

X-AOV

Automatic Opening Vent - NSHEV, Comfort Ventilation & Roof Access

VELUX®

Commercial



Overview

X-AOV offers a 3-in-1 function; it can be used as NSHEV (natural smoke and heat exhaust), comfort ventilation as well as roof access. The lids options for automatic opening vent are glass, polycarbonate, or insulated aluminium.

Automatic opening vent rooflights are electrically operated natural smoke and heat exhaust ventilators (NSHEV) that allow natural light into a building, when glazed with glass or polycarbonate. A non-vision solid lid automatic opening vent made of insulated aluminium is also available.

X-AOV is designed for easy installation on flat roofs up to 15° and the units open to 140° in less than 60 seconds in accordance with BS EN12101-2.



- Designed, tested and CE/UKCA marked in accordance with BS EN 12101-2
- Standard and bespoke sizes provide design flexibility to suit project requirements
- Variable kerb heights available for quick installation
- Thermally broken kerb reduces risk of condensation (non-thermal kerbs also available)
- Dual-colour options available to match the external roofscape and internal décor

Size Range Table (Ampere)

Glazing: Triple Skin Polycarbonate OR Insulated Solid Lid																						
Sizes	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Actuator Size	700	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A					
	800	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A					
	900	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	
	1000	4A	4A	4A	4A	4A	4A		4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	
	1100	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	
	1200	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	
	1300	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	UNCONCEALED WIDTH UPTO 2500 mm (THROAT SIZE). OTHER OPTIONS AVAILABLE SUBJECT TO TECHNICAL ASSESSMENT				
	1400	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A					
	1500	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A					

Glazing: Glass DGU ONLY																					
Sizes	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Actuator Size	700	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A				
	800	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A				
	900	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A
	1000	4A	4A	4A	4A	4A	4A		4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	6A
	1100	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A	# 2x4A	# 2x4A	UNCONCEALED WIDTH UPTO 2500 mm (THROAT SIZE). OTHER OPTIONS AVAILABLE SUBJECT TO TECHNICAL ASSESSMENT				
	1200	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	# 2x4A	# 2x4A	# 2x4A	# 2x4A						
	1300			# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A	# 2x6A										

Note: The size range showing 4A or 6A are single exposed actuators, this can be made concealed by increasing to two actuators with concealment panel to maximise free area.

Size Range Table with Geometric Free Area (m²)

Glazing: Triple Skin Polycarbonate OR Insulated Solid Lid (Geometric free area [m ²] and Cv=0.4)																					
Sizes	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Actuator Size	700	0,37	0,44	0,51	0,58	0,65	0,72	0,79	0,86	0,93	1,00	1,07	1,14	1,21	1,33	1,4	1,47				
	800	0,43	0,51	0,59	0,67	0,75	0,83	0,91	0,99	1,07	1,15	1,23	1,31	1,39	1,52	1,6	1,68				
	900	0,48	0,57	0,66	0,75	0,84	0,93	1,02	1,11	1,20	1,29	1,38	1,47	1,56	1,65	1,74	1,83	1,92	2,01	2,10	2,19
	1000	0,53	0,63	0,73	0,83	0,93	1,03	1,13	1,23	1,33	1,43	1,53	1,63	1,73	1,83	1,93	2,03	2,13	2,23	2,33	2,43
	1100	0,59	0,70	0,81	0,92	1,3	1,14	1,25	1,36	1,47	1,58	1,69	1,80	1,91	2,02	2,13	2,24	2,35	2,46	2,57	2,68
	1200	0,64	0,76	0,88	1,00	1,12	1,24	1,36	1,48	1,60	1,72	1,84	1,96	2,08	2,20	2,32	2,44	2,56	2,68	2,80	2,92
	1300	0,78	0,91	1,04	1,17	1,3	1,43	1,56	1,69	1,82	1,95	2,08	2,21	2,34	2,47	2,6	UNCONCEALED WIDTH UPTO 2500mm (THROAT SIZE). OTHER OPTIONS AVAILABLE SUBJECT TO TECHNICAL ASSESSMENT				
	1400	0,84	0,98	1,12	1,26	1,4	1,54	1,68	1,82	1,96	2,1	2,24	2,38	2,52	2,66	2,8					
	1500	0,9	1,05	1,2	1,35	1,5	1,65	1,8	1,95	2,1	2,25	2,4	2,55	2,7	2,85	3					

Glazing: Glass DGU ONLY (Geometric free area [m ²] and Cv=0.4)																					
Sizes	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Actuator Size	700	0,37	0,44	0,51	0,58	0,65	0,72	0,79	0,86	0,93	1,00	1,07	1,14	1,21	1,33	1,4	1,47				
	800	0,43	0,51	0,59	0,67	0,75	0,83	0,91	0,99	1,07	1,15	1,23	1,31	1,39	1,52	1,6	1,68				
	900	0,48	0,57	0,66	0,75	0,84	0,93	1,02	1,11	1,2	1,29	1,38	1,47	1,56	1,65	1,74	1,83	1,92	2,01	2,1	2,19
	1000	0,53	0,63	0,73	0,83	0,93	1,03	1,13	1,23	1,33	1,43	1,53	1,63	1,73	1,83	1,93	2,03	2,13	2,23	2,33	2,43
	1100	0,59	0,70	0,81	0,92	1,03	1,14	1,25	1,36	1,47	1,58	1,69	1,87	1,98	2,09	2,2	UNCONCEALED WIDTH UPTO 2500mm (THROAT SIZE). OTHER OPTIONS AVAILABLE SUBJECT TO TECHNICAL ASSESSMENT				
	1200	0,64	0,76	0,88	1,00	1,12	1,24	1,36	1,48	1,60	1,72	1,92	2,04	2,16	2,28	2,4					
	1300			1,04	1,17	1,3	1,43	1,56	1,69	1,82	1,95										

