SUPPLY & EXTRACT 93

FAN TYPE	FAN LOCATION	MAX PERFORMANCE	PAGE
OPUS 40/60/95	SURFACE OR RECESSED	95l/s	94
ES-OPUSDC	INLINE DUCT	115l/s	100
OPUS PLUS	INLINE DUCT OR SURFACE	150l/s	106
XS	WALL/CEILING/ WINDOW/ROOF	0.55m³/s	112
SQURBO	EXTRACT	0.4m³/s	128
ECOSMART SQURBO	SUPPLY/EXTRACT	0.5m³/s	134
XTRACTOR	INLINE	5.9m³/s	146
XTRACTOR CONSTANT PRESSURE	INLINE	5.9m³/s	168
AIRMOVER	INLINE	11m³/s	180
SQUIF	INLINE	6.5m³/s	190
TWIN SQUIF	INLINE	6.2m³/s	200
GAS INTERLOCK SYSTEM	SAFETY CONTROL	CONTACT NUAIRE	208

OPUS 40-60-95 SINGLE & TWIN FANS

NEW STYLISH WALL & CEILING FAN CONTINUING NUAIRE'S PEDIGREE FOR HIGH PERFORMANCE, LOW NOISE SOLUTIONS.

ecosmart OPTIONS AVAILABLE

BENEFITS

VERY QUIET OPERATION
Units offer high performance with low noise levels.

MOST EFFICIENT SYSTEMS
Latest DC motor design providing high performance with the lowest possible Specific Fan Power available in its class. Will conform to Part L2.

GUARANTEED VENTILATION
The most compact cost effective twinfan available for the duty range.

QUICK & EASY TO INSTALL
Unit can be installed as recessed or surface mounted on site.

SIMPLE TO COMMISSION
Integral control facility enables the duty to be precisely set without the need for additional controls.

LOW MAINTENANCE COST
Easy clean foam filters protect motor and fan assembly, reducing maintenance costs and extending fan life. Foam filters fitted as standard.

CONTROLS
A choice of 'on-board' and 'remote' control options are available, including Ecosmart energy efficient controls.

FLEXIBLE SOLUTION - SIDE DISCHARGE
Unit can be installed horizontally or vertically. Range offers surface, recessed or duct mounted options.

CONTINUOUS VENTILATION
Twin fans allow for automatic changeover to standby fan in event of fan failure.

SPECIALIST OPTION
Vandal proof grille available for extra security and protection.

WARRANTY
Opus 40, 60 & 95 have a 3 year warranty. Ecosmart models have a 5 year warranty.

Note: if you have a BMS system the Ecosmart model will be required.

For a full range of Ecosmart sensors and enablers please refer to the controls and ancillaries section.

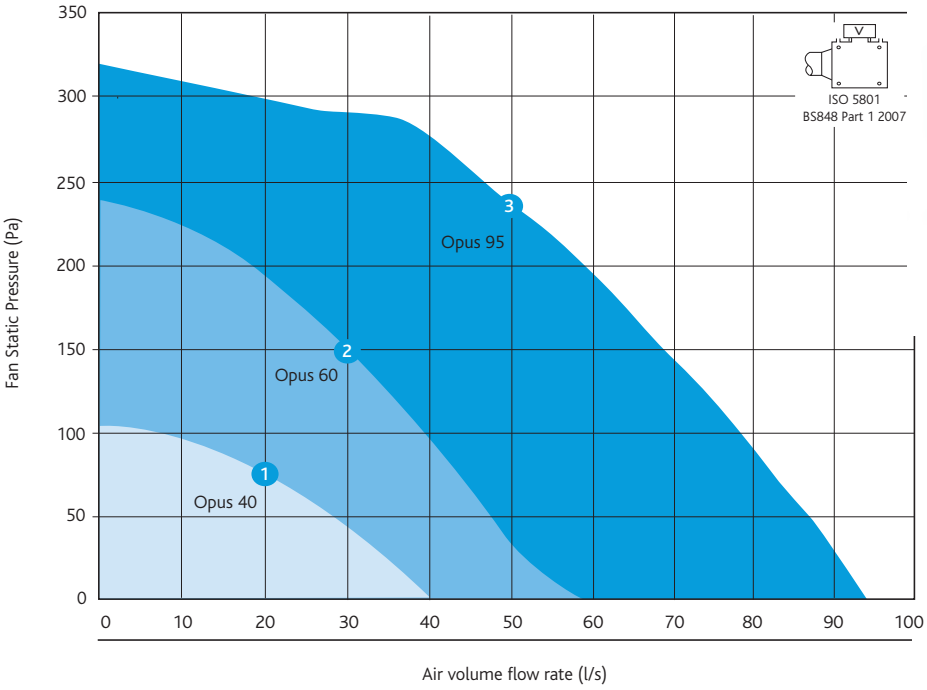
INSTALLATION OPTIONS

Unit can be installed as surface or recessed.

