ECO DATA SHEET

COLT

ECO
NATURAL LOUVRED VENTILATOR
DATA SHEET

ECO is a natural louvred ventilator that is available in a wide range of sizes, louvre options and control options. ECO has been exhaustively tested and certified to EN 12101-2: 2003 in accredited third party test laboratories and is CE marked. It is well suited to most industrial and commercial buildings and can provide both day to day and smoke ventilation, as well as permit the entry of natural daylight if fitted with glass or polycarbonate blades.

ECO can be installed at any angle, and can provide either low level inlet or high level extract. ECO is also often used as a termination piece for ducting systems, extract fans or air handling systems. ECO has a wide range of available options, and is low in maintenance. If a louvred ventilator is required with a higher specification with regards to thermal insulation and air tightness, the Colt Airlite ventilator will provide this. There are many other ventilators in the Colt range to suit your application.

VENTILATOR OPTIONS

ECO is available up to 2326mm throat width x 3498mm throat length. Louvres are either of aluminium, polycarbonate or glass. Optional accessories include bird, insect and burglar guards.

Please visit our web page to view all the available options and for a specification.



INSTALLATION

ECO can be installed at any angle. Bases are of durable aluminium and are customised to suit the installation into either curtain walling, glazing or prepared openings.

Please visit our web page for typical installation details.

OPERATION AND CONTROLS

ECO is classed as a dual purpose ventilator, providing both day to day and smoke control ventilation. Either pneumatic, electric or hand controls operate the ventilator.

TESTING

ECO has been rigorously tested in third party laboratories. See page 4 for further details.

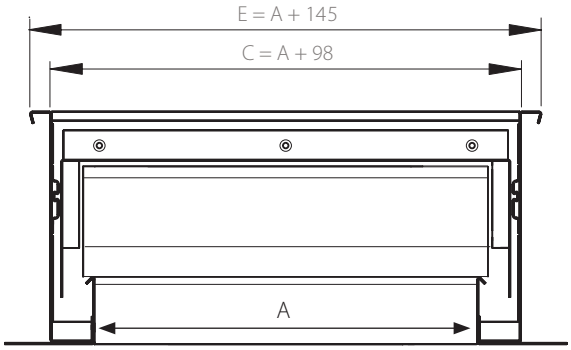
We believe people deserve to work & live in safe & beautiful buildings.

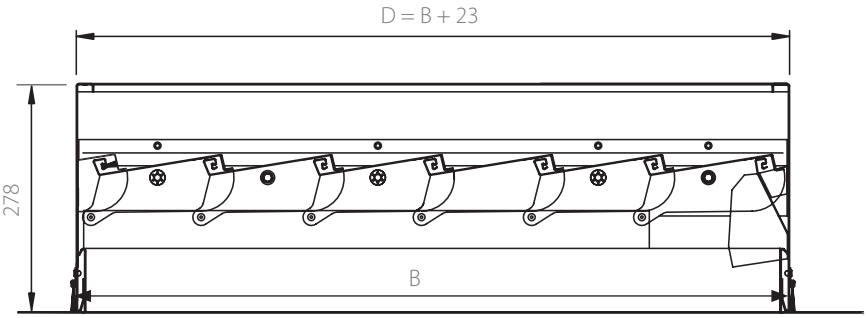
SMOKE CONTROL

T. 1300 665 471
www.smokecontrol.com.au

FPA GOLD MEMBER Fire Protection Association Australia

DIMENSIONS*





WIDTH CODE

	Throat width dimension A (mm)	Body width dimension C A + 98(mm)
06	426	524
07	576	674
09	726	824
10	876	974
12	1026	1124
13	1176	1274
15	1326	1424
16	1476	1574
18	1626	1724
21	1926	2024
22	2000	2098
23	2126	2224
25	2326	2424

LENGTH CODE

	Throat length dimension B (mm)	Body length dimension D B + 23(mm)**
10	705	728
11	838	861
13	971	994
14	1104	1127
15	1237	1260
17	1370	1393
18	1503	1526
19	1636	1659
21	1769	1792
22	1902	1925
23	2035	2058
25	2168	2191
26	2301	2324
27	2434	2457
29	2567	2590
30	2700	2723
31	2833	2856
32	2966	2989
34	3099	3122
35	3232	3255
36	3365	3388
38	3498	3521

*There are some restrictions on the maximum size of the ventilator if glass louvres are used. Colt can advise on this.

** Flange widths and lengths are variable and need to be *clarified in each instance. For the minimum dimensions* of these, add 140mm to the throat width and 140mm to the throat length.





