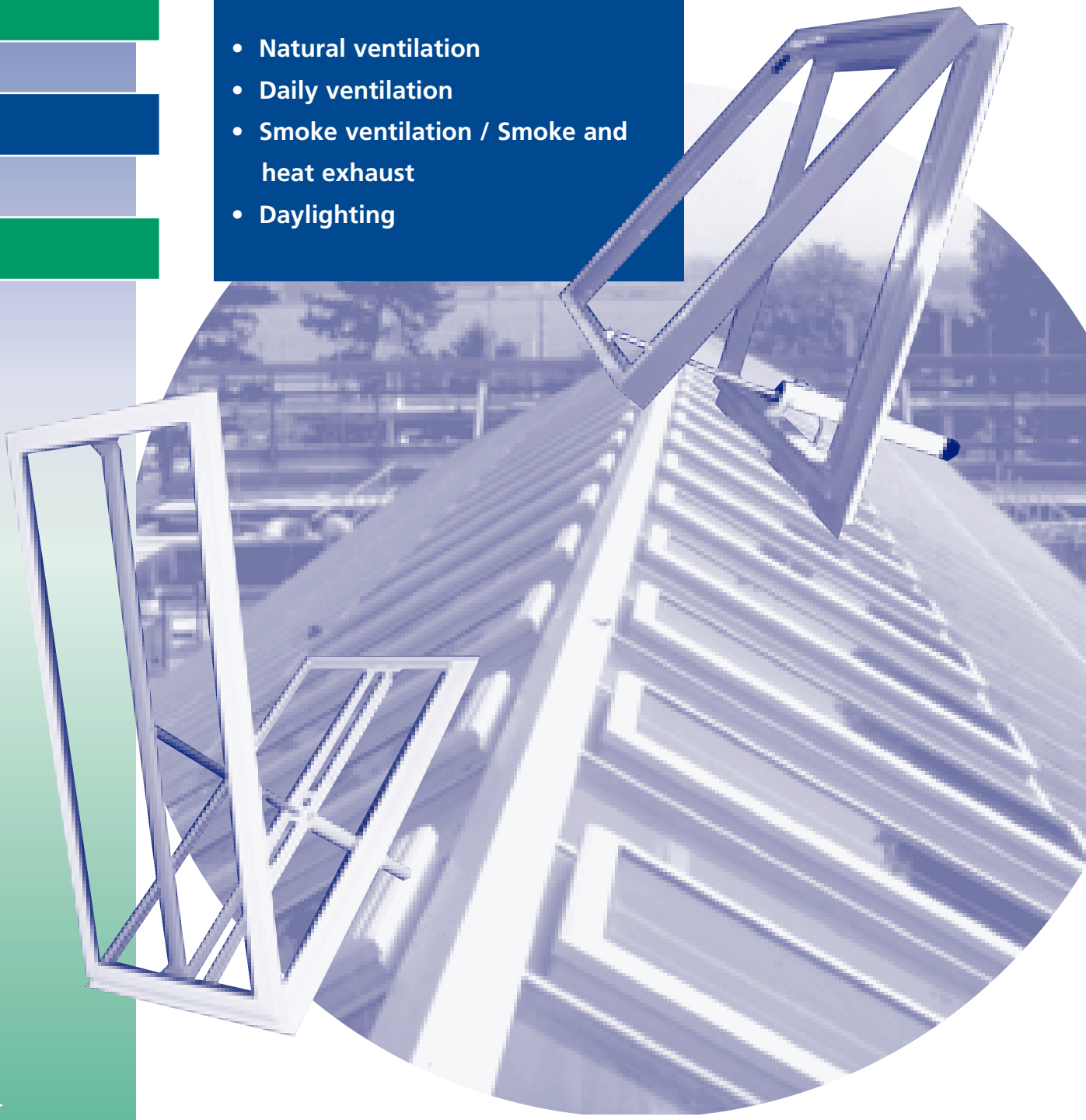
CASEMENT WINDOW VENTILATOR
TYPE - VR
TYPE - BVR

- Natural ventilation
- Daily ventilation
- Smoke ventilation / Smoke and heat exhaust
- Daylighting

