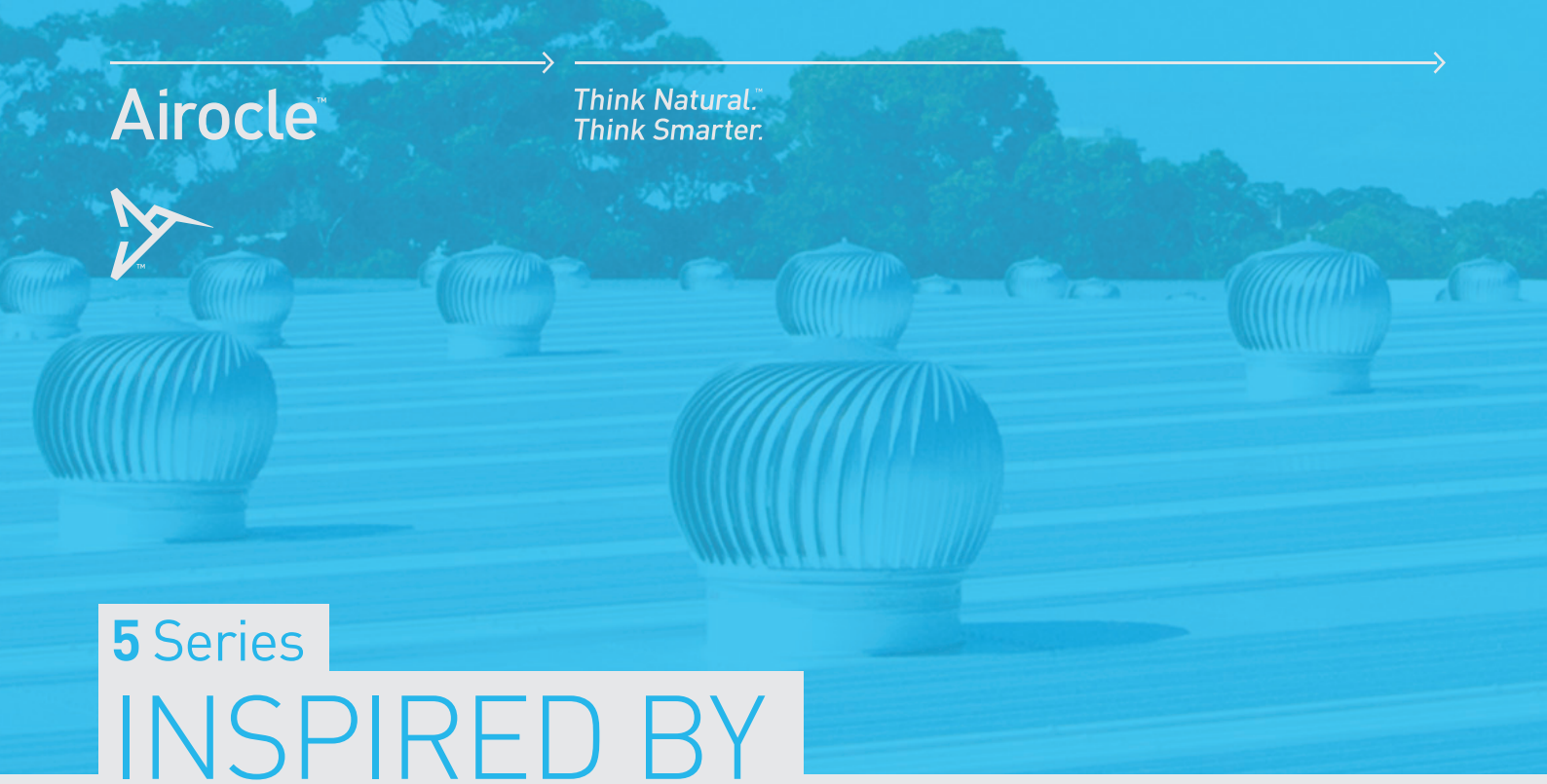
Airocle™

Think Natural.™
Think Smarter.



5 Series

INSPIRED BY THE NATURAL FORCES FOR MAXIMUM ROOF-BASED VENTILATION

Roof Wall

5 SERIES

VENTS & VENTILATORS

ROTARY ROOF VENTS

Previously **Gyro Series**

CSIRO CERTIFIED

Tested and certified by CSIRO® for airflow, fire and weather performance

Asking the experts

Our blueprint is to establish ourselves as the pre-eminent company wherever an alternative ventilation solution was required. We find that the earlier a natural ventilation system is incorporated into the design of a project, the better the outcome.

- EXTERNAL ENVIRONMENT
- INTERNAL ENVIRONMENT
- WIND EFFECT
- PRESSURE RELIEF
- VENTILATION SCHEME
- LOW-LEVEL AIR INLETS

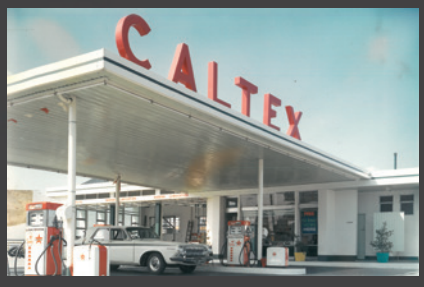
90 years providing expert solutions

The Airocle journey began life 90 years ago when we established ourselves as the IVR Group. It's a story of passion and commitment to provide a natural and sustainable alternative to ventilate buildings across Australia.

Over that time we developed a diverse and comprehensive range of systems, making us the largest designer and supplier in the natural ventilation category in Australasia, and an emerging force with architects and builders in Asia and America.

Our blueprint was to establish ourselves as the pre-eminent company wherever an alternative ventilation solution was required.

We found that the earlier a natural ventilation system is incorporated into the design of a project, the better the outcome, from the design to the bottom line, and a client's satisfaction. More and more architects were understanding the importance of natural ventilation and the more holistic and efficient flow-on effects that it created.



Our History:

1924 — 1953 — 1967 — 1977 — 2005 — +2014

Roofsaver CO. PTY. LTD. RSCO IVR EQUIPMENT IVR GROUP Airocle™

Rotary Roof Vents

Roof Solutions

- Passive Natural Ventilation
- Engineered Design
- Market Leading Performance
- Ideal For Sustainable Building Design

Tested and certified by CSIRO® for airflow, fire and weather performance

5 SERIES

The pinnacle of efficient and effective rotary ventilation design.

The **5 Series** in the pinnacle of efficient and effective rotary ventilation design. The large surface area of our spherical design, high coefficient of discharge and quality fabrication from Australian materials ensures that every vent provides the longevity and airflow performance your building deserves.

Design

The ability to provide reliable and cost effective natural ventilation to new and existing buildings makes the **5 Series** the optimal choice for building designers.

The spherical design of the **5 Series** head ensures maximum airflow by providing 25% more surface area than typical straight vane ventilators and maximises the suction effect of wind as air wraps around the spherical vent and draws from the leeward side.

A unique corrugated blade design combined with clever engineering ensures complete weather proof performance in all conditions including snow regions. Precision balancing and alignment and the use of quality componentry ensures the **5 Series** remain quiet, vibration free and last the life of the building.

Adequate make up air is essential for an effective natural ventilation system.

The **5 Series** has been successfully used on thousands of projects across a range of applications including:

- School & Educational Spaces
- Electricity Substations
- Factories & Processing Plants
- Warehouses & Storage Facilities
- Leisure Centres & Indoor Pools
- Security & Defence Buildings

Benefits

Performance

Independent research has found that the Spherical design of the **5 Series** can achieve up to 25% more airflow than typical straight vane ventilators under the same conditions*. CSIRO testing has also found that our unique Square-to-Round base helps provide 15% more airflow that traditional spigot bases. This means you get more airflow with smaller vents.

Fire and Cyclone Rating

The **5 Series** can also meet the demands of Cyclone Category C and D regions and is fire rated to 200°C/120min plus 300°C/30min (with the appropriate options) ensuring that your ventilation or smoke hazard management has the reliability and integrity it deserves.

Design Flexibility

Take advantage of manual/electric/pneumatic dampers to open/close vents for complete occupant control or link them to a BMS to operate on a timer, thermostat, humidity or occupant sensor. Or incorporate a booster fan to increase airflow in night purge systems or systems where increased flow is only required some of the time. The **5 Series** provides amazing flexibility in letting you achieve what you want from your ventilation design.

Energy and Environment

Reducing energy use in your building can improve your electricity costs and your environmental performance. Through reducing costs normally associated with mechanical ventilation such as electrical wiring, increased structural support and maintenance, using natural ventilation allows your project to make reductions in resource use and save money during the construction and operation lifecycle of your building.

Warranty

We back the **5 Series** with a 30 year parts warranty and provide designers, builders and occupants confidence that they are installing a product that will work for the life of the building. Available in Zincalume, Colorbond, Colorbond Ultra, Aluminium and Stainless Steel, the **5 Series** is designed to meet all environments including corrosive coastal areas. A 12 month warranty exists on all damper motors and booster fans as per OEM warranties.

*Independent reports are available upon request.

Quality

RAIN
AS2428.1

WIND
AS2428.2

FIRE
AS2428.4 & 1668.2

COEFFICIENT OF DISCHARGE
AS2428.5

CYCLONE RATED

Using Airocle gives you access to not just the best products on the market, but over 90 years of experience and expertise and the assurance that your building will benefit from fully engineered designs that are manufactured with high quality Australian materials. Along with our focus on rigorous product development and engineering, the 5 Series has been CSIRO tested.

