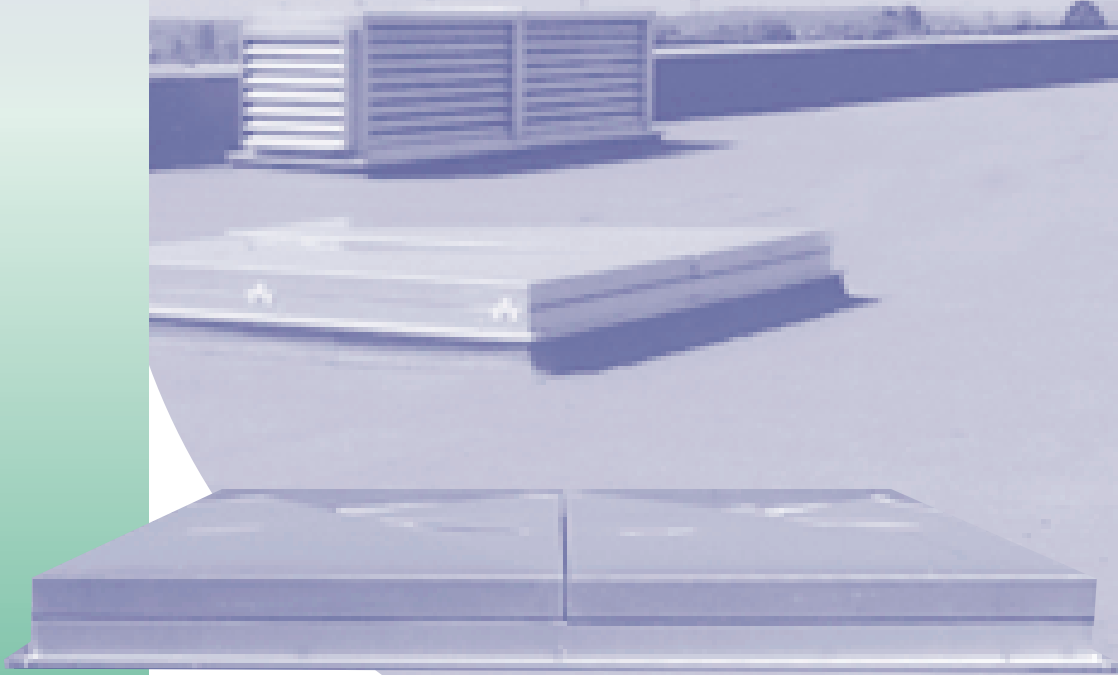


# NKVD - PF

## TWIN FLAP ROOF VENTILATOR FLAT PROFILE

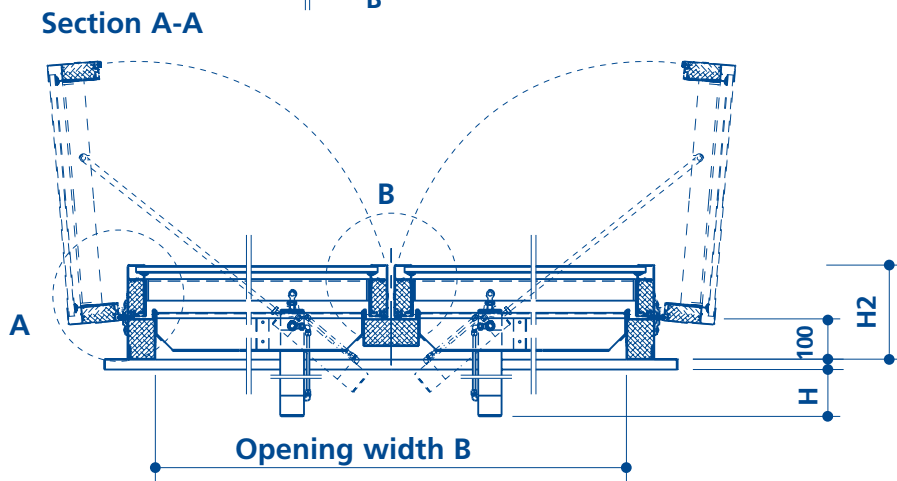
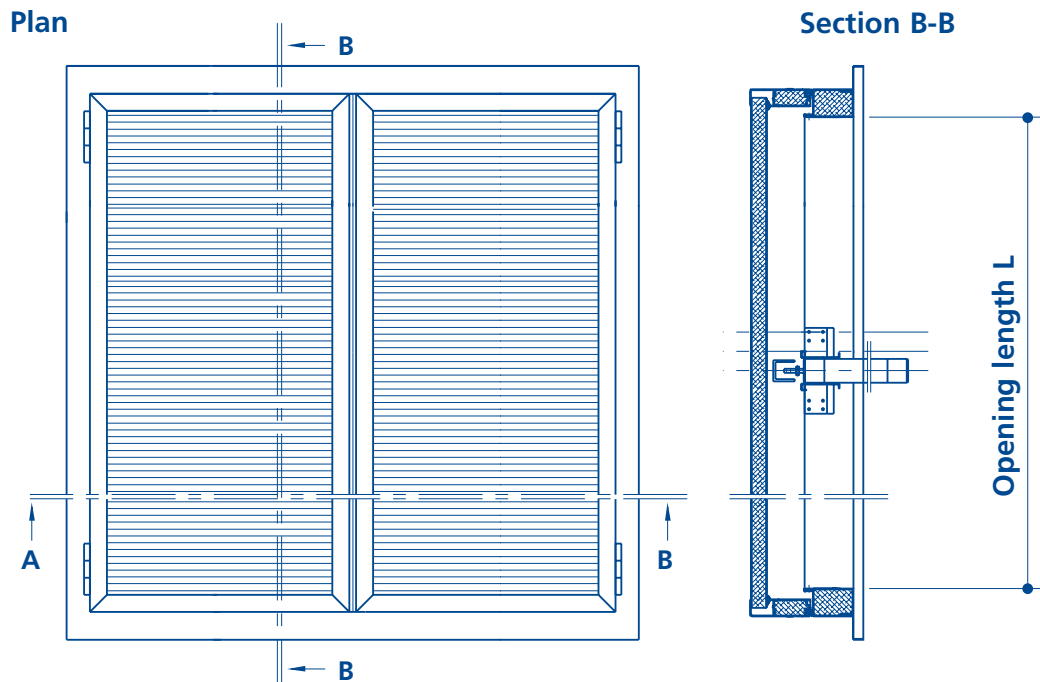
- Natural ventilation
- Smoke ventilation  
smoke and heat exhaust
- Superior condensation protection
- Superior protection against air losses
- Superior acoustic attenuation



