

## CONSTANT PRESSURE TWINFANS

ENERGY SAVING CENTRAL EXTRACT SYSTEM THAT PRECISELY VENTILATES INDIVIDUAL ROOMS DEPENDING ON THEIR REQUIREMENTS.



## BENEFITS

### PRECISE VENTILATION

The only multi-room ventilation system to provide local "on demand" control.

### GUARANTEED VENTILATION

Automatic change over in the event of fan/motor failure, guaranteeing ventilation 24/7.

### QUIET OPERATION

Does not generate noise by throttling back on balancing dampers required in conventional systems.

### TRUE DEMAND VENTILATION

Only the areas requiring ventilation receive ventilation.

### SAVES ENERGY

Up to 70% saving over conventionally controlled central systems.

- Not needlessly extracting conditioned air
- Fan speed/motor power dictated by demand requirement.

### UNIQUE DIRECT ACTING MULTI-POSITION DAMPER/GRILLE

Ensures operation only when room occupied with integrated PIR.

### PRE-WIRED

All components assembled, wired and tested at the Nuairé manufacturing facility.

- Simply plug and go. No wiring required between fan and dampers.

### ENHANCED CAPITAL ALLOWANCE COMPLIANT

Immediate benefits to your client.

### INTEGRATED SILENCER

Sizes 6 and 9.

### DUCT MOUNTED VERSION OF DAMPER

For unobtrusive flexibility.

### TWIN OR SINGLE

Twin or single fan options are available.

### WARRANTY

Ecosmart Constant Pressure has a 5 year warranty.

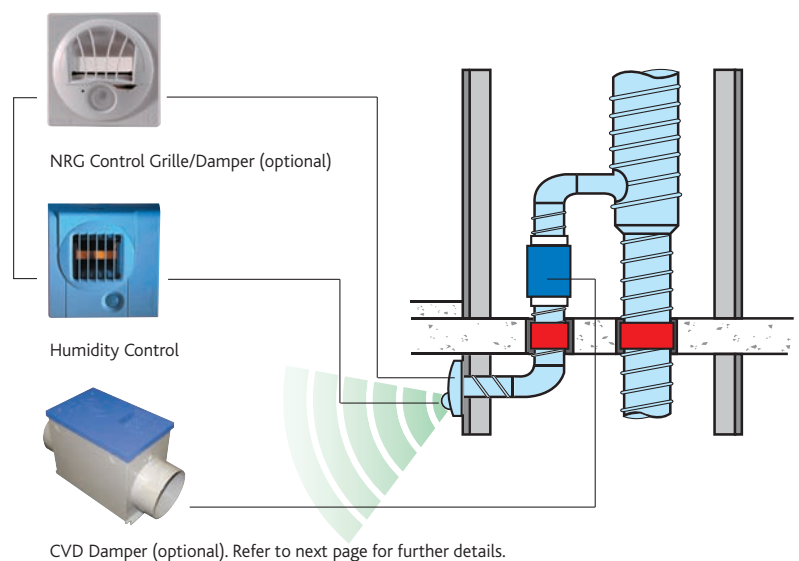
Note: For further details on Constant Pressure single fan options, please contact Nuairé.

Note: These units have the pressure sensor configured for extract application. For supply applications please contact Nuairé.

Larger duties are available please contact Nuairé.

### WHAT IS CONSTANT PRESSURE?

Constant Pressure Variable Volume systems (CPVV) are systems of fans, controls & sensors installed in a multi-room ducted system. The system is intended to provide continuous background ventilation when the served spaces are unoccupied and will automatically increase the ventilation rate when any room is occupied to the design requirements. Only the room requiring the increased ventilation will receive the ventilation.



**HOW DOES CONSTANT PRESSURE WORK?**

Independent extract grilles are installed at duct termination points in each of the spaces served, the grilles (for the benefit of this exercise we will consider our NRG grilles) are set to provide one of four boost ventilation rates. They are connected independently to a 230V AC supply via 230/12V transformers.

The grilles have in built occupancy sensors (PIR) and when the PIR detects movement the grille is driven open, when a grille opens the system pressure falls, the fan control detects the change and adjusts the motor speed to maintain the target pressure.

Grilles will stay open for approximately twenty minutes after the last movement has been seen and when it closes the control again compensates for the change in system pressure by adjusting fan speed.

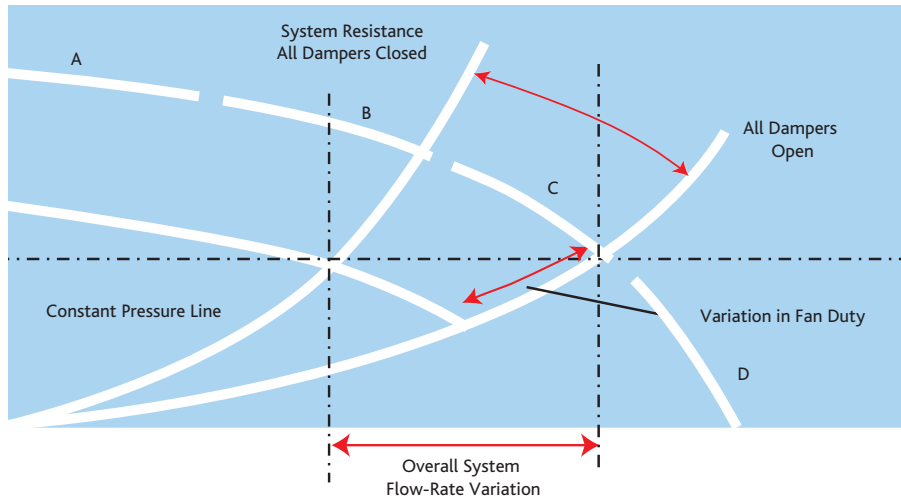
By opening the grilles the pressure in the system will fall. The control system in the fan senses this and automatically speeds up to provide the higher volume and equalise the system pressure. This works in reverse with the grille closing, increasing the system pressure, automatically reducing the fan speed and again equalising the system pressure. Hence a constant pressure variable volume system. There is no inter-connection between grille/damper and fan.



**WHAT ARE NRG GRILLES?**

A motorised two-position grille offered by Nuairé to compliment the range of constant pressure fans. They have:

- A connecting spigot to suit 125mm duct opening.
- Four settable positions for boost vent rate, Positions 1, 2, 3 & 4 are indicated on the grille by the appropriate number of dots. The grille is pre-set at 5mm open to guarantee the trickle ventilation rate and the other positions are set via a trigger on the front of the grille.



- An integral occupancy sensor (PIR) which is not adjustable.
- They are 12V-AC operating and are supplied with 230/12V AC transformers for installation local to the grille. For ease of installation the transformer can be connected to an independent spur or ring main.
- Integrated run on timer providing approx. twenty minutes overrun, which is non-adjustable.
- Grille resistance is dependent upon the air volume passing through it, see the resistance charts.
- There is no interconnecting wiring between damper/grille & fan.



**CVD DAMPER**

The CVD damper will work in the same way as the NRG but is mounted in-line and will be 230v operated responding to external switching devices such as humidistat, remote PIR, light switch, door switch etc. The in-line version has an in built motorised volume control damper to regulate the maximum flow through the branch connection. It has an airflow sensor that continuously monitors the airflow and adjusts the damper position accordingly.

**THE INTEGRATED CONTROL PACKAGE**

Is mounted in the fan chamber and consists of the EST package including:

- The inverter, which is the mechanism that varies the speed of the motors
- A Ecosmart control printed circuit board which converts the data from the pressure transducer to an input signal to the inverter.
- Terminals to connect the incoming mains supply and remote status indicators.

**THE PRESSURE TRANSDUCER**

Is precisely calibrated and mounted in the fan chamber and is connected to the Ecosmart control board. It continually monitors system pressure, compares the actual to the target allowing the control board to convert the data to an input signal to the inverter, thereby adjusting the motor speed to compensate for the system change.

**THE SET-UP BOX**

Is mounted on the external face of the unit case, it is connected to the control pack by a low voltage lead and includes

- A potentiometer to set the target pressure.

All achieved whilst fan is running without re accessing the fan chamber.

**HOW THE CVD DAMPER INTERACTS WITH CONSTANT PRESSURE**

The CVD100/125/150/200 dampers use the latest micro-electro-mechanical system (MEMS) sensor technology to give precise measurement and control of flowrate.

The CVD100/125/150/200 dampers will control the flow rate when the pressure drop across the damper is within the range stated in the performance envelope.

Two flow settings are available; trickle and boost. The damper will operate in the trickle setting when it is powered up and will go into the boost setting when a mains signal is received at the SL terminal or when the CVD-PIR (optional ancillary) is activated.