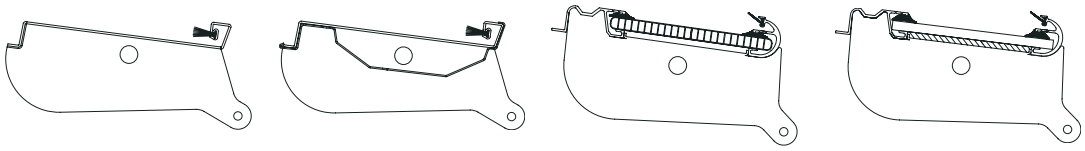
ECO AERODYNAMIC PERFORMANCE

A = Measured throat area, Av - m^2

B = Aerodynamic free area, Aa (AvCv) - m^2

LENGTH CODE		WIDTH CODE												
		06	07	09	10	12	13	15	16	18	21	22	23	25
10	A	0.30	0.41	0.51	0.62	0.72	0.83	0.93	1.04	1.15	1.36	1.41	1.50	1.64
	B	0.21	0.28	0.36	0.40	0.47	0.54	0.61	0.65	0.71	0.84	0.86	0.91	1.00
11	A	0.36	0.48	0.61	0.73	0.86	0.99	1.11	1.24	1.36	1.61	1.68	1.78	1.95
	B	0.25	0.34	0.43	0.48	0.56	0.64	0.72	0.77	0.84	1.00	1.02	1.09	1.19
13	A	0.41	0.56	0.70	0.85	1.00	1.14	1.29	1.43	1.58	1.87	1.94	2.06	2.26
	B	0.29	0.39	0.49	0.55	0.65	0.74	0.84	0.89	0.98	1.16	1.18	1.26	1.38
14	A	0.47	0.64	0.80	0.97	1.13	1.30	1.46	1.63	1.80	2.13	2.21	2.35	2.57
	B	0.33	0.45	0.52	0.63	0.74	0.84	0.95	1.01	1.11	1.32	1.35	1.43	1.57
15	A	0.53	0.71	0.90	1.08	1.27	1.45	1.64	1.83	2.01	2.38	2.47	2.63	2.88
	B	0.37	0.50	0.58	0.70	0.82	0.95	1.07	1.13	1.25	1.48	1.51	1.60	1.76
17	A	0.58	0.79	0.99	1.20	1.41	1.61	1.82	2.02	2.23	2.64	2.74	2.91	3.19
	B	0.41	0.55	0.65	0.78	0.91	1.05	1.18	1.25	1.38	1.64	1.67	1.78	1.94
18	A	0.64	0.87	1.09	1.32	1.54	1.77	1.99	2.22	2.44	2.89	3.01	3.20	3.50
	B	0.45	0.61	0.71	0.86	1.00	1.15	1.30	1.38	1.52	1.79	1.83	1.95	2.13
19	A	0.70	0.94	1.19	1.43	1.68	1.92	2.17	2.41	2.66	3.15	3.27	3.48	3.81
	B	0.49	0.66	0.77	0.93	1.09	1.25	1.41	1.50	1.65	1.95	2.00	2.12	2.32
21	A	0.75	1.02	1.28	1.55	1.81	2.08	2.35	2.61	2.88	3.41	3.54	3.76	4.11
	B	0.53	0.71	0.83	1.01	1.18	1.35	1.52	1.62	1.78	2.11	2.16	2.29	2.51
22	A	0.81	1.10	1.38	1.67	1.95	2.24	2.52	2.81	3.09	3.66	3.80	4.04	4.42
	B	0.57	0.77	0.90	1.08	1.27	1.45	1.64	1.74	1.92	2.27	2.32	2.47	2.70
23	A	0.87	1.17	1.48	1.78	2.09	2.39	2.70	3.00	3.31	3.92	4.07	4.33	4.73
	B	0.61	0.82	0.96	1.16	1.36	1.56	1.75	1.86	2.05	2.43	2.48	2.64	2.89
25	A	0.92	1.25	1.57	1.90	2.22	2.55	2.87	3.20	3.53	4.18	4.34	4.61	5.04
	B	0.65	0.87	1.02	1.23	1.45	1.66	1.87	1.98	2.19	2.59	2.64	2.81	3.08
26	A	0.98	1.33	1.67	2.02	2.36	2.71	3.05	3.40	3.74	4.43	4.60	4.89	5.35
	B	0.69	0.93	1.09	1.31	1.53	1.76	1.98	2.11	2.32	2.75	2.81	2.98	3.26
27	A	1.04	1.40	1.77	2.13	2.50	2.86	2.23	3.59	3.96	4.69	7.87	5.17	5.66
	B	0.73	0.98	1.15	1.39	1.62	1.86	2.10	2.23	2.45	2.91	2.97	3.16	3.45
29	A	1.09	1.48	1.86	2.25	2.63	3.02	3.40	3.79	4.17	4.94	5.13	5.46	5.97
	B	0.77	1.04	1.21	1.46	1.71	1.96	2.21	2.35	2.59	3.07	3.13	3.33	3.64
30	A	1.15	1.56	1.96	2.37	2.77	3.18	3.58	3.99	4.39	5.20	5.40	5.74	6.28
	B	0.81	1.09	1.27	1.54	1.80	2.06	2.33	2.47	2.72	3.22	3.29	3.50	3.83
31	A	1.21	1.63	2.06	2.48	2.91	3.33	3.76	4.18	4.61	5.46	5.67	6.02	6.59
	B	0.85	1.14	1.34	1.61	1.89	2.17	2.44	2.59	2.86	3.38	3.46	3.67	4.02
32	A	1.26	1.71	2.15	2.60	3.04	3.49	3.93	4.38	4.82	5.71	5.93	6.31	6.90
	B	0.88	1.20	1.40	1.69	1.98	2.27	2.56	2.71	2.99	3.54	3.62	3.85	4.21
34	A	1.32	1.79	2.25	2.71	3.18	3.64	4.11	4.57	5.04	5.97	6.20	6.59	7.21
	B	0.93	1.16	1.46	1.76	2.07	2.37	2.67	2.84	3.12	3.70	3.78	4.02	4.40
35	A	1.38	1.86	2.35	2.83	3.32	3.80	4.29	4.77	5.26	6.22	6.46	6.87	7.52
	B	0.97	1.21	1.53	1.84	2.16	2.47	2.79	2.96	3.26	3.86	3.94	4.19	4.59
36	A	1.43	1.94	2.44	2.95	3.45	3.96	4.46	4.97	5.47	6.48	6.73	7.15	7.83
	B	1.00	1.26	1.59	1.92	2.24	2.57	2.90	3.08	3.39	4.02	4.11	4.36	4.77
38	A	1.49	2.01	2.54	3.06	3.59	4.11	4.64	5.16	5.69	6.74	7.00	7.44	8.14
	B	1.04	1.31	1.65	1.99	2.33	2.67	3.01	3.20	3.53	4.18	4.27	4.54	4.96