Recessed mounting mode.

PERFORMANCE - OPUS EXTRACT FANS

Opus 40, 60 and 95



Note: Opus 95 has ²/₃rds duty on fan failure.

Casing

Code description (Example)

OPUS 40T - E S P

1 2 3 4 5

1 = Opus range
2 = 40, 60 or 95l/s
3 T = Twin
S = Single
D = Dual fan ²/₃rds duty on fan failure
4 = Ecosmart control or speed control
5 = P.I.R. or run on timer

OPUS EXTRACT FANS - MODELS AND CODING

MODEL	OPUS40 (SINGLE & TWIN)	OPUS60 (SINGLE & TWIN)	OPUS95 (SINGLE & TWIN)
	surface/recessed	**surface/recessed**	**surface/recessed**
Single Fan (basic on/off, with trickle switch)	S	S	-
Twin Fan (basic on/off, with trickle switch)	T	T	-
Dual Fan (²/₃rds duty on fan failure)	-	-	D
Speed control (built in trickle & boost)	C	C	C
Ecosmart (speed control/sensors)	ES	ES	ES
Run on timer	R	R	R
PIR (run on timer included) only available on Ecosmart model (built in)	P	P	P

ANCILLARIES

Remote Fail Indicator	OPUS-RFI	OPUS-RFI	OPUS-RFI
Remote Fail Indicator (for Ecosmart model only)	ES-AVI2	ES-AVI2	ES-AVI2
External Humidistat	HUMISEN	HUMISEN	HUMISEN
External Humidistat (for Ecosmart model only)	ES-HUMIDISTAT	ES-HUMIDISTAT	ES-HUMIDISTAT
Vandal proof cover	OPUS-VPC	OPUS-VPC	OPUS-VPC
Backdraft shutter in white	PVC494WH	PVC494WH	PVC494WH

For a full range of Ecosmart sensors and enablers please refer to the controls and ancillaries section.
For foam filter spares contact Nuaire.

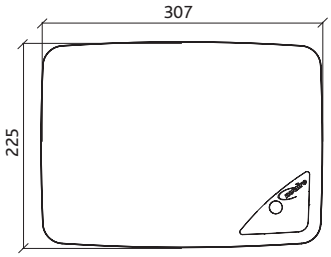
ELECTRICAL & SOUND

Fan Unit	Frequency Hz 63	125	250	500	1K	2K	4K	8K	Open inlet dBA @ 3m	FLC amps	Power watts
Opus 40	45	47	53	49	47	48	43	33	36	0.1	14
Opus 60	48	57	57	55	54	55	51	44	43	0.32	43
Opus 95 Dual fan	50	57	62	58	57	57	52	46	46	0.6	72

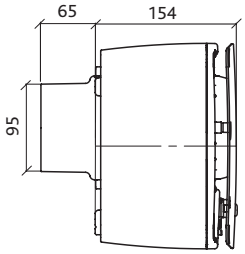
DIMENSIONS (MM)