5 Series → Rotary Roof Vents

By using natural thermodynamic forces that drive air up and through the ventilator ensures that your 5 Series ventilation system is directly responsive to internal and external conditions.

WAREHOUSING + STORAGE

INDUSTRIAL WORKSHOPS

SCHOOLS + EDUCATION FACILITIES

HALLS, GYMNASIUMS + INDOOR POOLS

DEFENCE + GOVERNMENT BUILDINGS

ELECTRICITY SUBSTATIONS + WATER PUMP HOUSES

Rotary Vents
5 Series

Aquatic Centre
Picton NSW

5S

ROTARY ROOF VENTS
DESIGN

Scientific engineering principles has lead to our 5 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

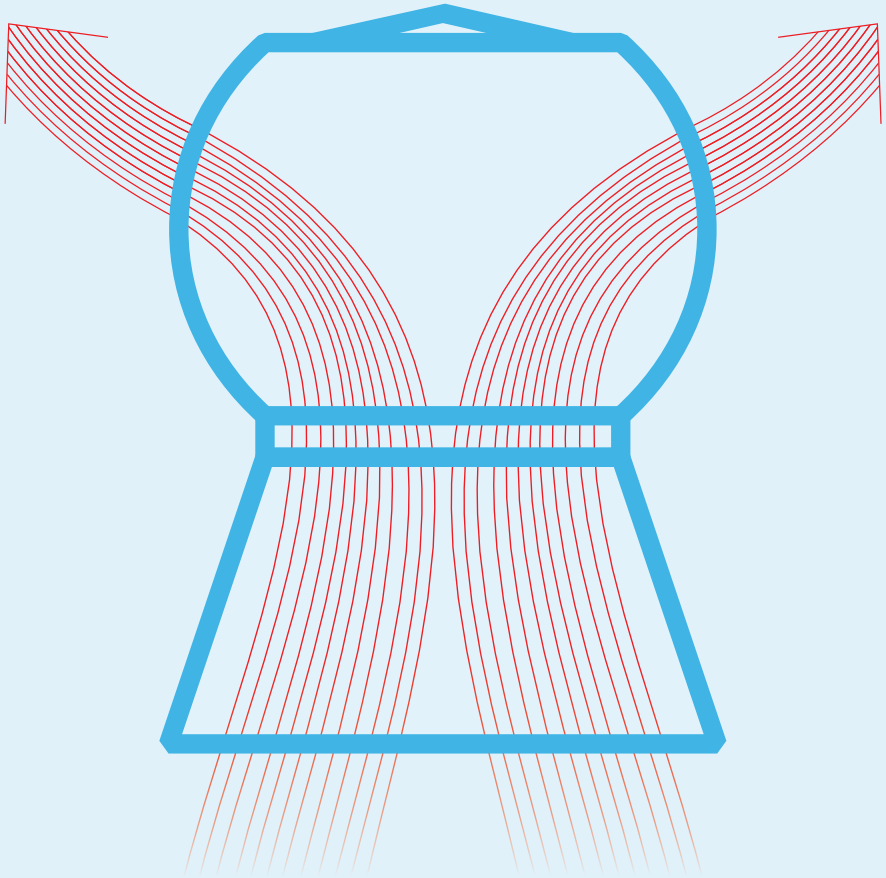
The spherical design of the 5 Series builds on this by promoting the effect of wind as it wraps around the spherical shaped head and draws from the leeward side. With a free open area 25% larger than a typical straight vane ventilator, we have maximised this wind effect ensuring high air flow performance rates. The unique blade design and large free open area maximises the efficiency of air moving through the ventilator and out of the building without compromising its weatherproof capabilities. The 5 Series is CSIRO tested to AS2428 & AS1668 and has proven design advantages over other 'rotary roof vent' designs in the market.

Performance Certification

The Flow Rate Performance Ratings for the 5 Series Ventilators in this publication are based on formulas & guidelines as outlined by The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) on Natural Ventilation & combined with the Mechanical Effect (of wind on ventilation rates) by wind tunnel tests.

The 5 Series Ventilators have been tested for Wind Resistance, Rain Resistance & Discharge Coefficient (Effective Aerodynamic Area) by CSIRO Laboratories under AS2428:2004 parts 1, 2 & 5 (equivalent to AS/NZS4740:2000 Appendix H, C & D). The 5 Series Ventilators have also been tested for Fire by CSIRO Laboratories under AS/NZS 1668.1:1998.

The Airocle 5 Series Ventilators have not been tested for Flow Rate Performance to AS/NZS4740:2000 Appendix E, as no suitable/or agreed methods have been established to date for testing the performance for spherical vane rotary ventilators.



Installation

Custom fabricated bases to match the pitch and profile of your roof make installation quick and simple saving you time on the roof and ensuring your project runs efficiently even on the most complex roof.

Bushfire Rated

Apart from being tested for flame contact and fire rating by the CSIRO, the 5 Series can also incorporate bushfire rated mesh in the vent to ensure that embers cannot enter the internal environments and assists buildings comply with AS3959.

Quality

Engineered and manufactured in Australia using high quality materials, the 5 Series provides the integrity and longevity that is vital for the success of projects. With the ability to fabricate from aluminium, Zincalume®, Colorbond®, galvanised steel or stainless steel, this ventilator provides the design flexibility to meet the most demanding environments.

Weatherproof

The unique corrugated blade design and precision engineering ensures that our vents are able to achieve high levels of airflow while maintaining complete weather tightness. Tested by the CSIRO to AS2428.1 & 2 (Rain and Wind), we have made sure we protect the integrity of your building from the elements.

Snow Resistance

The spherical rotary head design of the 5 Series ensures that snow is quickly expelled from the vent surface and does not build up against or on top of the vent - prohibiting the build up of snow melting into the ventilator and protecting your internal environment and ventilation performance.

Cyclone Rated

The 5 Series cyclone rated option is rated for up to Category 4 cyclone regions ensuring the structural integrity and performance across all parts of Australia. This has seen the 5 Series become common feature on buildings throughout tropical regions including mining operations and cyclone shelters.

Dimensions and Mass

MODEL	(D) (mm)	(O) (mm)	(H) (mm)	MASS (kg)	CYCLONE RATED (Cat C)	(Cat D)	FIRE RATED (AS1668.1)
5AV.0300	305	430	385	5.0	✓	✓	✓
5AV.0350	355	500	440	9.2	✓	✓	✓
5AV.0400	406	540	473	11.2	✓	✓	✓
5AV.0450	457	610	533	15.0	✓	✓	✓
5AV.0500	508	692	593	17.5	✓	✓	✓
5AV.0600	610	825	693	23.5	✓	✓	✓
5AV.0685	686	950	780	27.0	✓	✓	✓
5AV.0760	762	1010	870	32.0	✓	✓	✓
5AV.0840	838	1090	920	40.0	✓	✓	✓
5AV.0900	915	1170	970	43.0	✓	✓	✓
5AV.1050	1067	1330	974	44.0	✓	✓	✓
5AV.1200	1220	1480	1050	46.0	✓	✓	✓

Note: Mass is based on Zincalume fabrication. Fabrication for alternative materials will alter published mass figures. Please contact us for further details if required. For ventilator performance please refer to the air flow performance chart in this catalogue.

Materials and Finishes

The 5 Series is available in a wide range of materials and finishes ensuring that your ventilation system will meet the engineering and aesthetic demands of your project.

MATERIAL	MILL FINISH	COLORBOND®	COLORBOND® METALIC	COLORBOND® ULTRA	DULUX COLOURS
ZINCALUME	✓	✓	✓	✓	✓
ALUMINIUM	✓	✓	✓	✓	✓
ALUMINIUM (MARINE GRADE)	✓	✓	✓	✓	✓
STAINLESS STEEL	✓	✓	✓	✓	✓
STAINLESS STEEL (MARINE GRADE)	✓	✓	✓	✓	✓
GALVANISED STEEL	✓	✓	✓	✓	✓

Note: 5AV.1050 and 5AV.1200 models are not available in Zincalume fabrication and will be fabricated in Aluminium as standard.

