Standard Flat Glass Rooflight Datasheet

November 2023

PRODUCT DESCRIPTION

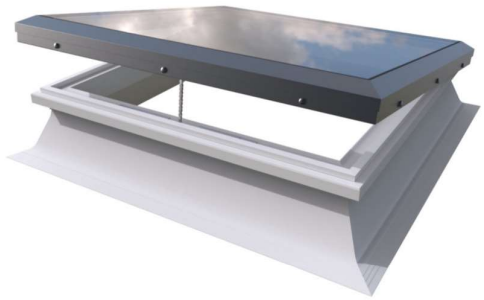
Individual glass rooflights intended for installation on flat roofs of all modern building types to provide natural light (and ventilation where specified). Rooflights are manufactured to ISO 9001 industry standards.

APPEARANCE

Sleek and contemporary design with a slimline powder coated frame and flush fitting glass panel.

DESIGN FEATURES

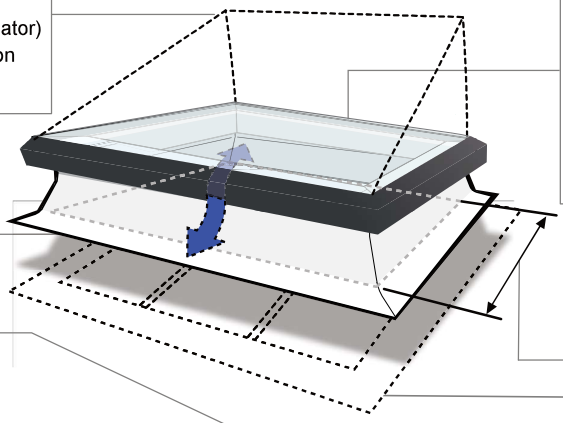
- Premium rooflight offering a robust build as well as protection against intrusion or vandalism.
- Components of powered opening rooflights (230V) are completely concealed for an unobstructed light well.
- For ease of installation, the tapered kerb foot does not require timber fillets and an integral clamp holds the roofing membrane in place and provides a clean external finish for all roofing types.
- Powder coated aluminium frame as standard (RAL 7016).
- U, value to as low as 1.46 W/m²K.
- Laminated inner pane for safety of anyone beneath the rooflight.
- Fragile (non-fragile options available)



PRODUCT OPTIONS SUMMARY (See page 2 onwards for details)

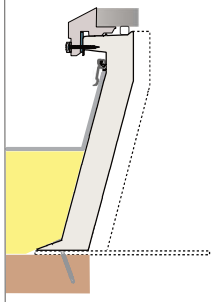
Hinged Opening
-Manual opening
-Powered with wall-switch (chain actuator)
-Optional Remote Controlled Operation
-Optional Rain Sensor Operation

Optional Ventilation
-Manual Hit-and-Miss
-Automatic Humidity Controlled

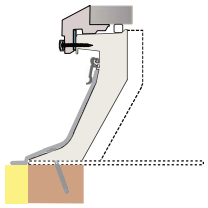


Glazing Type
-Flat glass :
-6mm toughened outer, 90% Argon filled cavity, 6.4mm laminated soft coat Low E inner
(NB - for very large sizes inner pane increases to 8.8,9.5 or 11.5mm)
-Glass panel is P4A secure

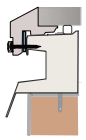
Kerbs



Tall 300mm PVCu*



Standard sloped PVCu*



Builders upstand (vented or opening variants)

Builders upstand (fixed unvented variants)

Acoustic Pack available for noise reduction

Size (roof opening)
Standard range:
see Table 1 on Page 2
In square and rectangular combinations.

Optional Security Grille

COMPOSITION

The double glazed glass panel is made up of: 6mm toughened outer, a 90% argon filled cavity, with a 6.4mm laminated soft coat Low E inner. For larger sizes the inner pane thickness is increased to 8.8mm, 9.5mm or 11.5mm.