Surface mounted unit

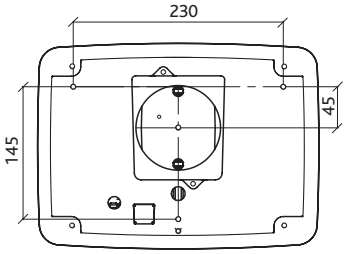
Front view



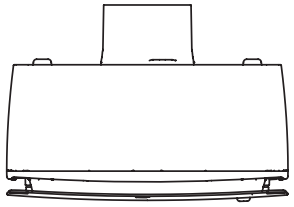
Side view



Back view

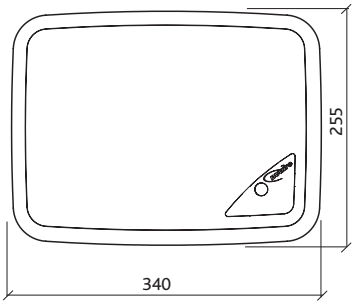


Top view

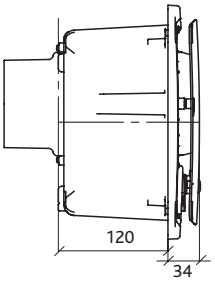


Recessed mounted unit rear discharge

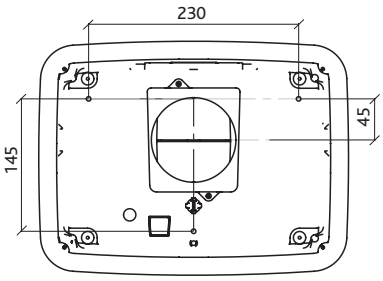
Front view



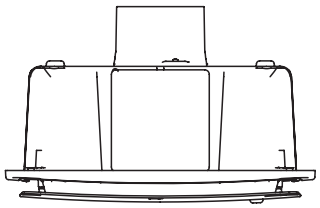
Side view



Back view

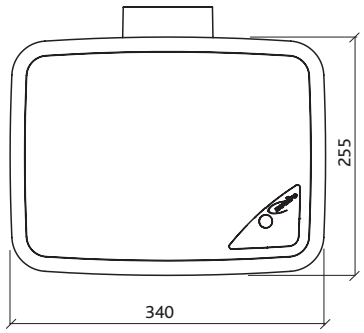


Top view

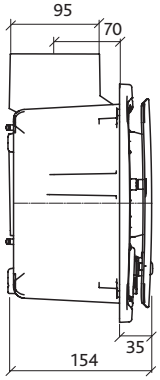


Recessed mounted unit side discharge

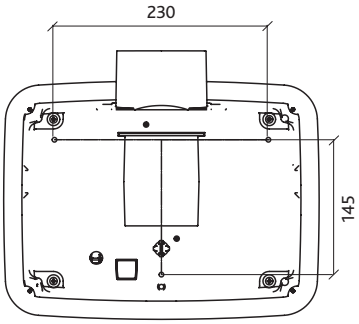
Front view



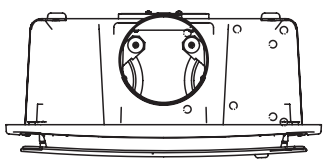
Side view



Back view

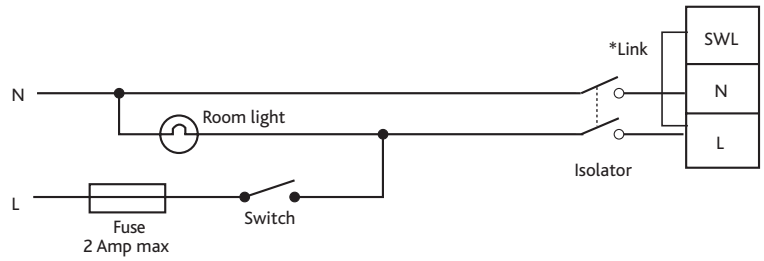


Top view

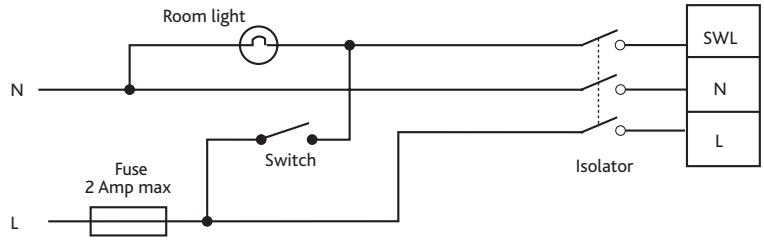


WIRING - OPUS 40 - 60 - 95

Unit ventilating one room



Unit ventilating one room (Using run on circuit)



*Note: Link also required when used in conjunction with remote user control (ES-UCF).

CONSULTANTS SPECIFICATION

OPERATION

The extract fans shall be as indicated on the drawings and shall be in accordance with the fan schedule in the specification. The vitiated air shall be extracted from each area via ductwork as shown. All necessary ductwork fittings and ancillaries shall be allowed for by the mechanical sub contractor. The extract fan shall automatically vary its speed as it receives signals from one of the interconnected sensors sited in the rooms being ventilated. When the signal is received the fan shall have the ability to increase speed gradually until the required level is achieved or it will work on a trickle and boost principle i.e. increase ventilation rate from the continuous background rate to the design maximum in one step.