Functions

X-AOV products are multipurpose units that are suitable for providing natural smoke and heat exhaust, as well as comfort ventilation and natural light when glazed with polycarbonate or glass. The solution can also be used to provide safe and easy access to a roof for inspection or maintenance requirements. X-AOV is electrically operated (24VDC or 48VDC) and opens upon detection of smoke interfaced to BMS system or standard 24VDC/48VDC control panel (supplied separately).

X-AOV products can be fixed directly to the roof deck, with a minimum kerb height of 300mm, as the unit must be 300mm above the finished roof surface to comply with EN12101-2. The height can be increased to suit the insulation thickness being applied. Adapter kerbs are available for fixing to an upstand with a minimum base kerb height of 300mm.

Kerb and lifting frame is fabricated from aluminium, which can be insulated and thermally broken for use above a heated space (X3 range). A non-insulated version (X5 range) can also be supplied, which is suitable for unheated areas such as smoke shafts. Compatible control panels and sensors for easy specification are also available.

Automatic Opening Vent lid options

Depending on your project requirements, X-AOV lids are available in glass, polycarbonate, or insulated aluminium.



Glass Lid (IGL)



Polycarbonate Lid (SS)



Solid Lid (ISL)

Glazing - Double-glazed glass (IGL)

Units that can be supplied with low-emissivity (Low-E) glass to suit specification requirements. Typically comprise:

1. An outer pane made from 6mm clear, toughened Low-E glass
2. A 12-16mm argon-filled cavity
3. An inner pane made from 6.4mm laminated glass (typically)

Option for non-fragile glass tested to CWCT TN66 / 67, Class 2.

Units that have the same outer pane and cavity, with a 9.5mm laminated inner pane.



Glazing - Triple-skin polycarbonate (SS)

Rated non-fragile to ACR[M]001:2019 Class B. Available as single, double, or triple skin polycarbonate domes or pyramids.



Glazing - Solid Lid (ISL)

Rated non-fragile to ACR[M]001:2019 Class B, these are available as insulated or non-insulated.



Thermal performance and weather resistance

X-AOV is designed to be thermally efficient, as required, and resistant to wind and rain ingress. The thermally broken insulated aluminium kerbs are suitable for use above heated spaces and can provide U_d -values as low as $1.25 \text{ W/m}^2\text{°K}$.

Typical whole-product U_d developed values are:

- 1000x1000mm X-AOV with glass lid: $1.25 \text{ W/m}^2\text{°K}$
- 1000x1000mm X-AOV with triple-skin polycarbonate lid: $1.54 \text{ W/m}^2\text{°K}$
- 1000x1000mm X-AOV with insulated aluminium lid: $1.66 \text{ W/m}^2\text{°K}$
- Uninsulated aluminium kerb (for unheated spaces only)

A weather cowl is provided as standard, which reduces the risk of rain or debris entering the building during adverse weather conditions when the X-AOV is used for natural ventilation. The maximum opening angle is 20° and tested to RE 10,000 cycles.

Performance values:

- Aerodynamic free area (Cv): 0.40 (According to EN 12101-2:2003, Annex B, B.1)
- Reliability (Re): 1000
- Snow load (SL): 600
- Low ambient temperature (T): -15
- Wind load (WL): 1500
- Resistance to heat (B): 300

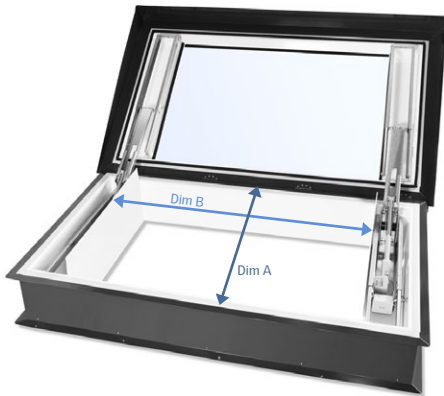
Electrical information

Concealed actuators and wiring provide an unobstructed view through the rooflight. X-AOV is fitted with two actuators, each with the following specifications:

- Actuator reference: SA power single, SA power mini
- Actuator type: Rotating arm
- Actuator stroke / rotation: 0–155°
- Voltage: 24VDC or 48VDC
- Current draw: 2 Amps, 4 Amps or 6 Amps (to suit size of AOV)
- Consumption under load: 72W
- Switching: 2No micro-switches
- Flex type: 2 core silicone cable (Brown = positive, Blue = negative)
- Operating time: 50 seconds (±/5 seconds)

Compatible control panels and sensors are available in a range of options, depending on the application and requirements.

Other Information



Dim A = Actuator length/size & Dim B = Throat width



Special design splayed kerb for bespoke sizes



Concealed actuators for better free area/ access



Off-set actuator (max 750mm) for unrestricted access

Note: Installation instructions and DoP available at <https://commercial.velux.co.uk/products/smoke-and-natural-ventilation/smoke-ventilation/automatic-opening-vents>