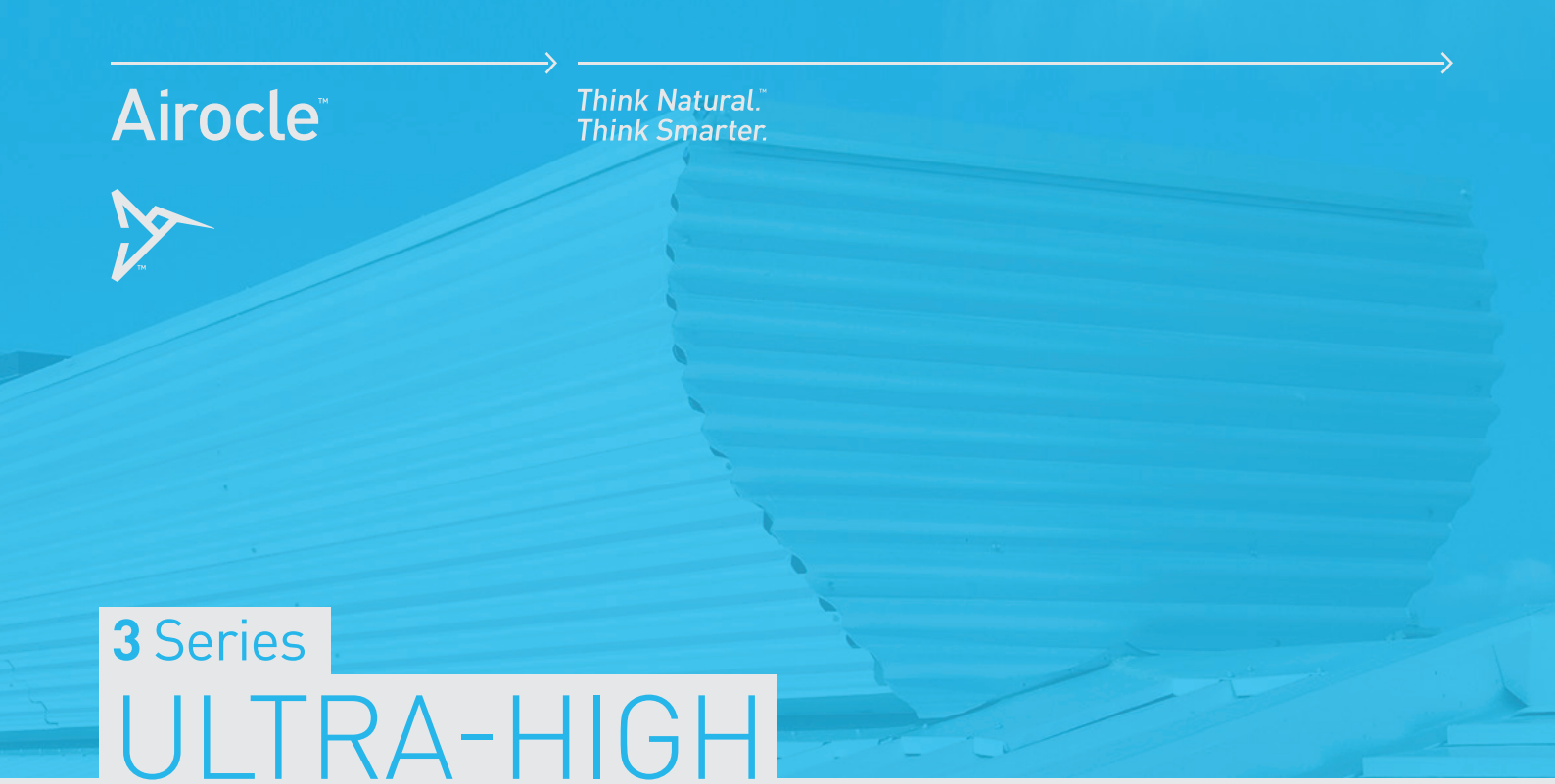
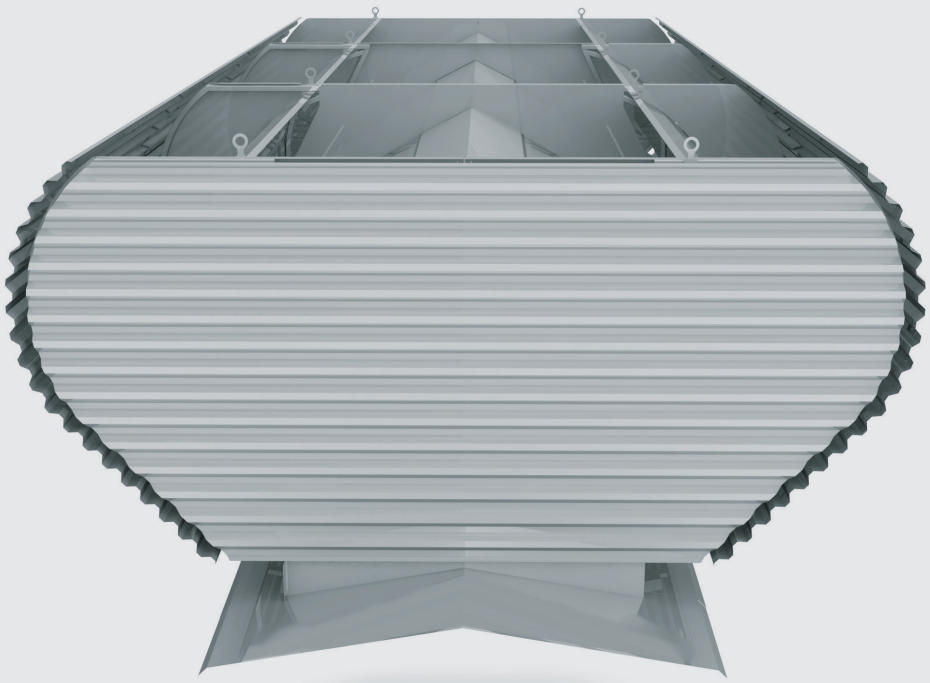
Airocle™

