

EXPERIENCE

DAYLIGHT LIVING

WITH JET COX PRODUCTS

The logo for COXDOME, featuring the word "COXDOME" in a bold, sans-serif font. "COX" is in grey and "DOME" is in red. A thin, grey, curved line arches over the word "DOME".

**DRIVEN BY
DAYLIGHT**

DAYLIGHT

THE LINK BETWEEN NATURAL LIGHT

FRESH AIR AND QUALITY OF LIFE

Much of our time is spent in enclosed spaces – at work, at home and in public places. We are often surrounded by artificial light and air-conditioned air. In many respects this is convenient, but it certainly does not stimulate our mind and senses to the same extent as natural light and fresh air does.

Light is one of the most important elements in all cultures as people generally use their sense of sight to perceive their environment. Natural daylight plays a particularly important role in this respect because of its positive effect. It induces a sense of well-being and keeps us healthy and in peak condition. It inspires us, increases creativity and has an alleviating anti-stress effect.

Natural light products from JET COX enable us to benefit from these positive effects. The basic idea is to bring natural light into all the areas in which you may spend time. The solutions that we have developed for this purpose are used in all areas of public and private life. We have developed a plethora of different designs that can be integrated into any type of building, be it a new or refurbished property, and can be tailored to your individual requirements.

All JET COX products are designed to meet high technical requirements. Sophisticated designs offer energy-efficient products based around cost-effective building maintenance. The special glazing technology also provides maximum light output for your internal rooms.

As a business we have been providing this service for over 60 years.

It's what motivates us and inspires us –

DRIVEN BY DAYLIGHT

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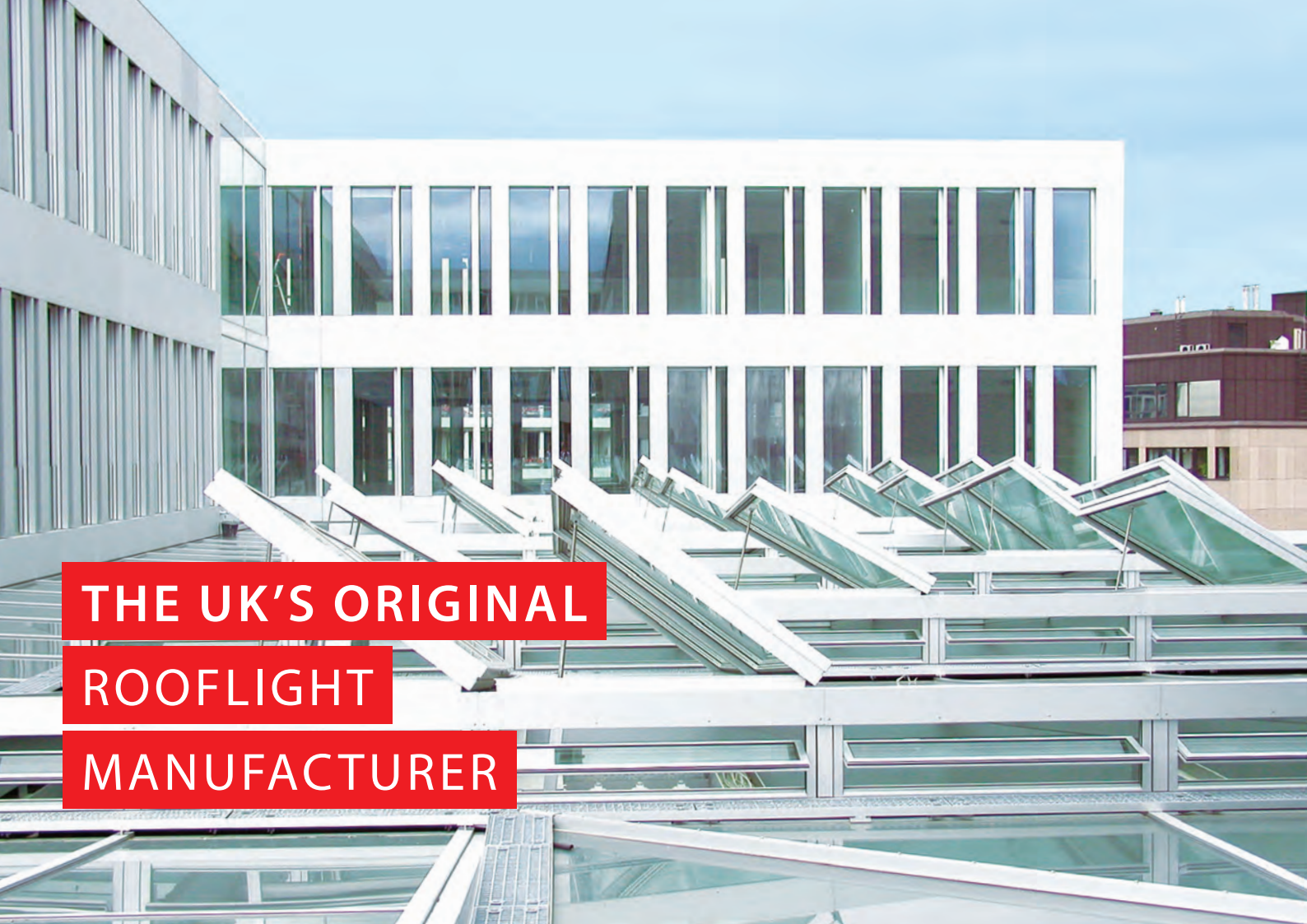
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**THE UK'S ORIGINAL
ROOFLIGHT
MANUFACTURER**



JOIN US IN THE CHANGE...

As one of the UK's first rooflight manufacturers, we have seen many changes in the building industry over the last 60 years.

It's time for change again...and this time it's a change to our business.

Cox Building Products is now part of the large European Group—The JET Group, and will now operate in the UK as JET COX Ltd. JET COX Ltd will offer the UK building industry a broader range of daylight solutions under the JET COX brand whilst continuing to sell our industry recognised rooflight range under the COXDOME brand. The addition of Cox Building Products Ltd to the JET Group will provide the UK with a strong, innovative organisation and by joining forces we are better fixed to service the UK's construction industry.

We are confident you'll agree that the changes are for the better, and look forward to working with you in the future.

While JET COX LTD has taken every effort to ensure that the information contained within this brochure is correct, you should be aware that the information may be incomplete, inaccurate or may have become out of date.

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COMPANY PROFILE

We have been manufacturing rooflights since 1954, and in that time we have gained valuable experience in the manufacture and distribution of specialist flat roofing daylight and ventilation systems throughout the entire UK.

Everything we manufacture at JET COX is quality tested to the very highest standards. With professional accreditations and ISO9001– 2008, all aspects of our manufacturing and operational process is stringently audited to ensure our processes maintain consistency and our production continually meets the requirements of our customers.

At JET COX we understand the importance of natural daylight. Daylight brings us new energy, it brings the world to life—at home, outdoors and at work. It has been scientifically proven that daylight makes people feel better and perform better.

JET COX uses innovative, sustainable daylight solutions to help capture the most of this inexhaustible supply. For over 60 years we have provided a wide-ranging assortment of daylight solutions, in both plastic and glass, that take our client's inspired ideas and turn them into practical applications.

This is what motivates us and inspires us -

DRIVEN BY DAYLIGHT



COVERAGE, SUPPORT & SERVICE

Based from our offices in the Midlands, JET COX LTD are ideally located to service the entire UK.

Offering full sales and technical advice we are able to assist with your project from enquiry through to after sales support. Whether it's assistance with specifying the right product or help with site surveying, our experienced, knowledgeable team are only a phone call away.



COXDOME

TRADE

RANGE



The Coxdome Trade Range is a high quality, universal 'out of plane' rooflight system.

The range is available in a variety of shapes and sizes and whether you're a roofing contractor, an architect, a building contractor or a residential client there is an application for all flat roofing requirements.

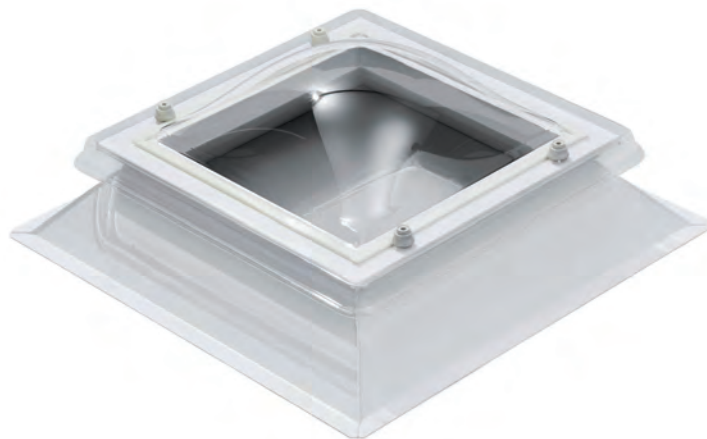
Manufactured from extruded white PVC-u they come with a choice of 150mm splayed, 300mm splayed or 160mm vertical upstands.

Available in double, triple or quadruple skin polycarbonate glazing they can be specified either spherical or pyramidal. Please refer to the section on glazing for individual performances and refer to the relevant Building Regulations thermal performance requirements.

Installed to the manufacturer's instruction the Trade Range offers excellent waterproofing properties. Weathered to the full height of the upstand water penetration is virtually impossible.

The range is available in a wide variety of sizes and can be specified fixed, with or without background ventilation, or with hinged ventilation.

- **High quality, cost effective rooflight**
- **High Security Fixings as standard**
- **Polycarbonate impact resistant glazing**
- **UV Stable PVC-u white upstands**
- **Fully CE Marked products**



GLAZING

Many individual factors need to be taken into consideration when specifying your rooflight: thermal efficiency, light transmission, solar gain, fire classification, and noise reduction are just some of these factors. The glazing you choose will have a major impact on how your rooflight performs.

The Trade Range domes are manufactured from polycarbonate. Polycarbonate is a durable, high impact-resistant material and is highly transparent to visible light. In some cases it can achieve better light transmission than many kinds of glass and can be up to 300 times more impact resistant than glass!

Trade Range domes are available in double, triple and quadruple skin and can be supplied Clear, Diffused, Opal, or Cool & Clear.

The Trade Range Domes are manufactured in accordance with European Standards and hold full CE marking according to EN 1873.

SUMMARY OF BUILDING REGULATIONS - WITH REFERENCE TO GLAZING


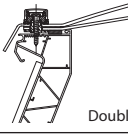
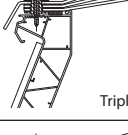
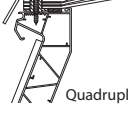
Non Fragility ACR(M)001:2005 - 'Test for the Fragility of Profiled Sheet Roofing Assemblies'

All Trade Range domes are classified 'Class B Non-Fragile', according to ACR(M)001:2005 and when tested, demonstrated full compliance with EN 1873, Soft Body Test, based on an impact energy of 1200 Joules.

