Flat Glass

TB403

Brett Martin Flat Glass
Datasheet

Product Description
Brett Martin Daylight Systems' Flat Glass Rooflights are individual glass rooflights intended for installation on flat roofs of all modern building types to provide natural light (and ventilation where specified). Brett Martin Flat Glass rooflights are manufactured to ISO 9001 industry standards.

Brett Martin Flat Glass exhibits a sleek and contemporary design with a slimline powder coated frame and flush fitting glass panel. All Brett Martin Daylight Systems Flat Glass rooflights have full BBA approval and are certified under 06/4385. All fixed Brett Martin Flat Glass rooflights achieve Secured by Design accreditation.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 06/4385

Secured by Design
SBD
Police Preferred Specification

THE FIRST CHOICE FOR SAFETY WITH OVERHEAD GLAZING
LAMINATED INNER PANE
ENDORSED BY THE ROOFLIGHT ASSOCIATION

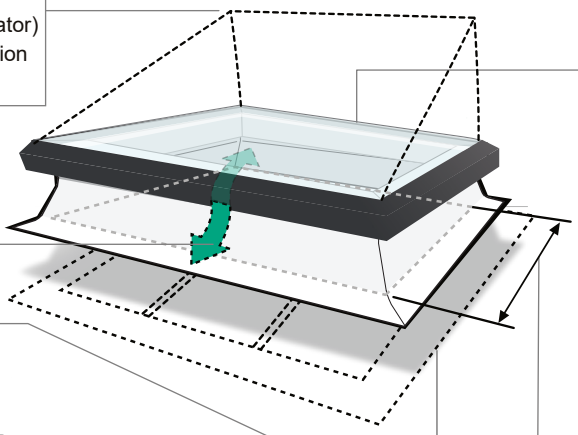
Design Features
- Premium rooflight offering a robust build as well as protection against intrusion or vandalism.
- Powder coated aluminium frame as standard in a choice of RAL 7016 grey or RAL 9005 black.
- U_r value to as low as 1.43 W/m²K.
- Components of powered opening rooflights (230V) are completely concealed for an unobstructed light well.
- Safety as standard on all variants, with laminated inner glass pane reducing the risk of falling glass in the event of accidental breakage. Optional enhanced glass specification available to achieve non-fragility rating of CWCT TN-67 for Class 2 roofs and Class B to ACR[M]001*.
- For ease of installation, the tapered kerb foot does not require timber fillets and an integral clamp holds the roofing membrane in place and provides a clean external finish for all roofing types.
- Fixed rooflights achieve Secured by Design accreditation.

Product Options Summary

Hinged Opening
- Manual opening
- Powered with wall-switch (chain actuator)
  - Optional Remote Controlled Operation
  - Optional Rain Sensor Operation

Optional Ventilation
- Manual Hit-and-Miss

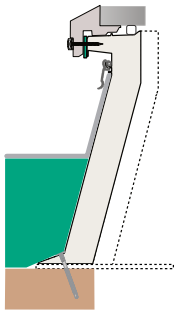
Glazing Type, Flat Glass
- 6mm toughened outer, 90% Argon filled cavity, Inner pane laminated with PVB interlayer & soft coat Low E coating. (NB - inner pane thickness varies with size and non-fragility specification)
- CWCT TN-67 for class 2 roofs*
- ACR[M]001 Class B non-fragile*

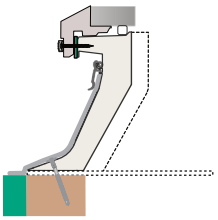


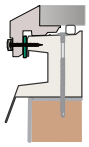
Size (roof opening)
Standard range:
see Table on Page 3 In square and rectangular combinations.

Optional Security Grille

Kerb


Tall 300mm PVCu**


Standard sloped PVCu**


Structural, Insulated Builders upstand (vented or opening variants)


Structural, Insulated Builders upstand (fixed unvented variants)

*When specified with the non-fragile option and when new and fully installed to Brett Martin Daylight Systems installation guides

**Acoustic Pack available for noise reduction

Brett Martin

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Flat Glass

TB403

Brett Martin Flat Glass
Datasheet

Composition
The double glazed glass panel is made up of: 6mm toughened outer, a 90% argon filled cavity, with a laminated inner (including PVB interlayer). The inner pane thickness varies with rooflight size and specification. All double glazed units include a soft coat Low E coating.

The frame is extruded aluminium, powder coated in a choice of RAL 7016 grey or RAL 9005 black to provide a premium appearance and highly appealing finish, and is thermally isolated to provide excellent thermal performance. The kerbs are manufactured from Lead & Cadmium free un-plasticised PVC rigid multi-wall extruded profile, with internal white finish. The Glass, PVC-U and Aluminium which comprise the product can be recycled at the end of useful product life.