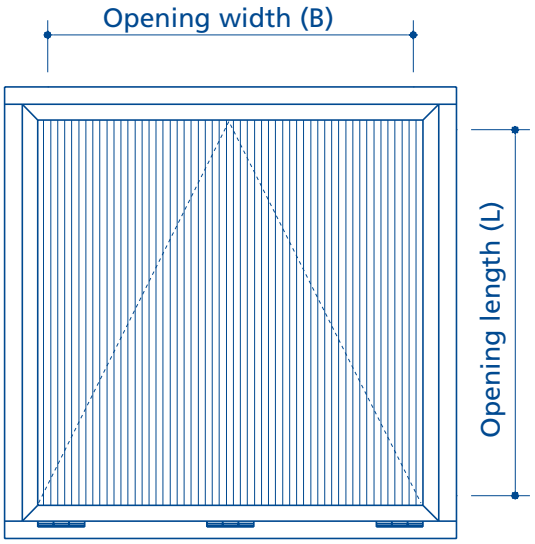


Bovema UK Ltd

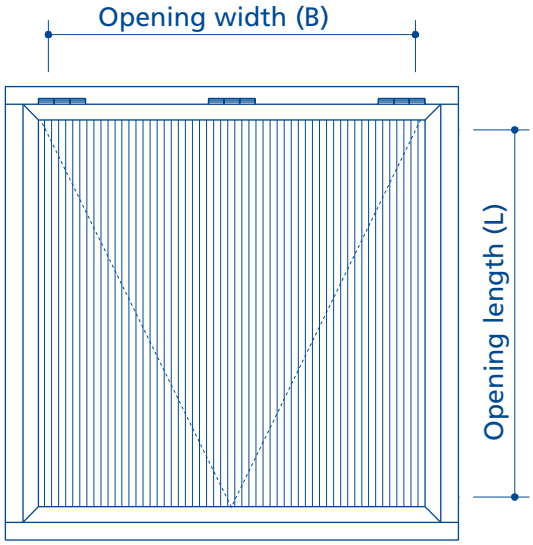
Bovema (UK) Ltd is a member of the international Bovema Beheer Group