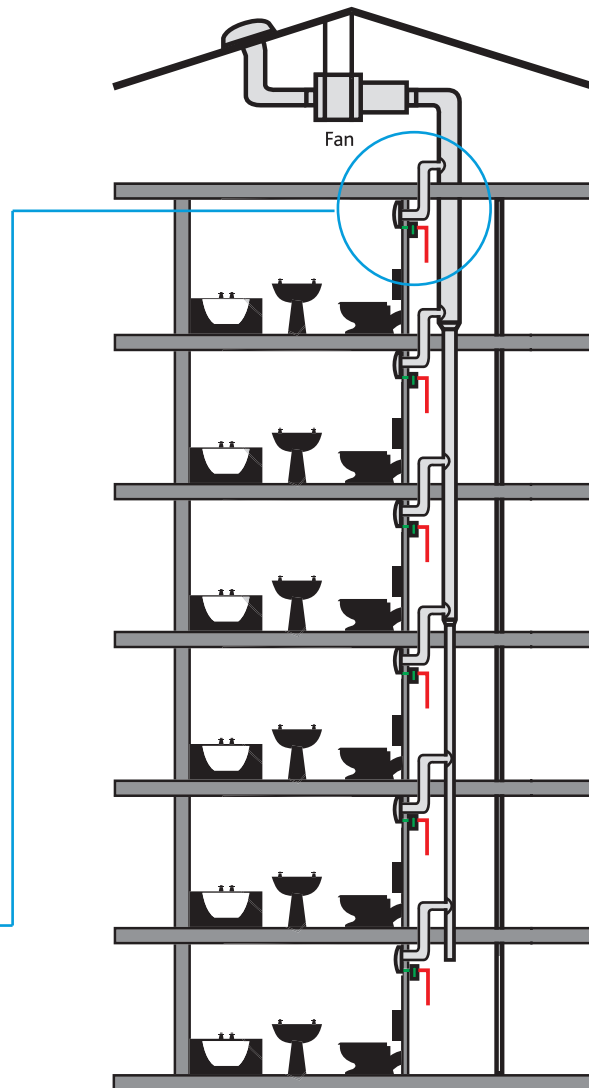
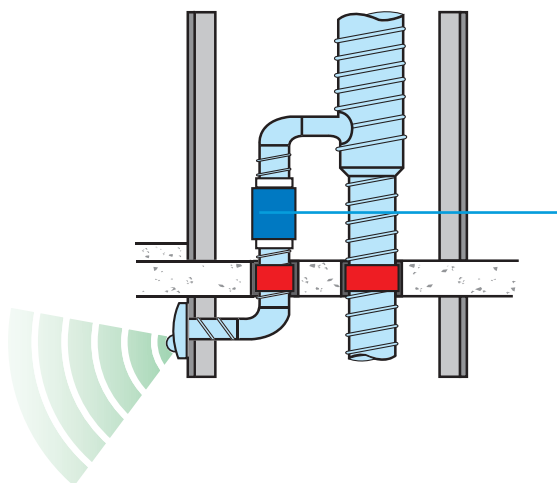
A run-on timer (adjustable between 1 to 60 minutes) will hold the damper in the boost setting for the preset time period.

The application of innovative acoustic design has produced low flowrates at high pressures without the usual associated noise problem. Typical accuracy of the dampers is shown in the table below if the unit is installed in accordance with the Nuair installation and maintenance instructions.

Unit	Typical Accuracy
CVD 100	+ - 2 l/s
CVD 125	+ - 3 l/s
CVD 150	+ - 3 l/s
CVD 200	+ - 4 l/s

All adjustments can be made without removing the cover.

Location of CVD damper.



**PERFORMANCE - CVD DAMPER**

A nominal pressure drop must be allowed in order to ensure adequate airflow through the damper. To ensure the airflow pattern through the damper produces consistent readings; the pressure drop across the damper should not exceed the recommended value.

Recommended values are listed in the table below and shown in the performance envelope of each damper.

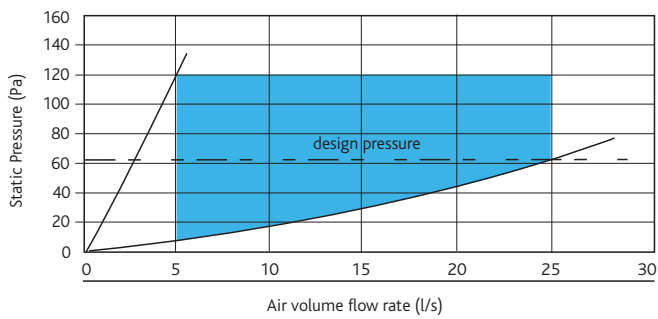
Code	Nominal design pressure drop	Maximum pressure across damper*
CVD100	60Pa	120Pa
CVD125	70Pa	140Pa
CVD150	80Pa	160Pa
CVD200	90Pa**	200Pa

\*recommended maximum operating pressure to ensure the damper would work within calibration limits.

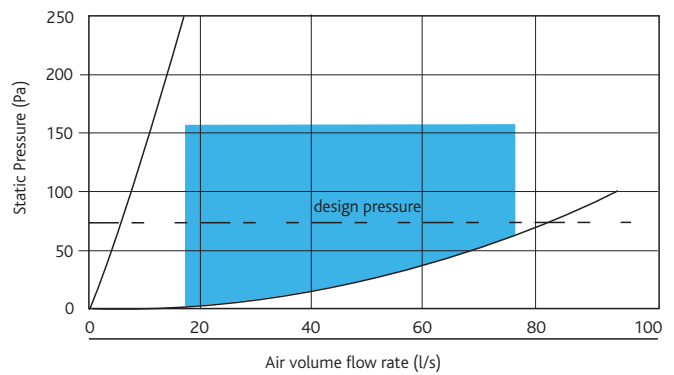
Keep the duct velocity as low as possible to ensure the system produces the lowest energy usage, preferably below 5m/s.

\*\*Allow 90Pa for duties below 100l/s and 150Pa for duties between 100l/s and 125l/s.

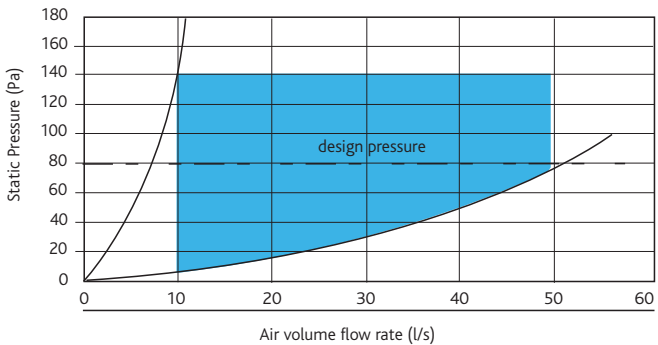
Performance envelope for CVD100



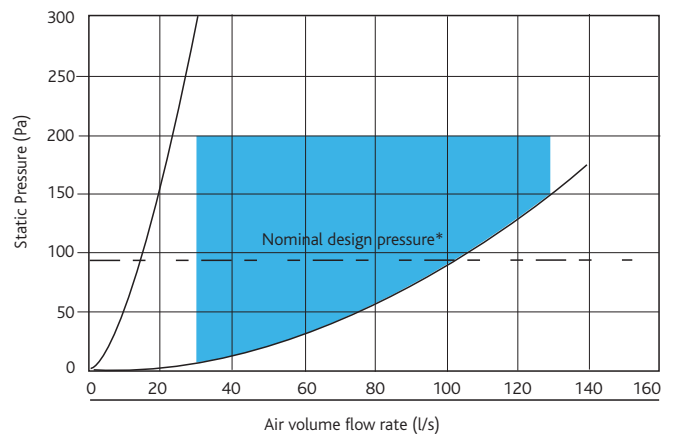
Performance envelope for CVD150



Performance envelope for CVD125

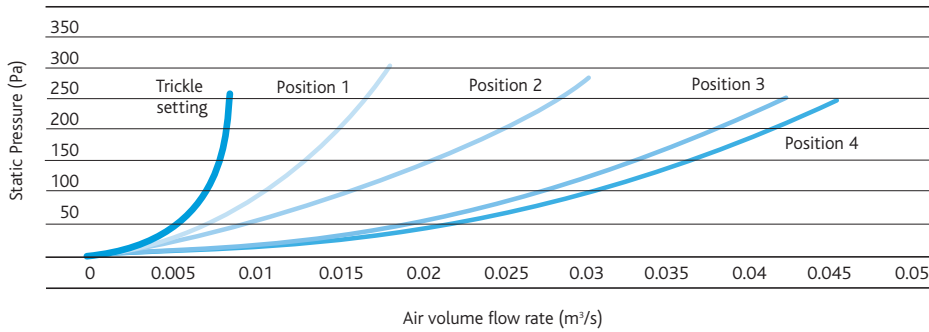


Performance envelope for CVD200

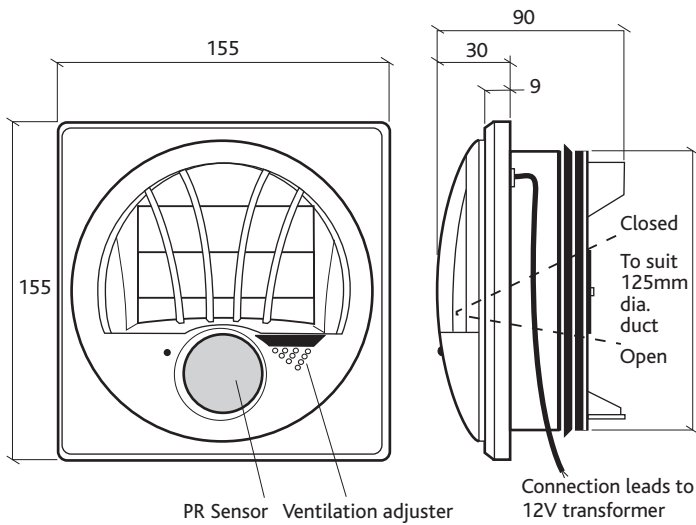


**PERFORMANCE - NRG MOTORISED GRILLE/DAMPER**

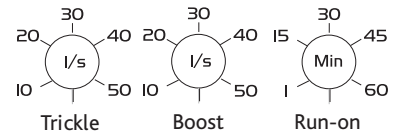
Motorised grille/damper type NRG Acoustic Information



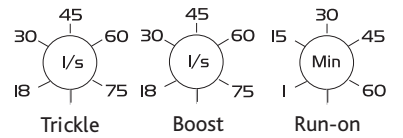
**DIMENSIONS NRG GRILLE DAMPER**



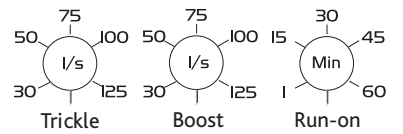
Dial calibration for CVD125



Dial calibration for CVD150



Dial calibration for CVD200

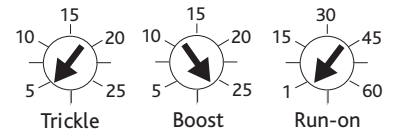


**DIMENSIONS CVD DAMPERS**

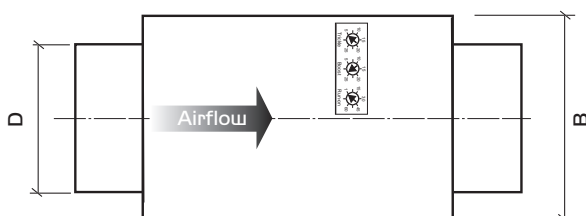
Dimensions in mm.