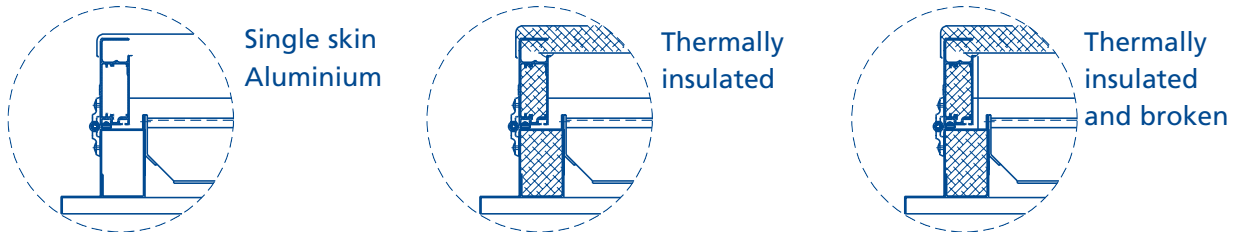
**Bovema**   
*UK Ltd*

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

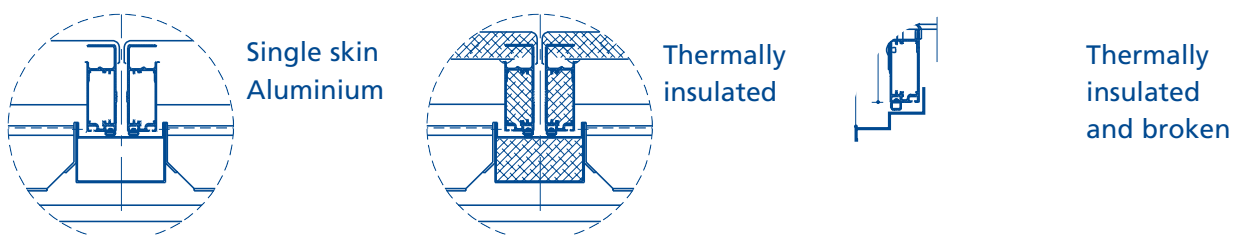
# TECHNICAL INFORMATION



**Detail A**



**Detail B**



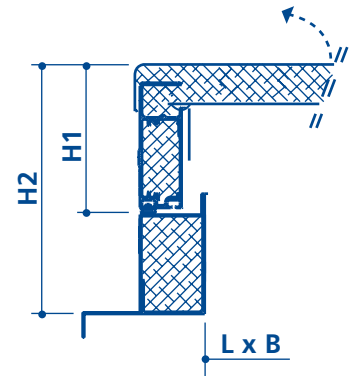
# TYPE NKVD- PF TWIN FLAP VENTILATOR flat profile

Type NKVD-PF

Geometric area (m<sup>2</sup>) / sizes in mm.

Type	L	B	A geom	Cyl. Stroke	H
1000/1000	1000	1000	1.00	360	500
1000/1500	1000	1500	1.50	360	500
1000/2000	1000	2000	2.00	360	500
1000/2500	1000	2500	2.50	360	500
1500/1000	1500	1000	1.50	570	710
1500/1500	1500	1500	2.25	570	710
1500/2000	1500	2000	3.00	570	710
1500/2500	1500	2500	3.75	570	710
2000/1000	2000	1000	2.00	735	920
2000/1500	2000	1500	3.00	735	920
2000/2000	2000	2000	4.00	735	920
2000/2500	2000	2500	5.00	735	920
2500/1000	2500	1000	2.50	900	1130
2500/1500	2500	1500	3.75	900	1130
2500/2000	2500	2000	5.00	900	1130
2500/2500	2500	2500	6.25	900	1130

Detail  
Operable flap with  
thermally insulated  
flap and base.



Thickness of operable flaps in mm

Thermal insulation K Value in W/m <sup>2</sup> .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				
Standard double glazed glass						3.0	2.9	2.8	2.8			
Type HR double glazed glass						2.0	1.8	1.7	1.6			
Double skin aluminium panel, thermally insulated						1.9	1.9	1.8	1.6	1.5	1.3	0.45
Sound level Rw- Value in dB per spec. ISO 717												
Single skin aluminium	6.0											
Georgian wired, toughened or laminated glass												
Translucent Polycarbonate			17	21	21	21		22				
Standard double glazed glass						32	35	36	37			
Type HR double glazed glass						32	35	36	37			
Double skin aluminium panel, thermally insulated								22	24	25	28	
H1	98	98	98	98	98	102	106	106	112	142	142	142
H2	198	198	198	198	198	202	206	206	212	242	242	242