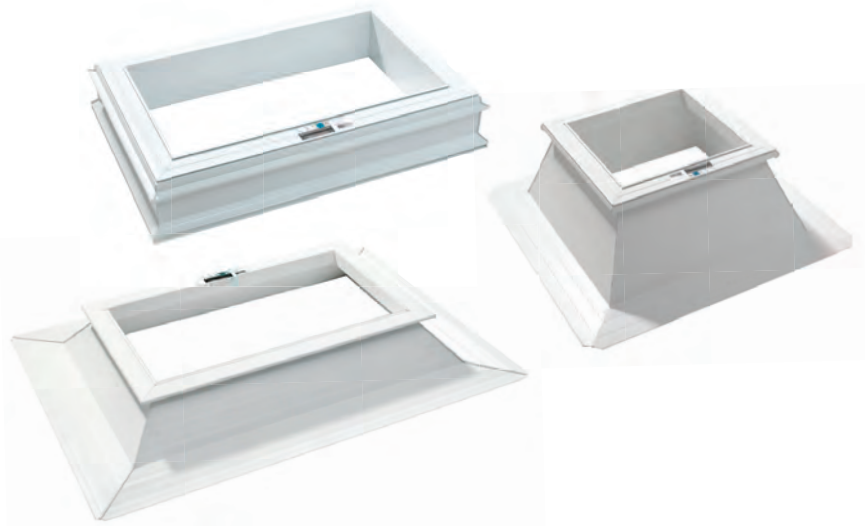
Fire Classification EN 13501-1 - 'Fire Test to Building Material - Classification'

All Trade Range Rooflights are manufactured using minimum 3mm Polycarbonate. According to EN 13501-1, 3mm polycarbonate achieves B-s1-d0 and therefore attains Class 1 Certification. TP(a) is realised with a solid polycarbonate sheet minimum 3mm thick.

DOMES, PYRAMIDS, TRAPEZOIDS, CIRCULAR

	Glazing	Light Transmission	'G'Value Solar Heat Gain	'U'Value	Sound Reduction (dB) according to DIN52210	Fire classification according to BS EN15301:1 2007	Impact Resistance
 Single	Clear	88%	82%	5.0 W/m ² K*	12dB	1-3mm: B-s1-d0	> 200 N/mm ²
	Diffused	77%	67%				
	Opal	44%	51%				
	Cool & Clear	48%	36%				
 Double	Clear	77%	67%	2.6W/m2K*	20dB	1-3mm: B-s1-d0	> 200 N/mm ²
	Diffused	77%	67%				
	Opal	44%	51%				
	Cool & Clear	48%	36%				
 Triple	Clear	71%	57%	1.7W/m2K*	22dB	1-3mm: B-s1-d0	> 200 N/mm ²
	Diffused	71%	57%				
	Opal	62%	52%				
	Cool & Clear	45%	31%				
 Quadruple	Clear	66%	49%	1.3W/m2K*	23dB	1-3mm: B-s1-d0	> 200 N/mm ²
	Diffused	66%	49%				
	Opal	57%	45%				
	Cool & Clear	41%	26%				

*U'Value is calculated according to EN 1873 and is based on a 1800mm x 1800mm domelight



UPSTANDS



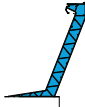

The Coxdome Trade Range Upstands are designed to provide a watertight thermal break between the finished roof and the rooflight. With excellent thermal insulation properties they often offer a more thermally efficient solution to the standard builder's kerb and help improve the overall 'U' value of the unit.

Made from high impact resistant PVC-u, all Trade Range Upstands are completely recyclable, and are manufactured according to the latest environmental standards.

At minimum, all Trade Range Upstands are double walled and watertight welded. The internal is UV stable ensuring the brilliant white finish and avoiding the need for internal decoration. Trade Range Upstands are available in a range of sizes and can also be specified with or without insulation.

The Trade Range BF15, BF30 and RO16 upstands are also available with four sided reinforcement. These upstands are used, as standard, in our Automatic Opening Vent Range and with our Rooftop Entrance Rooflight where more frequent operation of the units is required.

All Trade Range Upstands are compatible with most flat roof membrane systems including single ply, GRP, hot melt, asphalt, liquid and lead.

	Height	Material	Profile Width	'U' Value according to EN ISO 10077-2	Fire Resistance according to BS EN15301:1:2007
 SF15	150mm	PVC-u	25mm	1.8 W/m ² K	D-s3-d1
 RO16	160mm	PVC-u	65mm	0.2 W/m ² K Without insulation 1.0 W/m ² K	D
 BF30	300mm	PVC-u	35mm	1.0 W/m ² K Without insulation 2.1 W/m ² K	D-s3-d0
 BF15	150mm	PVC-u	25mm	1.2 W/m ² K Without insulation 3.0 W/m ² K	D-s3-d2

BACKGROUND VENTILATION

Background ventilation is available with the Trade Range of Rooflights.

Two options are available:

- **Permanent Ventilation**

In areas hard to access or in areas where security is primary consideration 'non-controllable', permanent ventilation offers continuous ventilation around the perimeter of the dome. Ventilation spacers are inserted between the factory assembled polycarbonate dome and the upstand. The shaped lip on the edge of the outer skin is engineered for maximum weathering and prevents water ingress.

- **Controllable Ventilation**

This is offered by means of a controllable trickle ventilator; air flow is afforded by the use of adjustable tumblers. Internal and external parts are constructed from moulded PVC-u (data sheet are available on request) and can be fitted to either two sides or all four sides of any of the Trade PVC-u Upstand Range.*

CONTROLLABLE VENTILATION

PERFORMANCE DATA

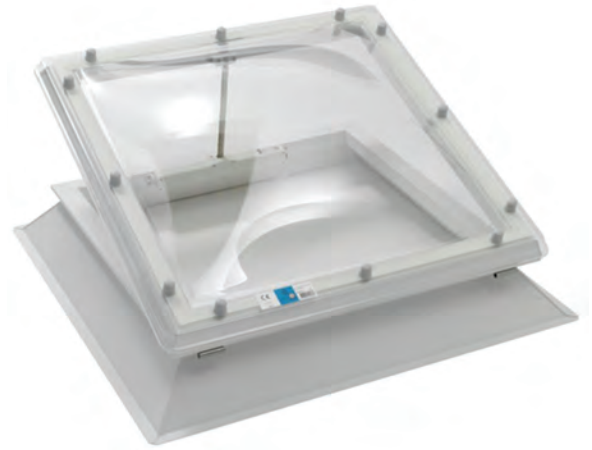
Vent Type	EQA (Equivalent Area)	Geometric Free Area
2000 + Hood + Grill	1360mm ²	2000mm ²
4000 + Hood + Grill	2580mm ²	4000mm ²

CONTROLLABLE VENTILATION

ACOUSTIC VALUES

Vent Type	Values D.n.e.w.
2000 in Open Position	34dB
2000 in Closed Position	39dB
4000 in Open Position	31dB
4000 in Closed Position	36dB

*Whilst controllable ventilation can be fitted to a 150mm upstand please note that BS 6229: 2003, Code of Practice for Flat Roofs with continuously supported coverings, outlines that the waterproofing upstand detail should terminate at least 150mm above the uppermost roof surface to which the roof covering is bonded or dressed.



VENTILATION OPTIONS

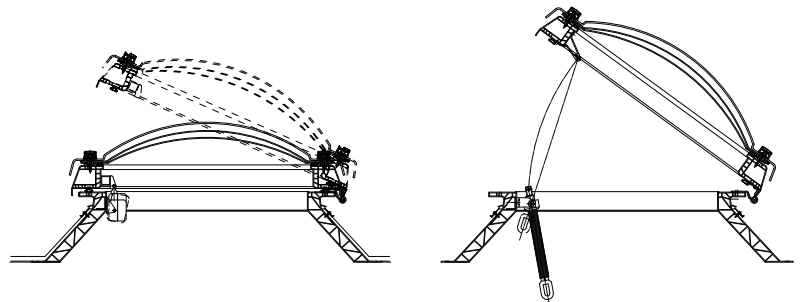
Ventilation is the process of changing or replacing air in any space to provide high indoor air quality. It is often the link between your internal space and the outside elements. The correct relationship between insulation, heating, solar gain and ventilation must be achieved in order to provide a pleasant, comfortable, productive indoor space.

The Trade Range is therefore available with a choice of ventilation options.

Hinged opening domes are available either manually or electrically operated.

The manually operated option is supplied with a spindle gear and is operated from floor level using a winding pole. Maximum ventilation is approximately 300mm.

The electrically powered alternative uses a chain link actuator and is operated from a 240V mains supply. Maximum ventilation is approximately 400mm with three optional fixed intermediary positions at 100mm, 200mm and 300mm.



ACCESSORIES

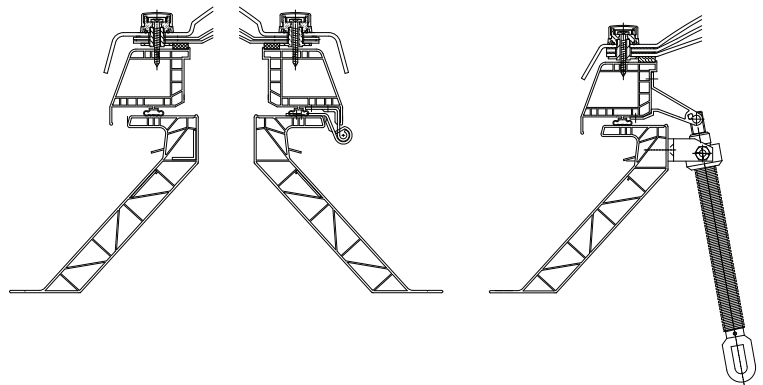
Manual Hinge

- Winding Rod

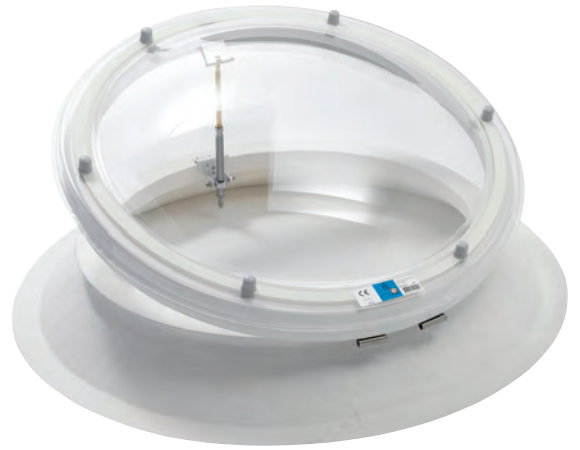


Electric Hinge

- Remote Control
- Wind, Rain and Temperature Sensors



Glazing is available in Clear, Diffused, Opal, and Cool & Clear. Please refer to Section: Glazing for options, specifications and classifications.



COXDOME CIRCULAR

The Coxdome Circular Rooflight offers an attractive, modern, glazing solution which will add character and definition to any interior design space. Available in a range of sizes the domes are available with double, triple or quadruple skins. Manufactured with a double layer GRP (Glass Reinforced Plastic) with polyurethane insulation the upstands are compatible with most roofing materials.

Glazing is available spherical in Clear, Diffused, Opal, and Cool & Clear. Please refer to Section: Glazing for options, specifications and classifications.

The Circular Range is available with a choice of two ventilation options.

Hinged opening domes are available either manually or electrically operated.

All ventilation frames are manufactured from extruded white PVC-u sections.


The manually operated option is supplied with a spindle gear and is operated from floor level using a winding pole. Maximum ventilation is approximately 300mm.

The electrically powered alternative uses a chain link actuator and is operated from a 240V mains supply. A toggle switch is supplied as standard. Rain, wind and temperature sensors along with a remote control can also be specified with the electrically operated version.