Code	A	B	C	D	E	F	Weight Kg
CVD100	221	128	165	100	69	295	2
CVD125	300	180	195	125	75	400	3.5
CVD150	300	200	220	150	90	400	3.7
CVD200	300	230	275	200	115	400	4

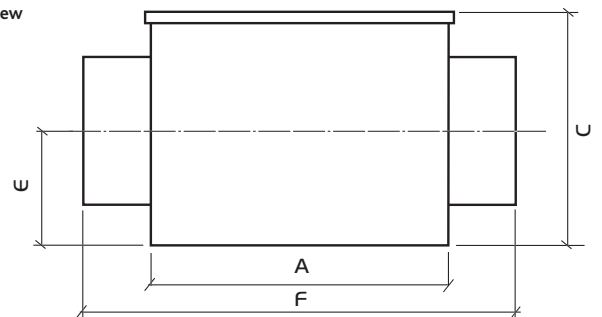
CVD100 Settings



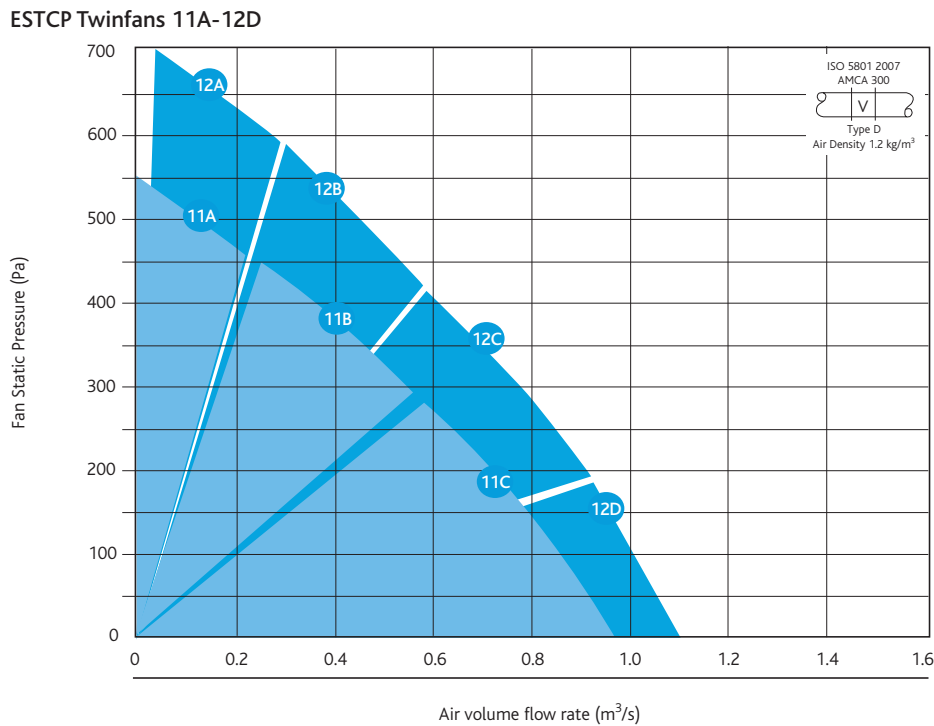
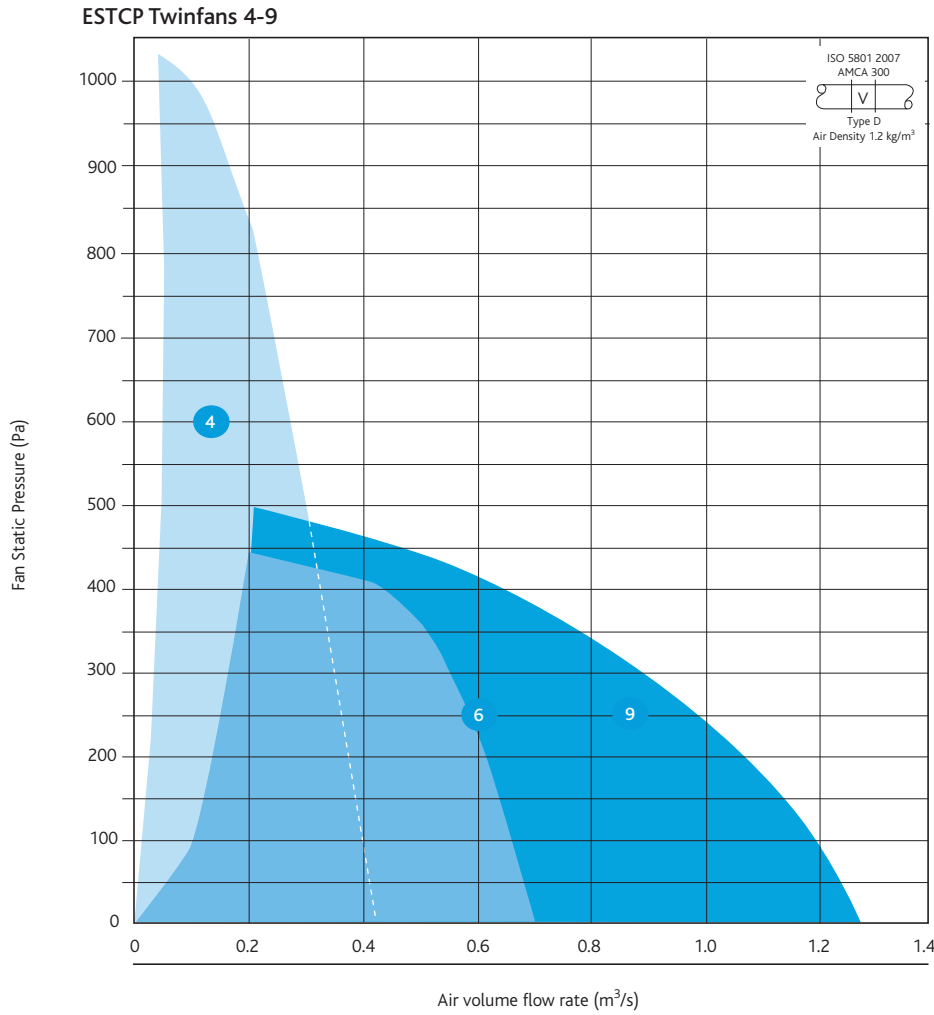
Plan view



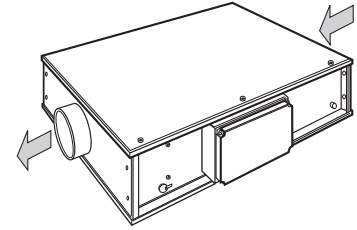
Side view



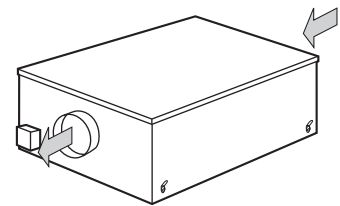
**PERFORMANCE - CONSTANT PRESSURE TWIN FANS**



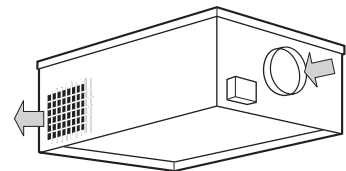
**Casing**



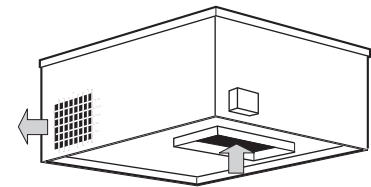
**ESTCP Internal In-line Twin Fans**



**ESTCP-X External In-line Twin Fans**



**ESTCP-R Roof Twin Fans with end inlet and side discharge**



**ESTCP-B Roof Twin Fans with bottom inlet and side discharge**

**NB: Ecosmart Twinfans sizes 11-19 inc must not be mounted more than 5° from the horizontal.**

**Code descriptions**

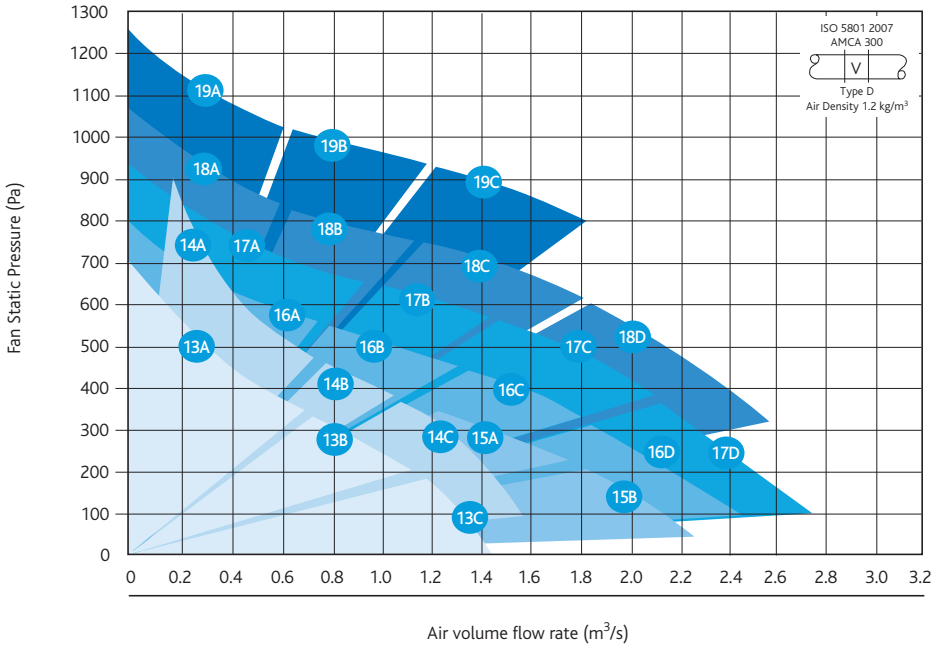
**ESTCP 11 B - B**

1	2	3	4

1. Ecosmart Constant Pressure Twin range
2. Case size
3. A, B, C & D refer to motor & pulley combination
4. No suffix - internal in-line unit  
 X - External in-line unit  
 R - Back inlet, grille outlet external roof mounted unit  
 B - Bottom inlet