\*k= 3 walled polycarbonate



## General information

### DESCRIPTION

The **Bovema** NKVD-PF twin flap ventilator provides an economical and energy efficient method of exhausting large quantities of warm air and / or smoke from a building. The NKVD-PF is particularly suitable for industrial and commercial buildings where the overall building design requires low rates of air leakage, good sound attenuation or good thermal insulation performance. The NKVD-PF is a flat, very low profile unit and is supplied for flat roof installation with solid blades. To prevent staining, polycarbonate or glass bladed units should only be specified where the roof slope is 10 Deg or more from the horizontal. The low profile makes the NKVD-PF ideal for installations where Architectural requirements require a rigid but unobtrusive ventilator. The NKVD-PF ventilator is manufactured to NEN-EN-ISO 9002 quality control standards and is designed and tested to comply with various national standards for smoke ventilators, such as BS: 7346: Pt1: 1990 in the UK and DIN 18232 in Germany. The NKVD-PF ventilator is manufactured from high quality, corrosion resistant aluminium to ensure low maintenance requirements. The NKVD - PF ventilator is of a versatile design, allowing a wide range of specifications, from single skin, to fully insulated and thermally broken units, with electric or pneumatic operating systems as required to meet the project specification requirements. Specially designed units offer high levels of sound reduction for theatres and similar noise sensitive buildings.

### OPERATING PRINCIPLES

Warm air is lighter than cold air and rises by convection. Using this natural ventilation principle, assisted as appropriate by wind action, large quantities of warm air or smoke can be evacuated from a building. The NKVD-PF natural ventilator utilises this principle to provide high levels of ventilation. Each ventilator has two large flaps, which close on single or double EDPM seals to provide an air and watertight seal around the full perimeter of the unit. A fully welded upstand and central gutter combine to drain water from the flaps directly onto the roof, without first entering the building. The flaps are hinged on the outside of the frame, which allows them to open fully to 90 degrees. This maximises the free area available for ventilation. Operation to open and close is by pneumatic or electric actuators, which are operated via remote control panels, allowing interface connections to rain, wind detectors, BMS or fire alarm systems.

### APPLICATIONS

Industrial or commercial buildings with flat roofs, where smoke extract is required for fire protection. Where the removal of process or solar heat gains requires daily ventilation, without weather protection, including buildings where high levels of thermal or acoustic protection is essential. Typical installations include: Theatres, Warehouses, Logistics or similar buildings where protection against water penetration is paramount, high quality public and private accommodation projects.

### SPECIFICATIONS

Flaps: 1.5 – 2.0 mm thick, single skin aluminium  
20, 30, 60 mm thick double skin aluminium with thermal insulation  
20, 30, 60 mm thick double skin aluminium, thermally broken with full insulation.  
6 mm Georgian wired, toughened or laminated glass.  
18 – 30 mm double-glazed insulated units (in various compositions)  
16, 20, 25 mm translucent, insulated double skin polycarbonate.

Please note glazed units are only suitable for roofs with 10 Deg minimum slope

Base construction: Single skin aluminium  
Double skin aluminium, with thermal insulation.  
Double skin aluminium, thermally broken, with full insulation.

### CONTROLS

Pneumatic actuators, which lock in both the fully open and fully closed position, using a two pipe pneumatic system, with when required, individual one-shot glass bulb / CO<sub>2</sub> emergency fail safe system actuation, operating at 68, 93, 110, or 140 Deg C as required to meet the project requirements. 230 V A/C or 24V D/C electric actuator operation to motor the flaps from fully open 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 pipe work and wiring as required.

### MATERIALS

Corrosion resistant aluminium with sheet material from AlMg3 alloy.  
Extruded Aluminium profiles from AlMgSi 0.5 alloy  
All fixings in stainless steel.  
Hinges in aluminium and stainless steel.  
Weather resistant seals in EPDM

### GENERAL

The NKVD - PF twin flap ventilator is fully assembled and tested before despatch. The standard unit is supplied in natural mill finished aluminium, but a Polyester Powder Paint finish may be supplied to any available RAL colour, selected from the standard Bovema range. Other optional items such as bird screens, sound attenuators, sprinkler shields and open / close location switches are also available. The ventilator bases and fixing flanges are of fully welded construction and the versatile base design allows installation onto most building types. Standard flange sizes are 100 mm but special sizes can be supplied to meet project requirements and ensure simple, weatherproof installation.

### SERVICE

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



A FRESH LOOK ON VENTILATION  
E-mail: [info@bovema-uk.com](mailto:info@bovema-uk.com) Internet: [www.bovema-uk.com](http://www.bovema-uk.com)