Maximum ventilation is approximately 400mm with three optional fixed intermediary positions at 100mm, 200mm & 300mm.

Please note: Controllable background ventilation is not available in the Circular Range. Background ventilation is by means of Permanent ventilation only.



	Height	Material	Profile Width	U' Value according to EN ISO 10077-2	Fire Resistance according to BS EN15301:1 2007
	150mm	GRP	10mm	1.6 W/m²K	Class E
	300mm	GRP	20mm	0.95 W/m²K	Class E
	500mm	GRP	20mm	0.95 W/m²K	Class E

Rooflight Size	Opening		Upstand		
	MANUAL	HINGE	150MM GRP	300MM GRP	500MM GRP
600	•	•	•	•	•
700	•	•	•	•	•
800	•	•	•	•	•
900	•	•	•	•	•
1000	•	•	•	•	•
1100	•	•	•	•	•
1200	•	•	•	•	•
1400	•	•	•	•	•
1500	•	•	•	•	•
1800	•	•	•	•	•
2000	•	•	•	•	•
2200	•	•	•	•	•

Please note: PVC-u Internal Liners are also available with the Circular Range



COXDOME PYRAMID

The Coxdome Trade Range Pyramid provides maximum daylight while at the same times offers a sharp, modern, clean appearance. Suitable for refurbishment or new build the Pyramid Rooflight will complement any building.

All Pyramid domes are thermaformed to a 30° angle and are available with any of the Trade Upstands- see Section: Upstands

Supplied as standard with high security fittings and anti-tamper screws, opportunistic removal of the dome is virtually impossible.

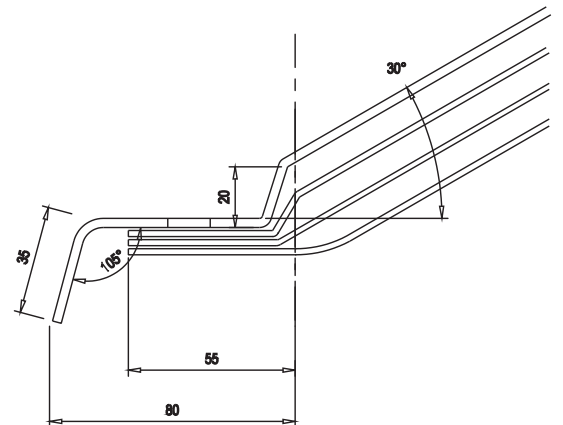
Glazing is available with double, triple or quadruple skins and can be specified Clear, Diffused, Opal, or Cool & Clear.

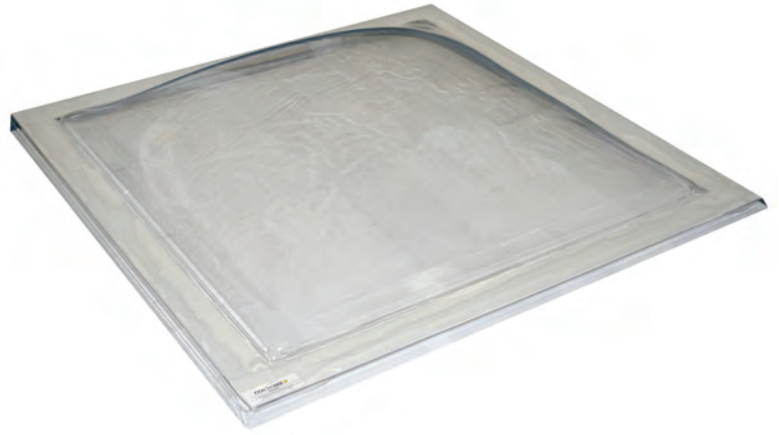
The Pyramid Range comes fixed, manually operated, electrically operated or as an access unit. All opening mechanisms incorporate the standard Trade Range systems.

Installation is fast and easy and all upstands are compatible with most flat roof membrane systems.



Rooflight Size	Fixed	Manual	Electric	Rooftop Access	Rooftop Entrance
600 x 600	•	•	•		•
700 x 700	•	•	•		•
800 x 800	•	•	•	•	•
900 x 900	•	•	•	•	•
1000 x 1000	•	•	•	•	•
1000 x 1500	•	•	•	•	
1000 x 2000	•	•	•		•
1100 x 1100	•	•	•	•	
1200 x 1200	•	•	•	•	•
1200 x 2400	•	•	•		
1400 x 1400	•	•	•		
1500 x 1500	•	•	•		
1600 x 1600	•	•	•		
1700 x 1700	•	•	•		
1800 x 1800	•	•	•		
2000 x 2000	•	•	•		
2200 x 2200	•	•	•		





COXDOME GALAXY RANGE

The Coxdome Galaxy Range is a 'dome-only' solution and has been designed to be fitted to existing builder's kerbs.

The 100mm flanged polycarbonate unit ensures it fits to most kerbs without the need for adjustment.

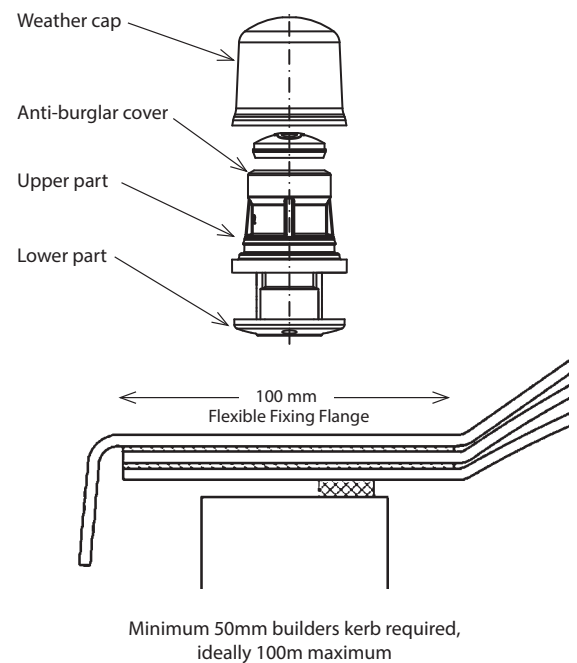
The Galaxy is ideal for refurbishment projects where only the glazing needs replaced.

All Galaxy domes are manufactured using 3mm polycarbonate. 'According to EN 13501-1 2007, 3mm polycarbonate achieves B-s1-d0 and therefore attains Class 1 Certification. TP(a) is realised with a solid polycarbonate sheet minimum 3mm thick.

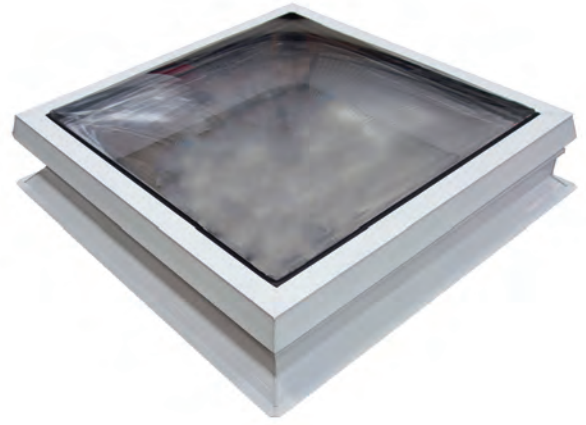
- **Single, Double, Triple or Quadruple skin**
- **Clear or Diffused**
- **Security Fixings supplied as standard**
- **Easy to install with minimum disturbance**

Please Note: All Galaxy domes are supplied undrilled for maximum flexibility. Pyramids, trapezoids and circular domes are not available in the Galaxy Range.

Galaxy Dome Size (to outer edge of flange)	Min ext kerb	Max ext kerb
600 x 600	510 x 510	610 x 610
600 x 900	510 x 810	610 x 910
600 x 1200	510 x 1120	610 x 1220
600 x 1800	510 x 1730	610 x 1830
750x 750	660 x 660	760 x 760
750 x 900	660 x 810	760 x 910
900 x 900	810 x 810	910 x 910
900 x 1200	810 x 1120	910 x 1220
900 x 1800	810 x 1730	910 x 1830
1050 x 1050	970 x 970	1070 x 1070
1050 x 1500	970 x 1420	1070 x 1520
1200 x 1200	1120 x 1120	1220 x 1220
1200 x 1800	1120 x 1730	1220 x 1830
1200 x 2400	1120 x 2340	1220 x 2440
1500 x 1500	1420 x 1420	1520 x 1520
1800 x 1800	1730 x 1730	1830 x 1830



Please Note:
The glazing tape between the polycarbonate layers is 100mm and therefore can be visible on builder's kerbs less than 100mm width.



COXDOME 2000 RANGE

The Coxdome 2000 Range is available either fixed or with a choice of two hinged ventilation options.

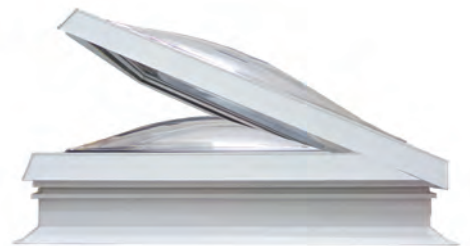
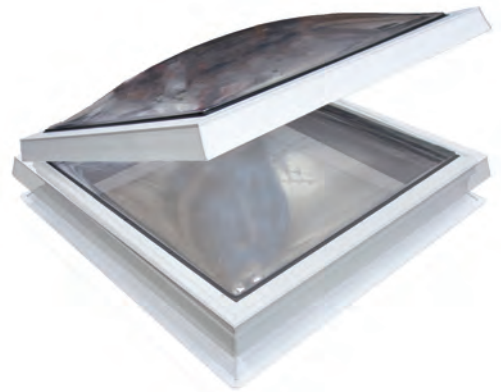
With sharp, smooth, clean UV protected white PVC-u profiles; the 2000 Range is one of the most aesthetically pleasing rooflights on the market. Coxdome's unique, concealed snap fixings avoid the need for visible fixing clips and also offer increased security. Supplied as a pre-fabricated factory finished unit the only means of removal of the glazing is by the specially designed 'disengaging tool'.

The R016, 160mm vertical upstand provides excellent thermal properties and combined with a triple skin dome offer an outstanding overall 'U' Value. Installing the 2000 Range is straight forward and hassle free and the upstand is compatible with most flat roof membrane systems.

Manual hinged units are supplied with a spindle gear, are operated from floor level by means of a winding rod, and offer controlled maximum ventilation to approximately 300mm.

Electrically operated units are supplied as standard with a toggle switch and offer approximately 400mm maximum ventilation. There are three optional fixed intermediary ventilation stages at 100mm, 200mm & 300mm.

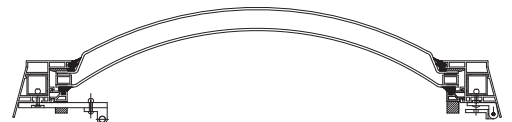
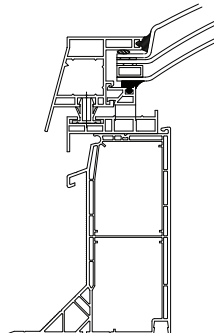
Remote control, wind, rain, and temperature sensors are available for specification with the 2000 Range.



