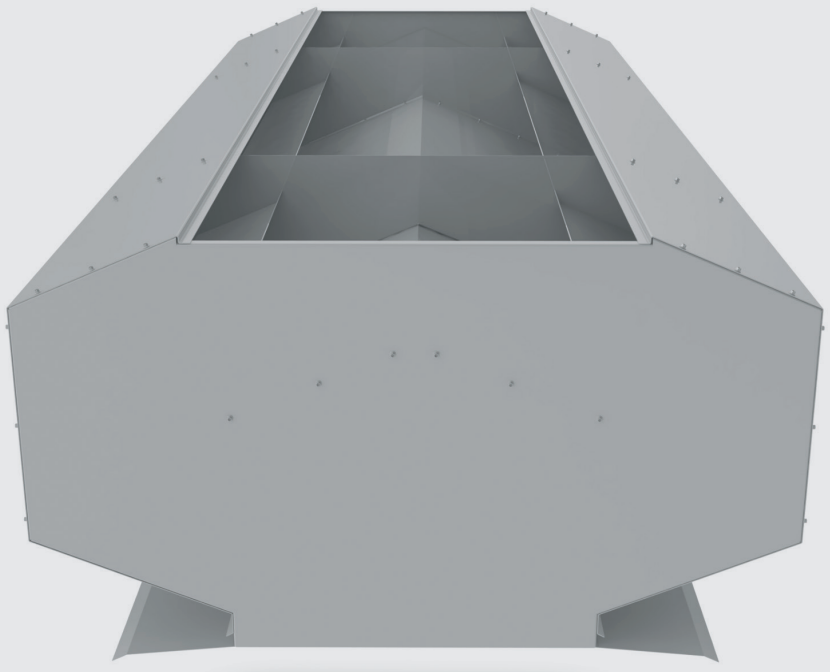
Airocle™

Think Natural.™
Think Smarter.

2 Series

THE MOST EFFECTIVE AND EFFICIENT SOLUTION IN ITS CLASS



Roof

2 SERIES

RIDGE + SLOPE MOUNTED

VENTILATORS

Previously **Commander Series**

CSIRO CERTIFIED

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

Ridge + Slope Mounted Ventilators

Roof Solutions

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

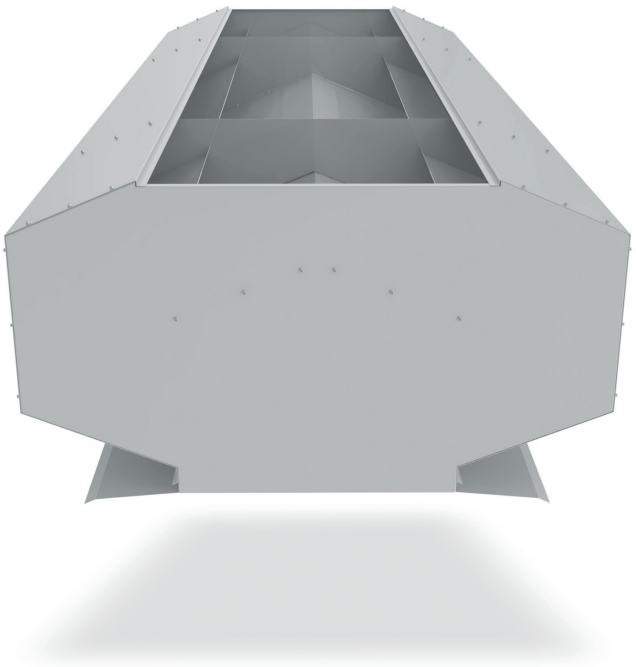
Tested and certified by CSIRO® for airflow, fire and weather performance

2 SERIES

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

The **2 Series** ridge and slope mounted ventilators deliver class leading natural ventilation performance for low to medium heat loads - ensuring you have the most effective yet efficient solution for improving the internal environment of every building.

Tested and certified by CSIRO® for airflow, fire and weather performance, the **2 Series** offers unparalleled reliability, high airflow performance and peace of mind in even the most demanding environments.



Design

Engineered for any environment demanding reliable ventilation for medium heat loads, the **2 Series** provides effective and efficient performance for all external and internal environments including cyclonic conditions.