Durability
Brett Martin Flat Glass units are expected to remain fit for purpose in normal conditions for a period of 20 years (with a warranty available providing a 10 year guarantee) i.e. they will not become perforated, lose significant structural integrity, or distort to the extent of losing weather-tightness. The available warranty also guarantees:

- Electrical actuators (where present), for a period of 1 year (actuators have a design life of at least 10,000 cycles).
- Insulated glass used in the construction of the rooflight for 5 years.

Safety Requirements and CDM
Non-Fragile Specification option
Brett Martin Flat Glass achieves CWCT TN-67 non-fragility for class 2 roofs and ACR[M]001 class B non-fragility when new and fully installed in accordance with Brett Martin Daylight Systems' installation guides. Foot traffic on rooflights should always be avoided; impacts such as foot traffic or a falling person may cause damage which could necessitate rooflight replacement.

Fragile Specification option
If a fragile rooflight is specified it is the customer's responsibility to ensure a risk assessment has been carried out to define the measures required to prevent significant risk of falling through the rooflight, in compliance with CDM regulations. For further information please see Rooflight Association NTD14.

All glass panels are BS EN12150, BS 14449 and BS 1279 compliant.

Security
All fixed Brett Martin Flat Glass units are fitted to a structural, insulated builders upstand or a PVC kerb using self-drilling fixings concealed using colour-matched cover caps. Fixed variants are accredited by Secured by Design based on independently assessed testing in accordance with PAS24. Optional security grilles are designed to fit beneath the foot of the kerb to provide additional security where required.

Fire Performance
Glass is designated Class A to EN13501-1, as it is included in the list of CWFT (classified without further test) materials published in the Official Journal of the EU (see European Commission Decision 96/603/EC).

These rooflights are glazed with a 6mm toughened outer pane and can therefore be regarded as having a $B_{ROOF}(t4)$ classification as per English building regulations.

Roof Applications
Flat Glass units are suitable for mounting at pitches of 2°-15°.

A minimum pitch of 2° or 4° is required to prevent water ponding on the glass leading to rapid dirt build up. See table under 'Available Sizes' on page 3 for minimum pitch according to size.