The frame is extruded aluminium, with a powder coating (RAL 7016) 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

Flat glass units are expected to remain fit for purpose in normal industrial 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

These rooflights incorporate a laminated inner pane for the safety of anyone beneath the rooflight, minimising risk of glass falling into the space below if either glass pane should break, in accordance with industry recommendations. These rooflights are fragile (as defined by CWCT and ACR): they are not suitable for foot traffic and may not resist a person falling onto them; suitable precautions should be taken (by others, following a risk assessment) to ensure the safety of anyone accessing the roof area where the product is installed. Alternative specifications which are non-fragile for use on Class 2 roofs are available on request. All glass panels are BS EN12150, BS 14449 and BS 1279 compliant.

FIRE RATING

Building Regulations Approved Document B: Fire Safety (volume 1 for dwellings and volume 2 for buildings other than dwellings) sets out the fire safety rules for buildings, which can be met by achieving specific European Class reaction to fire ratings to the relevant standard EN 13501-1.

Section B2 (volumes 1 and 2) concerns internal fire spread and defines the classification of linings dependent on building type and size:

	Volume 1 - dwellings (see paragraph 4.1 & table 4.1)	**Volume 2 - non dwellings** (see paragraph 6.1 & table 6.1)
Classification	**Location**	**Location**
D-s3,d2	Small rooms max floor area 4m² Garages (as part of dwelling) max floor area 40m²	Small room in non-residential accomodation max 30m²
C-s3,d2	Other rooms (including garages) Circulation spaces within a dwelling	Other rooms (including garages)
B-s3,d2	Other circulation spaces (including the common areas of blocks of flats)	Other circulation spaces

Section B4 (volumes 1 and 2) concerns external fire spread and defines limitations on the roof coverings. Coverings with a designation of $B_{ROOF}(t4)$ can be used at any distance from a relevant boundary. It also states that when used in rooflights, unwired glass a minimum of 4mm thick can be regarded as having a $B_{ROOF}(t4)$ classification (see: volume 1 – paragraph 12.8; volume 2 – paragraph 14.8)

Glass is designated Class A to EN13501 part 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).

Flat glass rooflights can therefore be regarded as Class A (CWFT) to EN13501-1. All flat glass units are glazed with a 6mm toughened outer pane and therefore can also be regarded as having the $B_{ROOF}(t4)$ classification defined in section B4.

AVAILABLE OPTIONS

Table 1 - Sizes of Rooflights

Bold, black text indicates unit size, *Italic grey text indicates daylight area* (mm)
Note: Custom sizes are available on request. Please contact the supplier to discuss requirements.