Think Natural.™
Think Smarter.



3 Series

ULTRA-HIGH PERFORMANCE FOR HIGH AIRFLOW APPLICATIONS



Roof

3 SERIES

VENTS & VENTILATORS

RIDGE & SLOPE VENTILATORS

Previously **Vangard Series**

CSIRO CERTIFIED

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

Vents & Ventilators

Ridge & Slope Ventilators

Roof Solutions

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

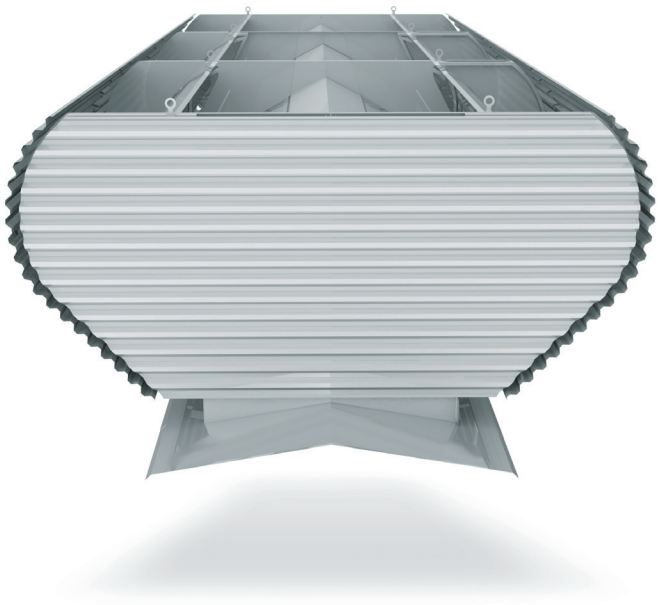
Tested and certified by CSIRO® for airflow, fire and weather performance

3 SERIES

Removing heat and humidity in buildings and replacing it with cool, fresh air has never been easier.

High heat loads require high levels of ventilation. The **3 Series** ridge and slope ventilators provide ultra-high performance for high airflow applications that are found in industry, large warehousing, mining and infrastructure. Engineered to ensure reliable, weathertight, high capacity natural ventilation, the **3 Series** is designed to withstand the harshest of environments including corrosive and cyclone conditions.

Tested and certified by CSIRO® for air flow, fire and weather performance, the **3 Series** is the most efficient



Design

High levels of engineering ensure that the **3 Series** delivers high levels of air flow performance in the most demanding environments. Leading airflow and mechanical engineering expertise has seen the **3 Series** incorporate a range of unique design features such as internal guide vane dampers and wind jump diaphragms to ensure the most efficient exhausting of hot and/or contaminated air.

Projects benefiting from the **3 Series** include:

- Large Warehousing and Chemical Storage
- Heavy Industry including Steel Manufacturing
- Processing, Desalination and Treatment Plants
- Mining Workshops and Processing Facilities
- Gymnasiums and Sports Centres
- Rail Rolling Stock Sheds and Aircraft Hangers

Benefits

Cost and Energy Efficiency

Lower energy costs and reduced construction costs are only some of the reasons to choose natural ventilation and the **3 Series**. The most significant advantage over mechanical ventilation is that the higher the heat load and more demanding the environment, the better natural ventilation will perform. Combined with the ability for projects to reduce structural steel due to the pressure relief properties of natural ventilation systems, the **3 Series** is an advantage for designers seeking cost efficient and sustainable design.