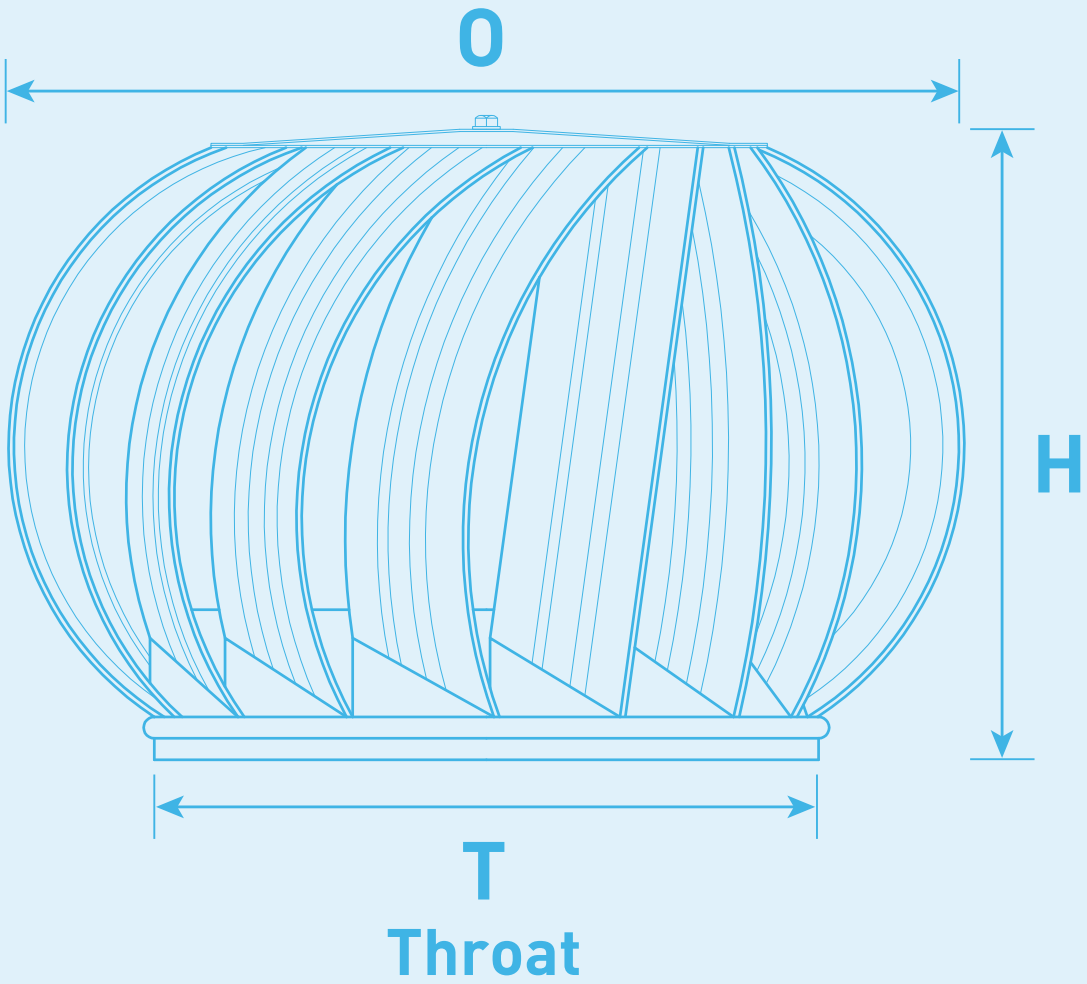
Size & Dimensions

Scientific engineering principles has led to our 5 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

Rotaty Roof Vents 5 Series

Head Diagram and Model Base Type

Series	Description
5**A**V.xxxx	Signifies transition base
5**B**V.xxxx	Signifies spigot base
5**O**V.xxxx	Signifies no base

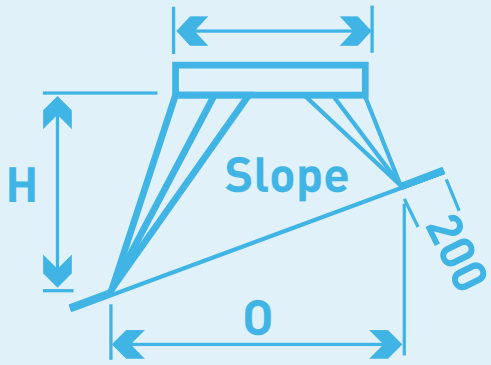


Note: Full detail drawings for all products including site specific details are available on request. Please contact us and we'll be sure to help.

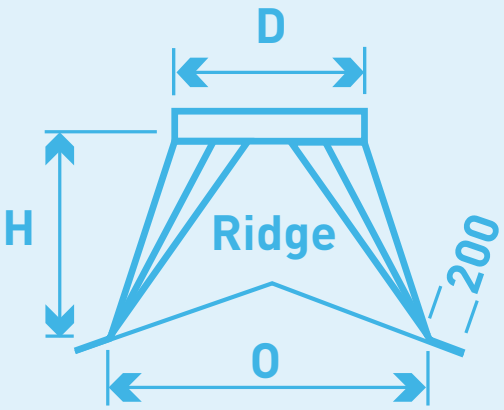
Transition Base

Providing 15% better airflow performance than traditional spigot bases, the transition base by Airocle continues our proud tradition of maximising air flow performance for your building. The square-to-round design promotes improved airflow through funnelling air into the ventilator while providing a stronger more stable base for harsh environments including for cyclone regions.

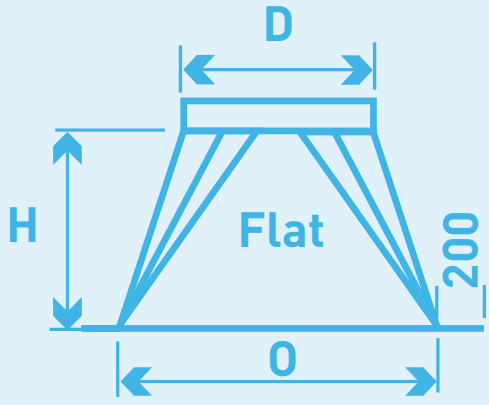
Base Type 1
Slope Mounted



Base Type 2
Ridge Mounted



Base Type 3
Flat Base



Details

Base Diameter	D (mm)	O (mm)	H (mm)	Mass (kg)
5AV.0300	300	400	200	4.0
5AV.0350	350	470	250	4.6
5AV.0400	400	500	250	6.0
5AV.0450	450	570	300	7.6
5AV.0500	500	620	300	9.1
5AV.0600	600	800	400	10.3
5AV.0685	685	850	400	11.5
5AV.0760	760	910	450	12.6
5AV.0840	840	1005	450	14.3
5AV.0900	900	1100	450	16.4
5AV.1050	1050	1220	600	18.1
5AV.1200	1200	1400	600	21.4

Options

OPERABLE DAMPERS (Manual)	(Electric)	(Pneumatic)	BOOSTER FAN	CYCLONE RATED (Cat C)	(Cat D)	Fire Rated (AS1668.1)	Bushfire Mesh (AS3959)
✓	✓	✓	X	✓	✓	✓	✓
✓	✓	✓	X	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓

Installation Made Easy

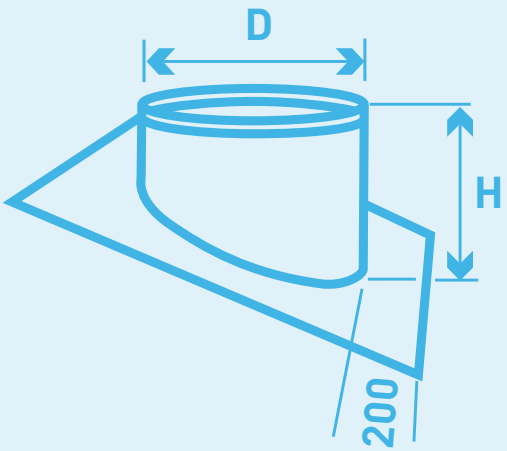
Rather than supply you with complicated adjustable throat design, every transition base we supply is built to suit the pitch and profile of the roof, making it simpler, safer and reducing the amount of time you need to be on the roof, supported by detailed installation instructions.

Note: Mass is based on Zincalume fabrication. Fabrication for alternative materials will alter published mass figures. Please contact us for further details if required.

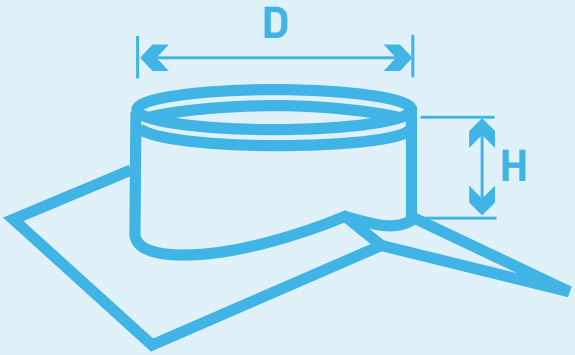
Spigot Base

The traditional spigot base delivers economy and a low profile to the 5 Series. Built from quality Australian materials, the spigot base provides installers and designers a simple, economical yet effective solution for implementing natural ventilation in their building.

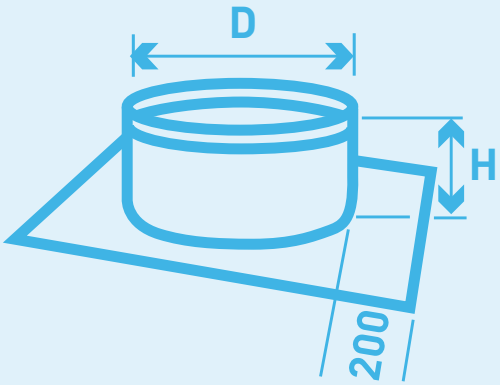
Base Type 4
Slope Mounted



Base Type 5
Ridge Mounted



Base Type 6
Flat Base



Details

Options

Base Model	D (mm)	O (mm)	H (mm)	Mass (kg)	OPERABLE DAMPERS (Manual)	(Electric)	(Pneumatic)	BOOSTER FAN	CYCLONE RATED (Cat C)	(Cat D)	Fire Rated (AS1668.1)	Bushfire Mesh (AS3959)
5BV.0300	300	300	100	3.2	✓	✓	✓	X	X	X	✓	✓
5BV.0350	350	350	100	3.7	✓	✓	✓	X	X	X	✓	✓
5BV.0400	400	400	100	4.8	✓	✓	✓	✓	X	X	✓	✓
5BV.0450	450	450	100	6.1	✓	✓	✓	✓	X	X	✓	✓
5BV.0500	500	500	150	7.3	✓	✓	✓	✓	X	X	✓	✓
5BV.0600	600	600	150	8.2	✓	✓	✓	✓	X	X	✓	✓
5BV.0685	685	685	175	9.2	✓	✓	✓	✓	X	X	✓	✓
5BV.0760	760	760	200	10.1	✓	✓	✓	✓	X	X	✓	✓
5BV.0840	840	840	200	11.5	✓	✓	✓	✓	X	X	✓	✓
5BV.0900	900	900	200	13.1	✓	✓	✓	✓	X	X	✓	✓
5BV.1050	SPIGOT BASE NOT AVAILABLE IN THIS DIAMETER											
5BV.1200	SPIGOT BASE NOT AVAILABLE IN THIS DIAMETER											

Installation Made Easy

We believe in making your life easier. Rather than supply you with complicated adjustable throat design, every spigot base we supply is built to suit the pitch and profile of the roof, making it simpler, safer and reducing the amount of time you need to be on the roof.