FEATURES

- **Part L Compliant**
- **Double or triple skin glazing**
- **Clear, Diffused, Opal or Cool & Clear Glazing available**
- **BS476: Fire Rating Compliant**
- **EN 1873 Soft Body Tested**

Rooflight Size	Glazing		Controllable Vevtillation		
	MM	DOME	PYRAMID	MANUAL	ELECTRIC
600 x 600	•	•	•	•	•
900 x 900	•	•	•	•	•
900 x 1200	•	•	•	•	•
1000 x 1000	•	•	•	•	•
1000 x 1500	•	•	•	•	•
1200 x 1200	•	•	•	•	•



Glazing is available spherical in Clear, Diffused, Opal, and Cool & Clear. Please refer to Section: Glazing for options, specifications and classifications.



JET COX

GLASS

PRODUCTS

Our new Glass Product Range is designed and manufactured by the JET Group, exclusively for the JET Group, and focuses on slim, elegant profile detailing allowing maximum daylight.

Many of the products are available in modular sizes and are supplied to site pre-fabricated allowing ease of specification, purchase and installation.

The aluminium profiles are supplied powder coated providing minimal maintenance and on-going costs to site. Other RAL finishes are available on request.

Glass configurations are such that specifications can be tailored to individual requirements for light transmission, solar gain, privacy, and thermal efficiency.

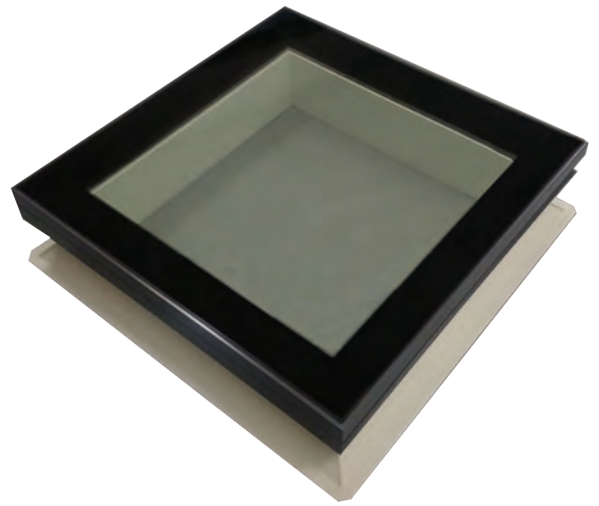
All products are designed, manufactured and supplied fully certified to meet high technical and performance requirements. Installation instructions are provided with all our products and Operational & Maintenance literature is available on request.

The JET COX Glass Range has applications ideal for the both the new build and refurbishment market. Please contact our offices for assistance with specification or site surveys.

All products within the Glass Product's Range carry the JET COX 10 Year Guarantee*.

Bespoke sizes and shapes are also available throughout the Range. Please contact our Sales Office for more information.

*Certain restrictions apply

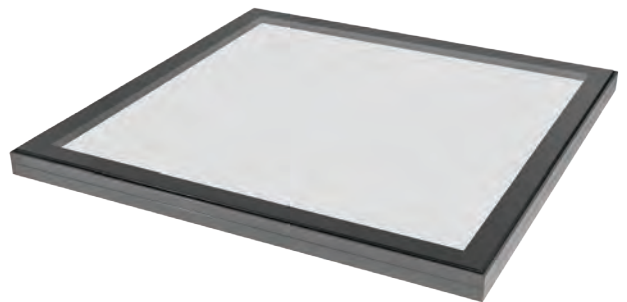


COXDOME FLAT GLASS

The Coxdome Flat Glass distinguishes itself from other modular units by the uninterrupted glass surface which offers pure natural daylight and clear panoramic views internally whilst providing a clean appearance in the external roof scape.

The aluminium frame profile is slim and isolated internally for thermal performance. The toughened outer glass panel has ceramic edge coating for a stylish finish.

The unit is fixed and can be installed onto a builder's kerb, or preformed upstand. The fixing screws are concealed with a flush cover making them invisible.

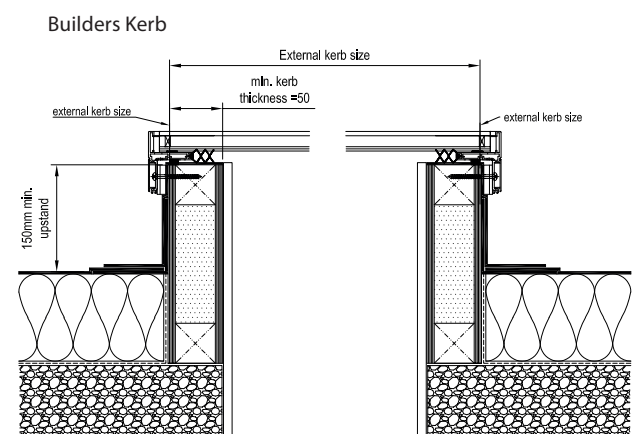
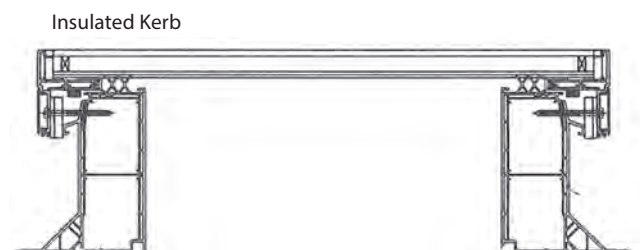


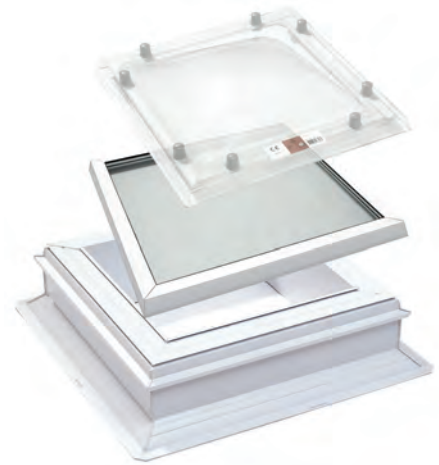
External Kerb Size (mm)	Daylight Size RO16 Upstand (mm)	Daylight Size Builders Upstand (mm)
750 x 750	600 x 600	650 x 650
900 x 900	750 x 750	800 x 800
900 x 1200	750 x 1050	800 x 1100
1000 x 1000	850 x 850	900 x 900
1000 x 1500	850 x 1350	900 x 1400
1000 x 1800	850 x 1650	900 x 1700
1000 x 2000	850 x 1850	900 x 1900
1200 x 1200	1050 x 1050	1100 x 1100
1500 x 1500	1350 x 1350	1400 x 1400

Product Specification	
Installation Angle	0 - 7°
Installation	Screws with cover strip

Glass Specification	
Glass Assembly (minimum)	6mm toughened external with black ceramic print / argon filled cavity / 8.4mm laminated. Low E glass
Insulation	HR++
Insulation	U _g = 1.0 Wm ² K
Spacer	Warm edge spacer
Injury Safety according to EN 12600	1B1
LTA / ZTA	App. 69% / 49%
Sound Insulation (R _w)	App. 35dB

Frame Specification	
Frame	Aluminium
Coating	Powder coated aluminium slate grey (RAL 7015)
Drainage	At each corner of the frame
Waterproof Welded	At each corner of the frame





JET COX FLAT ROOF WINDOW WITH DOME

The JET COX Glass Rooflight is a revolutionary rooflight that is designed to be suitable for even the most noise polluted areas.

Designed in-house by the JET Group research and development team, the glass rooflight provides the ideal glazing solution for new build and refurbishment projects. Offering maximum natural light and excellent thermal properties the glass rooflight is also exceptional at reducing unwanted noise; the double glazed insulated glass units provide an external noise reduction of 35dB.

Compatible with full range of upstands and polycarbonate domes from the Trade Range, the glass rooflight offers full specification flexibility and will cater for even the most demanding building requirements and building locations.

Ideal for refurbishment projects, the glass rooflight can also be installed direct onto an existing builder's kerbs.

Please note that the glass rooflight must always be specified and installed with a Coxdome Trade Dome.

Fully reinforced frames as standard, together with high security fixings caps and anti-tamper screws the glass rooflight provides maximum security and peace of mind.

The glass rooflight is suitable for most flat roof applications and will accommodate an inclination of up to 15°.

Domes are available spherical or pyramidal in double, triple or quadruple skins and can be specified in Clear, Diffused, Opal and Cool & Clear.

FEATURES

- UV & Impact Resistant PVC-u Reinforced Frames
- Compatible with the full range of Trade Upstands
- Hail Resistant
- JET COX 10 Year Guarantee
- Excellent acoustic properties
- Excellent Insulation Values

TECHNICAL SPECIFICATION

- 'U' Value according to EN 673-2011 of 1.1 W/m²K (Glass Unit)
- Light Transmission according to EN 410-2011 of 79%
- 'G' Value (Solar Gain) according to EN 410-2011 of 62.4%
- Fire Classification E (PVC-u Frame) according to EN13501-1
- Sound Reduction according to NEN-EN-5079 of 35dB (Glass)
- Burglar Resistant according to NEN 5096, Classification 2
- 4mm Float / 15mm Cavity / 6.2 Laminated Glass (Standard)
- Impact Resistant Classification 1B1 (highest classification) according to BS EN 12600:2002

Rooflight Size	Fixed	Electrical Opening
400 x 400	•	•
400 x 700	•	•
600 x 600	•	•
600 x 900	•	•
700 x 700	•	•
700 x 1000	•	•
800 x 800	•	•
800 x 1300	•	•
900 x 900	•	•
1000 x 1000	•	•
1000 x 1600	•	•
1200 x 1200	•	•
1300 x 1300	•	•
1400 x 1400	•	•

Dome Layers	Low 'E' / Laminated Glass with RO16 Upstand	
	Uw Value	Ug Value
Single	0.97 W/m ² K	0.81 W/m ² K
Double	0.89 W/m ² K	0.69 W/m ² K
Triple	0.83 W/m ² K	0.60 W/m ² K
Quadruple	0.79 W/m ² K	0.53 W/m ² K

Please Note: The 'U' Value calculation is according to EN 1873 and Eurolux Guidelines and is based on a domelight 1400mm x 1400mm with a RO16 Vertical Upstand





JET COX MODUGLASS

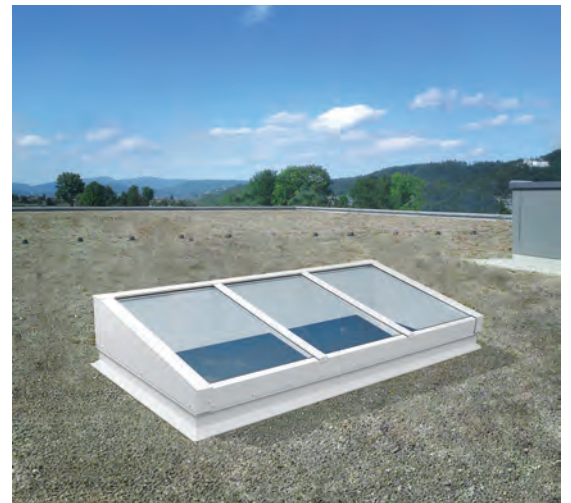
The JET COX Moduglass is a compact, free standing glass skylight. Engineered with slim, elegant aluminium profiles you can be sure of maximum daylight.

Moduglas is a well-designed, well insulated unit that is supplied pre-fabricated ready for direct installation. Installation is made easier with inclusion of the RO16 insulated, thermally efficient PVC-u upstand. The upstand once securely attached to the roof is then weathered in the same way as a standard rooflight.