Smoke and Fire Management

Natural ventilation provides your project the ability to simultaneously deliver effective natural ventilation and smoke hazard management. With CSIRO tested coefficient of discharge figures along with a thorough scientific approach to calculating airflow performance, Airocle can work with you to develop a natural ventilation solution that will meet all BCA and fire brigade requirements even in nil wind speed situations.

Performance

The **3 Series** delivers performance. A CSIRO® tested coefficient of discharge of 0.53 and throat sizes ranging from 600mm to over 4800mm ensures that your project can exhaust even the largest heat loads. The ability to operate in even the most demanding environments to reduce heat and humidity build up ensures your building minimises the risk of structural corrosion and improves often challenging working internal environments.

Engineered To Last

The need for quality and longevity is vital for the success of projects. Pioneering the use of vibration isolation mounts and modelling of wind load and force reactions has seen Airocle lead the market in providing ventilators that last a lifetime even in the harshest of environments. With successful projects in the most extreme climates including cyclone and blizzard environments, specifying Airocle ensures your project will perform.

Quality

RAIN
AS2428.1

WIND
AS2428.2

FIRE
AS2428.4

COEFFICIENT OF DISCHARGE
AS2428.5

CYCLONE RATED

You deserve the ability to ensure that your project meets the highest levels of quality and design and delivers reliable proven performance over the life of your buildings.

The 3 Series is the result of a quality-driven rigorous design process including CSIRO testing to:

3 Series > Ridge + Slope

Scientific engineering principles has lead to our 3 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

WAREHOUSING + STORAGE

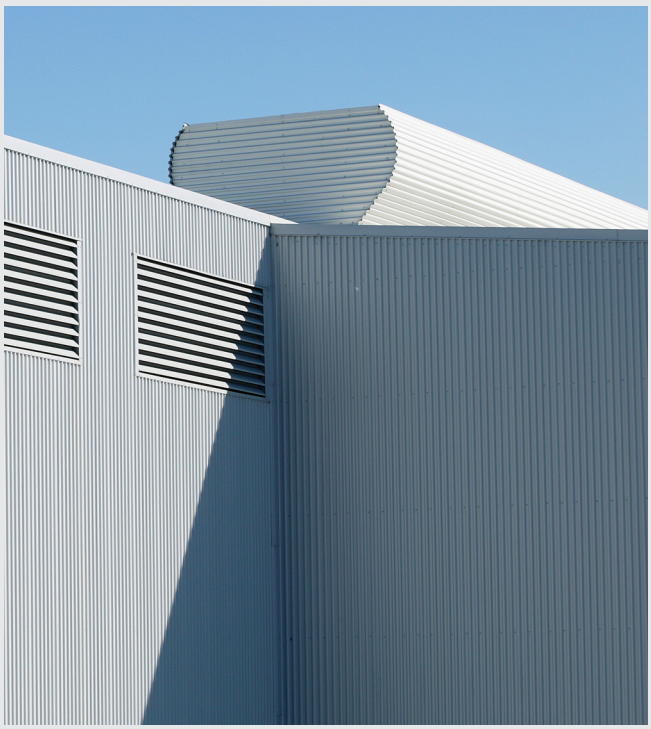
INDUSTRIAL WORKSHOPS

SCHOOLS + EDUCATION FACILITIES

HALLS, GYMNASIUMS + INDOOR POOLS

DEFENCE + GOVERNMENT BUILDINGS

ELECTRICITY SUBSTATIONS + WATER PUMP HOUSES POWER STATIONS

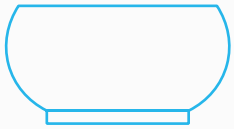


Freight Warehouse Ingleburn NSW

Ridge Ventilation 3 Series

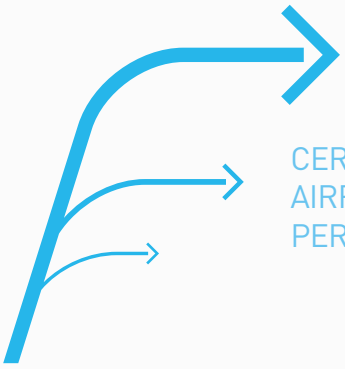
3S

RIDGE + SLOPE DESIGN



Scientific engineering principles has lead to our 3 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