LOUVRE TYPES - U VALUES & AIR PERMEABILITY



Louvre type	Al. Single skin aluminium (with option of low-loss brush seals)	A2. Double skin aluminium (with option of low-loss brush seals)	PC/PO. Twin wall opaque or clear polycarbonate with rubber seals	GR. Single skin Georgian wired laminated or toughened glass with rubber seals
Average louvre blade U value W/m ^{2}K	3.5 subject to upstand height* (6.0 without upstand)	3.1	3.2	3.5 subject to upstand height* (5.4 without upstand)
Average complete ventilator U value W/m ^{2}K excluding upstand*	3.5 subject to upstand height* (6.0 without upstand)	3.5 subject to upstand height* (4.2 without upstand)	3.5 subject to upstand height* (4.2 without upstand)	3.5 subject to upstand height* (5.8 without upstand)

* In many cases a U value of at least 3.5 W/m^2 is required to meet the Building Regulations. This value can be achieved or surpassed if the ventilator is installed on an upstand which protrudes above the outer membrane of the roof. Colt can advise on this.

For a low-loss ventilator air permeability varies between 130 and 230 l/hr/m^2 at 50 Pa, depending on ventilator size.

ECO VENTILATOR WEIGHTS (kg)

The controls options and louvre types affect the weight of the ventilator.
This table gives weights using aluminium louvres. Where other louvre types are used, the weight of the related ventilator is available on request.
Add 5 kg for electric controls, 3 kg for pneumatic controls and 1 kg for manual controls.

LENGTH CODE \ WIDTH CODE	10	15	17	19	21	23	25	26	28	30	37	38	39	42
10	15	17	19	21	23	25	26	28	30	37	38	39	42	
11	17	19	21	23	25	27	29	33	36	40	42	43	46	
13	18	20	22	24	27	29	31	36	39	44	45	47	50	
14	19	22	24	26	29	31	33	39	42	47	49	51	54	
15	21	23	26	28	31	33	36	42	45	51	53	55	59	
17	22	25	27	30	33	35	38	45	48	54	56	59	63	
18	23	26	29	32	35	38	40	48	51	58	60	62	67	
19	25	28	31	34	37	40	43	51	55	62	64	66	71	
21	26	29	32	36	39	42	45	54	58	65	67	70	75	
22	27	31	34	37	41	44	47	57	61	69	71	74	79	
23	29	32	36	39	43	46	50	60	64	72	75	78	83	
25	30	34	37	41	45	48	52	63	67	76	79	82	87	
26	31	35	39	43	47	51	54	66	70	79	82	86	92	
27	33	37	41	45	49	53	57	69	73	83	85	89	96	
29	34	38	42	47	51	55	59	72	77	87	90	93	100	
30	35	40	44	48	53	57	61	75	80	90	93	97	104	
31	37	41	46	50	55	59	64	78	83	94	97	101	108	
32	38	43	48	52	57	62	66	80	86	97	100	105	112	
34	40	44	49	54	59	64	69	83	89	101	104	109	116	
35	41	46	51	56	61	66	71	86	92	104	107	112	120	
36	42	47	53	58	63	68	73	89	96	108	111	116	125	
38	44	49	54	60	65	70	76	92	99	112	115	120	129	