Note: Mass is based on Zincalume fabrication. Fabrication for alternative materials will alter published mass figures. Please contact us for further details if required.

Performance

Working out what size and quantity of ventilators for your project is easy. Using our air flow performance rating table below provides a useful reference for estimating airflow performance of the 5 Series based on a range of temperature differentials, effective stack heights and wind speed factors. Figures are stated as m^3/sec (multiply by 1000 for litres/sec equivalent).

STACK HEIGHT (m)	WIND FACTOR (km/h)	ΔºT (ºc)	AIRFLOW PERFORMANCE RATINGS (m^3/sec)											
			300	350	400	450	500	600	685	760	840	900	1050	1200
3.05	6.4	6	0.152	0.208	0.271	0.343	0.423	0.609	0.773	0.952	1.155	1.371	1.862	2.444
		11	0.158	0.215	0.281	0.355	0.437	0.630	0.800	0.985	1.195	1.418	1.926	2.528
		17	0.166	0.226	0.296	0.374	0.461	0.664	0.843	1.038	1.259	1.495	2.030	2.664
	8.0	6	0.182	0.248	0.324	0.411	0.505	0.727	0.924	1.137	1.380	1.638	2.224	2.920
		11	0.184	0.252	0.329	0.416	0.512	0.738	0.937	1.154	1.400	1.661	2.257	2.962
		17	0.193	0.268	0.350	0.443	0.545	0.785	0.997	1.228	1.490	1.768	2.401	3.152
	12.8	6	0.272	0.371	0.485	0.613	0.755	1.088	1.381	1.701	2.063	2.449	3.325	4.365
		11	0.277	0.377	0.493	0.623	0.767	1.105	1.404	1.729	2.097	2.489	3.380	4.436
		17	0.279	0.380	0.497	0.629	0.775	1.116	1.417	1.745	2.117	2.513	3.412	4.478
	16.0	6	0.336	0.458	0.598	0.757	0.932	1.343	1.705	2.099	2.547	3.023	4.102	5.388
		11	0.344	0.469	0.614	0.776	0.956	1.377	1.748	2.153	2.611	3.100	4.209	5.525
		17	0.352	0.480	0.626	0.792	0.977	1.408	1.787	2.197	2.669	3.169	4.314	5.648
6.10	6.4	6	0.158	0.215	0.281	0.355	0.437	0.630	0.800	0.984	1.195	1.418	1.936	2.527
		11	0.183	0.250	0.327	0.412	0.508	0.732	0.929	1.145	1.389	1.649	2.238	2.938
		17	0.188	0.256	0.335	0.423	0.522	0.751	0.954	1.175	1.425	1.691	2.297	3.015
	8.0	6	0.184	0.252	0.329	0.416	0.512	0.738	0.927	1.154	1.400	1.661	2.257	2.962
		11	0.191	0.260	0.340	0.430	0.530	0.763	0.969	1.194	1.448	1.718	2.334	3.063
		17	0.199	0.272	0.355	0.449	0.553	0.797	1.012	1.246	1.512	1.795	2.438	3.200
	12.8	6	0.277	0.377	0.493	0.623	0.767	1.105	1.404	1.729	2.097	2.489	3.380	4.437
		11	0.285	0.389	0.509	0.643	0.792	1.141	1.449	1.784	2.165	2.569	3.489	4.579
		17	0.310	0.422	0.552	0.699	0.860	1.239	1.573	1.937	2.350	2.790	3.788	4.972
	16.0	6	0.344	0.469	0.614	0.776	0.956	1.377	1.748	2.153	2.611	3.100	4.209	5.525
		11	0.354	0.482	0.631	0.797	0.982	1.414	1.795	2.211	2.682	3.184	4.323	5.673
		17	0.367	0.500	0.654	0.827	1.018	1.467	1.863	2.294	2.783	3.304	4.485	5.888
9.15	6.4	6	0.166	0.226	0.296	0.374	0.461	0.664	0.843	1.038	1.259	1.495	2.029	2.664
		11	0.188	0.256	0.335	0.423	0.522	0.751	0.954	1.175	1.425	1.692	2.297	3.015
		17	0.210	0.286	0.374	0.473	0.582	0.839	1.065	1.312	1.591	1.889	2.565	3.366
	8.0	6	0.196	0.268	0.350	0.443	0.545	0.785	0.997	1.228	1.490	1.769	2.401	3.152
		11	0.199	0.272	0.355	0.449	0.553	0.797	1.012	1.246	1.512	1.795	2.438	3.200
		17	0.230	0.314	0.411	0.520	0.640	0.922	1.171	1.441	1.748	2.076	2.818	3.699
	12.8	6	0.279	0.380	0.497	0.629	0.775	1.116	1.417	1.745	2.117	2.513	3.412	4.478
		11	0.310	0.422	0.552	0.698	0.860	1.239	1.573	1.937	2.350	2.790	3.788	4.972
		17	0.321	0.437	0.572	0.723	0.891	1.283	1.630	2.007	2.434	2.890	3.974	5.150
	16.0	6	0.352	0.480	0.626	0.792	0.977	1.408	1.773	2.197	2.649	3.169	4.314	5.605
		11	0.367	0.500	0.654	0.827	1.018	1.467	1.863	2.294	2.783	3.304	4.485	5.888
		17	0.371	0.507	0.663	0.838	1.033	1.486	1.888	2.324	2.820	3.347	4.545	5.965

Note: These figures are based on precise inputs using a transition base and no further optional fixings or fittings and should be used as indicative only. As with all natural ventilation systems, external environment, internal heat loads and other dynamic factors both positively and negatively impact on air flow performance. Our design team can help ensure your project is provided with the most appropriate design for your project. Call them now on 1800 805 062.

Due to concerns regarding the accuracy and adequacy of AS/NZS 4740:2000 Appendix E, published flow rates are based on a combination of Coefficient of Discharge (Effective Aerodynamic Area) under AS/NZS 4740:2000, formulas derived from ASHRAE guides to natural ventilation, and confirmed through CSIRO CFD modelling. IVR believes this method of confirmation provides a more adequate and accurate representation of air flow performance both for the 5 Series and for all rotary ventilators on the market.

Options

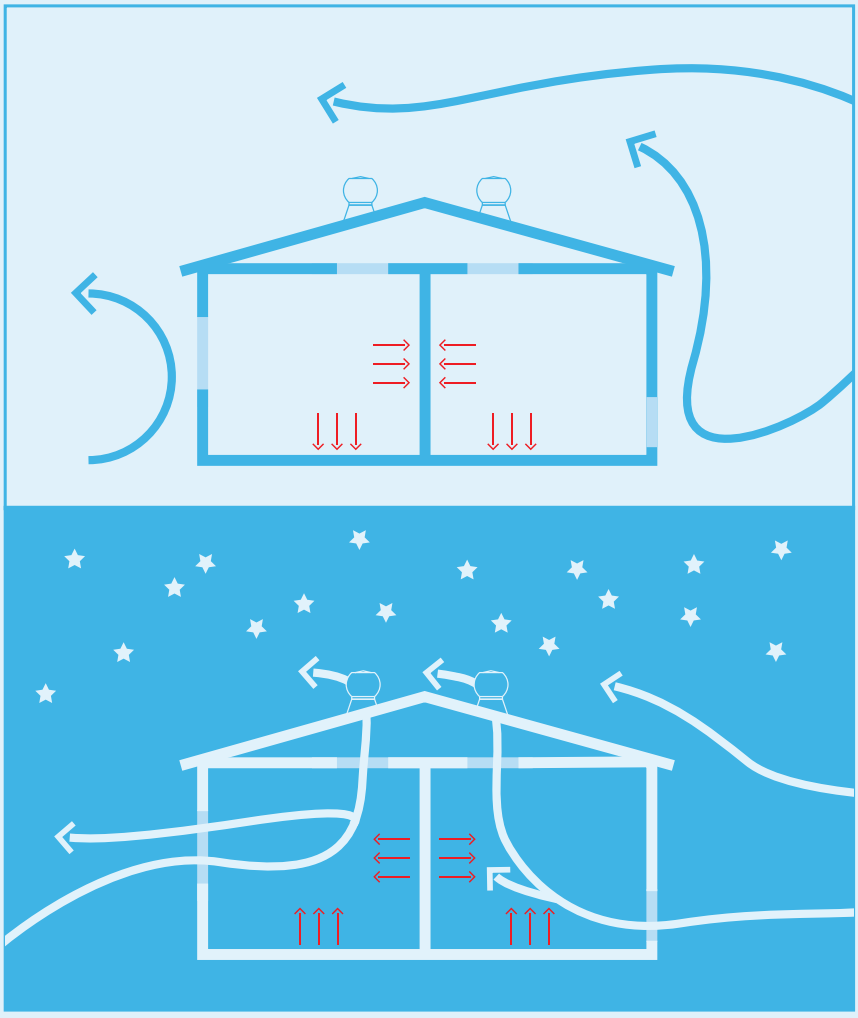
The 5 Series has an option range to assist in specialised circumstances.