PERFORMANCE - CONSTANT PRESSURE TWIN FANS CONT.

ESTCP Twinfans 13A-19C



For larger duties please contact Nuair.

CONSTANT PRESSURE INTERNAL TWIN FANS ESTCP

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct inlet Sound Power levels dB re lpW (+ correction for outlet)						Breakout dBA@3m	Weight (Kg)	
						125	250	500	1K	2K	4K			8K
ESTCP4	1	3600	0.52	3.1	3.1	78(+8)	72(+6)	60(+20)	52(+24)	46(+29)	40(+30)	31(+30)	45	62
ESTCP6	1	1272	1.23	7.6	7.6	77(+4)	70(+9)	56(+15)	52(+18)	49(+19)	46(+19)	38(+23)	43	79
ESTCP9	1	960	1.6	9.4	9.4	74(+8)	71(+9)	70(+13)	67(+19)	67(+20)	63(+22)	56(+22)	47	154
ESTCP11A	3	1225	0.37	1.3	1.3	73(+1)	67(+7)	62(+10)	63(+11)	55(+9)	49(+11)	45(+9)	46	77.5
ESTCP11B	3	1225	0.55	1.7	1.7	74(+2)	68(+7)	64(+9)	65(+10)	57(+8)	52(+9)	48(+7)	48	82.4
ESTCP11C	3	1225	0.75	2.1	2.1	75(+2)	70(+8)	65(+9)	66(+10)	58(+6)	53(+8)	50(+6)	49	84.4
ESTCP12A	3	1400	0.55	1.7	1.7	75(-1)	71(+4)	66(+7)	66(+9)	58(+7)	51(+8)	45(+5)	48	82.4
ESTCP12B	3	1400	0.75	2.1	2.1	74(+3)	70(+8)	65(+10)	66(+12)	58(+9)	51(+11)	44(+9)	50	84.4
ESTCP12C	3	1400	1.1	2.9	2.9	77(+2)	73(+7)	67(+10)	69(+10)	60(+8)	54(+10)	47(+11)	51	90.4
ESTCP12D	3	1400	1.5	3.7	3.7	79(0)	75(+5)	69(+8)	70(+9)	61(+7)	56(+8)	52(+6)	52	96.4
ESTCP13A	3	1085	0.75	2.1	2.1	70(+5)	67(+8)	67(+8)	63(+8)	56(+8)	57(+7)	51(+7)	48	116
ESTCP13B	3	1085	1.1	2.9	2.9	72(+5)	68(+8)	69(+8)	65(+8)	58(+8)	59(+7)	54(+7)	50	116
ESTCP13C	3	1085	1.5	3.7	3.7	73(+4)	69(+7)	70(+7)	64(+9)	59(+7)	61(+5)	55(+6)	50	125
ESTCP14A	3	1225	1.1	2.9	2.9	73(+5)	68(+7)	68(+7)	62(+10)	56(+8)	58(+6)	48(+7)	48	116

Fan size 11 to 19 inc. are belt drive and cannot be mounted at an angle no greater than 5°. Please contact your local Nuair Technical Sales Engineer or the Technical Department to discuss your application requirements. Breakout dBA@3m is hemispherical free field. The electrical and sound information in the table is nominal.

## Constant Pressure Internal Twin Fans ESTCP cont.

## ELECTRICAL, SOUND &amp; WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct inlet Sound Power levels dB re lpW (+ correction for outlet)							Breakout dBA@3m	Weight (Kg)
						125	250	500	1K	2K	4K	8K		
ESTCP14B	3	1225	1.5	3.7	3.7	74(+5)	68(+9)	68(+10)	63(+11)	57(+10)	59(+8)	49(+12)	50	125
ESTCP14C	3	1225	2.2	5.4	5.4	75(+5)	70(+9)	71(+9)	65(+11)	60(+9)	62(+7)	55(+9)	52	134
ESTCP14D	3	1225	3	6.9	6.9	76(+4)	72(+7)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	53	140
ESTCP15A	3	925	2.2	5.4	5.4	80(+6)	79(+2)	78(+9)	76(+8)	73(+7)	70(+6)	64(+9)	60	168.7
ESTCP15B	3	925	3	6.9	6.9	83(+8)	81(+3)	79(+9)	78(+9)	76(+9)	74(+10)	68(+12)	62	174.6
ESTCP16A	3	1040	1.5	3.7	3.7	80(+5)	80(+1)	75(+8)	75(+7)	73(+6)	71(+6)	67(+8)	57	159.6
ESTCP16B	3	1040	2.2	5.4	5.4	81(+8)	81(+3)	76(+12)	76(+11)	74(+9)	71(+9)	68(+9)	61	168.7
ESTCP16C	3	1040	3	6.9	6.9	81(+7)	82(+2)	77(+11)	77(+10)	74(+8)	71(+9)	68(+8)	61	174.6
ESTCP16D	3	1040	4	10	10	84(+7)	82(+1)	80(+10)	79(+9)	77(+8)	75(+9)	70(+8)	63	193.6
ESTCP17A	3	1160	2.2	5.4	5.4	83(+4)	81(0)	75(+7)	76(+7)	74(+5)	73(+5)	69(+6)	57	168.7
ESTCP17B	3	1160	3	6.9	6.9	84(+5)	82(+1)	76(+12)	77(+9)	75(+8)	73(+7)	70(+7)	61	174.6
ESTCP17C	3	1160	4	10	10	84(+4)	83(0)	77(+11)	78(+8)	75(+7)	73(+7)	70(+6)	61	193.6
ESTCP17D	3	1160	5.5	12	12	85(+4)	83(-1)	80(+10)	80(+7)	77(+7)	76(+7)	71(+6)	62	231.6
ESTCP18A	3	1260	2.2	5.4	5.4	83(+3)	84(-1)	78(+7)	80(+5)	76(+5)	75(+4)	69(+5)	60	168.7
ESTCP18B	3	1260	3	6.9	6.9	84(+4)	83(-2)	79(+9)	80(+5)	77(+6)	74(+5)	69(+7)	61	174.6
ESTCP18C	3	1260	4	10	10	84(+4)	83(-1)	79(+8)	80(+5)	77(+5)	74(+6)	69(+7)	61	193.6
ESTCP18D	3	1260	5.5	12	12	85(+4)	83(-1)	81(+8)	81(+5)	78(+5)	76(+6)	71(+7)	62	231.6
ESTCP19A	3	1440	3	6.9	6.9	90(+2)	83(-2)	82(+5)	80(+4)	79(+5)	78(+3)	73(+4)	61	174.6
ESTCP19B	3	1440	4	10	10	87(-2)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	60	193.6
ESTCP19C	3	1440	5.5	12	12	86(+1)	84(0)	82(+6)	81(+6)	79(+3)	77(+3)	73(+3)	62	231.6

Fan size 11 to 19 inc. are belt drive and cannot be mounted at an angle of no greater than 5°.

Please contact your local Nuair Technical Sales Engineer or the Technical Department to discuss your application requirements.

Breakout dBA@3m is hemispherical free field. The electrical and sound information in the table is nominal.

