0.5	0.2								
cfm/ft²	0.01	0.05	0.09	0.04								
Water resistance @ 3.4 L/m²/min (5 USgal/ft²/hr)* [max. tested differential pressure with no leakage]												
Pascals	720	720	720	720								
lbs/ft²	15	15	15	15								
Thermal performance (Certified, complete unit values)												
Sun Tunnels are tested, listed and labeled per NFRC procedures U-Factor (with insulation at ceiling), SHGC, and VT <sub>annual</sub>												
U-factor: Btu/[hr*ft²*F°]												
Base model	0.51	n.r.	n.r.	0.50	n.r.	0.50	n.r.					
w/energy kits	0.36	n.r.	0.38	0.37	0.38	0.37	0.38					
SHGC: US ratings shown for models with EO energy kits												
Base model	0.46	n.r.	n.r.	0.21	n.r.	0.21	n.r.					
w/energy kits	0.42	n.r.	0.25	n.r.	0.25	n.r.	0.25					
	Annu	al Average	Visible T	ransmitta	nce (VT <sub>ann</sub>	<sub>ual</sub> )						
Base model	0.36	n.r.	n.r.	0.16	n.r.	0.16	n.r.					
w/energy kits	0.32	n.r.	0.40	n.r.	0.40	n.r.	0.40					
Structural Performance [Performance Grade or DP]* [Note: 1 psf = 47.88 Pa]												
Dome type **		Uplift (negative)										
Acrylic or Polycarbonate	n.a.	180 Acrylic only	165	125								
Temp. Glass	245			n.a.								
Dome type **		Download (positive)										
Acrylic or Polycarbonate	n.a.	200 Acrylic only	300	300								
Temp. Glass	150		n.a.									

\* Tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)

Sun Tunnels are certified per WDMA Hallmark: Products 426-H-626, -693, -705, and -706 Florida Product Approval FL-6393

Texas Dept. of Insurance Reports: SK-12, SK-15 and SK-24

\*\*All Sun Tunnels models with Polycarbonate domes are tested for Wind-Borne debris, in accordance with ASTM E1886 and ASTM E1996. Rated for Wind Zone 3. Missile Level C. Cycle Pressure +50/-50

(The following models not available with Polycarbonate domes: THR, TLR, TSR)

VELUX America LLC offers the choice of laminated or tempered glass for the inside pane. Laminated glass is a combination of two or more glass sheets with one or more interlayers of plastic (PVB). In case of breakage, the interlayer is designed to hold the fragments together. Types 04, 06, 08 and 10 glass are the standard  $laminated\ glass\ options.\ Type\ O5\ glass\ is\ the\ only\ standard\ tempered\ glass\ option.\ Tempered\ glass\ does\ not$ contain an interlayer to hold the fragments together; instead, tempered glass is designed to break into small, pebble-like pieces. When tempered glass breaks, pieces of glass come loose and may strike an individual. CONSULT LOCAL REGULATIONS AND/OR BUILDING MATERIAL CONSULTANTS TO DETERMINE WHICH TYPE OF GLASS IS RIGHT FOR YOU OR IF LAMINATED GLASS OR GLASS RETENTION SCREENING IS REQUIRED IN YOUR APPLICATION.

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