Projects that benefit from the **2 Series** include:

- Warehousing and Storage
- Industrial Workshops
- Schools and Education Facilities
- Halls, Gymnasiums and Indoor Pools
- Defence and Government Buildings
- Electricity Substations and Water Pump Houses

Benefits

Performance

We understand the science of air movement through ventilators and have engineered the **2 Series** to have the highest performance in the market for its class. With a coefficient of discharge of range of 0.33 - 0.46, this high performance means that you have less vent for the same performance of others on the market, giving your project both performance and commercial advantages.

Weathertight

Using Airocle allows you to take advantage of our strong investment in product design and development, with the incorporation guideline system (with the option of operable dampers), total gutter control and fully integrated drainage system. This offers superior levels of weather tightness whilst supplying effective natural ventilation. It ensures our vents meet and exceed AS2428.1 & .2 (Rain and Wind) ensuring optimal operation and performance in even the most extreme weather.

Cost and Energy Efficiency

Passive ventilation is by far the most effective way of reducing construction and operating costs in building design. Eliminating the need for electrical wiring and running costs normally associated with mechanical ventilation, the **2 Series** continues to make buildings more sustainable and cheaper to run.

Pressure Relief

CSIRO® tested and certified with a a coefficient of discharge of range of 0.33 - 0.46,, the **2 Series** allows engineers and building designers to factor this known coefficient of discharge into their projects. This has allowed projects to make large cost savings by reducing structural steel through improved building pressure relief.

Tailor-Made

Our in house design and manufacturing allows your ventilation system to be tailored to meet even the most demanding of environments including chemical exposure, corrosion or even **Category D** cyclone regions.