FAN SPECIFICATION

The fans shall have low energy, high efficiency DC fan/motor assembly with sealed for life bearings.

Motors shall have locked rotor protection to prevent overheating in the event of fan failure. The case shall be 100% recyclable with all parts supplied to enable either surface or recessed mounting . It shall have noise levels and power requirements as detailed in the specification and in accordance with the manufacturers details.

The unit shall be capable of discharging the air either from the rear of the case or the side via spigots suitable for 100mm diameter ductwork.

For commissioning purposes the unit shall have a miniature control panel mounted in its facia hidden behind the front cover facilitating high and low speed adjustment (trickle and boost) together with run on timer (1- 60minutes) The front cover shall be removable without the aid of tools. Any adjustments shall be quickly and easily achieved with a standard screwdriver. The control panel shall also have status indication lamps visible behind the corner "window".

Run and standby versions shall have autochangeover and duty share as standard, the fan shall changeover every twelve hours of run time to maximise the units effective life span. All models shall have foam filters as standard.

CONTROL SPECIFICATION

The fan unit shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components pre-wired and factory fitted by the manufacturer.

CONTROL OPTIONS

All models to have power and fan failure indication visible behind the front cover.

Base model – on/off control with facility for continuous background ventilation.
C – full speed control of both background and boost ventilation.
R – 1-60 minute run-on timer.
P – Integrated passive infrared detection to trigger the units to boost (Ecosmart model).

ES – ECOSMART CONTROL OFFERING:

- Integrated Infinitely variable speed control.
- Integral background ventilation commissioning facility.
- Integral boost ventilation commissioning facility.
- Autochangeover and duty share (twin fan unit only).
- Integral adjustable run on timer.
- Integral S/L terminal for boost trigger from remote switch, e.g. light switch.
- 3no. IDC sockets for interconnection of Ecosmart fans or low voltage sensors using pre-plugged 4-core low voltage cable.

Multiple fans can be interconnected and run from one or more sensor or controller.

- Remote volt free run and fail status indication.
- Run and fail relays for connection to BMS.
- Facia mounted fan failure, system status indication as follows:
- Fan 1 status.
- Fan 2 status.
- Power to fan.
- System standby.
- 5 years parts and labour warranty.

The unit shall be of the Opus type as manufactured by Nuaire.