Standard minimum rooflight pitch of 2°

Minimum pitch of highlighted units is 4°

Standard sizes												
600 x 600	*450 x 450*	**750 x 750**	*600 x 600*	**900 x 900**	*750 x 750*	**1000 x 1000**	*850 x 850*	**1200 x 1200**	*1050 x 1050*	**1500 x 1000**	*1350 x 850*	
900 x 600	*750 x 450*	**1200 x 600**	*1050 x 450*	**1200 x 900**	*1050 x 750*							
Non-standard sizes												
750 x 600	*600 x450*	**1500 x 1050**	*1350 x 900*	**1800 x 1350**	*1650 x 1200*	**2100 x 1050**	*1950 x 900*	**2550 x 1350**	*2400 x 1200*	**3000 x 1650**	*2850 x 1500*	
900 x 750	*750 x 600*	**1500 x 1200**	*1350 x 1050*	**1800 x 1500**	*1650 x 1350*	**2100 x 1200**	*1950 x 1050*	**2550 x 1500**	*2400 x 1350*	**3150 x 1050**	*3000 x 900*	
1050 x 600	*900 x 450*	**1500 x 1350**	*1350 x 1200*	**1800 x 1650**	*1650 x 1500*	**2100 x 1350**	*1950 x 1200*	**2550 x 1650**	*2400 x 1500*	**3150 x 1200**	*3000 x 1050*	
1050 x 750	*900 x 600*	**1500 x 1500**	*1350 x 1350*	**1800 x 1800**	*1650 x 1650*	**2100 x 1500**	*1950 x 1350*	**2700 x 1050**	*2550 x 900*	**3150 x 1350**	*3000 x 1200*	
1050 x 900	*900 x 750*	**1650 x 600**	*1500 x 450*	**1950 x 750**	*1800 x 600*	**2100 x 1650**	*1950 x 1500*	**2700 x 1200**	*2550 x 1050*	**3150 x 1500**	*3000 x 1350*	
1050 x 1050	*900 x 900*	**1650 x 750**	*1500 x 600*	**1950 x 900**	*1800 x 750*	**2250 x 1050**	*2100 x 900*	**2700 x 1350**	*2550 x 1200*	**3150 x 1650**	*3000 x 1500*	
1200 x 750	*1050 x 600*	**1650 x 900**	*1500 x 750*	**1950 x 1050**	*1800 x 900*	**2250 x 1200**	*2100 x 1050*	**2700 x 1500**	*2550 x 1350*	**3300 x 1200**	*3150 x 1050*	
1200 x 1050	*1050 x 900*	**1650 x 1050**	*1500 x 900*	**1950 x 1200**	*1800 x 1050*	**2250 x 1350**	*2100 x 1200*	**2700 x 1650**	*2550 x 1500*	**3300 x 1350**	*3150 x 1200*	
1350 x 600	*1200 x 450*	**1650 x 1200**	*1500 x 1050*	**1950 x 1350**	*1800 x 1200*	**2250 x 1500**	*2100 x 1350*	**2850 x 1050**	*2700 x 900*	**3300 x 1500**	*3150 x 1350*	
1350 x 750	*1200 x 600*	**1650 x 1350**	*1500 x 1200*	**1950 x 1500**	*1800 x 1350*	**2250 x 1650**	*2100 x 1500*	**2850 x 1200**	*2700 x 1050*	**3300 x 1650**	*3150 x 1500*	
1350 x 900	*1200 x 750*	**1650 x 1500**	*1500 x 1350*	**1950 x 1650**	*1800 x 1500*	**2400 x 1050**	*2250 x 900*	**2850 x 1350**	*2700 x 1200*	**3450 x 1200**	*3300 x 1050*	
1350 x 1050	*1200 x 900*	**1650 x 1650**	*1500 x 1500*	**1950 x 1800**	*1800 x 1650*	**2400 x 1200**	*2250 x 1050*	**2850 x 1500**	*2700 x 1350*	**3450 x 1350**	*3300 x 1200*	
1350 x 1200	*1200 x 1050*	**1800 x 600**	*1650 x 450*	**1950 x 1950**	*1800 x 1800*	**2400 x 1350**	*2250 x 1200*	**2850 x 1650**	*2700 x 1500*	**3450 x 1500**	*3300 x 1350*	
1350 x 1350	*1200 x 1200*	**1800 x 750**	*1650 x 600*	**2000 x 1000**	*1850 x 850*	**2400 x 1500**	*2250 x 1350*	**3000 x 1050**	*2850 x 900*	**3450 x 1650**	*3300 x 1500*	
1500 x 600	*1350 x 450*	**1800 x 900**	*1650 x 750*	**2000 x 1500**	*1850 x 1350*	**2400 x 1650**	*2250 x 1500*	**3000 x 1200**	*2850 x 1050*	**3600 x 1500**	*3450 x 1350*	
1500 x 750	*1350 x 600*	**1800 x 1050**	*1650 x 900*	**2000 x 2000**	*1850 x 1850*	**2550 x 1050**	*2400 x 900*	**3000 x 1350**	*2850 x 1200*	**3600 x 1650**	*3450 x 1350*	
1500 x 900	*1350 x 750*	**1800 x 1200**	*1650 x 1050*	**2100 x 900**	*1950 x 750*	**2550 x 1200**	*2400 x 1050*	**3000 x 1500**	*2850 x 1350*			

SECURITY

All fixed units are fitted to a builders upstand or a PVC kerb using self-drilling fixings. All fixing heads are concealed using colour-matched cover caps. Optional security grilles are designed to fit beneath the foot of the kerb to provide additional security where required.

SECURITY GRILLE

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.