Night Purge

Night flushing works by opening up the Natural Ventilation system throughout the night, to cool down the thermal mass in a building by convection. Early in the morning before temperatures rise too far, the building is closed and kept sealed throughout the day to prevent hot air from outside entering. During the day, the cool mass absorbs heat from occupants and other internal loads.

DAY

NIGHT



Booster fans with manual or automatic timing controls can play a fundamental role in getting the most out of your night purge system. By overcoming the often still air during night time periods, booster fans have successfully allowed classrooms, laboratories, halls and offices to achieve comfortable environments throughout the day while keeping windows and doors closed, and the noise outside.

Booster Fan

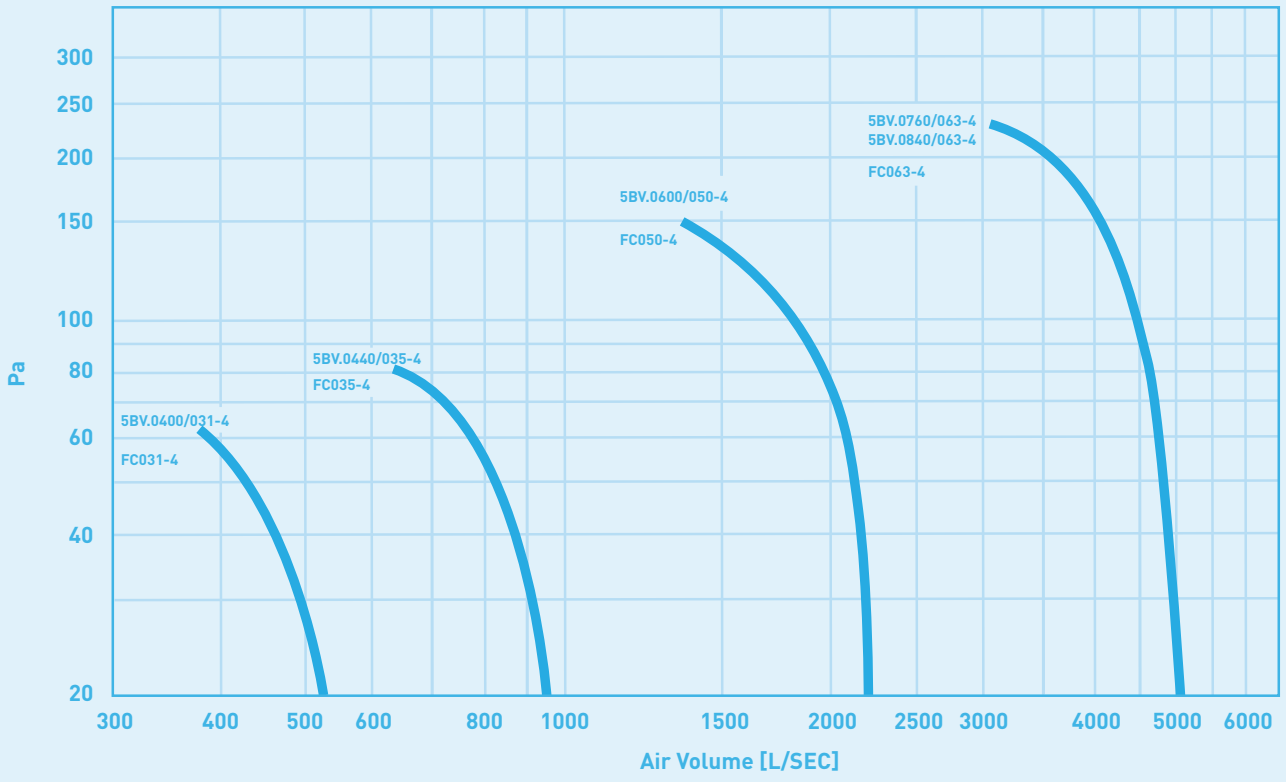
Incorporating a booster fan into your 5 Series gives building designers the combination of reliable smoke hazard management and natural ventilation. Switch between the economy and sustainability of natural airflow and the reliability of mechanical extraction, and embrace the cost and environmental benefits of using a truly hybrid system.

Booster fans give you the sustainability and energy efficiency of natural ventilation during normal operation with the security and reliability and flexibility of increased airflow performance in smoke management and night purge situations.

Series 5 Booster Fan and Smoker spill performance curves

MODEL	BOOSTER FAN NOM. FREE AIR (L/S)	240 VOLTS (KW)	(Amps)	415 VOLTSv (KW)	(Amps)	SPLA @ 3m (dB)
5BV.0400/031-4	583	0.15v	0.70	-	-	46
5BV.0450/035-4	1000	0.21	0.96	-	-	51
5BV.0600/050-4	2250	0.58	2.50	-	-	63
5BV.0760/063-4	5055	-	-	1.9/3.0	3.15	69
5BV.0840/063-4	5055	-	-	1.9/3.0	3.15	69

Note: Sizes are subject also to the project design requirements and also specific size availability at time of purchase.



Performance curves are based on free inlet and discharge results will differ through Turbo Ventilator head in natural field conditions.

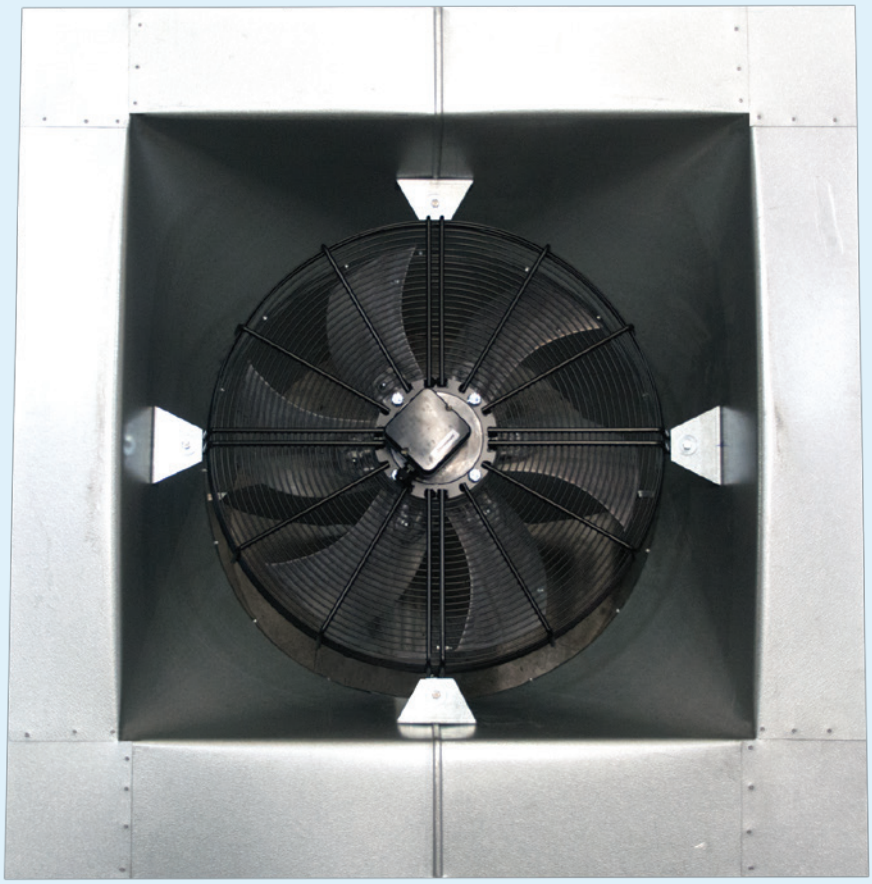
A Fire Rated Smoke Hazard Management Solution

The Fire Rated (FR) booster fan option along with our fire rated 5 Series product range ensures that your hybrid system has the capability to be incorporated into high sensitivity and demanding environments.

Rated for 200°C for 120 minutes; 300°C for 30 minutes, meet all relevant fire brigade requirements, standards and building codes, while improving sustainability and project budgets.

Higher Performance

We have focused on providing designers a high performance natural ventilation product with the ability to reliably boost this natural force with established fan principles when required - achieving much higher air flow rates than comparative hybrid designs.