Powder coated thermally broken aluminium profiles ensure the finished product offers low annual maintenance.

Manufactured from modular sizes the Moduglas Range is available in two, three, four or five glazing compartments.

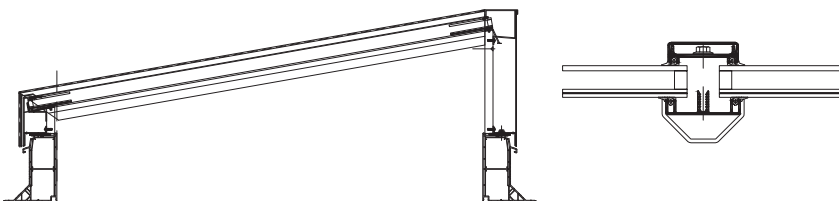
The Moduglas is compatible with most flat roof membrane systems including single ply, GRP, hot melt, asphalt, liquid and lead and comes complete with a 10 year guarantee.



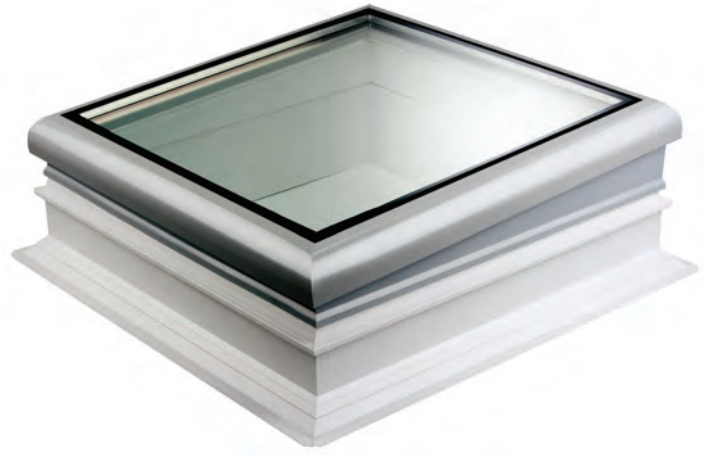
TECHNICAL SPECIFICATION

- **'U' Value 1.1 W/m²K***
- **Light Transmission 76%**
- **'G' Value (Solar Gain) 54%**
- **130mm concealed electrically operated ventilation**
- **RAL 9016 Powder coated aluminium profiles (other RAL colours available on request)**
- **Sound Reduction according to NEN-EN-5079 34dB**
- **Optional Solar Glass**
- **10° Inclination**

* Indicated values relate to the glazing only. Variances to sizes and glass configurations may affect these figures.



Rooflight Size	Fixed	Electric	External Blinds	Solar Glass Option
1000 x 1510	•	•	•	•
1000 x 2300	•	•	•	•
1000 x 3090	•	•	•	•
1000 x 3880	•		•	•



JET COX GLASSLIGHT

The JET COX Glasslight is an innovative flat glass rooflight solution suitable for all flat roof applications.

Manufactured from thermally broken durable aluminium with an external powder coating finish to RAL 9040, it is one of the most attractive flat glass solutions on the market. The glass surface is uninterrupted giving optimal view and maximum daylight. The Glasslight is available fixed or electrically opening for ventilation. The electric actuator is fully integrated and concealed within the PVC-u lower frame and allows the rooflight to open for ventilation to approximately 350mm.

The Glasslight, not only aesthetically pleasing, also offers superb performance.

Please note: The Glasslight is also available without the upstand for direct installation onto an existing builder's kerb / upstand. Contact our Sales Office for further information and advice on kerb sizing.



TECHNICAL SPECIFICATION

- **'U' Value** 1.2 W/m²K (with upstand)
1.6 W/m²K (without upstand)
- **Light Transmission** 79%
- **'G' Value (Solar Gain)** 63%
- **Sound Reduction according to NEN-EN-5079**
36dB - 39dB
- **Wind Load according to NEN-EN6702:2001**
– 0.8kN/m²
- **Safety Glass according to NEN-EN-3569 / 12600**
- **External Finish RAL 9040 / Internal Finish RAL 9010**
- **Minimal 3° Pitch (shortest side)**
- **RO16 PVC-u Upstand**

Designed to be a feature, not just to provide a function!

Rooflight Size	Fixed on Upstand	Electric on upstand	Fixed without Upstand	Electric without Upstand
400 x 700	•	•	•	•
600 x 600	•	•	•	•
600 x 900	•	•	•	•
600 x 1800	•	•		
600 x 2400	•	•		
700 x 700	•	•	•	•
700 x 1000	•	•	•	•
800 x 800	•	•	•	•
800 x 1300	•	•	•	•
800 x 1800	•	•		
800 x 2400	•	•		
900 x 900	•	•	•	•
1000 x 1000	•	•	•	•
1000 x 1800	•	•		
1000 x 2400	•	•		
1200 x 1200	•	•	•	•



JET COX SKYSIGHT

Flat roof window for energy efficient glass architecture creating buildings with atmosphere.

FEATURES

- Applicable as fix or ventilated flat roof daylight system
- Ventilated by high-quality chain thrust motors with 300 or 500 mm lifting height
- Aluminium surfaces coated in white RAL 9016 or optionally RAL-coloured according your choice on request

TECHNICAL SPECIFICATION

Glazing variants:

- Heat protection or sun protection-insulation glazing as standard with "warm edge"
- Realization with border frame or as step glazing

Double-insulation glazing:

Glass quality: outside toughened/inside LSG

- heat protection glazing JET-WSG 78/57 (Ug-value = 1,1 W/m²K acc. DIN 673) light transmission: TL min. 78 % energy transmission: g-value min. 57 %
- sun protection glazing JET-SSG 66/36 (Ug-value = 1,1 W/m²K acc. DIN 673) light transmission: TL min. 66 % energy transmission: g-value min. 36 %

Sound insulation: Rw = approx. 36 dB

Triple-insulation glazing:

Glass quality: outside toughened/inside LSG

- heat protection glazing JET-WSG 68/48 (Ug-value = 0,6 W/m²K acc. DIN 673) light transmission: TL min. 68 % energy transmission: g-value min. 48 %
- sun protection glazing JET-SSG 58/33 (Ug-value = 0,6 W/m²K acc. DIN 673) light transmission: TL min. 58 % energy transmission: g-value min. 33 %

Sound insulation: Rw = approx. 39 dB

NOTE:

Indicated values are related to the glazing. The indicated function values for the glass products and the photometric data correspond to the relevant and actual testing standards with the requested and described testing measurements. Variant sizes and combinations may effect changing of the results.

PRODUCT ADVANTAGES

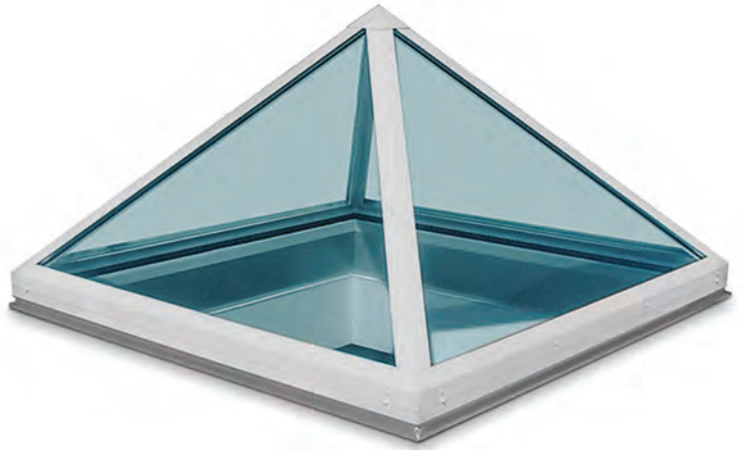
Top-quality product concerning heat- and sound insulation because of:

- thermal separated aluminium profiles
- sound-absorbing heat protection glazing
- highly heat insulated upstands with UN,AK up to 0,36 W/m²K
- highest air tightness (class 4 acc. DIN EN 12207)
- dimensioning for application according to EnEV 2014 (2016)
- natural room illumination with optimal light efficiency
- high quality design (can be equipped with chain thrust motor)
- light, fresh air and look-out in combination with comfortable applications
- optional ventilation and outer shading system, selectively with radio remote control
- connection to JET-SMARTCONTROL for more comfort
- optional step glazing for optimal water drainage
- optional JET-GRP adapter frame 7° for JET-SKYSIGHT supports the natural glass cleaning effect
- fast fitting by the roofer is possible, because the JET-SKYSIGHT will be delivered prefabricated on JET-upstands and packed on a transportable pallet

Fall through protection:

- permanent fall through proof according to GS-Bau 18

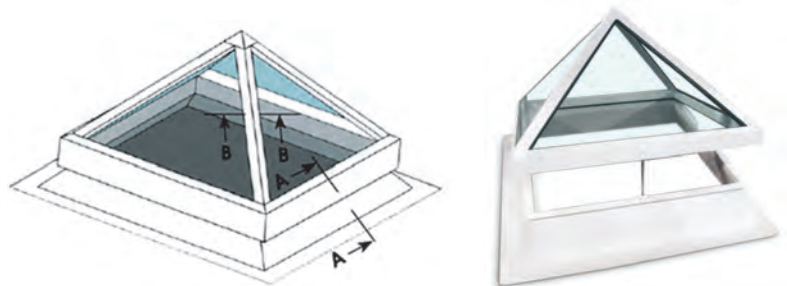
Order Size (mm)	Double Insulation Glazing Weight (approx kg)	Triple Insulation Glazing Weight (approx kg)
600 x 600	9	13
600 x 900	15	20
800 x 800	18	24
900 x 900	24	32
900 x 1200	34	45
1000 x 1000	31	41
1000 x 1500	49	64
1200 x 1200	47	61
1200 x 1500	60	78
1200 x 1800	74	96
1500 x 1500	78	100
1500 x 1800	95	122
1500 x 2100	78	143



JET COX 45° GLASS PYRAMID

The JET COX 45° Glass Pyramid and Trapezoid Range provides a high quality, aesthetically pleasing, prefabricated glazing solution for a variety of applications.

The slim, elegant, thermally broken aluminium sections are exclusively designed to maximise natural daylight; the choice of glass specification allows thermal and acoustic performance to be given equal consideration and because the units are prefabricated (sizes $\geq 2000\text{mm} \times 2200\text{mm}$ will require site glazing) fitting on site is fast and easy.