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Flat Glass

TB403

Brett Martin Flat Glass
Datasheet

Available Sizes

Standard Size		Non-Standard Size									
Rooflight size	Daylight area	**Rooflight size**	Daylight area	**Rooflight size**	Daylight area	**Rooflight size**	Daylight area	**Rooflight size**	Daylight area	**Rooflight size**	Daylight area
600 x 600	450 x 450	**750 x 600**	600 x 450	**1650 x 600**	1500 x 450	**1950 x 1350**	1800 x 1200	**2400 x 1500***	2250 x 1350	**3000 x 1650***	2850 x 1500
750 x 750	600 x 600	**900 x 750**	750 x 600	**1650 x 750**	1500 x 600	**1950 x 1500***	1800 x 1350	**2400 x 1650***	2250 x 1500		
900 x 600	750 x 450	**1050 x 600**	900 x 450	**1650 x 900**	1500 x 750	**1950 x 1650***	1800 x 1500	**2550 x 1050***	2400 x 900		
900 x 900	750 x 750	**1050 x 750**	900 x 600	**1650 x 1050**	1500 x 900	**1950 x 1800***	1800 x 1650*	**2550 x 1200***	2400 x 1050		
1000 x 1000	850 x 850	**1050 x 900**	900 x 750	**1650 x 1200**	1500 x 1050	**1950 x 1950***	1800 x 1800*	**2550 x 1350***	2400 x 1200		
1200 x 600	1050 x 450	**1050 x 1050**	900 x 900	**1650 x 1350**	1500 x 1200	**2000 x 1500***	1850 x 1350	**2550 x 1500***	2400 x 1350		
1200 x 900	1050 x 750	**1200 x 750**	1050 x 600	**1650 x 1500***	1500 x 1350	**2000 x 2000***	1850 x 1850*	**2550 x 1650***	2400 x 1500		
1200 x 1200	1050 x 1050	**1200 x 1050**	1050 x 900	**1650 x 1650***	1500 x 1500	**2100 x 900**	1950 x 750	**2700 x 1050***	2550 x 900		
1500 x 1000	1350 x 850	**1350 x 600**	1200 x 450	**1800 x 600**	1650 x 450	**2100 x 1050**	1950 x 900	**2700 x 1200***	2550 x 1050		
2000 x 1000	1850 x 850	**1350 x 750**	1200 x 600	**1800 x 750**	1650 x 600	**2100 x 1200***	1950 x 1050	**2700 x 1350***	2550 x 1200		
		1350 x 900	1200 x 750	**1800 x 900**	1650 x 750	**2100 x 1350***	1950 x 1200	**2700 x 1500***	2550 x 1350		
		1350 x 1050	1200 x 900	**1800 x 1050**	1650 x 900	**2100 x 1500***	1950 x 1350	**2700 x 1650***	2550 x 1500		
		1350 x 1200	1200 x 1050	**1800 x 1200**	1650 x 1050	**2100 x 1650***	1950 x 1500	**2850 x 1050***	2700 x 900		
		1350 x 1350	1200 x 1200	**1800 x 1350**	1650 x 1200	**2250 x 1050**	2100 x 900	**2850 x 1200***	2700 x 1050		
		1500 x 600	1350 x 450	**1800 x 1500***	1650 x 1350	**2250 x 1200***	2100 x 1050	**2850 x 1350***	2700 x 1200		
		1500 x 750	1350 x 600	**1800 x 1650***	1650 x 1500	**2250 x 1350***	2100 x 1200	**2850 x 1500***	2700 x 1350		
		1500 x 900	1350 x 750	**1800 x 1800***	1650 x 1650*	**2250 x 1500***	2100 x 1350	**2850 x 1650***	2700 x 1500		
		1500 x 1050	1350 x 900	**1950 x 750**	1800 x 600	**2250 x 1650***	2100 x 1500	**3000 x 1050***	2850 x 900		
		1500 x 1200	1350 x 1050	**1950 x 900**	1800 x 750	**2400 x 1050***	2250 x 900	**3000 x 1200***	2850 x 1050		
		1500 x 1350	1350 x 1200	**1950 x 1050**	1800 x 900	**2400 x 1200***	2250 x 1050	**3000 x 1350***	2850 x 1200		
		1500 x 1500*	1350 x 1350	**1950 x 1200**	1800 x 1050	**2400 x 1350***	2250 x 1200	**3000 x 1500***	2850 x 1350		

*Minimum pitch is 4° (all other sizes 2°)

Size Restrictions

Please note that restrictions apply due to size, wind loadings and weight. For fixed units with a PVC kerb, the maximum size is 2000mm x 2000mm (square) and 2850mm x 1650mm (rectangle). For powered opening rooflights, size is normally restricted to a maximum of 1200mm x 1200mm (square) and 1500mm x 1000mm (rectangle). Size of the largest manual opening rooflight is restricted to 1200mm x 1200mm. The largest non-fragile square is 1650mm x 1650mm.

Opening Options

Brett Martin Flat Glass can be opened on concealed hinges using actuators to create a large ventilation area. Powered opening rooflights are not suitable for use in conditions at risk of high humidity (e.g. domestic bathrooms).

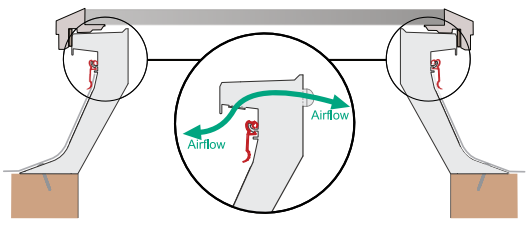
Opening rooflights controlled by remote (PCR) or remote & rain sensor (PCS) are not suitable for use near solar panels, due to risk of Radio Frequency interference. Where powered opening units and solar panels are specified the wall-switch option should be selected.

Opening Options

Opening Type	Description	Geometric Ventilation Area	
		Min	Max
Manual Opening (MLD)	Hinged opening rooflight which is operated manually via a worm gear drive with an extension pole	0.300 m²	0.683 m²
Powered Opening (PCD/PCR)	Powered hinged opening rooflight with completely concealed operating mechanism. Opened and closed using a control switch or remote control	0.211 m²	0.725 m²
Sensor Controlled Powered Opening (PCS)	Powered hinged opening rooflight which includes rain sensors for automatic operation	0.211 m²	0.725 m²

Ventilation

Ventilation can help reduce humidity, and reduce risk of condensation and should be considered in any areas of high humidity. Brett Martin Flat Glass rooflights may be unvented or can incorporate hit-and-miss manually controlled trickle vents which are available in all sizes where a PVC kerb is an option.