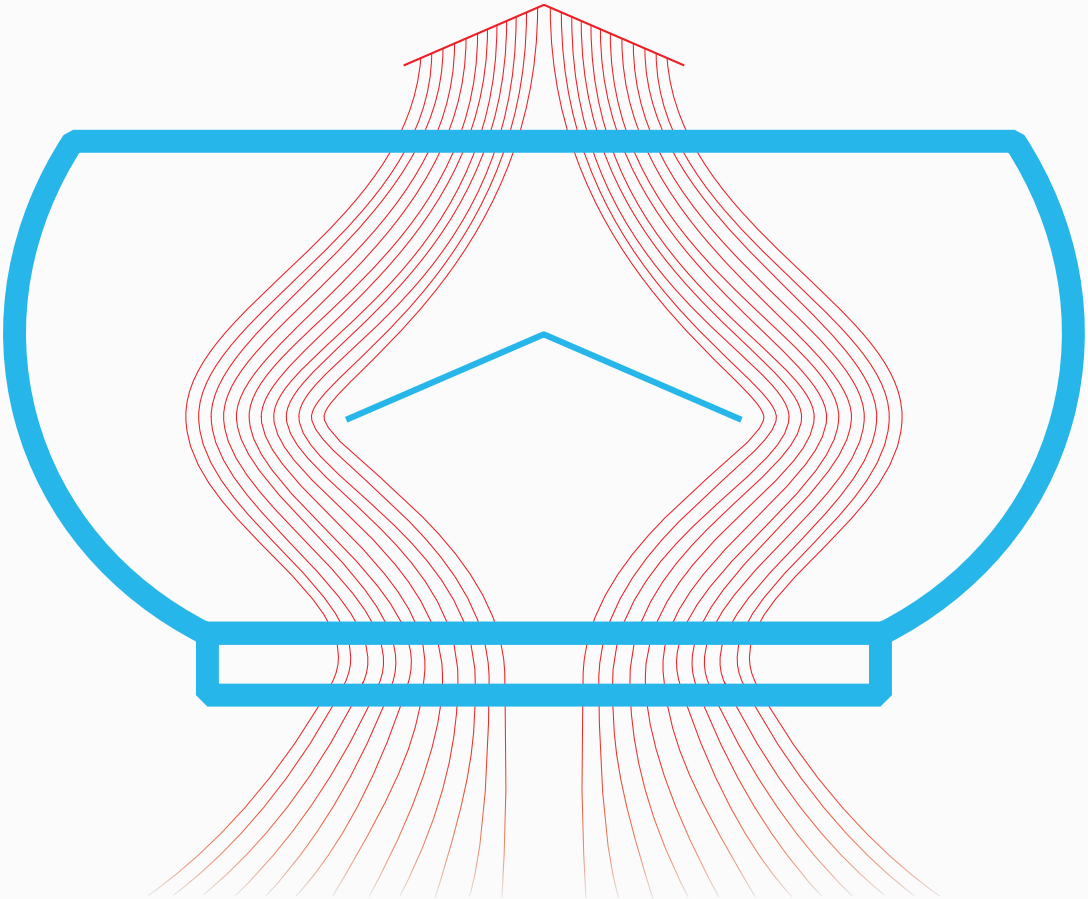
The 3 Series is CSIRO tested to AS2428 and has proven design advantages over other 'vented ridge' designs in the market (Certificate Number DTA292).



E&OE

Weathertight

Clever design and engineering which has led to the incorporation of our unique guide vane arrangement (with option of operable dampers). An integrated drainage system allows your project to harness the benefits of natural ventilation while ensuring your building keeps the elements outside. CSIRO tested to meet and exceed AS2428.1 & .2 (Rain and Wind) and proven in cyclone conditions, the **3 Series** allows you to feel assured that your project will have optimal performance even in the most extreme weather.



Safety

The **3 Series** gives projects unparalleled advantages in safety through innovative features including integrated safety fall arrest systems. The ability to incorporate a roof access fall restraint system into a ventilator which spans the roof of your project improves access, removes unnecessary penetrations and makes your building a safer place to work in.

Intrinsically Safe

The **3 Series** is ideal for hazardous and volatile environments due to its intrinsically safe design. With careful and deliberate choice of materials and fabrication methods, the **3 Series** limits static and other forms of energy being a possible cause of ignition within the ventilator. This has seen the **3 Series** become specified product of choice for a range of refinery, chemical and processing facilities.