**CONSTANT PRESSURE EXTERNAL TWIN FANS ESTCP-X**

**ELECTRICAL, SOUND & WEIGHT**

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct inlet Sound Power levels dB re lpW (+ correction for outlet)						Breakout dBA@3m	Weight (Kg)	
						125	250	500	1K	2K	4K			8K
ESTCP4-X	1	3600	0.52	3.1	3.1	77(+9)	73(+5)	66(+14)	64(+12)	60(+15)	55(+15)	50(+11)	47	86
ESTCP6-X	1	1300	1.1	7.6A	7.6A	73(+7)	66(+13)	54(+16)	50(+19)	49(+19)	47(+19)	41(+20)	47	86
ESTCP9-X	1	1069	1.6	9.4	9.4	82(+10)	70(+6)	66(+6)	62(+8)	61(+6)	56(+9)	50(+10)	50	162
ESTCP11A-X	3	1225	0.37	1.3	1.3	73(+1)	67(+7)	62(+10)	63(+11)	55(+9)	49(+11)	45(+9)	46	77.5
ESTCP11B-X	3	1225	0.55	1.7	1.7	74(+2)	68(+7)	64(+9)	65(+10)	57(+8)	52(+9)	48(+7)	48	82.4
ESTCP11C-X	3	1225	0.75	2.1	2.1	75(+2)	70(+8)	65(+9)	66(+10)	58(+6)	53(+8)	50(+6)	49	84.4
ESTCP11D-X	3	1225	1.1	2.9	2.9	77(+0)	73(+5)	66(+8)	67(+9)	58(+7)	53(+8)	50(+6)	49	90.4
ESTCP12A-X	3	1400	0.55	1.7	1.7	75(-1)	71(+4)	66(+7)	66(+9)	58(+7)	51(+8)	45(+5)	48	82.4
ESTCP12B-X	3	1400	0.75	2.1	2.1	74(+3)	70(+8)	65(+10)	66(+12)	58(+9)	51(+11)	44(+9)	50	84.4
ESTCP12C-X	3	1400	1.1	2.9	2.9	77(+2)	73(+7)	67(+10)	69(+10)	60(+8)	54(+10)	47(+11)	51	90.4
ESTCP12D-X	3	1400	1.5	3.7	3.7	79(0)	75(+5)	69(+8)	70(+9)	61(+7)	56(+8)	52(+6)	52	96.4
ESTCP13A-X	3	1085	0.75	2.1	2.1	70(+5)	67(+8)	67(+8)	63(+8)	56(+8)	57(+7)	51(+7)	48	116
ESTCP13B-X	3	1085	1.1	2.9	2.9	72(+5)	68(+8)	69(+8)	65(+8)	58(+8)	59(+7)	54(+7)	50	116
ESTCP13C-X	3	1085	1.5	3.7	3.7	73(+4)	69(+7)	70(+7)	64(+9)	59(+7)	61(+5)	55(+6)	50	125
ESTCP14A-X	3	1225	1.1	2.9	2.9	73(+5)	68(+7)	68(+7)	62(+10)	56(+8)	58(+6)	48(+7)	48	116
ESTCP14B-X	3	1225	1.5	3.7	3.7	74(+5)	68(+9)	68(+10)	63(+11)	57(+10)	59(+8)	49(+12)	50	125
ESTCP14C-X	3	1225	2.2	5.4	5.4	75(+5)	70(+9)	71(+9)	65(+11)	60(+9)	62(+7)	55(+9)	52	134
ESTCP14D-X	3	1225	3	6.9	6.9	76(+4)	72(+7)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	53	140
ESTCP15A-X	3	925	2.2	5.4	5.4	80(+6)	79(+2)	78(+9)	76(+8)	73(+7)	70(+6)	64(+9)	60	168.7
ESTCP15B-X	3	925	3	6.9	6.9	83(+8)	81(+3)	79(+9)	78(+9)	76(+9)	74(+10)	68(+12)	62	174.6
ESTCP16A-X	3	1040	1.5	3.7	3.7	80(+5)	80(+1)	75(+8)	75(+7)	73(+6)	71(+6)	67(+8)	57	159.6
ESTCP16B-X	3	1040	2.2	5.4	5.4	81(+8)	81(+3)	76(+12)	76(+11)	74(+9)	71(+9)	68(+9)	61	168.7
ESTCP16C-X	3	1040	3	6.9	6.9	81(+7)	82(+2)	77(+11)	77(+10)	74(+8)	71(+9)	68(+8)	61	174.6
ESTCP16D-X	3	1040	4	10	10	84(+7)	82(+1)	80(+10)	79(+9)	77(+8)	75(+9)	70(+8)	63	193.6
ESTCP17A-X	3	1160	2.2	5.4	5.4	83(+4)	81(0)	75(+7)	76(+7)	74(+5)	73(+5)	69(+6)	57	168.7
ESTCP17B-X	3	1160	3	6.9	6.9	84(+5)	82(+1)	76(+12)	77(+9)	75(+8)	73(+7)	70(+7)	61	174.6
ESTCP17C-X	3	1160	4	10	10	84(+4)	83(0)	77(+11)	78(+8)	75(+7)	73(+7)	70(+6)	61	193.6
ESTCP17D-X	3	1160	5.5	12	12	85(+4)	83(-1)	80(+10)	80(+7)	77(+7)	76(+7)	71(+6)	62	231.6
ESTCP18A-X	3	1260	2.2	5.4	5.4	83(+3)	84(-1)	78(+7)	80(+5)	76(+5)	75(+4)	69(+5)	60	168.7
ESTCP18B-X	3	1260	3	6.9	6.9	84(+4)	83(-2)	79(+9)	80(+5)	77(+6)	74(+5)	69(+7)	61	174.6
ESTCP18C-X	3	1260	4	10	10	84(+4)	83(-1)	79(+8)	80(+5)	77(+5)	74(+6)	69(+7)	61	193.6
ESTCP18D-X	3	1260	5.5	12	12	85(+4)	83(-1)	81(+8)	81(+5)	78(+5)	76(+6)	71(+7)	62	231.6
ESTCP19A-X	3	1440	3	6.9	6.9	90(+2)	83(-2)	82(+5)	80(+4)	79(+5)	78(+3)	73(+4)	61	174.6
ESTCP19B-X	3	1440	4	10	10	87(-2)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	60	193.6
ESTCP19C-X	3	1440	5.5	12	12	86(+1)	84(0)	82(+6)	81(+6)	79(+3)	77(+3)	73(+3)	62	231.6

Fan size 11 to 19 inc. are belt drive and cannot be mounted at an angle no greater than 5°. Please contact your local Nuair Technical Sales Engineer or the Technical Department to discuss your application requirements. Breakout dBA@3m is hemispherical free field. The electrical and sound information in the table is nominal.

## TWIN FANS

### CONSTANT PRESSURE

#### TECHNICAL INFORMATION

### CONSTANT PRESSURE EXTERNAL TWIN FANS ESTCP-R AND B

#### ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct inlet Sound Power levels dB re lpW (+ correction for open outlet)						Open inlet (Open outlet) dBA@3m	Weight (Kg)	
						125	250	500	1K	2K	4K			8K
ESTCP4	1	3600	0.52	3.1	3.1	77(+0)	73(+4)	66(+17)	64(+20)	60(+24)	55(+25)	50(+24)	47	86
ESTCP6	1	1300	1.23	7.6	7.6	73(+7)	66(+13)	54(+16)	50(+19)	49(+19)	47(+19)	41(+20)	47	86
ESTCP9	1	1065	1.6	9.4	9.4	82(+10)	70(+6)	66(+6)	62(+8)	61(+6)	56(+9)	50(+10)	48	162
ESTCP11A	3	1225	0.37	1.3	1.3	73(-3)	67(+3)	62(+9)	63(+11)	55(+9)	49(+11)	45(+9)	47(+11)	77.5
ESTCP11B	3	1225	0.55	1.7	1.7	74(-2)	68(+4)	64(+8)	65(+10)	57(+8)	52(+9)	48(+7)	49(+10)	82.4
ESTCP11C	3	1225	0.75	2.1	2.1	75(-2)	70(+4)	65(+8)	66(+10)	58(+6)	53(+8)	50(+6)	51(+9)	84.4
ESTCP11D	3	1225	1.1	2.9	2.9	77(-4)	73(+2)	66(+7)	67(+9)	58(+7)	53(+8)	50(+6)	52(+8)	90.4
ESTCP12A	3	1400	0.55	1.7	1.7	75(-5)	71(+1)	66(+6)	66(+9)	58(+7)	51(+8)	45(+5)	51(+8)	82.4
ESTCP12B	3	1400	0.75	2.1	2.1	74(-1)	70(+5)	65(+9)	66(+12)	58(+9)	51(+11)	44(+9)	50(+11)	84.4
ESTCP12C	3	1400	1.1	2.9	2.9	77(-2)	73(+4)	67(+9)	69(+10)	60(+8)	54(+10)	47(+11)	53(+10)	90.4
ESTCP12D	3	1400	1.5	3.7	3.7	79(-4)	75(+2)	69(+7)	70(+9)	61(+7)	56(+8)	52(+6)	54(+9)	96.4
ESTCP13A	3	1085	0.75	2.1	2.1	70(+5)	67(+8)	67(+8)	63(+8)	56(+8)	57(+7)	51(+7)	50(+6)	116
ESTCP13B	3	1085	1.1	2.9	2.9	72(-1)	68(+6)	69(+8)	65(+8)	58(+8)	59(+7)	54(+7)	52(+7)	116
ESTCP13C	3	1085	1.5	3.7	3.7	73(-2)	69(+5)	70(+7)	64(+9)	59(+7)	61(+5)	55(+6)	52(+7)	125
ESTCP14A	3	1225	1.1	2.9	2.9	73(-1)	68(+5)	68(+7)	62(+10)	56(+8)	58(+6)	48(+7)	50(+8)	116
ESTCP14B	3	1225	1.5	3.7	3.7	74(-1)	68(+7)	68(+10)	63(+11)	57(+10)	59(+8)	49(+12)	50(+10)	125
ESTCP14C	3	1225	2.2	5.4	5.4	75(-1)	70(+7)	71(+9)	65(+11)	60(+9)	62(+7)	55(+9)	53(+9)	134
ESTCP14D	3	1225	3	6.9	6.9	76(-2)	72(+5)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	55(+7)	140
ESTCP15A	3	925	2.2	5.4	5.4	80(+1)	79(+1)	78(+8)	76(+8)	73(+7)	70(+6)	64(+9)	62(+8)	168.7
ESTCP15B	3	925	3	6.9	6.9	83(+3)	81(+2)	79(+8)	78(+9)	76(+9)	74(+10)	68(+12)	65(+9)	174.6
ESTCP16A	3	1040	1.5	3.7	3.7	80(0)	80(0)	75(+7)	75(+7)	73(+6)	71(+6)	67(+8)	62(+6)	159.6
ESTCP16B	3	1040	2.2	5.4	5.4	81(+3)	81(+1)	76(+11)	76(+11)	74(+9)	71(+9)	68(+9)	63(+10)	168.7
ESTCP16C	3	1040	3	6.9	6.9	81(+2)	82(0)	77(+10)	77(+10)	74(+8)	71(+9)	68(+8)	63(+9)	174.6
ESTCP16D	3	1040	4	10	10	84(+2)	82(-1)	80(+9)	79(+9)	77(+8)	75(+9)	70(+8)	66(+8)	193.6
ESTCP17A	3	1160	2.2	5.4	5.4	83(0)	81(-1)	75(+6)	76(+7)	74(+5)	73(+5)	69(+6)	63(+6)	168.7
ESTCP17B	3	1160	3	6.9	6.9	84(0)	82(0)	76(+11)	77(+9)	75(+8)	73(+7)	70(+7)	64(+9)	174.6
ESTCP17C	3	1160	4	10	10	84(-1)	83(-1)	77(+10)	78(+8)	75(+7)	73(+7)	70(+6)	64(+8)	193.6
ESTCP17D	3	1160	5.5	12	12	85(-1)	83(-2)	80(+9)	80(+7)	77(+7)	76(+7)	71(+6)	67(+7)	231.6
ESTCP18A	3	1260	2.2	5.4	5.4	83(-2)	84(-2)	78(+6)	80(+5)	76(+5)	75(+4)	69(+5)	66(+5)	168.7
ESTCP18B	3	1260	3	6.9	6.9	84(0)	83(-3)	79(+8)	80(+5)	77(+6)	74(+5)	69(+7)	66(+6)	174.6
ESTCP18C	3	1260	4	10	10	84(-1)	83(-2)	79(+7)	80(+5)	77(+5)	74(+6)	69(+7)	66(+6)	193.6
ESTCP18D	3	1260	5.5	12	12	85(-1)	83(-2)	81(+7)	81(+5)	78(+5)	76(+6)	71(+7)	67(+6)	231.6
ESTCP19A	3	1440	3	6.9	6.9	90(-1)	83(-2)	82(+5)	80(+4)	79(+5)	78(+3)	73(+4)	68(+4)	174.8
ESTCP19B	3	1440	4	10	10	87(-5)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	67(+4)	193.6
ESTCP19C	3	1440	5.5	12	12	86(-2)	84(0)	82(+5)	81(+6)	79(+3)	77(+3)	73(+3)	68(+5)	231.6