Quality

RAIN
AS2428.1

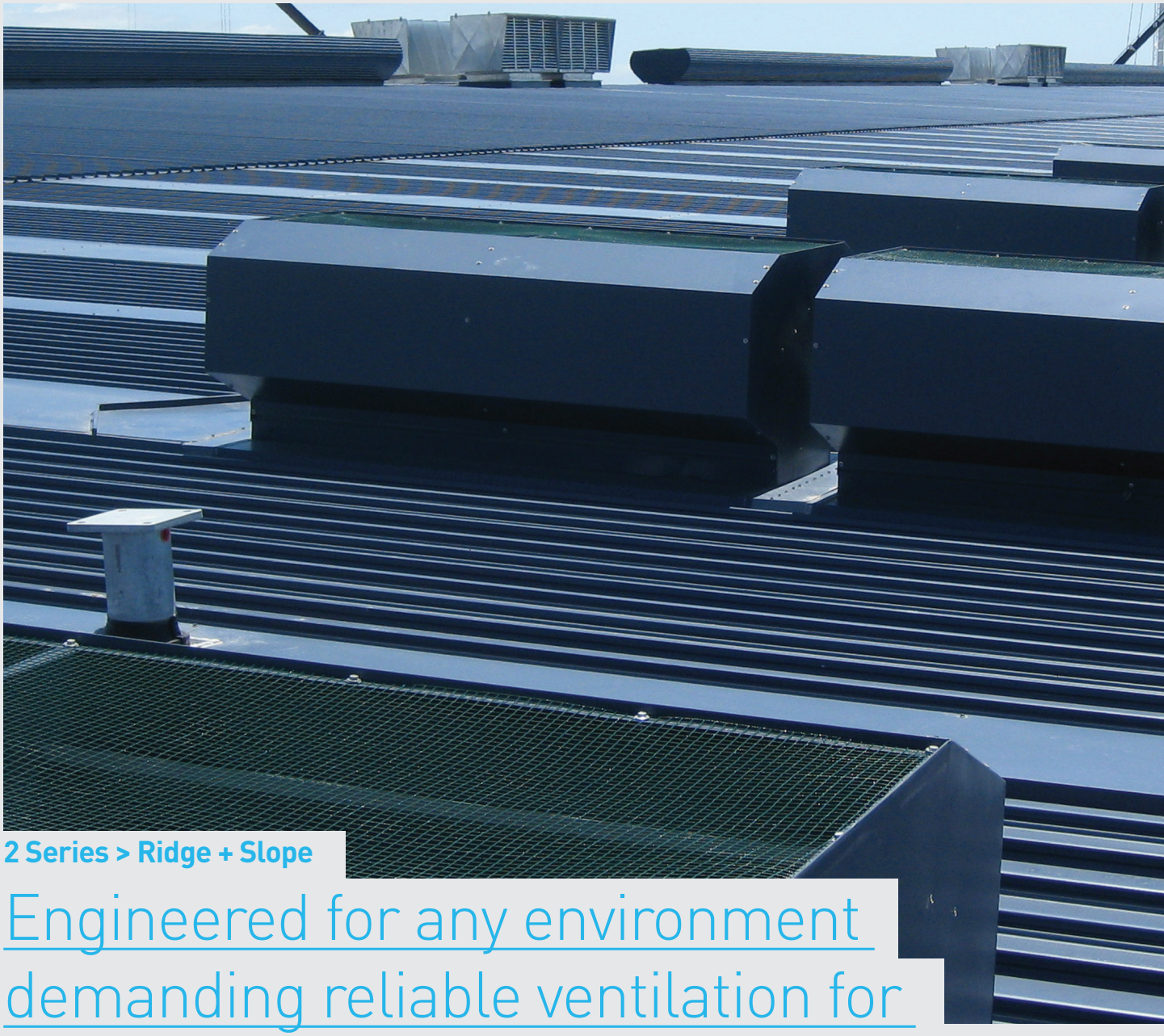
WIND
AS2428.2

FIRE
AS2428.4

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 2 Series has been CSIRO® tested.



2 Series > Ridge + Slope

Engineered for any environment demanding reliable ventilation for a range of heat loads, the 2 Series provides effective and efficient performance for all external and internal environments.

WAREHOUSING + STORAGE

INDUSTRIAL WORKSHOPS

SCHOOLS + EDUCATION FACILITIES

HALLS, GYMNASIUMS + INDOOR POOLS

DEFENCE + GOVERNMENT BUILDINGS

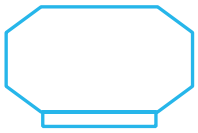
ELECTRICITY SUBSTATIONS + WATER PUMP HOUSES POWER STATIONS

Desalination Plant Kurnell NSW

Ridge + Slope Mounted Ventilators 2 Series

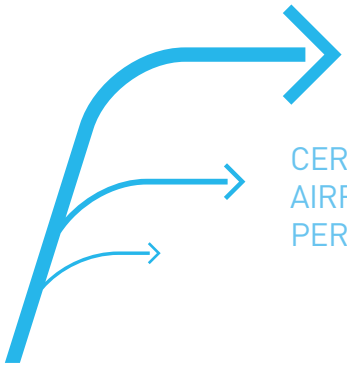
2S

RIDGE + SLOPE DESIGN



Scientific engineering principles has led to our 2 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

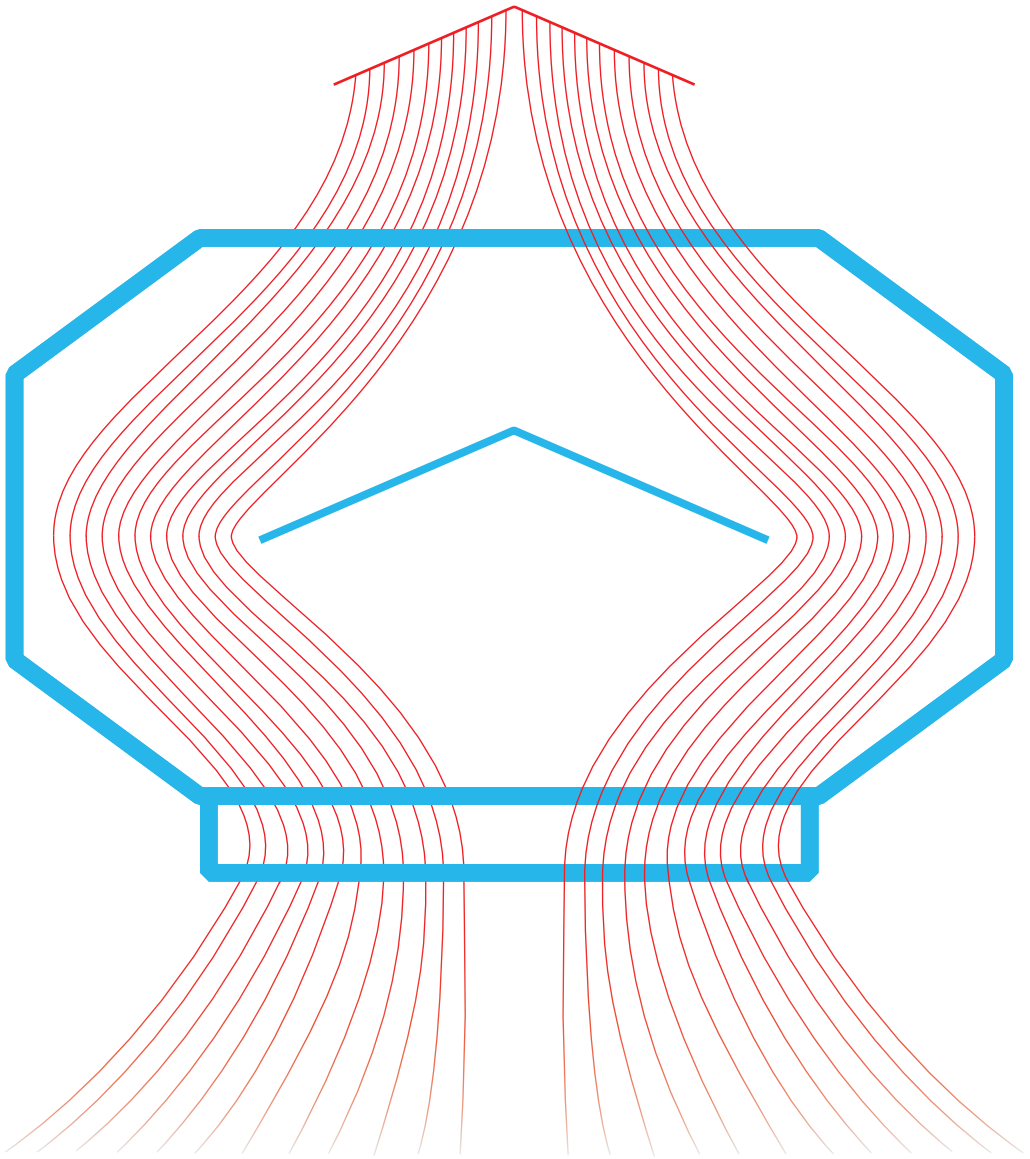
The 2 Series is CSIRO tested to AS2428 and has proven design advantages over other 'vented ridge' designs in the market (Certificate Number DTA293)