Ventilation Options

Ventilation Type	Description	Rating
Trickle Ventilation (Hit-and-Miss)	Manually operated trickle ventilation provides background ventilation to the interior	Provides 8400mm² Equivalent Area Ventilation

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TB403

Brett Martin Flat Glass
Datasheet

Security Grille Option
Designed to fit beneath the foot of the kerb to provide additional security where required. It is powder coated in a white finish, and available in all sizes where a PVC kerb is an option.

Glazing Performance
Brett Martin Flat Glass comes with a 6.8mm, 7.5mm, 8.8mm or 9.5mm laminate inner depending on size and specification. Other glazing options are available on request. If non-standard glass is used, glazing performance may differ from the table shown.

Overall Glazing Performance				
Glazing specification	Light		Solar Energy	
	Transmission	Reflection	G-Value	Shading coefficient
Non-fragile	66%	24.7%	0.44	0.51
Fragile	77%	12.8%	0.69	0.79

Thermal Performance (England, Scotland and Wales)
There is currently no method set out for assessing the thermal performance of flat glass rooflights, so the method shown in Rooflight Association (formerly NARM) NTD2 has been adopted as the most appropriate. Thermal transmittance is defined as a U_{rc} value for a rooflight with a PVC kerb and a U_r value for a rooflight fitted to a builders upstand. The thermal transmittance values (assessed horizontally) are shown below.

Thermal Performance (England, Scotland and Wales)					
Rooflight Variant		Size range	Surface:area ratio	Non-Fragile	Fragile
				U_r / U_{rc} value	U_r / U_{rc} value
				W/(m².K)	W/(m².K)
Unvented, Fixed Rooflight on Builders Upstand	(U_r)	600 x 600	2.31	1.43	1.51
		3600 x 1650	1.25	1.59	1.71
Vented or Opening Rooflight on Builders Upstand	(U_r)	600 x 600	1.64	1.76	1.81
		2850 x 1650	1.21	1.69	1.79
Rooflight with standard 150mm Sloped Kerb	($U_{rc\ 150}$)	600 x 600	2.44	1.82	1.85
		2850 x 1650	1.43	1.72	1.81
Rooflight with standard 300mm Tall Kerb	($U_{rc\ 300}$)	600 x 600	3.38	1.72	1.75
		2850 x 1650	1.68	1.68	1.75

*The overall thermal performance of rooflights is still referred to as a U_d-value in the building regulations, rather than U_r/U_{rc} value as per the calculation method. Values stated are therefore equivalent to a U_d-value assessed horizontally.

Thermal Performance (Republic of Ireland and Northern Ireland)
The thermal performance of Flat Glass is assessed in the vertical plane and declared as a U_d value of the glazing system. (The glazing used in Flat Glass achieves a centre pane U value of 1.1W/m²K)

Thermal Performance (Republic of Ireland, Northern Ireland)				
Rooflight Variant		Size range	Non-Fragile	Fragile
			U_d value	U_d value
Unvented, Fixed Rooflight on Builders Upstand	(U_d)	600 x 600	1.67	1.84
		3600 x 1650	1.17	1.37
Vented or Opening Rooflight on Builders Upstand	(U_d)	600 x 600	1.58	1.68
		2850 x 1650	1.22	1.38
Rooflight with standard 150mm Sloped Kerb	(U_d)	600 x 600	1.29	1.35
		2850 x 1650	1.15	1.28
Rooflight with standard 300mm Tall Kerb	(U_d)	600 x 600	1.20	1.24
		2850 x 1650	1.12	1.23

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Datasheet

Acoustic Performance

Brett Martin Flat Glass units achieve a direct airborne sound insulation value of 37-39db (Rw). This value can be improved further by the fitting of a kerb acoustic pack. The acoustic pack is not available with vented or opening options.

Wind and Snow Loads

Brett Martin Flat Glass has been tested to show that, when correctly fitted in accordance with our instructions and unit is closed, will resist wind loads calculated in accordance with BS EN 1991-1-4: 2005, and imposed loads in accordance with BS EN 1873: 2005.

Resistance to Snow and Wind Loads

	Fixed	Opening
Snow Load (N/m^2)	1200	1200
Wind Load (N/m^2)	2400	1200

Annealed, Laminated Inner Pane

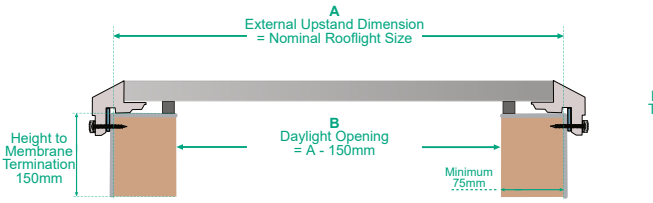
These Flat Glass rooflights are manufactured using double glazing which includes an inner pane of annealed, laminated safety glass, which prevents falling glass in the event of accidental breakage, for the safety of those below the rooflight. In addition, a laminated inner pane is essential for non-fragile rooflights.