VENTILATION

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

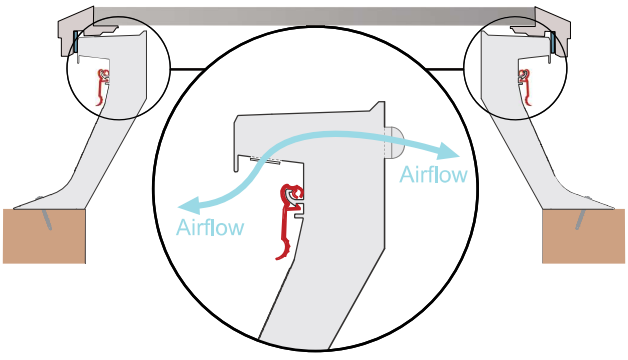


Table 4
Ventilation Options

Ventilation Type	Description	Rating
Trickle Ventilation (Hit-and-Miss)	Manually operated trickle ventilation provides background ventilation to the interior	Provides 8400mm² Equivalent Area Ventilation
Automatic Humidity Controlled Trickle Ventilation	Humidity controlled trickle ventilation is sensor controlled to open and close in response to room humidity levels	Provides 7822mm² Equivalent Area Ventilation and provides superior protection against condensation

Standard Flat Glass Rooflight Datasheet

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 Options' on page 3 for minimum pitch according to size.

OPENERS

Units can also be opened on concealed hinges using actuators to create a large ventilation area. Opening rooflights can contribute to room ventilation as required by approved document F of the English Building Regulations. Powered opening rooflights are not suitable for use in conditions at risk of high humidity (e.g. domestic bathrooms).

Table 2
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 m^2	0.683 m^2
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 m^2	0.725 m^2
Sensor Controlled Powered Opening (PCS)	Powered hinged opening rooflight which includes rain sensors for automatic operation	0.211 m^2	0.725 m^2

GLAZING OPTIONS & TRANSMISSION VALUES

The glazing used achieves the following values:

Table 3

Light		Solar Energy	
Transmission	79%	G-value	0.61
Reflection	12%	Shading Coefficient	0.71

THERMAL PERFORMANCE

Thermal transmittance of rooflights is assessed in the horizontal plane for compliance with Part L of building regulations.

There is currently no method set out for assessing the thermal performance of flat glass rooflights, so the method shown in 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. All variants of flat glass rooflights have a better thermal transmittance than the limiting value in Part L of 2.2 W/m^2K. The thermal transmittance values (assessed horizontally) are shown below. For U_d values calculated in the vertical plane please contact the manufacturer.

Rooflight Variant		Size range	Surface:area ratio	U_r / U_{rc} value W/(m^2.K)
Unvented, Fixed Rooflight on Builders Upstand	(U_r)	600 x 600	2.31	1.46
		3600 x 1650	1.27	1.63
Vented or Opening Rooflight on Builders Upstand	(U_r)	600 x 600	1.64	1.78
		2850 x 1650	1.21	1.72
Rooflight with standard 150mm Sloped Kerb	($U_{rc\,150}$)	600 x 600	2.44	1.83
		2850 x 1650	1.43	1.75
Rooflight with standard 300mm Tall Kerb	($U_{rc\,300}$)	600 x 600	3.38	1.73
		2850 x 1650	1.43	1.71

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.

Standard Flat Glass Rooflight Datasheet

GENERAL PRODUCT DIMENSIONS

Differing kerb options available 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, units can be supplied with 150mm PVC kerb (for mounting at roof surface level) or 300mm PVC kerb (for mounting below insulation).