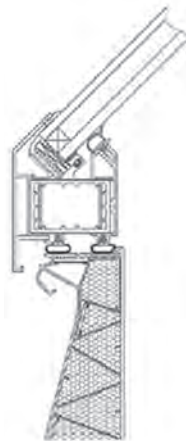
TECHNICAL SPECIFICATION

- Fixed or Electrically Operated
- 230V or 24V Electric Actuators
- Fully thermally broken Aluminium System
- Polyester Powder coated RAL 9016 as standard (other RAL colours are available on request)
- 150mm or 300mm PVC-u Upstand
- 'U' Value according to DIN EN ISO 6946
Glass Unit 1.1 W/m²K
- Light Transmission
Thermo-PLUS S3 78%
INFRASTOP Brilliant 66%
- 'G' Value solar heat gain
Thermo-PLUS S3 57%
INFRASTOP Brilliant 36%
- Sound Reduction according to DIN 52210
Opening Lid 33db
Upstand 42-44dB
- Electric Actuators 300mm or 500mm stroke length

Rooflight Size	Electric Actuators*		Weight (kg) with 300mm Upstand	Upstands - PVC-u	
	230v	24v		150mm	300mm
1000 x 1000	S	S	58	•	•
1200 x 1200	S	S	81	•	•
1500 x 1500	S	S	124	•	•
1800 x 1800	-	D	185	•	•
2000 x 2000	-	D	225	•	•
2200 x 2200	-	D	299	•	•
2500 x 2500	-	D	382	•	•

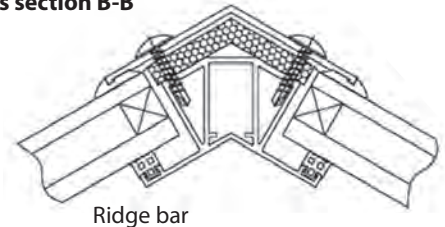
* S = Single Actuator D= Double Actuator with electrical synchronisation control

Cross section A-A



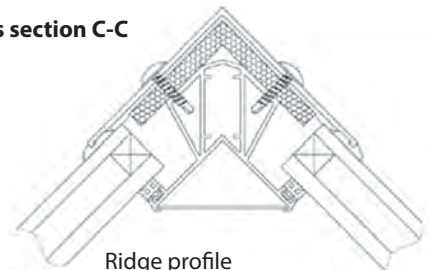
JET COX Glass Pyramid 45° with PVC-u Upstand

Cross section B-B

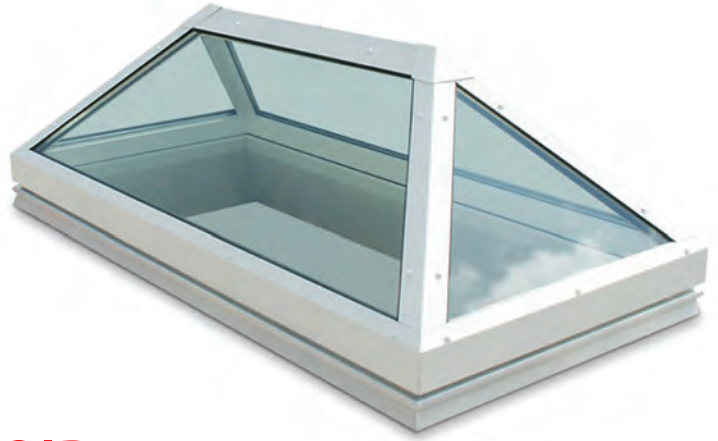


Ridge bar

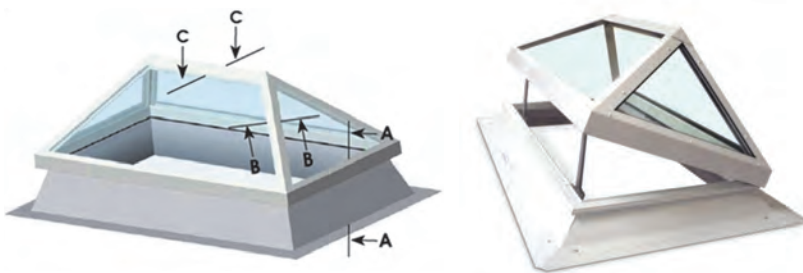
Cross section C-C



Ridge profile

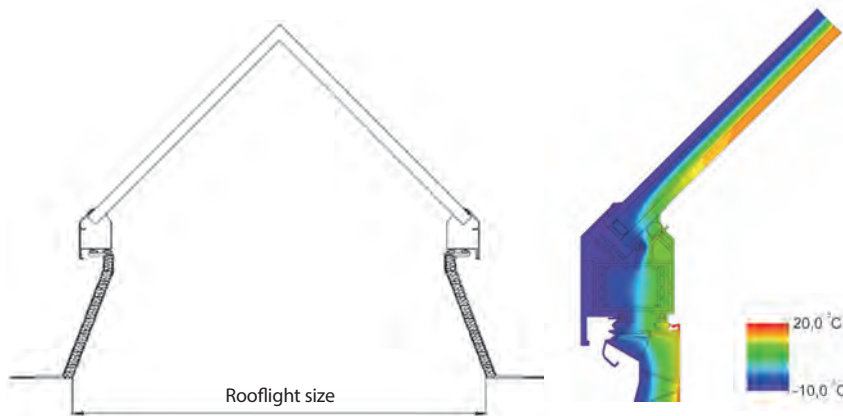


JET COX 45° GLASS TRAPEZOID



Rooflight Size	Electric Actuators*		weight (kg) with 300mm Upstand	Upstands - PVC-u	
	230v	24v		150mm	300mm
1000 x 1500	S	S	94	•	•
1000 x 2000	-	D	123	•	•
1200 x 1500	S	S	111	•	•
1200 x 2400	-	D	190	•	•
1500 x 1800	-	D	162	•	•
1500 x 2500	-	D	243	•	•
1800 x 2500	-	D	290		•

* S = Single Actuator D= Double Actuator with electrical synchronisation control



Thermal Progression:
JET COX Glass Pyramid 45°
with PVC-u Upstand



JET COX fall down protection system Type AS-AK on
PVC-u Upstand 150mm



JET COX

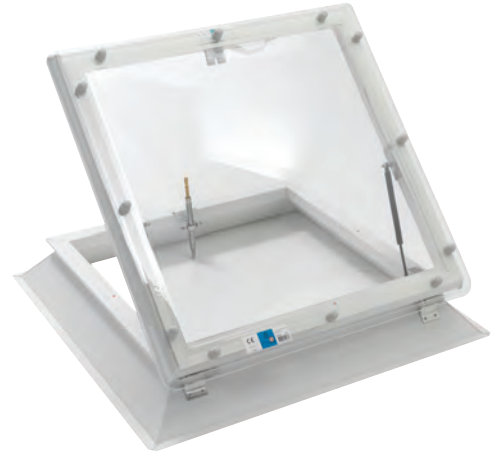
SMOKE VENTS &

ACCESS HATCHES

The greatest immediate danger to the occupants of a large building in the event of a fire comes from the smoke rather than the heat of the fire. Even a small fire can rapidly fill a large building with smoke to an extent where people escaping the building cannot see to find the escape routes and can be overcome by smoke inhalation.

The recognised method of addressing these problems is to provide a smoke ventilation system with automatically operated roof ventilators.

Smoke and Heat Exhaust Ventilation Systems (SHEVS) are therefore an essential component of any building's fire protection design concept. In a fire situation, smoke and heat exhaust ventilation systems create and maintain a smoke free layer above the floor by removing smoke. They also serve simultaneously to exhaust hot gases released by a fire in the developing stages. Their value in assisting in the evacuation of people from buildings and other constructions works, reducing fire damage and financial loss by preventing smoke damage, facilitating access for firefighting by improving visibility, reducing roof temperatures and retarding the lateral spread of fire is firmly established- so much so, it has become a legal requirement for all SHEV systems to be classified under CE EN12101-2.



COXDOME ROOFTOP ENTRANCE AND ACCESS

JET COX makes access to the roof space easy and safe with the stylish Rooftop Entrance and Rooftop Access.

ROOFTOP ENTRANCE - Frequent use

Opening the door to your roof terrace...

Designed with equal emphasis on the internal and external aesthetics, the Rooftop Entrance is manufactured using a 160mm PVC-u **VERTICAL** upstand and gas assisted struts. Reinforced ventilation frames ensure it is strong enough to withstand frequent use. A security handle, which can only be operated internally, provides peace of mind.

TECHNICAL SPECIFICATION

- **Opening angle of 78°**
- **R016 PVC-u Upstand**
- **Fire resistance (EN 13501-1:2007): D**
- **EN 1873 Soft Body Article 5.4.3.2 (1200 Joules)**

Rooflight Size	Glazing	
	Dome	Pyramid
500 x 1000	•	
600 x 600	•	•
600 x 900	•	
700 x 700	•	•
700 x 1000	•	
800 x 800	•	•
800 x 1300	•	•
800 x 1800	•	•
900 x 900	•	•
900 x 1200	•	
1000 x 1000	•	•
1000 x 1300	•	
1000 x 1600	•	
1000 x 2000	•	
1200 x 1200	•	•

ROOFTOP ACCESS - Occasional use

The Rooftop Access is designed to allow safe, occasional access on to a roof space for inspection of the roof or the facilities located on the roof. Specifying the Rooftop Access often avoids the need to provide other external facilities for gaining access to the roof. It can also be used as a means of emergency escape.

In addition you can specify a version which can be manually opened with a spindle. This will allow controllable ventilation before the removal of the spindle pin provides the user with direct access to the roof. Please remember you will require a winding rod to operate.

The Rooftop Access is available with either the 150mm or 300mm **SPLAYED** upstand and operates using gas assisted struts.

TECHNICAL SPECIFICATION

- **Opening angle of 85°**
- **SF15, BF30, BF15 Splayed Upstands**
- **EN 1873 Soft Body Article 5.4.3.2 (1200 Joules)**

Rooflight Size	Glazing	
	Dome	Pyramid
700 x 1200	•	
750 x 900	•	
800 x 800	•	•
800 x 1100	•	
900 x 900	•	•
900 x 1200	•	
1000 x 1000	•	•
1000 x 1500	•	•
1100 x 1100	•	•
1200 x 1200	•	•
1200 x 1500	•	

*The Rooftop Entrance and Rooftop Access are available with either spherical or pyramidal domes in Clear, Diffused, Opal, or Cool & Clear. Please refer to Section: Glazing for full details.



JET COX ROOF ACCESS HATCH

The JET COX Roof Access Hatch has been designed to allow personnel safe access onto the roof either for frequent inspection or occasional maintenance.

Suitable for use on all flat roofs with a maximum inclination of 15° the Access Hatch is manufactured from aluminium. Installed to the manufacturer's instructions JET COX guarantee the product for 10 Years.

The gas strut assisted opening provides smooth, easy, single-handed operation regardless of the size of rooflight.

The Access Hatch is supplied completed with upstand which ensures ease of installation.

The range is available in 5 standard sizes. Other sizes are available on request.



TECHNICAL SPECIFICATION

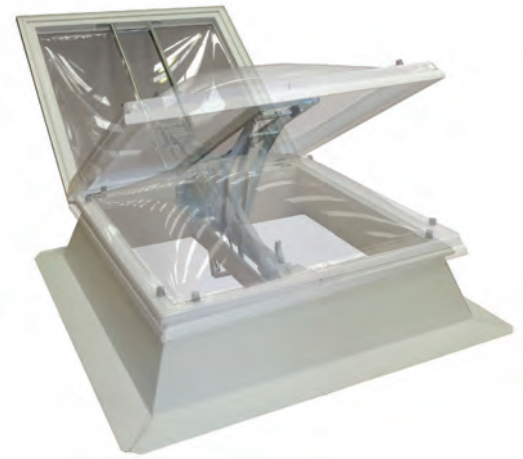
- Mill finish Aluminium Lid with 80mm Rockwool Insulation
- Splayed 300mm Steel Upstand with 60mm Rockwool Insulation
- White RAL 9002 Internal / Aluminium External
- 80° Opening Angle
- Fire Classification E according to EN 12101-2: 2003
- 'U' Value according to DIN EN ISO 6946
 - Opening Lid 0.46 W/m²K
 - Upstand 0.46 W/m²K
- Sound Reduction according to NEN-EN-5079
 - Opening Lid 33db
 - Upstand 42-44dB
- Fall Safety DGUV 07043 according to GS-Bau 18

Hitch – on anodized aluminium Ladders and Mounting Brackets are also available. Sizes and specification available on request.