Fan size 11 to 19 inc. are belt drive and cannot be mounted at an angle no greater than 5°.

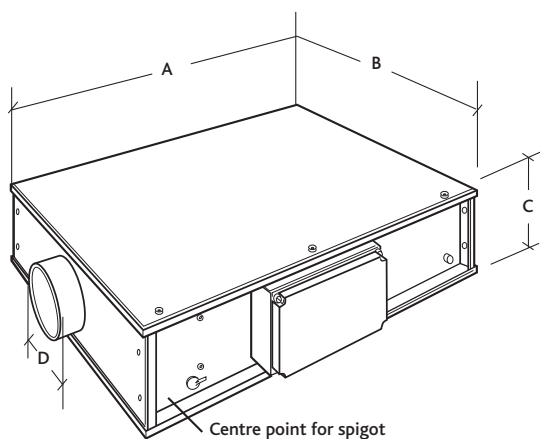
Please contact your local Nuair Technical Sales Engineer or the Technical Department to discuss your application requirements.

**Please insert R or B into code for spigot position eg. ESTCP17A - B.**

Breakout dBA@3m is hemispherical free field. The electrical and sound information in the table is nominal.

**DIMENSIONS**

**Internal Twin Fans ESTCP**



**DIMENSIONS (mm)**

Fan Code	A	B	C	Circular Spigot D dia	Rectangular Spigot
ESTCP4	1063	1047	360	250	N/A
ESTCP6	1193	1047	423	400	N/A
ESTCP9	1195	1174	575	500	N/A
ESTCP11	974	974	622	400	N/A
ESTCP12	974	974	622	400	N/A
ESTCP13	1233	1233	701	500	N/A
ESTCP14	1233	1233	701	500	N/A
ESTCP15	1430	1635	780	630	N/A
ESTCP16	1430	1635	780	630	N/A
ESTCP17	1430	1635	780	630	N/A
ESTCP18	1430	1635	780	630	N/A
ESTCP19	1430	1635	780	630	N/A

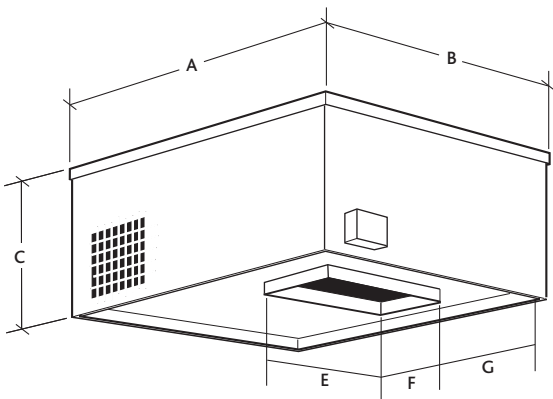
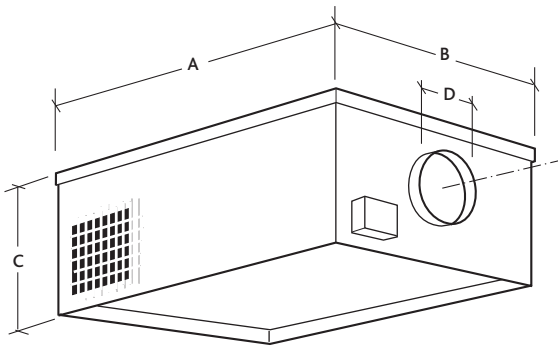
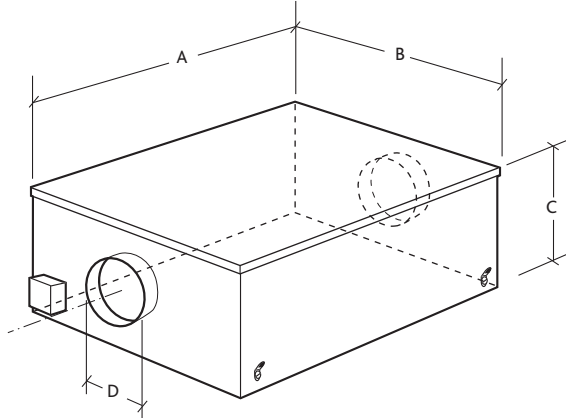
**QUICK SELECTION GUIDE**

**ESTCP TWIN FANS**

Fan Code	Circular Duct Mounted Silencer	Standard Flexible Connector	Acoustic Flexible Connector	AV Mounts
ESTCP4	ES4SIL	CFC25	ACFXRD25	NAV2
ESTCP6	ES6SIL	CFC40	ACFXRD400	NAV2
ESTCP9	ES8SIL	CFC50	ACFXRD500	NAV3
ESTCP11	ES6SIL	CFC40	ACFXRD400	INC
ESTCP12	ES6SIL	CFC40	ACFXRD400	INC
ESTCP13	ES7SIL	CFC50	ACFXRD500	INC
ESTCP14	ES8SIL	CFC50	ACFXRD500	INC
ESTCP15	CA63S	CFC63	-	INC
ESTCP16	CA63S	CFC63	-	INC
ESTCP17	CA63S	CFC63	-	INC
ESTCP18	CA63S	CFC63	-	INC
ESTCP19	CA63S	CFC63	-	INC

**DIMENSIONS**

External Twin Fans ESTCP-X,  
 Roof Twin Fans ESTCP-R end connection and  
 Roof Twin Fans ESTCP-B bottom connection



**QUICK SELECTION GUIDE**

**ESTCP-X & ESXCP-X TWIN FANS**

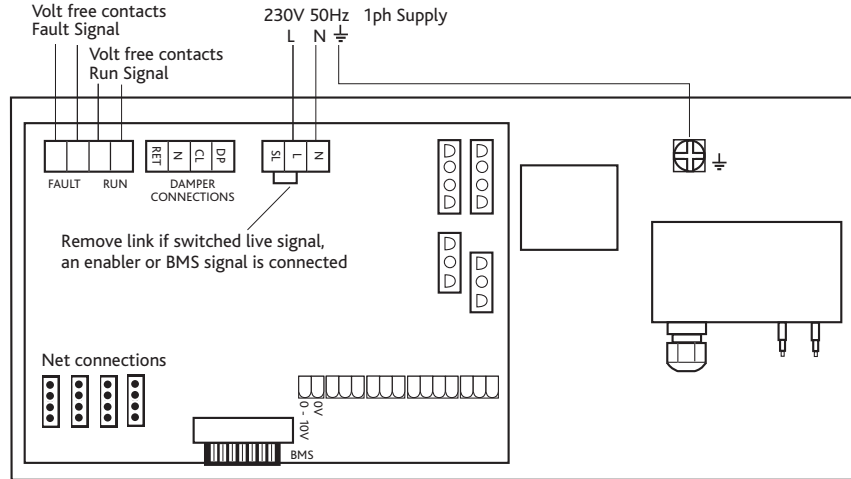
Unit	A	B	C	D	Weight Kg	
					EST	ESX
ESTCP4-X	1165	980	575	250	85	-
ESTCP6-X/ESXCP6-X	1165	980	575	400	86	70
ESTCP9-X/ESXCP9-X	1495	1125	710	500	162	133