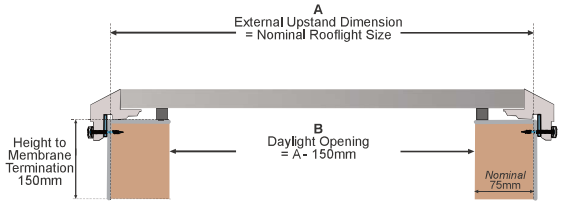


Figure 1: Fixed & Unventilated option directly fixed to builders upstand

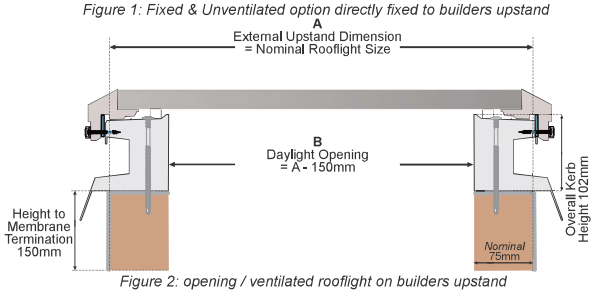


Figure 2: opening / ventilated rooflight on builders upstand

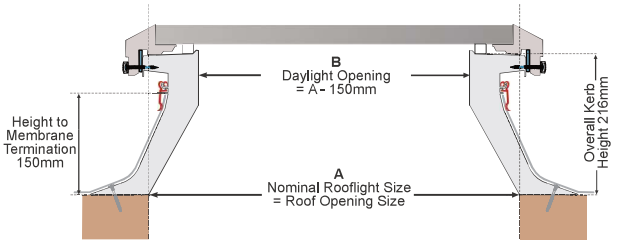


Figure 3: Rooflight with 150mm PVC kerb

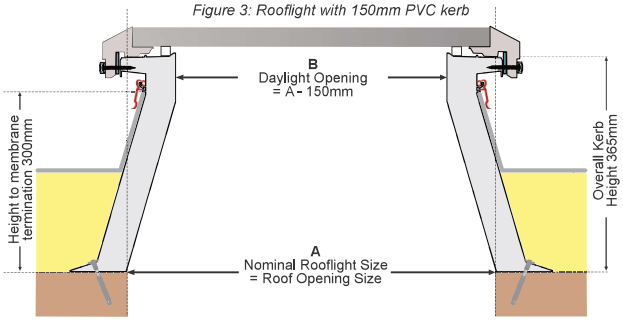


Figure 4: Rooflight with 300mm PVC kerb

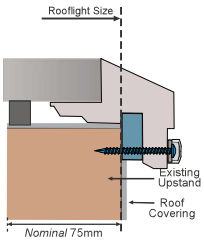


Figure 5: rooflight with builders upstand detail

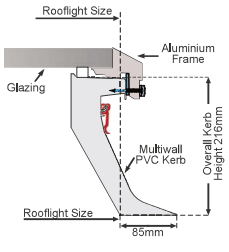


Figure 6: rooflight with 150mm PVC kerb detail

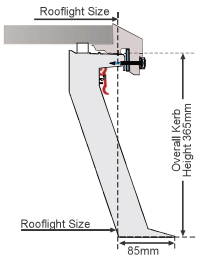


Figure 7: rooflight with 300mm PVC kerb detail

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.

ACOUSTIC PERFORMANCE

Units achieve a direct airborne sound insulation value of 37db (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 LOAD

Units have been tested to show that, when correctly fitted in accordance with our instructions and unit is closed, they will resist wind loads calculated in accordance with BS EN 1991-1-4: 2005, and imposed loads in accordance with BS EN 1873: 2005 as shown in Table 6.

Table 6
Resistance to Snow and Wind Loads

	Snow Load ($N.m^{-2}$)	Wind Load ($N.m^{-2}$)
Fixed	1200	2400
Opening	1200	1200

Table 7
Product Overall Height & Weight

	Nominal Dome Size (mm)	Builders upstand H(mm)	Builders upstand W#(Kg)	Sloped Kerb H(mm)	Sloped Kerb W#(Kg)	300mm Kerb H(mm)	300mm Kerb W#(Kg)
Fixed unvented standard flat glass rooflight*	Min 600 x 600	82	18	259	25	407	28
	Max 3600 x 1650	82	264	259	-	407	-
Opening standard flat glass rooflight* (when closed)	Min 600 x 600	185	25	259	28	407	30
	Max 2400 x 1500	185	179	259	188	407	195

**Contact supplier for weights of unit sizes not listed above*
#Product weights given above exclude packaging weights

INSTALLATION, HANDLING, MAINTENANCE & STORAGE

Full installation details, maintenance and product care details, can be found in the relevant Technical Bulletins.

Table 8
Technical Bulletins

Technical Bulletin	Technical Bulletin Description
TB400	Installation Standard Flat Glass Rooflight Fixed
TB401	Installation Standard Flat Glass Rooflight Powered Opening
TB402	Installation Standard Flat Glass Rooflight Manual Opening