Rooflight Size	Weight (Kgs)
900 x 1100	49.3
900 x 1600	65.1
1100 x 1100	55.1
1100 x 2600	107.2
1200 x 1700	78.4

* Other sizes available on request



JET COX FIREJET 165 24V/48V

Jet Cox FireJet 165 24V/48V Range provides a smoke and heat exhaust ventilation system for all Commercial and Residential applications.

Supplied factory assembled and factory tested all products are certified to CE EN12101-2. FireJet rooflights not only help to provide smoke extraction in the event of a fire but they also provide day-to-day controllable ventilation. Available in a wide range of sizes (many of which are held in stock) the Jet Cox FireJet range complies with the latest Building Regulations on Fire Safety and can be integrated into any Building Management System.

Linked to a central control panel, complete with a battery backup system in case of mains failure, the control panel can be triggered from either manual override switches local to the ventilator and the ground floor, by dedicated smoke detectors, or by interfacing with a third party smoke detection/fire alarm system.

The FireJet Range is available with CLEAR or OBSCURE polycarbonate glazing to enhance the buildings natural daylight or with a fully insulated ALUMINIUM solid cover.

Upstands can be specified either 300mm Splayed PVC-u or 300mm/400mm/500mm Splayed Metal.



FEATURES

- Sizes from 1000mm x 1500mm to 1500mm x 2500mm
- Opens to 165°
- Galvanised Steel Mechanism
- Glazed Polycarbonate Cover or Solid Insulated Aluminium Cover
- One Mechanism regardless of size
- Optional Day-to-Day Ventilation Position without additional motor
- Extremely Low Noise Level
- Compact 24V/48V DC Motor Unit / Sealed IP54
- Can be used for Roof Access

TECHNICAL SPECIFICATION

- CE EN12101-2 Certified
- Certificate 1368-CPD-C-002/2009 (I.F.I Institute, Germany)
- Aerodynamic Free Area up to Aa2.74m² *
- Snow Load up to 2400N/m²
- Wind Load up to 1500N/m²
- Low Ambient Temperature T(-15°)
- Heat Exposure B300
- Reaction to Fire Class E
- Opening Speed <60secs

* Aa-Value in m² (aerodynamic effective smoke exhaust surface) according to DIN EN12102-2

Rooflight Size/ Roof Opening Size (mm)	Geometric free area (m ²)	Aa-Value EN12101
1000 x 1500	1.04	0.93
1200 x 1200	1.00	0.88
1200 x 1500	1.30	1.12
1200 x 1800	1.60	1.34
1200 x 2100	1.90	1.59
1200 x 2400	2.20	1.93
1200 x 2500	2.30	2.01
1250 x 1250	1.10	0.95
1250 x 2500	2.42	2.09
1500 x 1500	1.69	1.42
1500 x 1800	2.08	1.81
1500 x 2100	2.47	2.11
1500 x 2400	2.86	2.45
1500 x 2500	3.00	2.55

Full technical data sheets are available detailing Geometric Areas, Aerodynamic Values, Snow Loads etc. For further information please contact our offices on 0121 530 4230 or at sales@jet-cox.co.uk



JET COX TUBELIGHT

The JET COX Tubelight was originally designed to transfer light to those small rooms or tight spaces that do not benefit from direct natural daylight. The sole aim of the Tubelight is to maximise daylight whilst minimising heat transfer.

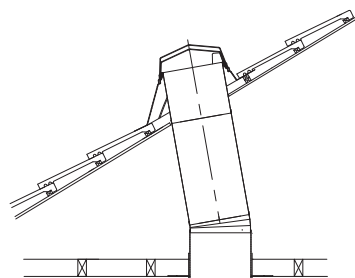
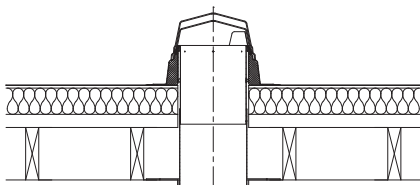
The application of the Tubelight has changed over the years and they now serve many other purposes and offer many other benefits. The low profile design of the Tubelight is aesthetically pleasing and less obtrusive than an out of plane rooflight; ideal where external constructive changes are undesirable or restricted. Internally, the ceiling light (diffuser) is made of coated aluminium (white or brushed alloy) and has a frosted look which is elegant, yet modern.

The Tubelight is also designed to transport light in both a vertical and horizontal direction, and with lengths of up to 8m the Tubelight can be specified to pass through several floors of a building.

The Tubelight is available in two sizes; 250mm and 350mm, and can be specified for pitched roof (15°-60°) or flat roof (>15°) applications.

Accessories

- **Extension Tube 62.5cm, comes with sleeve**
- **Elbow Tube, 0-45°, comes with sleeve**
- **Inner Dome, Polycarbonate; increased insulation**
- **Installation brackets for extension tubes**
- **Tube Spot**
- **Tube Dimmer**



Specification	Model	
	D-250	D-350
PITCHED ROOF (15°-60°)		
ROOF TILE FLASHING	700 X 890	700 X 890
ROOF OPENING DIAMETER	DEPENDS ON THE PITCH OF THE ROOF	
TUBE DIAMETER	250MM	350MM
CEILING LIGHT DIAMETER	320MM	420MM
FLAT ROOF (<15°)		
HEIGHT ABOVE ROOF	280MM	290MM
ROOF OPENING DIAMETER	270MM	370MM
UPSTAND FLANGE DIAMETER	520MM	620MM
LIGHT DISTRIBUTION (APPROX)	12M ²	20M ²
U' VALUE		
SINGLE SKIN	3.7 W/M ² K	3.5 W/M ² K
DOUBLE SKIN	3.1 W/M ² K	2.8 W/M ² K
LIGHT OUTPUT (LUMEN)		
SUMMARY - SUNNY	3,240	5,346
SUMMER - CLOUDY	1,620	2,673
WINTER	648	1,069
MATERIAL SPECIFICATION		
DOME	PC-POLYCARBONATE	
UPSTAND	DOUBLE SKIN ALUMINIUM INSULATED	
SLOPE ROOF SLATE	HDPE WEATHERING SLATE WITH LEAD FLASHING	
RIGID TUBE	ALUMINIUM WITH SILVER COATING	
FIXATION RING	ABS-PMMA	
DIFFUSER	PMMA	
CEILING LIGHT TRIM	ALUMINIUM	



REGULATIONS

FIRE RATING

The Building Regulations 2010: Fire Safety, Approved Document B (2006 edition incorporating 2007, 2010 & 2013 amendments)

The UK Regulations for fire safety in buildings are detailed in Document B.

There are two sections within the Document which relate directly to Rooflights, and have the following aims:

Section B2 – Internal Fire Spread

- 'to ensure fire spread over the internal linings of buildings is inhibited.

In order to inhibit spread of fire the internal linings shall-

- I. adequately resist the spread of flame over their surfaces; and
- II. have, if ignited, a rate of heat release or a rate of fire growth, which is reasonable in the circumstances'

In general, the standards for internal fire spread can be achieved by meeting the requirements of either (British) BS 476 Part 7: Method of test to determine the classification of the surface spread of flame of products or (European) BS EN 13501-1: 2007 Fire classification of construction products and building elements, Part 1- Classification using data from reaction to fire tests.

Where there is no classification for thermoplastic materials under BS 476 Part 7, three other ratings are used; TP(a) Rigid, TP(a) Flexible and TP(b).

Section B4 – External Fire Spread

- 'to ensure external walls and roofs have adequate resistance to the spread of fire over the external envelope and that spread of fire from one building to another is restricted.

- I. The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.'

In general, the standards for external fire spread can be achieved by meeting the requirements of either BS 476 Part 3 or BS EN 13501 Part 5.

In summary

Internal skin:

- The surface linings of walls and ceiling should normally be rated Class 1 according to BS 476 Part 7 or Class C-s3,d2 according to BS EN 15301:1
- The inner layer of a rooflight should either meet that same classification, or achieve TP(a)
- however, plastic rooflights with at least a Class 3 (BS 467 Part 7), Class D-s3,d2 (BS EN 15301:1) or TP(b) rating may be used in circumstances where the maximum area of each rooflight is less than 5m², with a minimum separation distance between each rooflight of 3m

Outer skin:

- When used in rooflights, a rigid thermoplastic sheet product made from polycarbonate or from un-plasticised PVC which achieves a Class 1 according to BS 476 Part 7 or Class C-s3,d2 according to BS EN 15301:1 for surface spread of flame can be regarded as having a British AA designation or BROOF (t4) European classification and is therefore acceptable
- Lower classifications for the outer skin may be acceptable, but only in areas out with 6m from a boundary

Please note that single skin sheet applications must meet the requirements for both the inner lining and outer roof surfaces.

Thermoplastics- Polycarbonate and un-plasticised PVC

Thermoplastic materials; PVC, solid polycarbonate and multiwall polycarbonate, are suitable materials for a wide range of building applications. However, as the material would melt during the testing

procedure, they cannot be tested under BS 476 Part 3 or BS EN 15301 Part 5.

UK Building Regulations therefore define an alternative classification for these materials;

- Polycarbonate or un-plasticised PVC which achieves Class 1, BS 476 Part 7 or Class C-s3,d2, BS EN 15301 Part 1, can also be classified AA designation or BROOF (t4) classification
- Multiwall polycarbonate which is rated

TP(a) rigid:

- i. Rigid solid pvc sheet
- ii. Solid (as distinct from double or multi-skin) polycarbonate sheet at least 3mm thick
- iii. Multi-skinned rigid sheet made from un-plasticised pvc or polycarbonate which has a Class 1 rating when tested to BS 476-7:1997 or 1971 or 1987; and
- iv. Any other rigid thermoplastic product, a specimen of which (at the thickness of the product as put on the market), when tested to BS 2782:1970 as amended in 1974: Method 508A Rate of burning (Laboratory method), performs so that the test flame extinguishes before the first mark and the duration of flaming or afterglow does not exceed five seconds following removal of the burner.

TP(a) flexible:

Flexible products not more than 1mm thick which comply with the Type C requirements of BS 5867-2:1980 Specification for fabrics for curtains and drapes – Flammability requirements when tested to BS 5438:1989 Methods of test for flammability of textile fabrics when subjected to a small igniting flame applied to the face or bottom edge of vertically oriented specimens, Test 2, with the flame applied to the surface of the specimens for 5, 15, 20 and 30 seconds respectively, but excluding the cleansing procedure; and

TP(b):

- i. Rigid solid polycarbonate sheet products less than 3mm thick, or multiple-skin polycarbonate sheet products which do not qualify as TP(a) by test; or
- ii. Other products which, when a specimen of the material between 1.5 and 3mm thick is tested in accordance with BS 2782:1970, as amended in 1974: Method 508A, has a rate of burning which does not exceed 50mm/minute.