**ESTCP-R & ESXCP-R, ESTCP-B & ESXCP-B TWIN FANS**

Unit	A	B	C	D	E	F	Weight Kg	
							EST	ESX
ESTCP4-R	1165	980	575	250	-	-	85	-
ESTCP4-B	1165	980	575	-	152	305	85	-
ESTCP6-R/ESXCP6-R	1165	980	575	400	-	-	86	70
ESTCP6-B/ESXCP6-B	1165	980	575	-	229	457	86	70
ESTCP9-R/ESXCP9-R	1495	1125	710	500	-	-	162	133
ESTCP9-B/ESXCP9-B	1495	1125	710	-	304	762	162	133

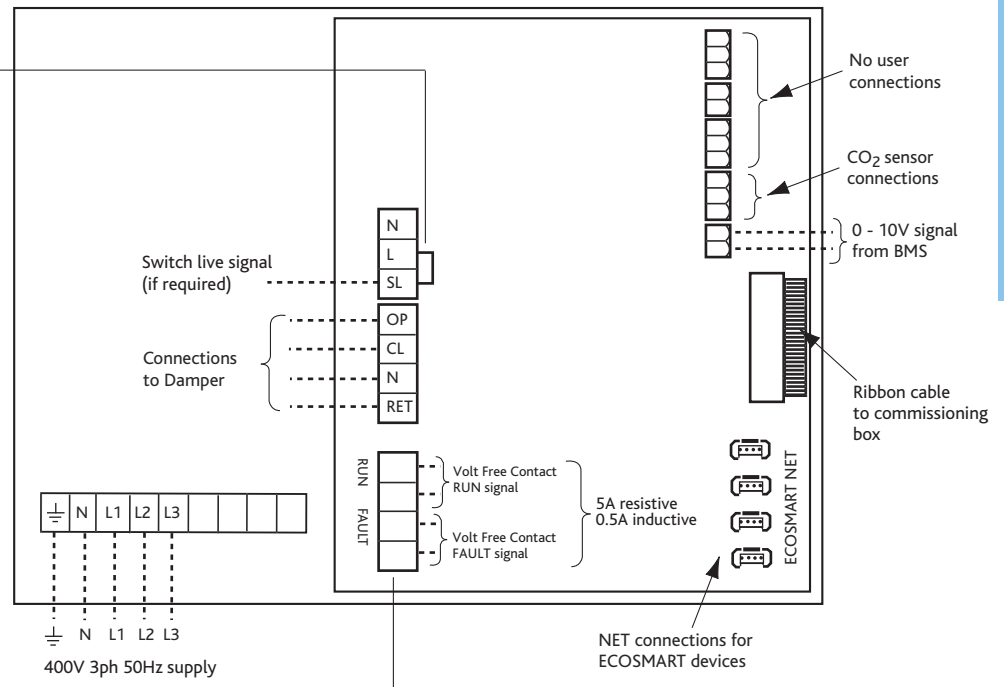
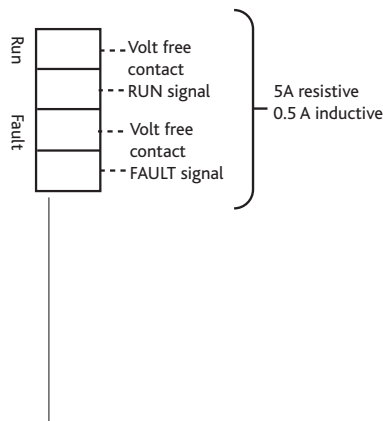
WIRING - CONSTANT PRESSURE

Single Phase



Three Phase

Remove this link wire if a switched live signal is connected to terminal SL.  
 Note: also remove link if a BMS system is connected.  
 Also remove link if an enabling device is connected in the NET.

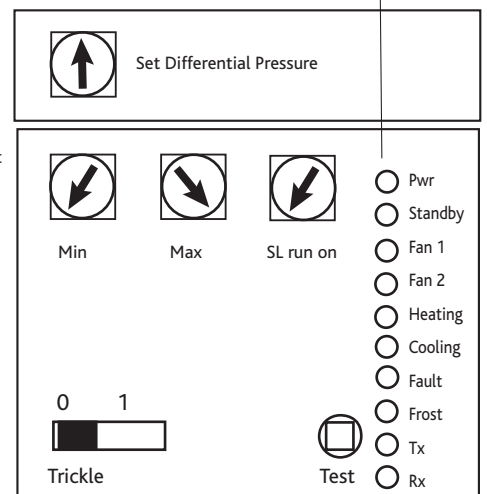


Set Up/Commissioning box

LED Indication

PWR	GREEN: Power on & OK,
Standby	LED on when fan is not running.
Fan 1	GREEN: Fan 1 is running, RED: Fan 1 faulty.
Fan 2	GREEN: Fan 2 is running, RED: Fan 2 faulty.
Heating*	Not applicable. See note.
Cooling*	Not applicable. See note.
Fault	LED on when a fault is present on unit.
Frost*	Not applicable. See note.
Tx	LED on when the controller is transmitting data.
Rx	LED on when the controller is receiving data.

MIN	= Minimum speed adjustment
MAX	= Maximum speed adjustment
SL Run on	= Switched Live Run-On Timer adjustment
TRICKLE	= Selects trickle running: 0 = off, 1 = selected
TEST	= Test button



Please refer to our commissioning guide 671405 for more info on Constant Pressure Systems.

\*Note that the control panel is common to all the Ecosmart products and will have indicators for functions that are not available in this particular fan. However these indicators will not be illuminated.

## CONSULTANTS SPECIFICATION

### CONSTANT PRESSURE EXTRACT SYSTEM

The main extract fan shall be as indicated on the drawings and in accordance with the relevant fan schedule. The vitiated air shall be extracted from the space using an energy efficient constant pressure principle via a variable air volume motorised damper/grille installed in each area, as detailed in the schedule.

### OPERATION

The extract fan shall automatically vary its speed as the system pressure varies; the variation in pressure is caused by the opening and closing of the Nuaire CVD extract damper. The damper is autonomous of the fan and requires no field wiring connecting it to the fan. The damper positions are open (boost) and closed (trickle). The inline damper has an integrated airflow sensor which continuously monitors and controls the amount of air being moved. The air volume is adjusted via minimum and maximum potentiometers on the side of the CVD damper and a run on timer.

The damper/grille shall be as manufactured by Nuaire Ltd.

The duct mounted damper CVD requires a 230V connection/power supply. Signal from 230V switch live i.e. light switch, PIR, humidistat etc.

(If the NRG grille is installed it shall be connected to a 12V ac supply via the inclusive 230V transformer unit and has an integral PIR, two position damper and overrun timer).

Once commissioned and set to work, the fan will maintain the preset pressure by varying its speed as the ventilation requirement within each area varies i.e. as dampers open and close. If the requirement exceeds the maximum or minimum limit, the fan will remain at the design/ limiting speed.

### FAN SPECIFICATION

Each acoustically lined low noise Twinfan shall be fitted with an integral Ecosmart control inclusive of a specifically calibrated pressure transducer and inverter drive. The fans shall have the following energy saving and operational functions integrally installed within the fan unit, all components will be pre-wired and fitted by the manufacturer:

- Factory calibrated pressure transducer.
- Frequency inverter with pressure transducer interface.
- Integral operating pressure adjustment (target pressure).
- BMS interface 0 - 10V.
- Integral auto changeover/duty share, fans changeover every 12 hours of run time.
- Auto changeover in the event of duty fan failure.
- Volt free run & failure/status indication.
- 4no. low voltage sockets for interconnection of remote failure indicator.

Fan, integrated Ecosmart controls and associated sensors/controllers shall be manufactured by Nuaire Ltd.

### CVD FEATURES

- Trickle/boost flow rate.
- Run on timer.
- Externally adjusted settings.
- CVD acts as a balancing damper.
- MEMS (air flow sensor) provide precise measurements and control of flow rate.

The Fan unit shall have a 5 year warranty, first year parts and labour the remainder parts only.

### INSTALLATION

By the appointed contractor.

Mechanical installation requires mounting of the extract unit in the designated position and connection to the associated duct work.

The contractor shall allow for all necessary ductwork transformations to and from the fan unit and any associated components in accordance with the manufacturers recommendations, DW 144 and general good practice.

Electrical installation requires the provision and connection of single phase electrical supply sizes 4, 6 & 9 or three phase sizes 11 to 19 inclusive.

A volt free run/fail status indication at the fan.

A single phase supply to the duct mounted damper version CVD/NRG.

A single phase supply to the transformer feeding the grille with integrated damper and PIR, the 12V output of which is connected to the grille.

### COMMISSIONING

By the appointed commissioning engineer.

The systems should be commissioned in the normal way and the operating or target pressure (inlet side of unit only) set via a potentiometer in the integral set-up box within the fan unit. This should be adjusted until the required air volume flow rate is achieved on the approved measuring device.

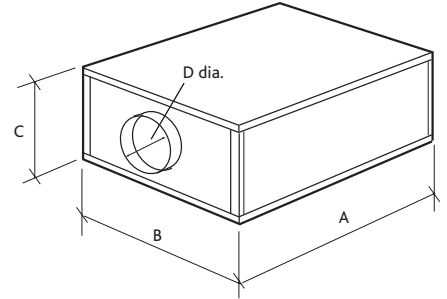
NOTE: NRG & CVD should not be mixed on same system.

The manufacturer's recommendations must be observed at all times.