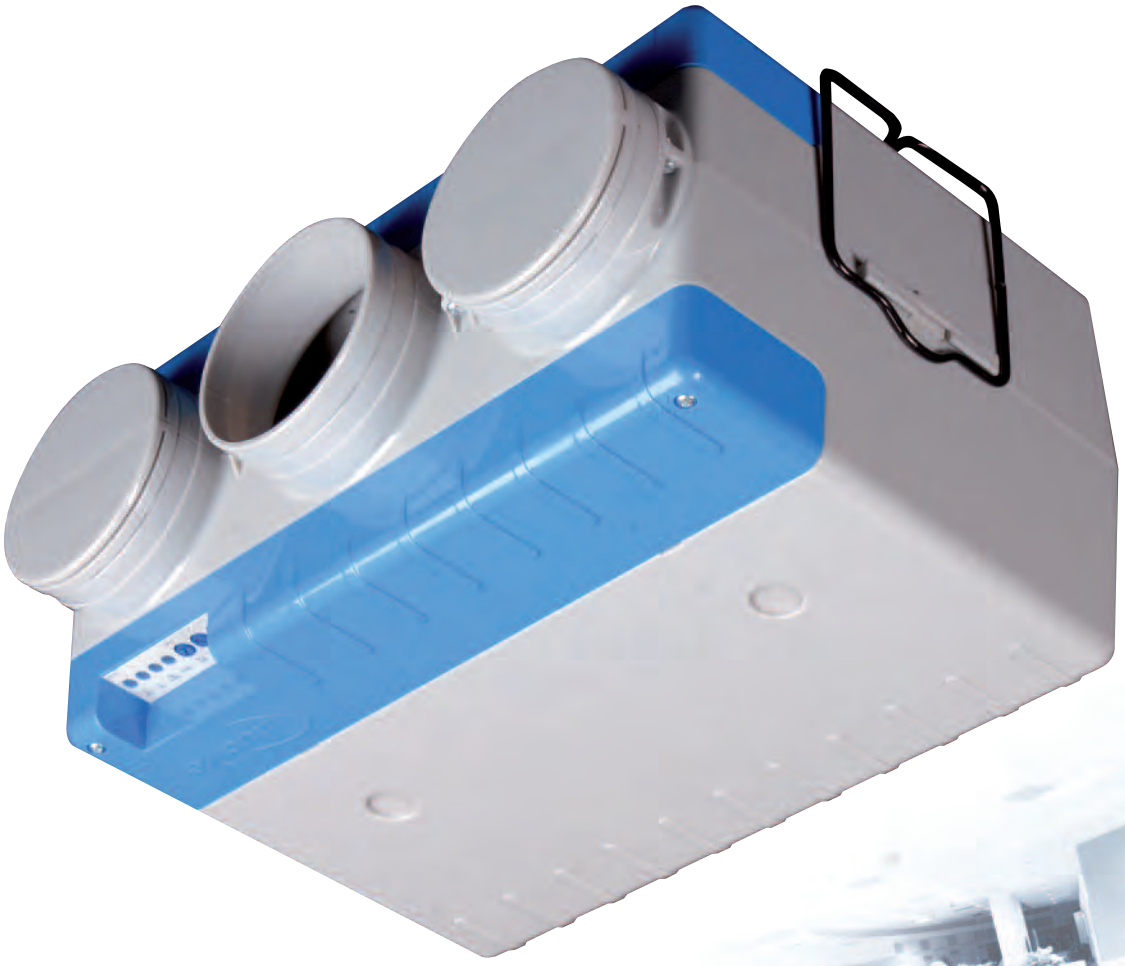
INSTALLATION

By the appointed contractor.
Mechanical installation requires mounting of the extract unit in the designated position and connection to the associated duct work. Electrical installation requires the provision and connection of single phase electrical supply at the fan.

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

ES-OPUSDC EXTRACT FANS

ENERGY EFFICIENT, LOW NOISE, FLEXIBLE EXTRACT SOLUTION.



ecosmart
OPTIONS AVAILABLE

BENEFITS

QUIETEST SOLUTIONS
Advanced fan motor and impeller technology providing the quietest unit available.

CONTINUOUS VENTILATION
Twin fans allow for automatic changeover to stand by fan in the event of fan failure. They also feature auto duty share.

MOST EFFICIENT SYSTEMS
Latest DC motor design providing high performance with the lowest possible Specific Fan Power available in its class.

SIMPLE COMMISSIONING
Integrated speed control enabling minimum and ,maximum fan speed to be easily adjusted giving an,accurate, efficient site set up.

QUICK & EASY INSTALLATION
Unique self locating mounting bracket enables the unit to be quickly and efficiently installed without additional fittings.

INCREASED LIFECYCLE
Accurate speed control reduces wear and heat losses combined with the automatic change over in the twinfan version increase overall life of the units.

HEALTHY ATMOSPHERE
Ecosmart sensors accurately control the ventilation levels ensuring that the rooms design requirement is met without wasting motor power or needlessly ,extracting conditioned air. Trickle function means that a background ventilation rate can be accurately set to keep rooms fresh when there is low occupancy.

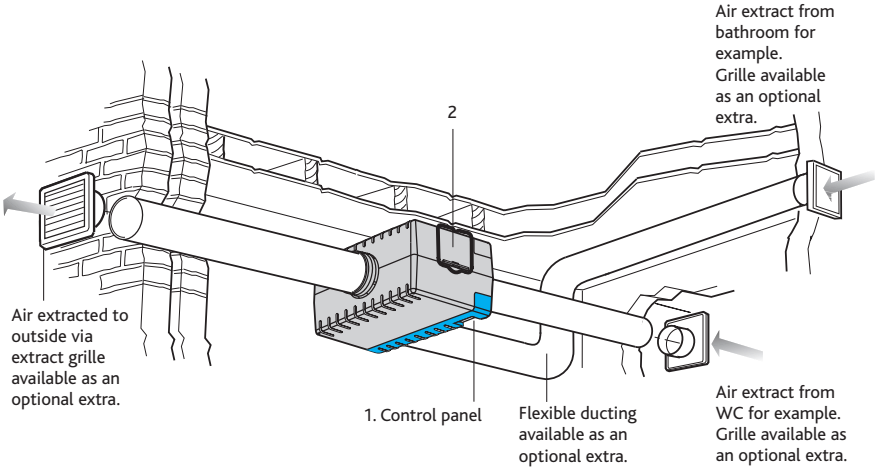
CONTROLLABILITY
A choice of 'on-board' and 'remote' control options are available and are completely interchangeable.