Quality

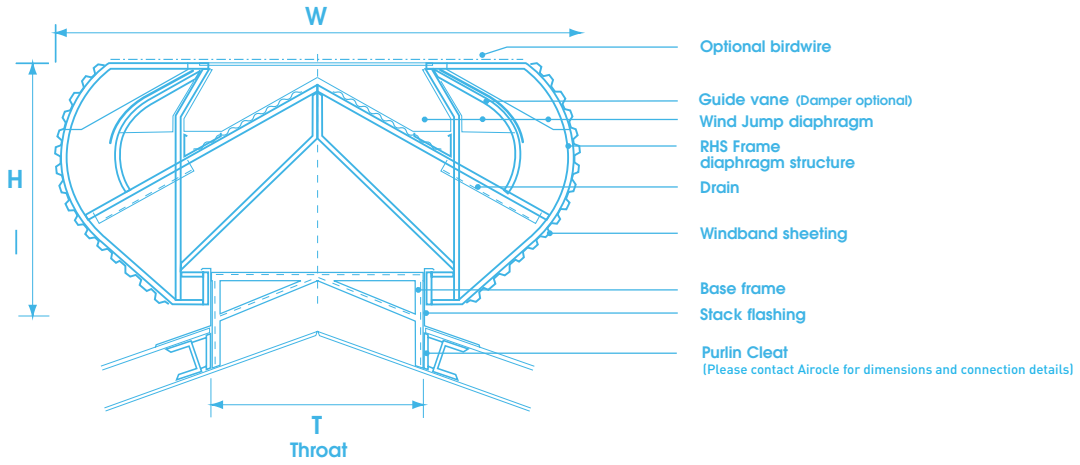
The need for quality and longevity is vital for the success of projects. Pioneering the use of vibration isolation mounts and modelling of wind load and force reactions has seen Airocle lead the market in providing ventilators that last a lifetime even in the harshest of environments. The **3 Series** ventilator is tailor engineered and fabricated in Australia to meet the requirements of each individual project including but not limited to chemical corrosion and cyclone or blizzard conditions.

Size & Dimensions

Scientific engineering principles has lead to our 3 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture, providing adequate inlet/makeup air is available.

Ridge Type 3 Series

Dimensions + Mass

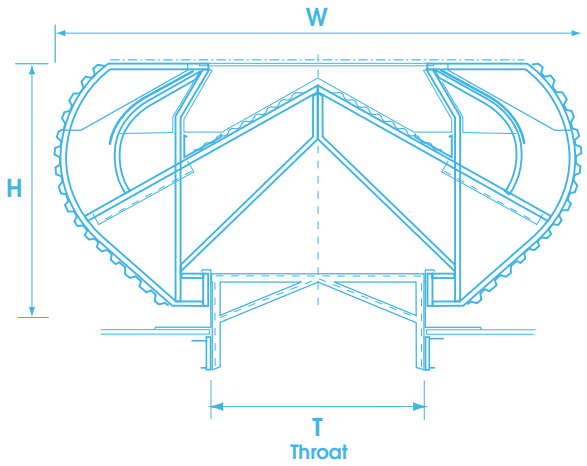


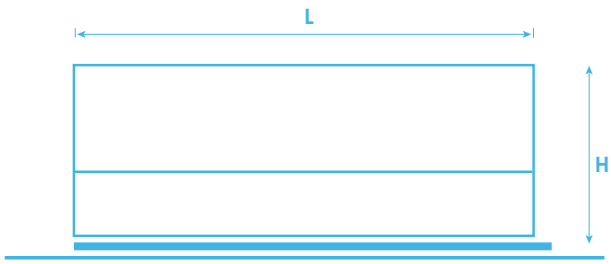
MODEL	(T) THROAT (mm)	(W) WIDTH (mm)	(H) HEIGHT (mm)	THROAT AREA (m^2/m)	MASS (kg/m)
3RV.0600	610	1562	792.1	0.61	59.4
3RV.0750	750	1950	1034	0.75	73.0
3RV.0900	915	2240	1115	0.91	80.5
3RV.1000	1000	2285	1184	0.10	89.0
3RV.1200	1220	2906	1391	1.22	103.0
3RV.1350	1350	3336	1618	1.35	107.5
3RV.1500	1525	3830	1869	1.52	112.0
3RV.1800	1820	4270	1890	1.83	137.0
3RV.2100	2135	4950	2076	2.13	146.0
3RV.2400	2440	5640	2335	2.44	162.0
3RV.2700	2745	6400	2670	2.74	197.0
3RV.3000	3050	7165	2920	3.05	231.0
3RV.3300	3330	7800	3210	3.33	239.0
3RV.3600	3660	8382	3500	3.66	261.0
3RV.4000	4000	9200	3950	4.00	290.0
3RV.4500	4500	10350	4380	4.50	330.0
3RV.4800	4800	10985	4760	4.80	352.5

Note: Mass is based on frames being located at 2440mm centres. Shorter frame spacing due to cyclone specifications will increase relative kg/m mass. For ventilator performance use this chart combined with the airflow performance chart to calculate ventilator airflow rates.

Note: Full detail drawings for all products including site specific details are available on request. Please contact us for further details by calling 1800 805 062.