E&OE

Draft Design

We remove the ability for air to travel up the exterior of the roof and into the vent. 'Vented ridge' is vulnerable to back drafting, and air and water entering the ventilator. Our unique design eliminates this by having the air exit at the top of the ventilator increasing airflow performance. Simple yet effective drainage channels ensure weather protection.



Wind Jump Diaphragms

Our vents have wind jump diaphragms at nominated points along the ventilator. These diaphragms create air pressure edges when the wind is blowing across the ventilator as well as along the ventilator guaranteeing high performance regardless of wind direction.

Internal Guide Vanes

The travel of air through a ventilator is important. Our unique guide vane system helps shape the air through the ventilator resulting in large airflow performance gains. Without these guide vanes ventilators struggle to direct airflow and lose efficiency.

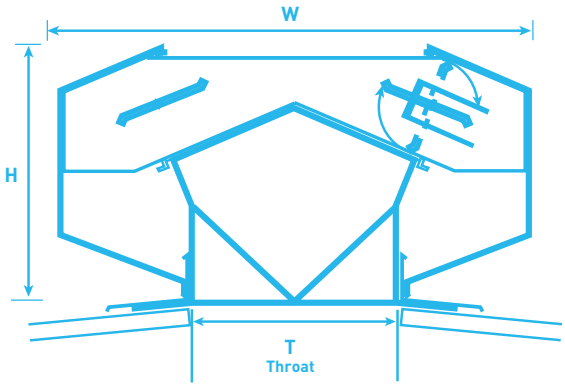
Effective Water Drainage

Rather than fighting the natural elements, the **2 Series** incorporates a unique drainage system which guides water that enters the vent straight back out ensuring weathertight performance even in cyclonic conditions.*

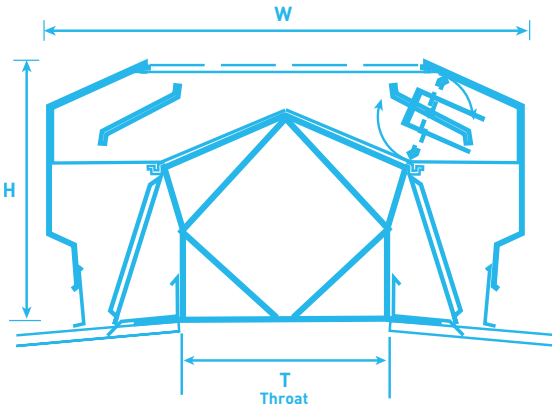
Size & Dimensions

Scientific engineering principles has led to our 2 Series providing optimal performance in all weather conditions and minimises the risk of back drafting and the entry of moisture.