ECOSMART SPEED CONTROL
All units have inbuilt energy efficient Ecosmart control included as standard to provide an easily commissioned packaged solution.

REMOTE FAILURE INDICATOR
Visual and audible failure indicator
Code: ES-AVI2.

WARRANTY
The Ecosmart Opusdc has a 5 year warranty.

TYPICAL INSTALLATION



Easy control access.

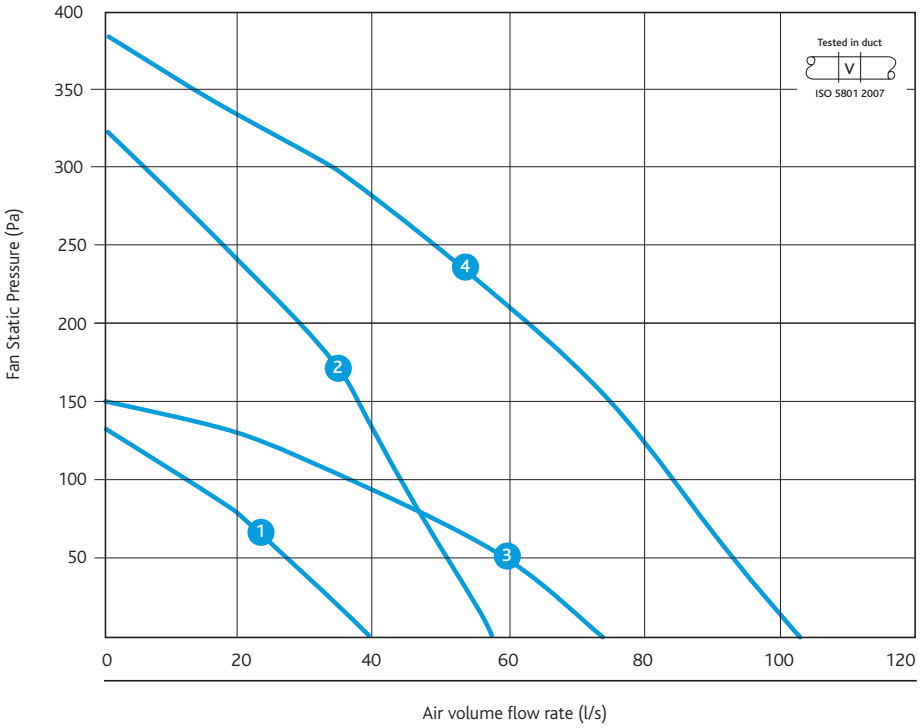
Quick release bracket.

Plug-in connections.

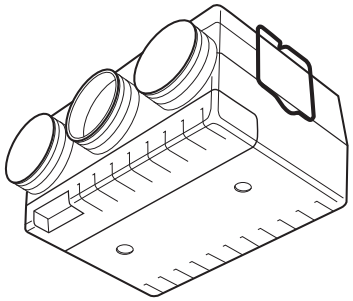
3 inlet connections.

PERFORMANCE - ES-OPUSDC EXTRACT FANS

Opus DC Single and Twinfan Units



Casing



Code descriptions

ES - OPUSDC 40 - 2 M

1 2 3 4 5 6

1. Ecosmart control
2. Opus range
3. DC=direct current, low watt
4. 40 = unit size
5. 2 = Twin model (See note*)
   No reference = Single fan
6. M= Duct mounted