TECHNICAL INFORMATION

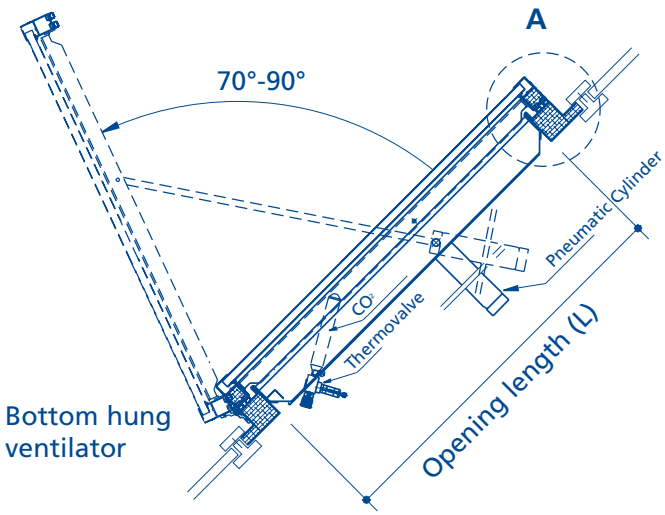
Plan of BVR



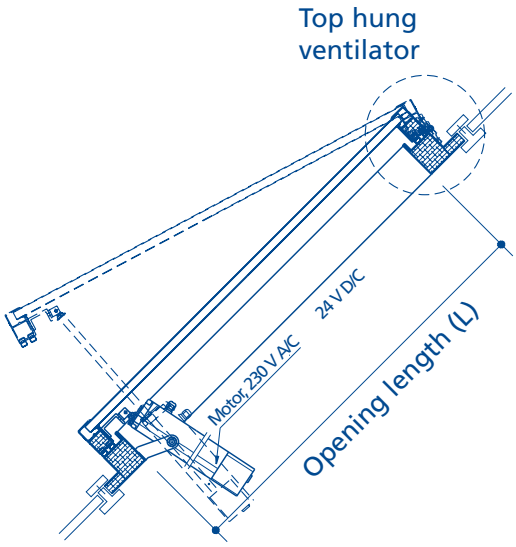
Plan of VR



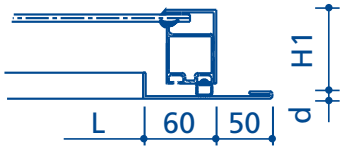
Smoke ventilation window BVR



Ventilation window VR

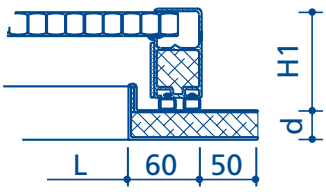


Detail A

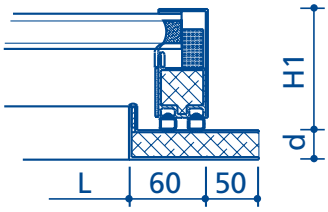


- **Opening flap:** Wired glass, polycarbonate

  Single skin aluminium,
- **Sealing:** Single / double EPDM
- **Installation flange:** Single skin Aluminium low base



- **Opening flap:** Translucent polycarbonate, insulated aluminium
- **Sealing:** Single / double EPDM
- **Installation flange:** Double skin aluminium insulation, thermally broken low base



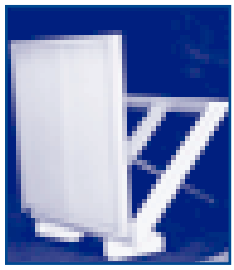
- **Opening flap:** Glass or polycarbonate, insulated and thermally broken aluminium
- **Sealing:** double EPDM
- **Installation flange:** Double skin aluminium insulation, thermally broken low base

Lloyds Quality Assurance audits the production and management systems twice each year.

CASEMENT WINDOW VENTILATORS
Type VR and BVR

Geometric area m^2 — opening width B mm

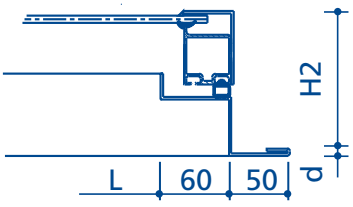
Opening length L mm	600	800	1000	1200	1400	1600	1800	2000	2200
600	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.20	1.32
800	0.48	0.64	0.80	0.96	1.12	1.28	1.44	1.60	1.76
1000	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20
1200	0.72	0.96	1.20	1.44	1.68	1.92	2.16	2.40	2.64
1400	0.84	1.12	1.40	1.68	1.96	2.24	2.52		
1600	0.96	1.28	1.60	1.92	2.24	2.56			
1800	1.08	1.44	1.80	2.16	2.56				
2000	1.20	1.60	2.00	2.52					
2200	1.32	1.76	2.20						



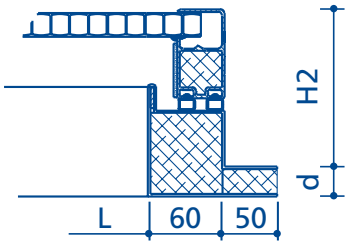
Thickness of blade material mm

Thermal insulation K value in W/m^2. K (U value)	1.5	6.0	10	16	16k	20	24	25k	30	60	60+	Spec.
Single skin aluminium	5.6											
Georgian wired, toughened or laminated glass			5.1									
Translucent polycarbonate			3.1	2.3	2.0	1.8		1.7				
Insulated glass standard shape						3.0	2.9		2.8			
Insulated glass type HR						2.0	1.8		1.6			
Double skin aluminium panel with thermal insulation					1.9			1.8				0.45
Sound reduction Rw value in dB Per ISO 717												
Single skin aluminium	6.0											
Georgian wired, toughened or laminated glass												
Translucent polycarbonate			17	21	21	21		22				
Insulated glass standard shape						32	35		37			
Insulated glass type HR						32	35		37			
Double skin aluminium panel with thermal insulation									22		28	
H1 in mm	60	65	80	80	80	80	85	86	95	120	120	120
H2 in mm	120	125	140	140	140	140	145	146	155	180	180	180

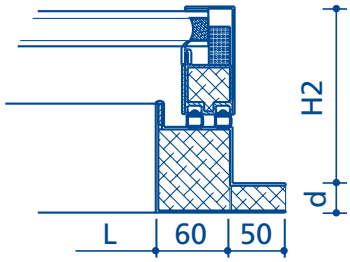
Installation flange thickness (d) 6 - 30 mm