Ridge Type 2 Series
Dimensions + Mass



2RV.0150 to 2RV.0600



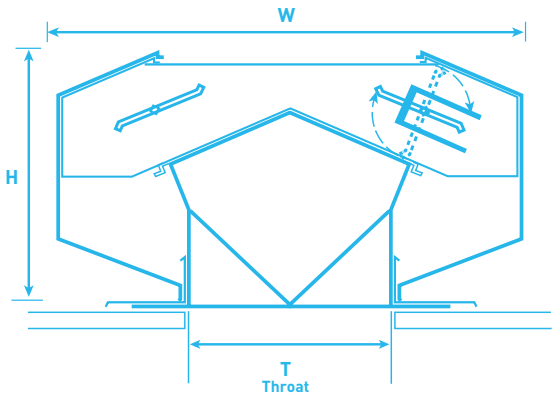
2RV.0750 +

MODEL	(T) THROAT (mm)	(W) WIDTH (mm)	(H) HEIGHT (mm)	THROAT AREA (m^2/m)	MASS (kg per 3m module)
2RV.0150	150	365	245	0.150	22.00
2RV.0225	225	560	351.1	0.225	45.0
2RV.0300	300	766	413	0.300	54.0
2RV.0380	380	932	550	0.380	70.0
2RV.0450	450	1100	671.4	0.450	73.0
2RV.0500	500	1158	684	0.500	77.0
2RV.0600	600	1346	756.5	0.600	96.0
2RV.0750	750	1744	902	0.750	108.0

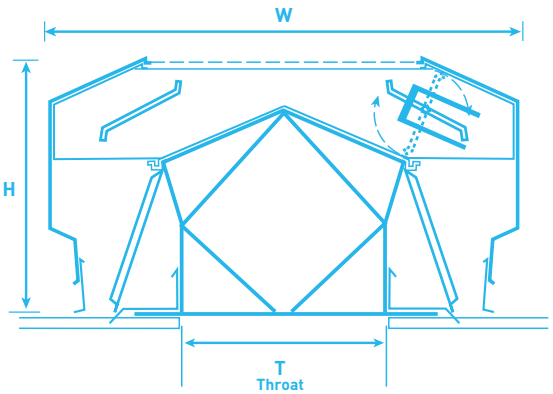
Note: For ventilator performance use this chart combined with the airflow performance chart to calculate ventilator airflow rates.

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 2 Series
Dimensions + Mass



2SV.0150 to 2SV.0600



2SV.0750 +

MODEL	(T) THROAT (mm)	(W) WIDTH (mm)	(L) LENGTH (mm)	HEIGHT (mm)	THROAT AREA (m^2/module)	MASS (kg)
2SV.0150	150	365	1525	245	0.230	12.4
2SV.0150	150	365	3050	245	0.460	22.0
2SV.0150	150	365	4575	245	0.690	32.4
2SV.0225	225	560	1525	351	0.340	25.3
2SV.0225	225	560	3050	351	0.680	45.0
2SV.0225	225	560	4575	351	1.020	66.2
2SV.0300	300	766	1525	451	0.460	30.4
2SV.0300	300	766	3050	451	0.920	54.0
2SV.0300	300	766	4575	451	1.380	79.4
2SV.0380	380	932	1525	550	0.580	39.4
2SV.0380	380	932	3050	550	1.160	70.0
2SV.0380	380	932	4575	550	1.740	102.8
2SV.0450	450	1100	1525	671.4	0.690	41.1
2SV.0450	450	1100	3050	671.4	1.380	73.0
2SV.0450	450	1100	4575	671.4	2.070	107.3
2SV.0500	500	1158	1525	684	0.7625	43.3
2SV.0500	500	1158	3050	684	1.525	77.0
2SV.0500	500	1158	4575	684	2.2875	113.2
2SV.0600	600	1346	1525	756.5	0.9150	54.1
2SV.0600	600	1346	3050	756.5	1.830	96.0
2SV.0600	600	1346	4575	756.5	2.745	141.1
2SV.0750	750	1744	1525	902	1.140	60.8
2SV.0750	750	1744	3050	902	2.280	108.0
2SV.0750	750	1744	4575	902	3.420	158.7