Slope Type 3 Series
Dimensions + Mass





MODEL	(T) THROAT (mm)	(W) WIDTH (mm)	(L) LENGTH (mm)	HEIGHT (mm)	THROAT AREA (m^2)	MASS (kg)
3SV.0600	610	1562	2400	792.1	1.464	142.6
3SV.0600	610	1562	4800	792.1	2.928	256.7
3SV.0600	610	1562	7200	792.1	4.392	376.5
3SV.0750	750	1950	2400	1034	1.800	175.2
3SV.0750	750	1950	4800	1034	3.600	315.4
3SV.0750	750	1950	7200	1034	5.400	462.5
3SV.0900	915	2240	2400	1115	2.196	193.2
3SV.0900	915	2240	4800	1115	4.392	347.8
3SV.0900	915	2240	7200	1115	6.588	509.5
3SV.1000	1000	2285	2400	1184	2.460	213.6
3SV.1000	1000	2285	4800	1184	4.920	384.5
3SV.1000	1000	2389	7200	1184	7.380	563.9
3SV.1200	1220	2906	2400	1391	2.928	247.2
3SV.1200	1220	2906	4800	1391	5.856	444.9
3SV.1200	1220	2906	7200	1391	8.784	652.6
3SV.1350	1350	3336	2400	1618	3.240	258.0
3SV.1350	1350	3336	4800	1618	6.480	464.4
3SV.1350	1350	3336	7200	1618	9.720	681.1
3SV.1500	1525	3830	2400	1869	3.660	268.8
3SV.1500	1525	3830	4800	1869	7.329	483.9
3SV.1500	1525	3830	7200	1869	10.980	709.6
3SV.1800	1820	4270	2400	1890	4.392	328.0
3SV.1800	1820	4270	4800	1890	8.784	590.4
3SV.1800	1820	4270	7200	1890	13.176	865.9
3SV.2100	2135	4950	2400	2076	5.124	350.4
3SV.2100	2135	4950	4800	2076	10.248	630.7
3SV.2100	2135	4950	7200	2076	15.372	924.1
3SV.2400	2440	5640	2400	2335	5.856	388.8
3SV.2400	2440	5640	4800	2335	11.712	699.8
3SV.2400	2440	5640	7200	2335	17.568	1026.4

Note: For ventilator performance use this chart combined with the airflow performance chart to calculate ventilator airflow rates.

Performance

			3 Series	4 Series
Stack height (m)	**Temp diff (°C)**	**Velocity (km/hr)**	**Calculated (m3/s / m2)**	
3	3	0	0.38	0.32
6	3	0	0.54	0.46
9	3	0	0.67	0.56
12	3	0	0.77	0.65
15	3	0	0.86	0.72
18	3	0	0.94	0.79
3	6	0	0.54	0.46
6	**6**	**0**	**0.77**	**0.65**
9	6	0	0.94	0.79
12	6	0	1.09	0.91
15	6	0	1.21	1.02
18	6	0	1.33	1.12
3	9	0	0.67	0.56
6	9	0	0.94	0.79
9	9	0	1.15	0.97
12	9	0	1.33	1.12
15	9	0	1.49	1.25
18	9	0	1.63	1.37
3	12	0	0.77	0.65
6	12	0	1.09	0.91
9	12	0	1.33	1.12
12	12	0	1.54	1.29
15	12	0	1.72	1.44
18	12	0	1.88	1.58
3	15	0	0.86	0.72
6	15	0	1.21	1.02
9	15	0	1.49	1.25
12	15	0	1.72	1.44
15	15	0	1.92	1.61
18	15	0	2.10	1.77
3	18	0	0.94	0.79
6	18	0	1.33	1.12
9	18	0	1.63	1.37
12	18	0	1.88	1.58
15	18	0	2.10	1.77
18	18	0	2.30	1.94

Working out the correct size ventilator for your project is easy. Using our CSIRO tested coefficient of discharge along with performance calculations and modelling, the table below provides a useful reference for estimating airflow performance of the 3 Series based on a range of temperature differentials, effective stack heights and wind speed factors.

Capacity Table

This table provides a useful reference for estimating airflow performance for the 3 Series based a range of temperature difference, effective stack and wind speed factors. Figures are stated as m^3/sec for every m^2 of vent throat area.

Note: The above table capacities are based upon CSIRO testing for Coefficient of Discharge and performance calculations. Figures are indicative only and should only be used as a guide to determine the approximate size of the opening required. Design elements such as inlet air, building design, internal impediments as well as geographic, meteorological and topographic factors are required to ensure specific performance rates.

Architects and engineers are invited to contact Airocle for the early design stages of their projects, when exact requirements and system designs can be determined.

Performance Options

The advantage of using Airocle is our ability to tailor our vents to meet exactly what you want. Our constant drive for product innovation and tailored engineering solutions means your project has the ability of integrating a range of optional features leading to more efficient, effective and sustainable building designs.

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 system to suit custom circumstances.