In some circumstances, annealed, laminated safety glass can be subject to thermal stress fracture in the event of uneven heat build-up directly under the glass. Installation of blinds, or any other alterations made to the lightwell below the rooflight, must be done so with consideration to the risk of thermal stress fracture. In the case of blinds, the risk of thermal stress fracture can never be fully removed, but it can be reduced by choosing light coloured blinds, positioning them as far away from the glass as possible, and including ventilation in the rooflight specification.

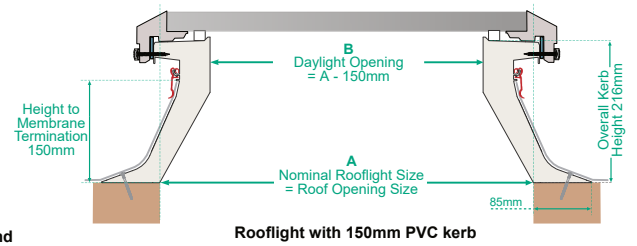
More detailed guidance can be obtained upon request.

Product Dimensions

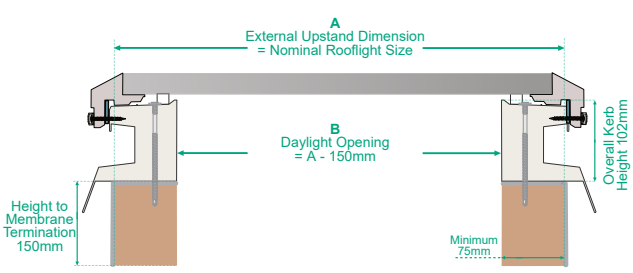
Brett Martin Flat Glass offers differing kerb options depending on project specification. When the rooflight is to be fitted to an existing upstand, fixed unventilated rooflights can be fitted directly, and opening or ventilated options are supplied complete with an adapter kerb. Where no upstand exists, Brett Martin Flat Glass can be supplied with 150mm PVC kerb (for mounting at roof surface level) or 300mm PVC kerb (for mounting below insulation).



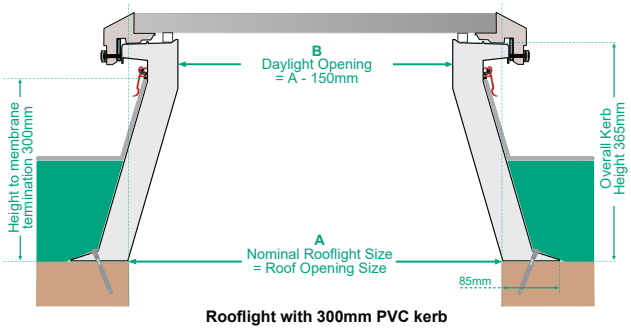
Fixed & Unventilated option directly fixed to structural, insulated builders upstand



Rooflight with 150mm PVC kerb



Opening / Ventilated rooflight on structural, insulated builders upstand



Rooflight with 300mm PVC kerb

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Datasheet

Product Overall Height & Weight			
Rooflight Variant	**Nominal Size**	**Height (mm)**	**Weight (kg)**
Unvented, Fixed Rooflight on Structural, Insulated Builder's Upstand	600 x 600	82	18
	3600 x 1650		264
Vented or Opening Rooflight on structural, Insulated Builder's Upstand	600 x 600	185	23
	2850 x 1650		210
Rooflight With 150mm Kerb	600 x 600	259	25
	2850 x 1650		220
Rooflight With 300mm Kerb	600 x 600	407	28
	2850 x 1650		228

Service temperature
This product is designed for typical building usage and climate in the UK, with a service temperature of -20°C to 60°C. Products installed on buildings with unusual usage and/or in countries with more extreme climates, may experience material temperatures outside of the stated service temperature range. It is the customer's responsibility to ensure the product is suitable for the expected material temperatures of the location where it is to be installed.

Regulatory requirements
This product is designed for typical UK regulatory requirements, however UK regulations are complex and there may be scenarios where the product is not appropriate. It is the customer's responsibility to ensure the product is suitable for the regulatory requirements of the specific location where it is to be installed. The manufacturer is unable to provide guidance on how the product meets regulatory requirements outside the UK.

Installation, Handling, Maintenance & Storage
Full installation details, maintenance and product care details are available on request.

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