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

Performance

			1 Series	2 Series
Stack height (m)	**Temp diff (°C)**	**Velocity (km/hr)**	**Calculated (m3/s / m2)**	
3	3	0	0.29	0.31
6	3	0	0.41	0.45
9	3	0	0.51	0.55
12	3	0	0.58	0.63
15	3	0	0.65	0.70
3	6	0	0.41	0.45
6	**6**	**0**	**0.58**	**0.63**
9	6	0	0.72	0.77
12	6	0	0.83	0.89
15	6	0	0.92	1.00
3	9	0	0.51	0.55
6	9	0	0.72	0.77
12	9	0	0.88	0.94
12	9	0	1.01	1.09
15	9	0	1.13	1.22
3	12	0	0.58	0.63
6	12	0	0.83	0.89
9	12	0	1.01	1.09
12	12	0	1.17	1.26
15	12	0	1.31	1.41
3	15	0	0.65	0.70
6	15	0	0.92	1.00
9	15	0	1.13	1.22
12	15	0	1.31	1.41
15	15	0	1.46	1.57

A 0.33 – 0.46 Cd sees the 2 Series lead the small-medium heat load ridge vent market in airflow performance. Combining airflow performance with quality Australian engineered design and materials, the 2 Series withstands even the most extreme wind loads without compromising performance.

Capacity Table

This table provides a useful reference for estimating airflow performance for the 2 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.

*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 1.2-1.5 : 1 (inlet : discharge) exist, Airocle can assist in designing or developing a ventilation system to suit custom circumstances.

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.

Ridgelite® Natural Lighting

All 2 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	64.7	68	< 0.1	
Ridgelite® Cool-lite®	Fibre Reinforced Polyester	38	23.5	< 0.237	Incorporates 25 micron oven cured film
Ridgelite® 30+R Fire Retardant	Fire Retardant GPP	58	68	< 0.1	Tested to AS1530.3

Bird Guards, Insect Mesh, Bushfire Mesh

Airocle understand that keeping birds, insects and bushfire embers from entering the ventilator is important for sensitive internal environments. Our ability to incorporate a range of mesh materials and apertures into the 2 Series, ensuring your project is secure.

Mesh Type	Aperture (mm)	Wire Diameter (Ømm)	Open Area (%)	Material
Bird	11.2	1.6	77	Galvanized Steel
Insect	1.4	1.6	67	Aluminium
Bushfire	1.4	0.56	61	Stainless Steel

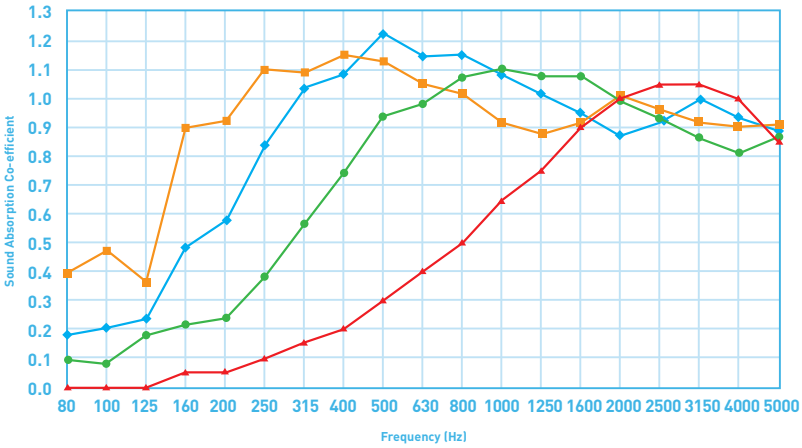
Phonic Acoustic Treatment

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

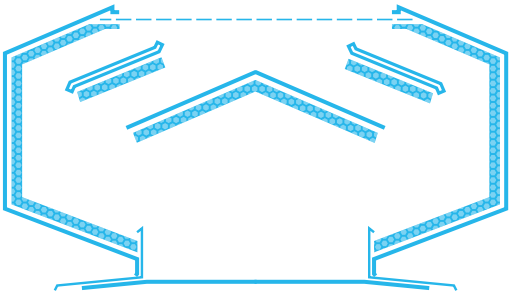
Megasorber FG12, NRC = 0.58

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

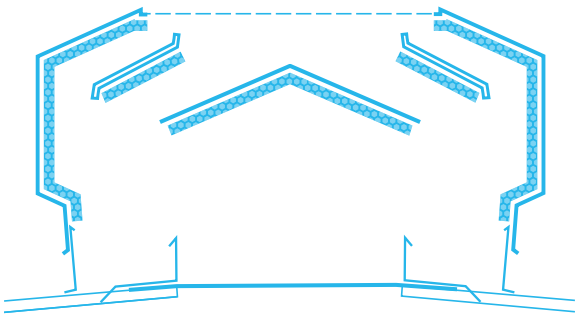
RMIT University Test Report: 121I/11-171/PD

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

150-600



750



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 2 Series and achieve a minimum NATA tested Sound Transmission Class (STC) 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.