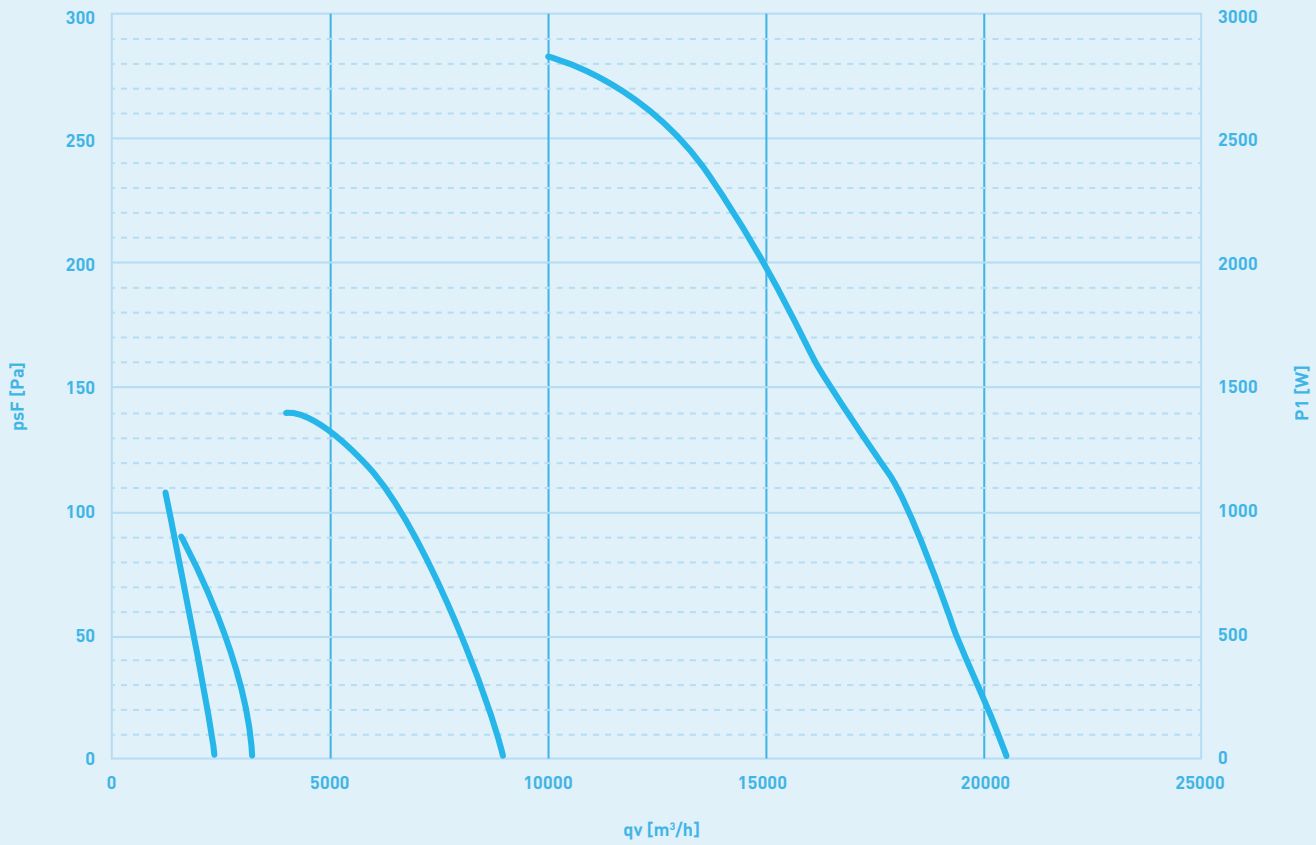


No Reduction In Throat Area

Our booster fan arrangement ensures that the throat area of each ventilator is not restricted.

By mounting each booster fan in the larger volumetric area of the underneath transition base, it allows air to move freely through to the ventilator during natural mode and deliver uninterrupted airflow.

Airflow + Acoustic Curves



Airflow

Booster Fan

BOOSTER FAN (Size)	BOOSTER FAN (Size)	NOM. AIR FLOW (Litres/Sec)	240 VOLTS (KW)	(Amps)	415 VOLTS (KW)	(Amps)	WEIGHT (kg)	IP RATING	FIRE RATED OPTION
031-4	310	650	0.14	0.63	-	-	4.3	54	3
035-5	350	910	0.17	0.75	-	-	4.6	54	3
050-4	500	2500	0.75	3.30	-	-	16.0	54	3
063-4	630	5750	-	-	2.40	4.60	23.0	54	3

Note: Booster fan diameter size must be smaller than the throat diameter of the selected 5 Series ventilator.

Fire Rated

The fire rated (FR) 5 Series option gives designers the ability to use natural ventilation in fire and smoke environments. The 5 Series, and optional dampers and booster fans are all rated for 200°C for 120 minutes; 300°C for 30 minutes - meeting all relevant fire brigade requirements, standards and building codes, while improving sustainability and budget outcomes.

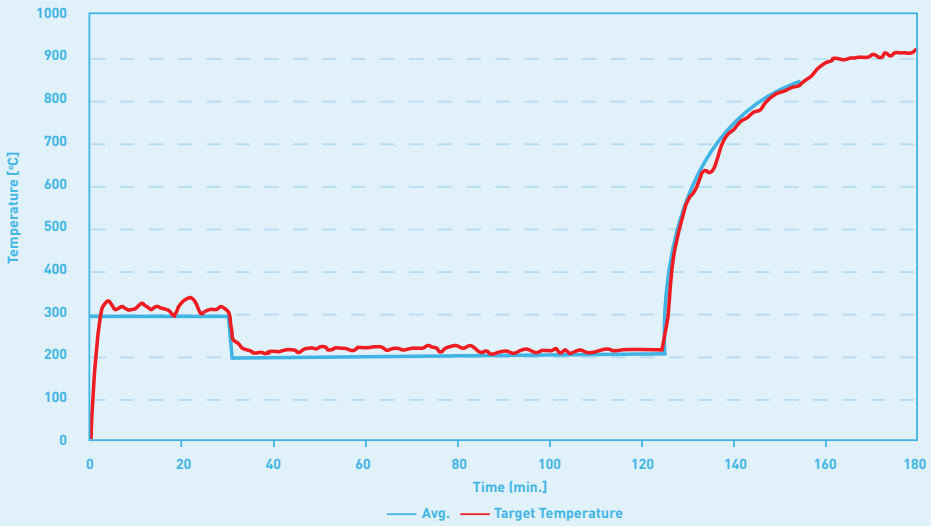


FIG 1. FURNACE TEMPERATURE

Tested to AS1668.1-1998 Part 4.8.1, the 5 Series delivers reliable smoke exhaust, greater safety for occupants, and increases the ability for emergency services to safely access the building and fire.

Fire Rating Details

Testing Authority:	CSIRO Manufacturing & Infrastructure Technology
Test Number:	FS3616/2564
Assessment Number:	FCO-231
Tested to:	AS1668.1-1998 Part 4.8.1

Temperature Conditions

1. A period of not less than 120 minutes with a smoke-spill air temperature of not less than 200°C
2. A period of not less than 30 minutes with a smoke-spill air temperature of not less than 300°C
3. A period of 30 minutes where the time/temperature curve defined by AS1530.4 was followed
4. Test to be terminated after a period of 180 minutes
5. A period of 30 minutes with a smoke-spill air temperature of not less than 900°C

Dampers

Description

Using European designed electric actuators; the ability to open, close or restrict airflow through the ventilator makes it perfect for summer/winter operations or link to a range of control sensors. With the ability to be power or spring return open/close or even modulating, it provides an excellent way of controlling airflow while remaining completely weatherproof.

Pneumatically Operable Dampers

Pneumatic operable dampers provide the ability to control ventilation airflow and operate under power failure situations through our compressor and receiver tank design – making them an excellent weatherproof way to reliably perform smoke hazard management and operate during emergencies.

Manually Operable Dampers

Manually operated dampers make ventilation control easy. Supplied with cord, guides and a return spring shut damper blade, this option allows smaller buildings an economical and simple way of keeping building occupants in comfort.

Mesh

Bird Guards, Insect Mesh, Bushfire Mesh

Using European designed electric actuators; the ability to open, close or restrict airflow through the ventilator makes it perfect for summer/winter operations or link to a range of control sensors. With the ability to be power or spring return open/close or even modulating, it provides an excellent way of controlling airflow while remaining completely weatherproof.

MESH TYPE	APPERTURE (mm)	WIRE DIAMETER (Ømm)	OPEN AREA (%)	MATERIAL
Bushfire	1.4	0.56	61	Stainless Steel

Cyclone Rated

The 5 Series is rated for up to Category D cyclone regions under AS1170 ensuring the structural integrity and performance across all parts of Australia. This has seen the 5 Series become common feature on buildings throughout tropical regions including mining operations and cyclone shelters.

Acoustic Dampening

Our unique Phonic acoustic dampening system can be fully integrated into the 5 Series. An efficient method of noise attenuation, the use of ignition retardant and hydrolysis resistant insulation allows vents to reduce noise transmission both out of and into the building, and retain their high discharge coefficient heat and smoke ventilation properties.

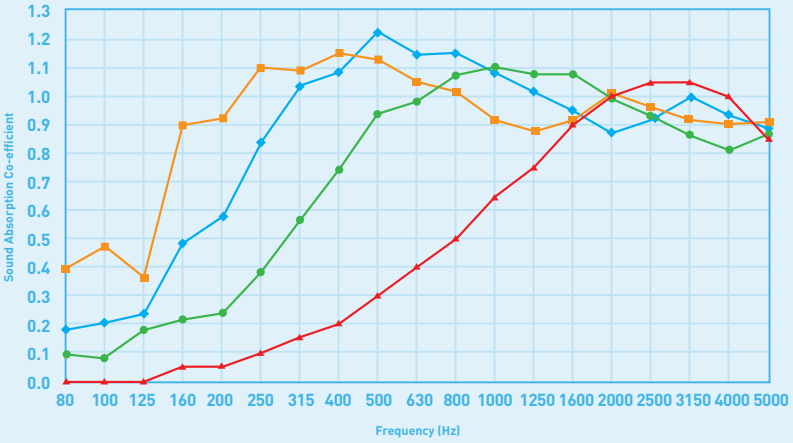
Acoustic Performance

Tested to AS1045-1988 Reverberation Room.