Ridgelite® Natural Lighting

All 3 Series models are able to benefit from our Ridgelite® UV stabilised internal solar lighting system. Meeting AS4256.3 and letting in an abundance of natural light through the vent, incorporating this option can reduce lighting costs and improve internal working environments while not impeding the high levels of air flow and weather performance. Ridgelite® is available in 3 options:

	Material	Light Transmission (%)	Heat Transmission (%)	UV Transmission	Notes
Ridgelite® Standard	Fibre Reinforced Polyester	85	89	< 0.1	
Ridgelite® Cool-lite®	Fibre Reinforced Polyester	38	30	< 0.1	Incorporates 25 micron oven cured film
Ridgelite® 30+R Fire Retardant	Wax free polyester resin	58	68	< 0.1	Tested to AS1530.3

Bird Guards, Insect Mesh, Bushfire Mesh

We understand that keeping birds, insects and fire embers from entering the ventilator is important for sensitive internal environments. Our ability to incorporate a range of mesh materials and apertures in to the 3 Series allows you the peace of mind knowing that your project is secure.

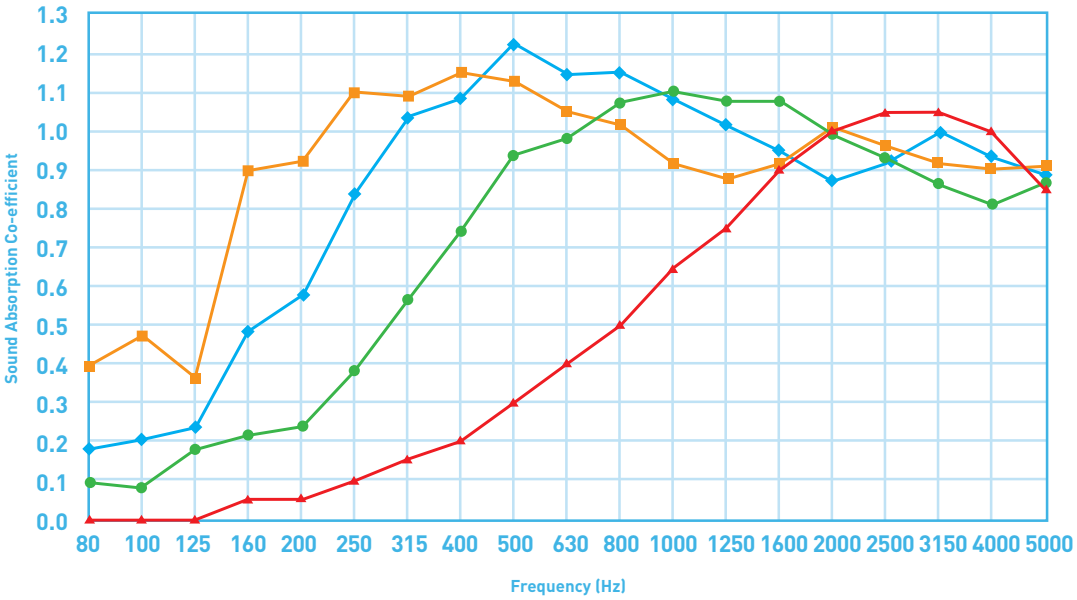
Mesh Type	Aperture (mm)	Wire Diameter (Ømm)	Open Area (%)	Material
Bird	11.2	1.6	77	Stainless Steel
Insect	6.8	1.6	67	Stainless Steel
Bushfire	2.0	0.56	61	Stainless Steel

Phonic Acoustic Treatment

Tested to AS1045-1988 Reverberation Room.