ANCILLARIES FOR QUIETSCROLL AND CONSTANT PRESSURE

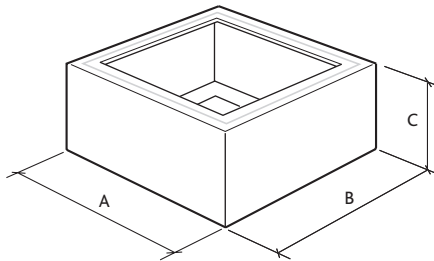
MATCHED SILENCER

Silencers have mineral wool packed to a density greater than 45kg/m<sup>3</sup>. The mineral wool is inert, non combustible and vermin proof for long life and safety. Casing is manufactured from 'Solissime' coated galvanised steel, and designed for fixing directly to the fan outlet. Fan spigot used on open end of matched silencer.



Dimensions (mm)		Attenuation	Dynamic attenuation of silencer in dB														
Unit code	Silencer code		A	B	C	D dia	weight (kg)	Unit code	Octave Band	Mid frequency Hz	125	250	500	1K	2K	4K	8K
ESTCP4	ES4 SIL	613	764	352	250	31	ES4 SIL	1	4	8	12	11	14	16			
ESTCP6	ES6 SIL	613	764	423	400	38	ES6 SIL	2	6	11	16	15	19	20			
ESTCP9	ES8 SIL	613	965	575	500	48	ES8 SIL	1	1	5	8	8	12	14			

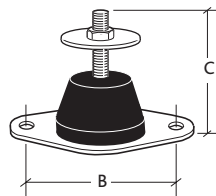
Note: These silencers are for internal use only.



PREFABRICATED CURB

Manufactured in aluminium alloy these curbs will reduce design work and guarantee correct unit mounting when on site. Note: Upper faces of curb are fitted with robust sealing strip.

Dimensions (mm)				
Prefab Curb Code	A	B	C	D
224PFC/1	225	225	250	50
280PFC/1	350	350	250	50
400PFC/1	450	450	250	75
500PFC/1	550	550	250	45
630PFC/1	650	650	250	45
800PFC/1	750	750	250	75
1000PFC/1	1000	1000	250	100



ANTI-VIBRATION MOUNTINGS

Supplied as a set of 4. To select match isolated assembly weight to max supporting weight shown on the right.

Resilient Rubber

Dimensions (mm)		Max Supporting Weight Kg Per Set		
Code	Type	B	C	
NAV1	Rubber	30	50	20.0
NAV2	Rubber	40	75	80.0
NAV3	Rubber	40	75	180.0

## TWIN FANS

### CONSTANT PRESSURE

#### TECHNICAL INFORMATION

## ANCILLARIES FOR QUIETSCROLL AND CONSTANT PRESSURE CONT.

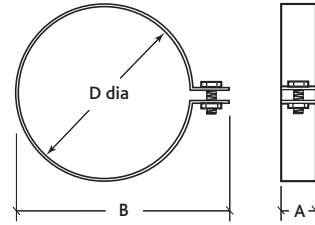
### FAST CLAMP

Manufactured from galvanised steel with a gasket liner to provide an air tight joint. Matching fan spigot diameters.

Typical code: FC-100

Dimensions (mm)

Code	A	D	Code	A	D
FC100	90	100	FC250	90	250
FC125	90	125	FC315	90	315
FC150	90	150	FC400	90	400
FC200	90	200	-	-	-



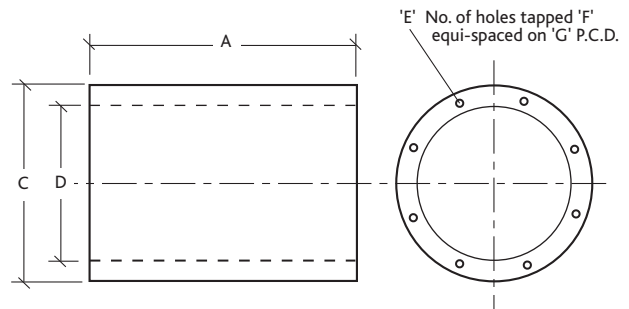
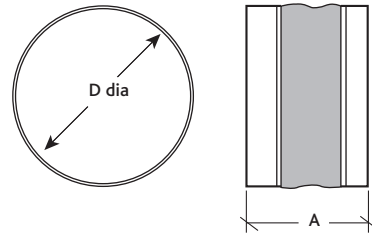
### CIRCULAR FLEXIBLE CONNECTOR

Flexible material is flame resistant to BS476 part 7 with galvanised steel spigots. Heat resistant to 132°C with excellent resistance to chemicals, oil and grease. Connector is airtight and waterproof.

Typical code: CFC-10

Dimensions (mm)

Code	A	D	Code	A	D
CFC10	150	102	CFC25	150	252
CFC12	150	127	CFC31	150	317
CFC16	150	152	CFC40	150	402
CFC20	150	202	-	-	-



### IN-LINE CIRCULAR ATTENUATORS

Standard - Un-podded - Performance, Dimensions (mm) and Weights

Dia.	Unit Code	Type	Dynamic Attenuation							Dimensions (mm)							Weight Kg
			Octave band mid frequency (Hz)														
			125	250	500	1K	2K	4K	8K	A	C	D	E	F	G		
250mm	CA25S	Standard Un-podded	-1	-2	-4	-7	-9	-7	-5	250	450	250	4	M8	300	6.0	
400mm	CA40S	Standard Un-podded	-2	-3	-5	-7	-9	-6	-5	400	600	400	8	M10	450	16.0	
500mm	CA50S	Standard Un-podded	-2	-3	-6	-8	-8	-6	-4	500	700	500	12	M10	560	23.0	
630mm	CA63S	Standard Un-podded	-2	-4	-8	-9	-8	-5	-4	630	830	630	12	M10	690	30.0	
1000mm	CA100S	Standard Un-podded	-3	-6	-9	-8	-6	-4	-2	1000	1200	1000	16	M12	1070	111.0	

Long - Un-podded - Performance, Dimensions (mm) and Weights

250mm	CA25L	Long - Un-podded	-2	-3	-6	-12	-15	-13	-9	500	450	250	4	M8	300	11.0
400mm	CA40L	Long - Un-podded	-3	-3	-7	-13	-14	-12	-8	800	600	400	8	M10	450	30.0
500mm	CA50L	Long - Un-podded	-3	-4	-10	-14	-13	-10	-7	1000	700	500	12	M10	560	42.0
630mm	CA63L	Long - Un-podded	-3	-6	-13	-15	-13	-9	-6	1260	830	630	12	M10	690	56.0
1000mm	CA100L	Long - Un-podded	-6	-11	-15	-14	-10	-6	-3	2000	1200	1000	16	M12	1070	203.0

Note: For further attenuation details please refer to Axis section.

**ANCILLARIES FOR QUIETSCROLL AND CONSTANT PRESSURE CONT.**

**TERMINATOR COWLS DIMENSIONS (mm)**

To provide a weatherproof route for supply & exhaust air to your ducted system.

Cowls are manufactured from flame retardant polymer and can be supplied with gravity backdraught shutters, bird guards and hand guards. The terminal is finished in BS00A05 Grey as standard. All BS or RAL colours are available. The cowl will normally be fitted to the upstand by a roofing contractor or builder. The Cowl can be fitted without shutters on a 0-60 degree pitched roof with its longer side running down the roof slope. The Cowl can be fitted with its longer side running across a slope of less than 85 degrees from the horizontal. When fitted to a wall the longer side must run horizontal.

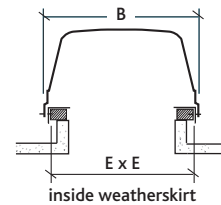
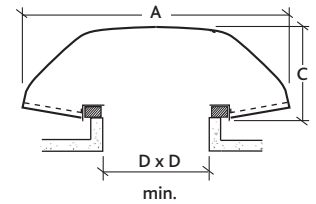
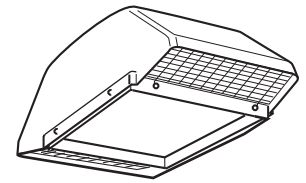
**Typical code: TRTS-A** Note: S = Shutters

Note: Air Pressure Drop of cowl (Pa) =  $Z \times Q^2$

$R = ZQm^2$

where Z = Factor listed in table below Q = Air Volume Flow Rate (m<sup>3</sup>/s)

Code	A	B	C	D	E	Weight Kg	Discharge	Z Intake
TRTS-A	900	620	340	460	600	12.3	67	118
TRTS-B	1080	740	375	560	695	14.7	39	87
TRTS-C	1320	964	475	700	945	26.0	28	62
TRTS-D	1470	1076	490	800	1050	28.2	19	32
TRTS-E	1780	1170	485	900	1136	50.0	7	11.3
TRTS-F	2260	1476	600	1200	1452	88.0	2.5	3.6



**SUPPLY/EXTRACT COWLS DIMENSIONS (mm)**

Supply/Extract Cowl: rigid flame retardant cowl, conforming with BS476 (Part 1 class 11) supplied in grey (BS 00 A 05) as standard (any BS or RAL colours available), fixing directly to the base using non-rusting sealed fixings. Air plenum is manufactured from galvanised steel incorporating supply & extract chambers. Rigid spigots are provided for connection of duct work. Supply & extract chamber is fitted with a bird guard.

**Typical code: TRSE1**

Code	A	B	C	D	E	F	G	Weight Kg
TRSE1	900	620	340	460	600	200	100	14
TRSE2	900	620	340	460	600	200	125	14
TRSE3	900	620	340	460	600	200	150	14
TRSE4	1320	964	475	700	945	345	200	30
TRSE5	1320	964	475	700	945	345	250	30
TRSE6	1320	964	475	700	945	345	315	30
TRSE7	1780	1170	489	900	1150	450	400	57

Resistance to airflow of this item is negligible.