FREQUENCY (HZ)	RANDOM INCIDENCE ABSORBTION COEFFICIENT		
	Megasorber FG25	Megasorber FG50	Megasorber FG100
100	0.08	0.21	0.47
125	0.18	0.24	0.37
160	0.22	0.49	0.90
200	0.24	0.58	0.92
250	0.38	0.85	1.10
315	0.56	1.04	1.09
400	0.74	1.09	1.15
500	0.94	1.23	1.13
630	0.98	1.15	1.05
800	1.07	1.15	1.01
1000	1.11	1.08	0.92
1250	1.08	1.02	0.88
1600	1.08	0.95	0.91
2000	0.99	0.87	1.01
2500	0.93	0.92	0.96
3150	0.86	1.00	0.91
4000	0.81	0.94	0.90
5000	0.86	0.89	0.91
NRC	0.85	1.01	1.04
∂w	0.7(MH)	1.00	1.00

Sound Absorption of Megasorber FG Products

(Tested to AS ISO 354-2006 Acoustics: Measurement of sound absorption in a reverberation room)



Megasorber FG100, NRC = 1.04

Megasorber FG50, NRC = 1.01

Megasorber FG25, NRC = 0.85

Megasorber FG12, NRC = 0.58

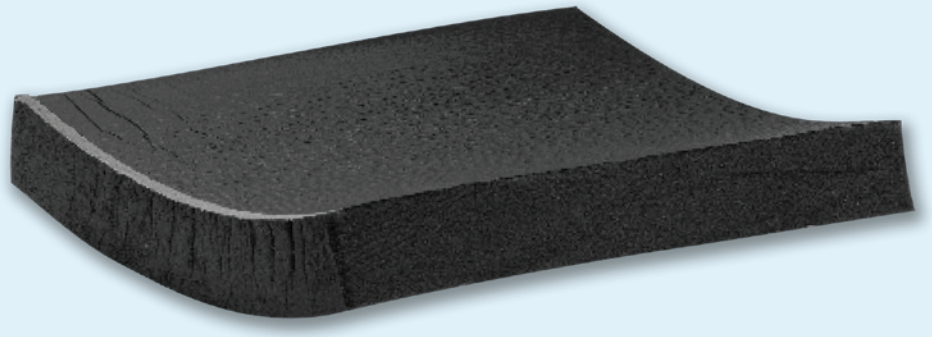
RMIT University Test Report: 121I/11-169/PD
RMIT University Test Report: 121I/11-171/PD
RMIT University Test Report: 121I/11-173/PD

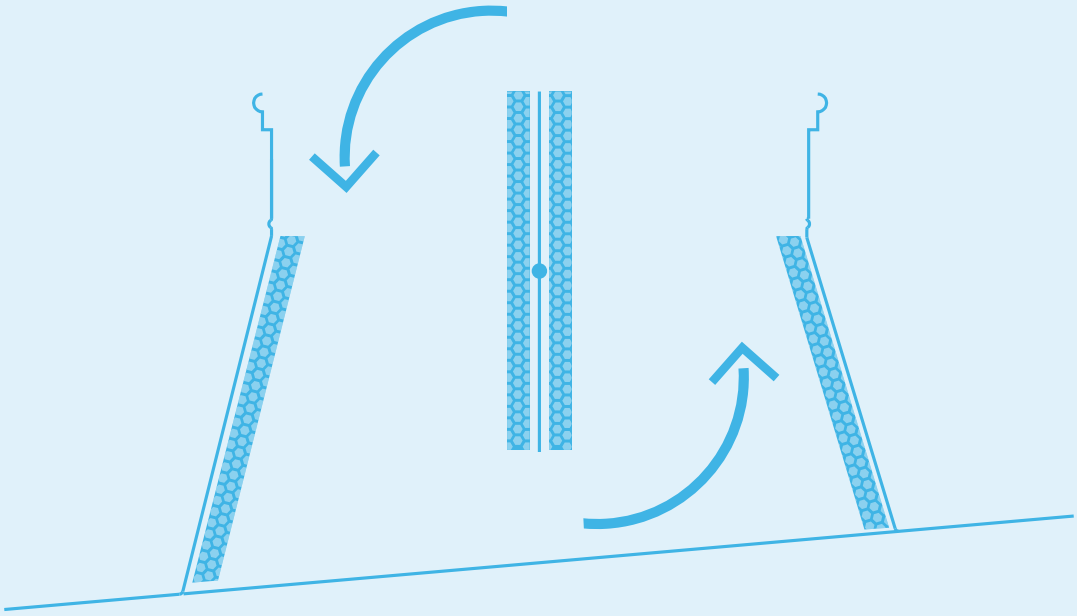
Airflow Control

Take control of your natural ventilation system through Airocle's range of air flow controls and sensors. Whether it be for emergency response, safeguarding optimal internal conditions or ensuring efficient airflow performance, the 5 Series has a range of sensors, controls and air flow dampers to ensure that your system can achieve what you want it to.

A Sound Advantage

Finding a way to minimise the transmission of noise out of or into buildings while passively ventilating your building is easy. The ability to acoustically treat the 5 Series and achieve a minimum NATA tested Sound Transmission Class (STC) of 10 ensures that your ventilation system keeps the noise where it's meant to be. (Tested in NATA approved laboratary to AS119-1985 and for AS1045-1988).





Material Properties

COLOUR (Facing)	RECOMMENDED MAXIMUM SERVICE TEMPERATURE (°c)	THERMAL CONDUCTIVITY (W/mK)
Black	100	0.003

Chemical Resistance (facing)

ACETONE	MEK	PETROL	DIESEL
Swells*	Swells*	Good	Good

*Swells and then returns to normal on drying.

Flammability Properties

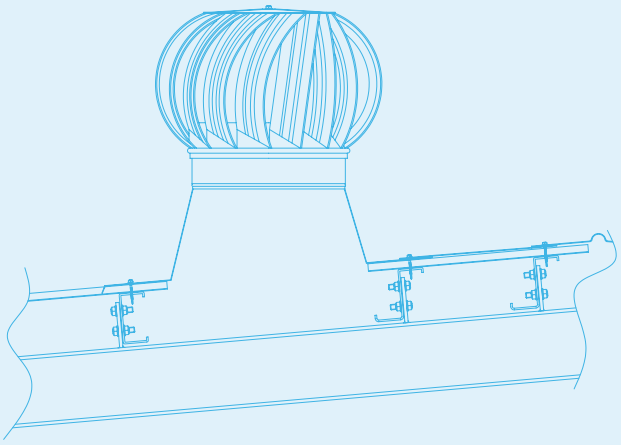
TEST METHOD	INDEX	RESULTS	DESCRIPTION
UL94	After flame time ≤ 2 seconds	HBF*	Horizontal Burn Test for foam
FMVSS-302	Burn rate - mm/min	Self Extinguishing	Automotive burn rate test

*Result applies to 12mm thickness.

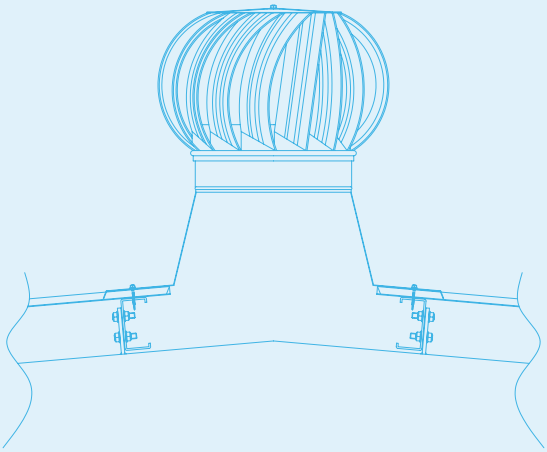
Typical Installation

An even distribution across the roof area is appropriate for flat or very shallow roofs, but venting in steep roofs would be more effective if located near the apex.

Slope Mounted



Ridge Mounted



Installing on Roofs

Installation is simple and quick due to each base being custom made to suit the pitch and profile of your roof. Vents are assembled fully assembled as head and base components.