TESTING

ECO has been designed and rigorously tested by accredited third party test laboratories in accordance with EN 12101-2: 2003 according to the following parameters

Parameter	Objective	Result
Opening against side wind of 10 m/s	Ventilator will open in a strong wind	Pass
Aerodynamic tests	Ventilator will perform as efficiently as specified. Tested with the above mentioned side wind	
Reliability or lifecycle	Ventilator will be reliable	11,000 open and close cycles, rated as a dual purpose ventilator
Snow	Ventilator will open and remain open under load	Varies according to size. ECO meets SL 250 over the complete range.
Wind suction load	When closed the ventilator has to withstand the negative (suction) pressure of the class.	Varies according to louvre type. ECO meets WL 1500 (1.5 kPa) with louvre blades wider than 1.5m, and WL 3000 (3.0 kPa) with louvre blades under 1.5m wide.
Low internal temperature	Ventilator will be reliable at low temperature	ECO will operate at temperatures of down to -25°C.
Resistance to heat	In a fire situation the ventilator will open and stay open, and the area of the opening will not decrease by more than 10%.	ECO meets B 300 (300°C for 30 minutes).





DATA SHEET ECO

FEATURES & BENEFITS

Wide range of applications - ECO is classed as a dual purpose ventilator, providing both day to day and smoke control ventilation. Polycarbonate and glass versions allow the entry of natural daylight. ECO is also often used as a termination piece for large ducted or air handling systems. There are pneumatic, electronic or hand controls and a wide range of louvre types, accessories and finishes.

High performance - ECO is aerodynamically efficient and has a high resistance to weather.

Proven performance - ECO has been exhaustively tested and certified to EN 12101-2: 2003 in accredited third party test laboratories.

Easy to install - ECO is delivered fully assembled to site and may be installed at any angle from the horizontal to the vertical. It has a wide range of base profiles to suit all sheeting, curb or glazing applications.

FCO slimline flanged option - The alternative FCO ventilator has a variable flange designed for unobtrusive vertical installation into curtain walling, glazing or prepared openings.

Weathered ventilation - ECO can be installed onto a Colt Weatherlite ventilated upstand module for natural ventilation irrespective of weather conditions.

Durable - ECO is manufactured from tough, corrosion resistant aluminium, alloy, grade 3005 in accordance with EN573-3, with stainless steel fixings. Louvres pivot on double nylon UV-resistant bearings.

Quality of manufacture - ECO is manufactured under the ISO 9001 quality standard. Each unit is given a functional test before despatch.

Low maintenance - ECO units have very low maintenance requirements.

Design service - Colt provides a preorder design service. Please contact Colt for more information relating to the application, specification, installation or servicing of ECO.

FEATURES & BENEFITS

Colt Group Ltd offers the following services:

- Scheme design of all types of Smoke and Heat Exhaust Ventilation Systems (SHEVS)
- Scheme design of pressurisation systems
- Scheme design of smoke containment systems
- Provision of performance specifications
- Project management
- Supply, installation, commissioning and maintenance of systems, including all necessary controls, which will be designed to interface with others' control systems.

Other reasons to choose Colt:

- Colt Smoke Control systems are suited to both commercial and industrial buildings, and may be adapted to suit most architectural requirements.
- Over the years Colt has funded a large proportion of the research into smoke control, and its representatives maintain an unparalleled level of technical expertise.
- Colt's in-house research and development capability ensures that Colt smoke control systems are designed, tested and updated by Colt to meet or exceed relevant legislation and standards.
- The majority of Colt's Smoke Control systems are manufactured under ISO 9001:2000 and BS ISO 14001:2004.

SERVICE AND MAINTENANCE

We offer a comprehensive range of maintenance packages incorporating the maintenance and repair of all building services equipment including non Colt products.

MAINTENANCE

Maintenance of a smoke control system is essential. Regular maintenance protects your investment and brings peace of mind that the system will operate effectively in an emergency