Purlin Spacings

Ensuring that your vent is incorporated into the structure of your building is essential for ensuring optimal performance of your system. Flexibility over purlin spacing ensures your design can easily incorporate the 2 Series. Here we've provided you an easy to follow guide on how to design your steelwork so that your vent can be fitted with minimum effort.

C & Z 150

ROOF PITCH	2RV-150		2RV-225		2RV-300		2RV-380		2RV-450		2RV-500		2RV-600		2RV-750		1RV-1200	
	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C
	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D
0°	145	80	195	130	300	234	339	274	374	309	413	349	446	381	521	456	664	600
2.5°	145	80	195	130	292	227	332	267	367	302	405	340	439	374	514	449	665	601
5°	145	80	195	130	285	219	326	260	361	295	398	333	433	367	508	443	666	602
7.5°	146	81	196	131	279	214	321	256	356	291	392	327	428	363	504	439	669	605
10°	146	81	197	132	273	208	314	249	350	285	384	319	423	358	499	434	673	609
12.5°	147	82	198	133	267	202	308	243	344	280	377	312	418	353	495	430	679	615
15°	148	83	199	134	260	195	302	237	339	274	370	315	413	348	491	426	685	621
17.5°	149	84	201	136	255	190	298	233	335	270	362	297	410	345	489	424	693	629
20°	150	85	202	137	251	186	294	229	332	267	354	289	408	343	488	423	703	639

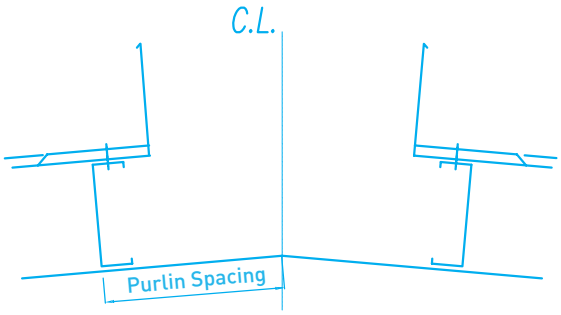
C & Z 200

ROOF PITCH	2RV-150		2RV-225		2RV-300		2RV-380		2RV-450		2RV-500		2RV-600		2RV-750		1RV-1200	
	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C	C&Z	C
	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D
0°	150	70	200	125	305	230	345	270	381	306	418	343	452	381	527	452	676	600
2.5°	150	70	200	125	293	218	334	259	369	294	408	333	441	366	516	441	677	601
5°	150	70	200	125	285	210	326	251	361	286	399	324	433	358	508	433	678	602
7.5°	151	76	201	126	277	202	317	244	354	279	390	315	426	351	502	427	681	605
10°	151	76	202	127	268	193	308	234	345	270	380	305	418	343	494	419	685	609
12.5°	152	77	203	128	260	185	301	226	338	263	370	295	411	336	488	413	691	615
15°	153	78	204	129	252	177	294	219	331	256	361	286	405	330	483	408	697	621
17.5°	154	79	206	131	243	168	286	211	323	248	351	276	398	323	477	402	705	629
20°	155	80	207	132	236	161	279	204	317	242	341	266	393	318	473	398	715	639