- **Opening flap:**
  Wired glass, polycarbonate
  Single skin aluminium
- **Sealing:** Single / double EPDM
- **Installation flange**
  Single skin
  Aluminium high base



- **Opening flap:**
  Translucent polycarbonate
  insulated aluminium
- **Sealing:** Single / double EPDM
- **Installation flange :**
  Double skin aluminium
  insulated and thermally
  broken high base



- **Opening flap:**
  Glass or polycarbonate,
  insulated and thermally
  broken aluminium
- **Sealing:** Single / double EPDM
- **Installation flange:**
  Double skin aluminium
  insulated and thermally
  broken high base

General information

DESCRIPTION

The **Bovema** casement type ventilation windows type VR and BVR are suitable for daily ventilation and daily / smoke extract ventilation respectively. The slim profiled shape makes the VR / BVR ventilators particularly suitable for installation into the roof glazing systems used on many industrial and commercial buildings. Both ventilators are available with various specifications for the opening panels. They may be fitted with translucent single or double-glazed units, to provide various levels of thermal or acoustic insulation performance and light transmission, to match the project requirements. Weatherproof EPDM seals provide a very high level of air tightness and prevent water penetration, when closed, even under extreme weather conditions.

OPERATING PRINCIPLES

Warm air is lighter than cold air and rises by convection. This thermal principle can extract large quantities of warm air from a building without any additional electrical power consumption. The Type VR ventilator is top hung and is designed to encourage additional ventilation due to external wind action. The type BVR ventilator is bottom hung so the panel stands up and protects the roof opening from side wind action, in accordance with the requirements for smoke extract ventilators. Both ventilators provide openings that offer very little resistance to air flow. Manual or automatic controls using pneumatic or electric actuators can be combined with control panels having inputs from thermostats, rain sensors, wind sensors or fire alarm inputs to provide Building ventilation systems to meet any required control specification.
In case of smoke alarm inputs the smoke ventilation windows would be controlled on a priority basis to a full locked opened position.

APPLICATIONS

Commercial and industrial buildings such as Atria and glazed areas in Shopping malls, Hotels and Restaurants. Also Apartment blocks and Public buildings.

SPECIFICATIONS

Opening light Panel:	- Single skin or thermally insulated aluminium units or thermally broken and insulated units
Panel Inserts:	- 6 mm single glazed Georgian wired glass. Single or double glazed units in toughened or laminated glass (18 - 30 mm)
Translucent polycarbonate:	- 10, 16, 20 or 25 mm thick, clear or opal. Special panels in stainless steel, copper, plastic or other materials to suit Architectural requirements.
Installation frame and base frame:	- Single skin aluminium or thermally insulated and / or thermally broken aluminium

CONTROLS

VR & BVR Casement windows may be supplied with pneumatic or electric control. Pneumatic actuators lock in the fully open or fully closed positions, using a two pipe compressed air supply, with when required, individual one-shot glass bulb/CO_2 emergency fail-safe system, operating at 68, 93, 110 or 140 Deg C. 230V A/C or 24V D/C electric actuator operation to motor the Casements from fully opened to fully closed. Both the electric and pneumatic systems can be provided with remote control panels, with fail-safe battery or compressed air operation, plus complete pipework and wiring as required.

MATERIALS

Opening panel:	Extruded aluminium profiles AlMgSi0.5 alloy
Installation frame:	Aluminium sheet material AlMg3 alloy
Seals:	EPDM rubber
Hinges:	Aluminium / stainless steel

GENERAL

The ventilation windows type VR and BVR are supplied fully assembled and each is tested before delivery. As standard the unit is manufactured in natural mill finished aluminium but can be polyester powder paint finished, to any RAL colour, selected from the Bovema standard colour range. The installation flanges are manufactured to suit the specific project requirements and are fully welded to give complete weather resistance. The light weight and flexibility of construction of the VR and BVR ventilator frames allows for installation into almost any roof or rooflight construction.

SERVICE

The Bovema group offers a comprehensive service covering the specification and installation of our products.

Bovema UK Ltd
A FRESH LOOK ON VENTILATION
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