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

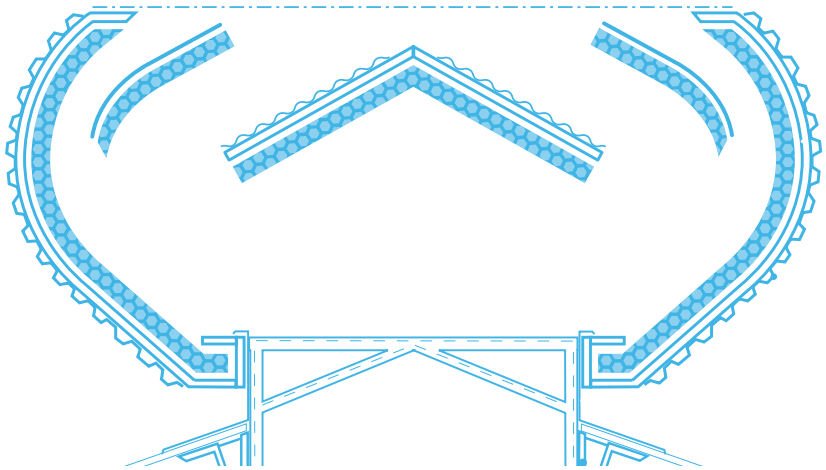
Megasorber FG25, NRC = 0.85

Megasorber FG12, NRC = 0.58

RMIT University Test Report: 121l/11-169/PD

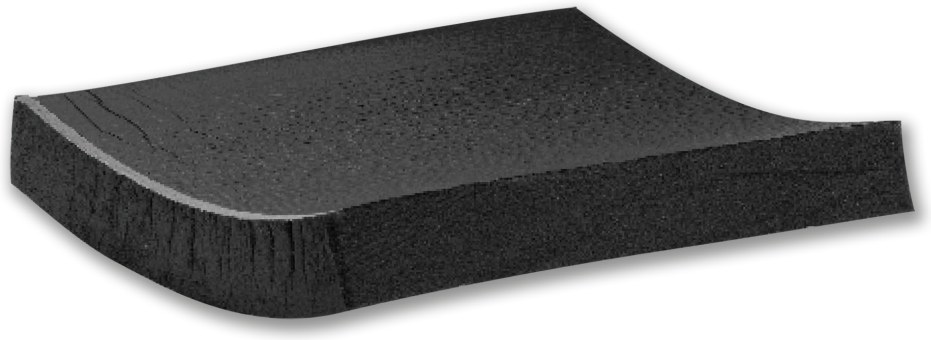
RMIT University Test Report: 121l/11-171/PD

RMIT University Test Report: 121l/11-173/PD



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 3 Series and achieve a minimum NATA tested Sound Transmission Class (STC) of 13 ensures that your ventilation system keeps the noise where it's meant to be.



Material Properties

Colour (Facing)	**Recommended Maximum Service Temperature** (°c)	**Thermal Conductivity** (w/mk)
Black	100	0.033

Chemical Resistance (Facing)

Acetone *Swells and then returns to normal on drying	**MEK** *Swells and then returns to normal on drying	**Petrol**	**Diesel**
Swells	Swells	Good	Good

Flammability Properties

Test Method	**Index**	**Results** *Result applies to 12mm thickness	**Description**
UL94	After flame time ⩽ 2 seconds	HBF*	Horizontal Burn Test for foam materials.
FMVSS-302	Burn rate - mm/min	Self Extinguishing	Automotive burn rate test.

Materials & Finishing

Fabrication

We have ability to suit every application including corrosive environments by fabricating the **3 Series** in:

- Colorbond
- Colorbond Ultra
- Zincalume
- Galvanised steel
- Aluminium
- Stainless steel
- Copper
- Fibre Reinforced Plastic (FRP)

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

Frames

Specifying the Airocle **3 Series** allows your ventilation system to be designed to meet even the harshest of environments. Structural integrity of every ventilator is ensured through the choice of steel, stainless steel or aluminium mainframes along with a range of protective coatings including Pacesetter® Polyurethane, Fluorocarbon-PVF2 or any other third party protective coating system that your design may require.

Shipping

The **3 Series** is available in multiples of 1000mm standard lengths with shorter lengths being available upon request. Ridge and slope mounted ventilators are supplied in complete knocked-down form (CKD) with all stop ends and necessary fixings in crating ready for direct hoisting to roof.

How to Specify

Description

Ventilator(s) shall be a natural or passive updraft design including applicable dampers, fixings, trims, flashings and other specified fittings. Install to manufacturers recommendations.

Performance

Roof ventilator is to be tested to:

RAIN
AS2428.1

WIND
AS2428.2

FIRE
AS2428.4 & 1668.2

COEFFICIENT OF DISCHARGE
AS2428.5

CYCLONE RATED

Size

Ventilator(s) to be _____ mm long with a throat diameter of _____ mm based on performance requirements as above.

Proprietary Item

3 Series Model _____ as manufactured by Airocle (airocle.com.au)

NATSPEC Worksection Title

0746p Natural Ventilation and Air Grilles.

Fabrication and Finish

Ventilator to be constructed in Zincalume®/Colorbond®/Aluminium/ Stainless Steel/Copper with Colour to match adjacent roof sheeting unless specified. Refer to External Finishes Schedule.

Features

Ventilator shall incorporate:

- Bird Mesh with ≤11.2mm aperture and ≥77% FOA
- Insect Mesh with ≤6.8mm aperture and ≥67% FOA
- Bushfire Mesh with ≤2mm aperture and ≥61% FOA
- Manual Operable Guidevane Dampers
- Electric Operable Guidevane Dampers with spring return open/close 240v/24v actuator
- Pneumatic Operable Guidevane Dampers with spring return open/close actuator
- Ridgelite® with ≥__% Light Transmission, ≤__% Heat Transmission and Airocle Transmission of ≤0.1
- Acoustic Treatment to ensure a minimum Sound Transmission Class (STC) Rating of 13
- Weather sensors and control to enable manual/automatic operations as per system design
- Airflow sensors and control to enable manual/automatic operations as per system design

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
OWNED + MADE