Class 1, BS 476 Part 7; Polycarbonate $\geq 3\text{mm}$ thick; and solid PVC (any thickness) are rated TP(a) Rigid

- Other thermoplastics, not categorised above, can be tested according to BS 2782 and are rated TP(a) Flexible or TP(b)

GRP (Glass Reinforced Polyester)

GRP can be classified to BS 476 Part 3 & Part 7, and to BS EN 15301 Part 1 & Part 5. A variety of grades are available offering alternative fire ratings dependant on application.

Please contact a member of our Sales Team for more detailed information.

PART L

Thermal Efficiency

The Building Regulations 2013: Conservation of Fuel and Power, Approved Document L (2010 Edition incorporating further 2010 amendments)

Originally introduced in 2000 to bring about control for the conservation of fuel and power, the latest version came into effect on the 1st October 2010. Further planned updates are scheduled over the forthcoming years.

Approved Document L is divided into four main categories:

Part L	Dwellings	Non-dwellings
New	L1A	L2A
Existing	L1B	L2B

The Regulation requires that reasonable provisions should be made to limit heat gains and losses through the fabric of the building. The main change to the 2006 Regulation is largely to the new build sector with much of the focus now on the energy efficiency of the major energy consuming services such as heating and lighting. The

revision now requires a calculation on the CO₂ emissions from the actual dwelling.

To comply with the Regulations the Dwelling CO₂ Emission Rate (DER) must be no worse than the Target CO₂ Emission Rate (TER). The TER is specified at design stage.

Calculation of the DER must be based on the building as constructed and should incorporate:

- Any changes made during construction which differ from specification
- Air permeability – Air permeability is the physical property used to measure airtightness of the building fabric. It is defined as air leakage rate per hour per square metre of envelope area at a test reference pressure differential across the building envelope of 50 Pascal (50 N/m²).

The thermal performance requirements of rooflights can be summarised for each of the categories as follows:

Document L 1A

Section 4.2: Rooflights, 2.00 W/m²K
Air Permeability 10.00 m³/hm² at 50Pa

Document L 1B

Section 4.21: Rooflights, 1.6 W/m²K

Document L 2A

Section 4.32: Rooflights, 2.2 W/m²K
Air Permeability 10.00 m³/hm² at 50Pa

Document L 2B

Section 4.26: Rooflights, 1.8 W/m²K

Section 4.27: Refers to a relaxation in certain classes of building with high internal gains. Here a less demanding 'U' Value may be an appropriate way of reducing CO₂ emissions. If this case can be made then a relaxation may be granted and a 'U' Value of 2.7 W/m²K must not be exceeded.

Roof ventilators (including smoke extract ventilators) have a maximum 'U' Value of 3.5 W/m²K.

SOUND

The Building Regulations 2010: Resistance to the Passage of Sound, Approved Document E (2003 Edition incorporating 2004 & 2010 amendments).

Approved Document E, which took effect on 1st July 2003, deals with the requirements of Part E of Schedule 1 to the Building Regulations 2010.

The document requires that buildings are designed and constructed to; offer protection against sound from other parts of the building and adjoining buildings; offer protection against sound within a dwelling house, flats and rooms for residential purposes; offer resistance to sound and reverberation in common internal parts of buildings; consider acoustic conditions within schools.

Document E refers to the following key elements of a building when considering sound and reverberation within a property; internal and external walls, floors and stairs.

The sound insulation and acoustic properties of the building materials must then be calculated and factored into the design. Rooflights fall into this category and should perform in accordance with the requirements.

The performance figures for the JET COX range of rooflights can be found in this brochure. Should you require further assistance please contact our Technical Department.

VENTILATION

The Building Regulations 2010: Means of Ventilation, Approved Document F (2010 Edition incorporating further 2010 amendments)

Simply put, ventilation is the removal of 'stale' indoor air from a building and its replacement with 'fresh' outside air.*



Ventilation is required for one or more of the following purposes;

- i. Provision of outside air for breathing
- ii. Dilution and removal of airborne pollutants, including odours
- iii. Control of excess humidity (arising from water vapour in the indoor air) Provision of air for fuel-burning appliances (which is covered under Part J of the Building Regulations)

Out with the scope of the Building Regulations, ventilation is also an important consideration in managing thermal control.

It is important at the design stage of a building that emphasis is placed on the ventilation and by what means that ventilation is achievable. There are minimum ventilation requirements within the Approved Document for new, existing, and refurbished buildings. Rooflights can provide background ventilation, mechanical ventilation and even permanent ventilation. Specification of a rooflight with means of ventilation will assist in complying with the requirements of Approved Document F.

The ventilation options for the JET COX range of rooflights can be found in this brochure. Should you require further assistance please contact our Technical Department.

* It is assumed within the Approved Document that the outside air is of reasonable quality

HEALTH & SAFETY

Health & Safety Executive; 'Working on a roof can be dangerous. Falls account for more deaths and serious injuries in construction than anything else and roofers account for 24% – the biggest category of worker by far – of those people who are killed in all falls from height.'

The Construction (Design & Management) Regulations 2007- CDM

CDM was brought in to help eradicate, or at worst reduce, the risk of accidents on site during construction, through to completion and for the life of the building even after use and in demolition. The Regulations are intended to focus attention on planning and management throughout construction projects, from design concept onwards. The aim is for health and safety considerations to be treated as an essential, but normal part of a project's development – not an afterthought.

The client, the project's designers, and the contractors, all have a specific duty, a duty of care, a responsibility, to 'design out' possible Health & Safety concerns at the earliest possible stage of the process.

Where there is a requirement for rooflights, consideration should be given to; non-fragility; protection surrounds; longevity; durability; and warranty. For information on any of the aforementioned please contact the JET COX Technical Department.

CONDENSATION

What is condensation?

All air contains a certain amount of invisible water vapour and warm air can 'carry' more water vapour. If warm air comes into contact with a cold surface, the air 'gives up' its water as droplets on the surface - warm moisture-laden air chills on contact with the cold surface.

There are many ways to reduce condensation.

Factors for consideration are:

- **Reducing moisture production**
- **Ventilation**
- **Heating**
- **Insulation**

Use of a Coxdome triple skin dome with an insulated upstand will increase the thermal

insulation properties of your rooflight, subsequently increasing the temperature of the internal surface of the rooflight, and therefore removing cold surfaces for the vapour to condense on to.

The provision of ventilation should also be considered when specifying a rooflight. If there is not enough ventilation, moist air will not be able to escape.* JET COX rooflights are available with a number of ventilation options; from permanent ventilation to trickle ventilation, manual opening to electrically operated ventilation with remote control and temperature sensors.

For assistance in specifying your rooflight please contact our Sales or Technical Team.

Things to consider...

Polycarbonate is a hygroscopic material and therefore can attract and absorb moisture from the air. In areas of high humidity it is therefore possible for moisture to penetrate the skins of the polycarbonate domelight; on cooling, this moisture then will condense inside the cavity. This process will likely occur more often in colder periods where there are extremes of temperature internally and externally. The higher the humidity the faster condensation will be visible. Ideally, humidity levels in a house should be between 40%-60%. Where humidity levels exceed 60%, combined with low externally temperatures, there is a likelihood that condensation will occur.

Once humidity levels are restored, however, this condensation dissipates through the breathable seals.

Temperature and humidity levels are beyond the control of JET COX and therefore no guarantees can be given against the formation of condensation on the surface or between the skins of our rooflights.

*Too much ventilation (as draughts) can make condensation worse by making homes harder to heat. But if you seal off all the draughts, then the moist air cannot escape.



SAFETY

Non Fragility ACR[M]001:2014 - 'Test for Non-Fragility of Profiled Sheet Roof Assemblies'

The original standard arose out of concerns expressed by the Health, Safety and the Environment (HSE) and the roofing industry about the lack of guidance on what is a fragile roof assembly. Its basis is a series of tests, carried out by the HSE, which quantified human impact loads on surfaces.

The Red Book 'ACR[M]001:2014 defines this test for non-fragility and such a test can be applied to any roof assembly. The test is designed to simulate the fall of a person. It is not a product test but products such

as rooflights are tested as part of the roof assembly.

The test defines 3 Classes of Non-Fragility – A, B or C. The classification is dependent on the performance during testing. Most roof constructions (without rooflights) achieve a Class B or Class C, seldom is Class A achieved. As a common rule the rooflight classification should be equal to the classification of the surrounding roof i.e. a roof assembly with no rooflights achieves a Class B and therefore a roof assembly with rooflights should also achieve Class B.

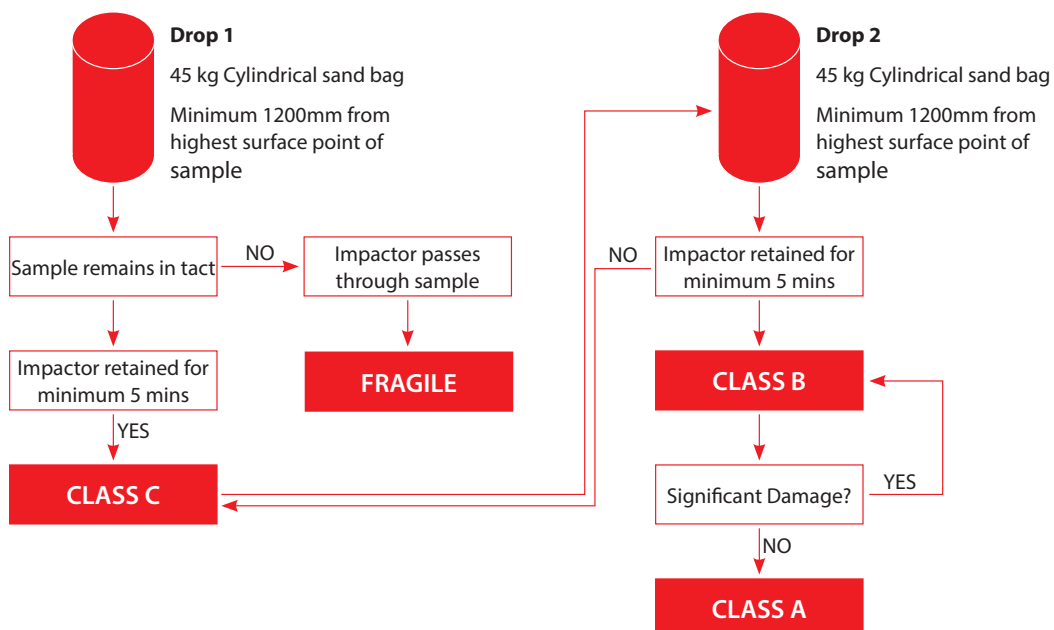
The test in summary...

The roof assembly, in this case the rooflight, is to be tested to the worst case

as prescribed by the relevant industry guidance.

The test involves the vertical fall, under gravity, of a 45kg cylindrical sand bag. The sand bag will be dropped from a minimum height of 1200mm measured from the highest surface point of the sample. The response of the sample to the impact will then be judged and recorded. Assuming the sample is intact a second drop will be performed and the result further recorded. The performance of the sample after each of the drop tests will define the classification of the roof assembly.

ACR[M]001:2014 TEST FOR NON-FRAGILITY



Please note: The method of fixing the rooflight is critical in determining the classification of non-fragility. A poorly installed rooflight can prove as hazardous as a fragile product. Please ensure installation is to the Manufacturer's Instructions at all times.

All Coxdomo Rooflights are classified 'Class B Non-Fragile', according to ACR[M]001:2014 and when tested, demonstrated full compliance with EN 1873, Soft Body Test, based on an impact energy of 1200 Joules.