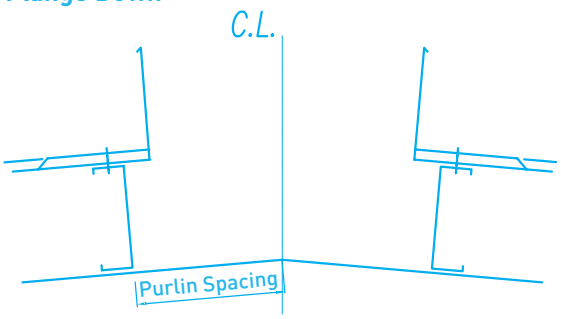
Purlin Spacings

C SECTION

Flange Up

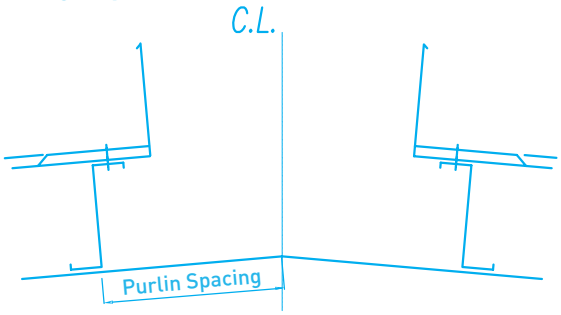


Flange Down

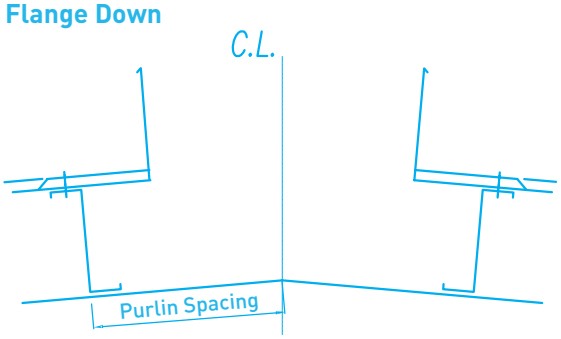


Z SECTION

Flange Up



Flange Down



Please note:
The main fixing screw must penetrate the apron flashing, roofing and into the top flange of the purlin at 600mm maximum sentres. Any variance to this method must be approved by Airocle.

Materials & Finishing

We have ability to suit every application including corrosive environments by fabricating the **2 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.

Shipping

The **2 Series** is available in 3050mm (3025mm effective) standard lengths with shorter lengths being available upon request. Ridge mounted ventilators are supplied in complete knocked-down form (CKD) with all stop ends and necessary fixings. Slope mounted ventilators are available to be supplied fully assembled for lengths under 6000mm.

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**

Roof ventilator shall have a Coefficient of Discharge of 0.33 – 0.46 to ensure engineered ventilation design requirements for the space are met.

Size

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

Proprietary Item

2 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

Disclaimer

The information contained in this work has been provided with every effort having been made to ensure accuracy and completeness. However, many of the statements contained in the catalogue are of a general nature and no guarantee is given, nor responsibility taken by Airocle for errors or omissions and Airocle does not accept responsibility in respect of any information or advice given in relation to or as a consequence of anything contained herein. Purchasers should seek their own independent advice as to the suitability of the products and materials contained in the catalogue for their particular circumstances. As Airocle are committed to ongoing product development, all dimensions, designs, specifications, descriptions, text results and exhaust capacities represented in this catalogue are subject to change without prior written notice.

Airocle™

15 Redbank Place
Picton NSW 2571

PO Box 583 Picton
NSW 2571

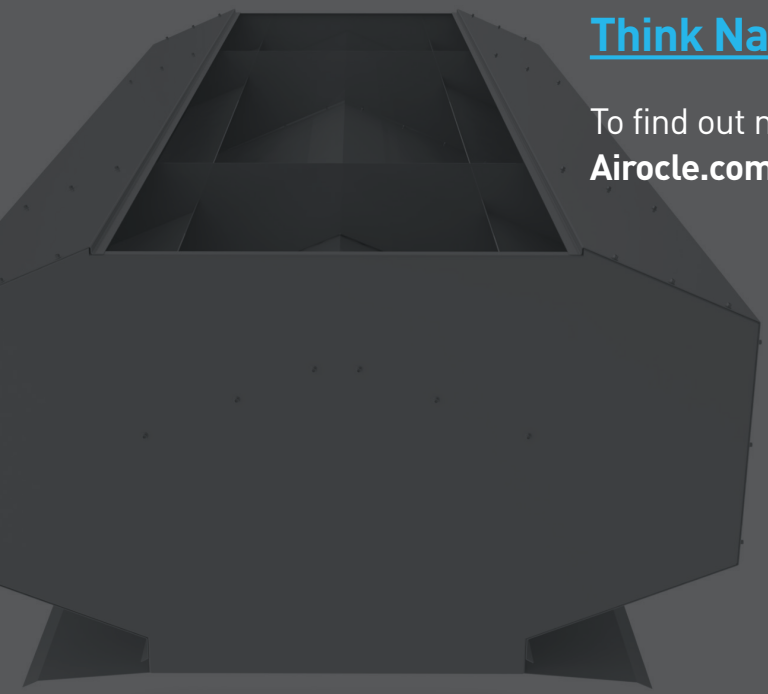
(P) 1800 805 062
(F) 02 4677 0558

info@airocle.com.au
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