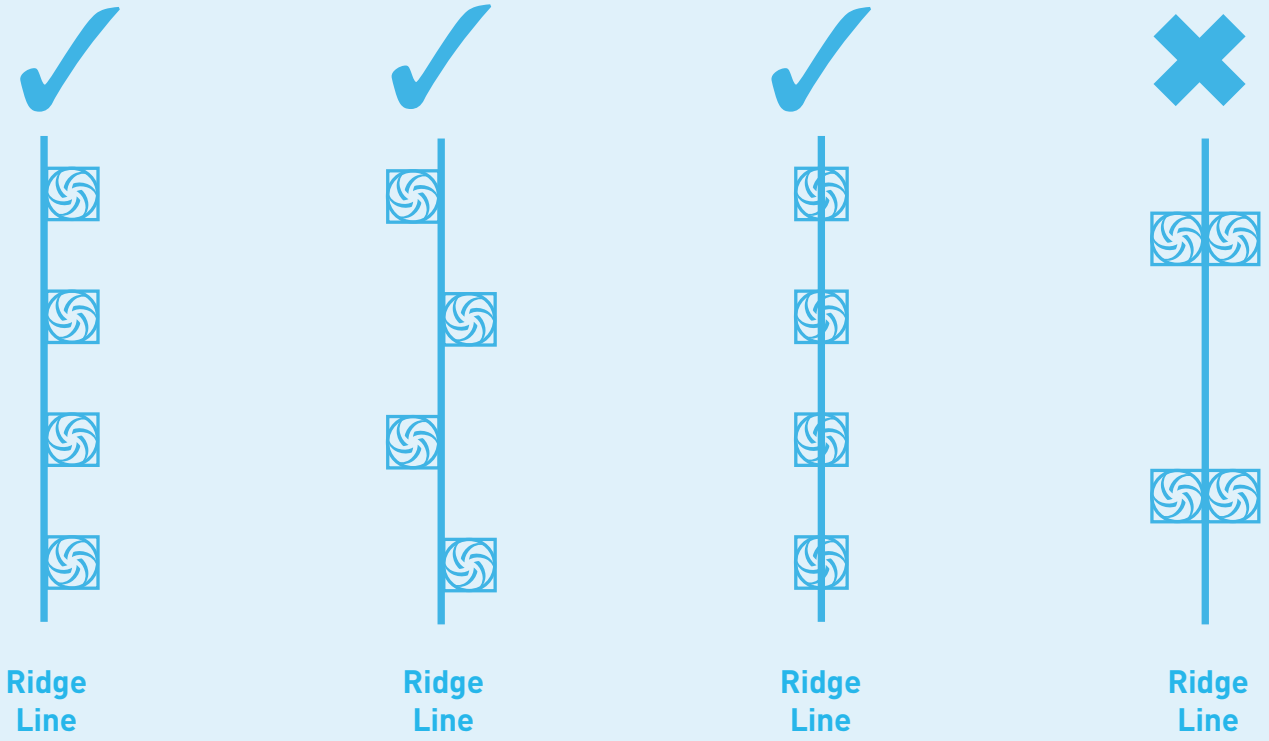
The building contractor must ensure that the vent is fitted appropriately to the roof structure and that any internal structural supports do not impede the flow path through the vent under normal operating conditions.

Vents will be provided with a full installation manual to ensure ease of installation.

Installation details are available from Airocle on request. Please contact us on 1800 805 062 as we are more than willing to help.

Determining Vent Location

Vents should generally be located at 6 metre spacing to optimise airflow performance of each ventilator. Ventilators should generally be placed at the highest point of a roof to maximise the impact of stack effect.



Avoid locating ventilators directly next to each other or against surfaces which may restrict the ability for efficient exhaust and wind effect.

Airflow & Weather Control

Take control of your natural ventilation system.

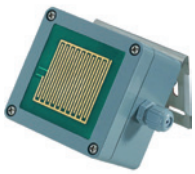
Whether it be for emergency response, safeguarding optimal internal conditions or ensuring efficient airflow performance, the **5 Series** has a range of sensors, controls and air flow dampers to ensure that your system can achieve what you want it to.

Sensors

Using Airocle gives your system access to a full range of sensors that will allow you complete control over your natural ventilation system.

Temperature and Humidity

The Airocle Humidity and Room Temperature Transmitter measures the relative humidity and temperature of air versus ambient via a digital long-term stable sensor which relays a 0-10 VDC signal back to the control panel for effortless control.



Precipitation

Moisture and precipitation sensors provide the ability for your natural ventilation system to be fully weather responsive. This sensor is designed to detect atomised moisture particles and allows your ventilation system to automatically respond to the event of precipitation ensuring that sensitive internal environments such as electrical manufacturing and warehousing is provided full weather protection.

Air Flow

Our standard airflow and velocity sensor is intended to monitor air flow and non-aggressive gaseous for systems which utilise a modulating damper system to ensure a particular range of flow. The sensor relays a switched output on detection of either a specified flow velocity or flow failure.

Air Quality

This sensor unit is suited for room ventilation as-needed by enabling increased natural ventilation airflow when air reaches a specified level of volatile organic compound contamination (VOC). The sensor operates on the basis of detecting mixed gas rather than tracing the concentrations of individual gases. Detectable gases include: combustion smoke, automobile exhaust, halogenated hydrocarbons, esters, alcanoles or other VOCs from coating or chemical processes.

Carbon Dioxide (CO_2) and Carbon Monoxied (CO)

Natural Ventilation control by CO_2 or CO is a viable and energy efficient way of controlling ventilation to respond to accumulation of CO_2. The ability to link with actuated damper control or with mechanical ventilation provides buildings the ability to reduce ventilation and energy costs by only providing ventilation when required.

Weather

This sensor package accurately measures the wind speed and wind direction, relaying output signals for ventilator damper and/or operable louvre control. This approach is intended for applications where external weather conditions are integral for the building ventilation strategy such as for the automatic opening/closing of louvres or ventilators for optimised air inlet or high wind protection.

Third Party Sensors

Airocle ventilation systems and control panels can be tailored to incorporate existing building automation sensors, controls or software ensuring that even existing buildings are provided simple, effective control of their building ventilation.

Controls

Airocle systems give you access to a full range of controls allowing you complete control to meet a range of solutions your project may require.

Ventilation Control Panel (VCP)

Airocle manufacturers each control panel to suit the exact requirements of each building. The ability to effortlessly link in with Building Management Systems (BMS), Fire Indication Panels (FIPs) and a range of control sensors provides buildings simple, effective operation, manual override ability and complete control over their ventilation system.

Materials & Finishing

We have ability to suit every application including corrosive environments by fabricating the **5 Series** in:

- Colorbond
- Colorbond Ultra
- Zincalume
- Galvanised steel
- Aluminium
- Stainless steel
- Copper

Our manufacturing process also allows us to colour match custom colours as well as provide all Colorbond, Colorbond Metallic and Dulux colour finishes.

How to Specify

Description

Roof ventilator(s) shall be of a rotary design incorporating a sealed bearing axle system. Design shall include all applicable dampers, accessories, fixings and flashings. Install to manufacturers recommendations.

Size

Roof ventilator(s) shall be ____ mm in diameter and located as per architectural drawings. Refer to architectural drawings or contact Airocle (1800 805 062) to calculate number of ventilators required, internal and external heat loads and air change required to maintain acceptable internal ambient temperature, and to provide proof of adequacy of design for purpose.

Base

Roof ventilator(s) shall be fitted with a 5**A**V.xxxx transition base or 5**B**V.xxxx spigot base to suit the ventilator diameter.

Performance

Each roof ventilator shall be capable of achieving ____ m^3/sec under ____ km/h wind speed, ____ °ΔT and ____ m effective stack height parameters

or

Each roof ventilator shall be capable of achieving _____ m^3/sec under design conditions of _____.

Testing

Roof ventilator(s) shall be designed and made in Australia using Australian materials. Roof ventilator(s) shall have a minimum coefficient of discharge (Cd) of 0.70 and be tested to:

RAIN
AS2428.1

WIND
AS2428.2

FIRE
AS2428.4 & 1668.2

COEFFICIENT OF DISCHARGE
AS2428.5

CYCLONE RATED

Proprietary Item

5 Series Model _____ as manufactured by Airocle (www.airocle.com.au or 1800 805 062)

Features

Ventilator shall incorporate:

- Internal acoustic insulation with a sound transmission class (STC) of 13
- Fire Rated construction to 200°C/120min plus 300°C/30min as per AS1668.1
- Spring return open/close disc damper with pneumatic /240v/24v electric/ manual control to be located in the base throat
- Spring return open/close fire rated damper with pneumatic/electric/ manual control to be located in the base throat
- Booster Fan shall be of an axial fan design located in a transition base to ensure no throat area restriction, and be capable of achieving _____ m^3/hr
- Stainless steel bush fire mesh to be located in the throat of the base to meet AS3959 consisting of a 2.0mm aperture, 0.56mmØ, 61% open area
- Security Mesh in 0.9mm 304 grade stainless steel with tamper resistant screws and frame with ↗61% FOA

Fabrication and Finish

Ventilator(s) to be constructed in Zincalume®/Colorbond®/Aluminium/ Stainless Stee/Galvanised Steel/Marine Grade Aluminium/Marine Grade Stainless Steel complete with standard/stainless steel working parts

Base(s) shall be constructed in Zincalume®/Colorbond®/Aluminium/ Stainless Steel/Galvanised Steel/ Marine Grade Aluminium/Marine Grade Stainless Steel

Colour to match adjacent roof sheeting unless specified. Refer to External Finishes Schedule.

Inlet/Makeup Air

Due to the need for makeup air, adequate inlets are essential for any ventilation system to operate effectively. While it is recommended an inlet ratio of 1.5 : 1 (inlet : discharge) exist, Airocle can assist in designing or developing a ventilation scheme to suit custom circumstances.

Airocle™

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Airocle.com.au

Australian owned, Airocle provides customers with a comprehensive and balanced portfolio of innovative natural ventilation solutions for sustainable commercial, industrial and community building design.

Think Natural. Think Smarter.

To find out more visit our website **Airocle.com.au** or call **1800 805 062**.

KNOWLEDGE BANK
INSPIRE + EDUCATE

The Airocle Knowledge Bank is an online resource centre designed to inspire and educate you and your clients on the benefits of natural ventilation. To find out more visit **Airocle.com.au**

AUSTRALIAN
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IVR GROUP TRADING AS AIROCLE