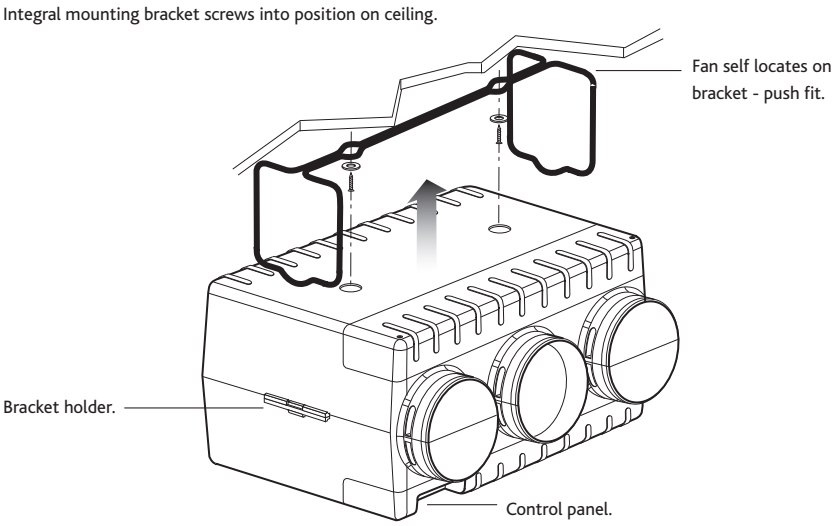
ES-OPUSDC EXTRACT FANS

ELECTRICAL & SOUND

Curve	Code	Input Power Watts	FLC amps	Induct Inlet/outlet noise	Sound Power Levels dB re:10-12w Frequency Hz 125	250	500	1K	2K	4K	8K	Breakout dBA@3m
	Single Fan											
1	ES-OPUSDC40-M	18	0.13	Induct inlet	65	52	45	41	36	24	25	29
				Induct outlet	64	56	53	52	49	42	34	
				Breakout sound levels	45	52	45	40	29	25	25	
2	ES-OPUSDC60-M	44	0.31	Induct inlet	72	58	53	50	45	33	30	34
				Induct outlet	75	67	62	61	60	55	49	
				Breakout sound levels	45	51	51	46	42	34	27	
	Twin Fan											
1	ES-OPUSDC40-2M	18	0.13	Induct inlet	65	52	45	41	36	24	25	29
				Induct outlet	64	56	53	52	49	42	34	
				Breakout sound levels	45	52	45	40	29	25	25	
2	ES-OPUSDC60-2M	44	0.31	Induct inlet	72	58	53	50	45	33	30	34
				Induct outlet	75	67	62	61	60	55	49	
				Breakout sound levels	45	51	51	46	42	34	27	
	Dual Fan											
3*	ES-OPUSDC75-M	33	0.23	Induct inlet	68	55	49	48	38	27	27	30
				Induct outlet	69	58	54	52	48	42	33	
				Breakout sound levels	52	48	49	44	31	28	25	
4*	ES-OPUSDC110-M	90	0.6	Induct inlet	76	68	61	54	49	40	37	37
				Induct outlet	76	71	63	63	62	58	52	
				Breakout sound levels	52	54	54	50	44	37	27	

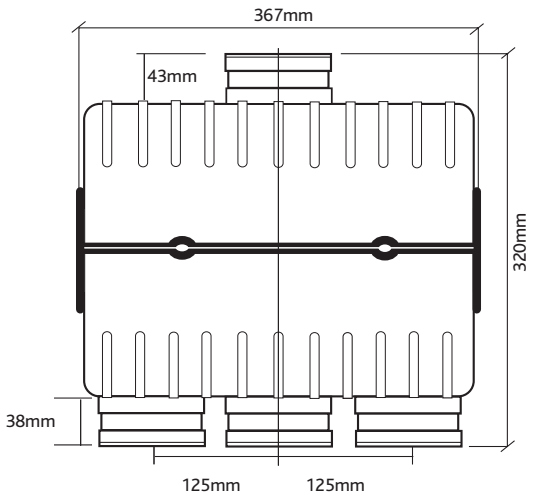
*Note: Unit sizes 75 and 110 have 2 fans running simultaneously as standard. In the event of failure the remaining fans performance will be reduced to approximately 2/3rds.
Fully Ecosmart compatible with low voltage plug in control.

INSTALLATION - ES-OPUSDC EXTRACT FANS

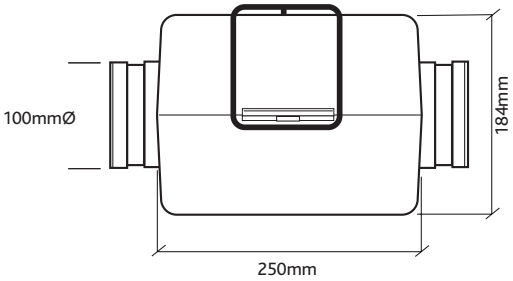


DIMENSIONS (MM)

View from the top

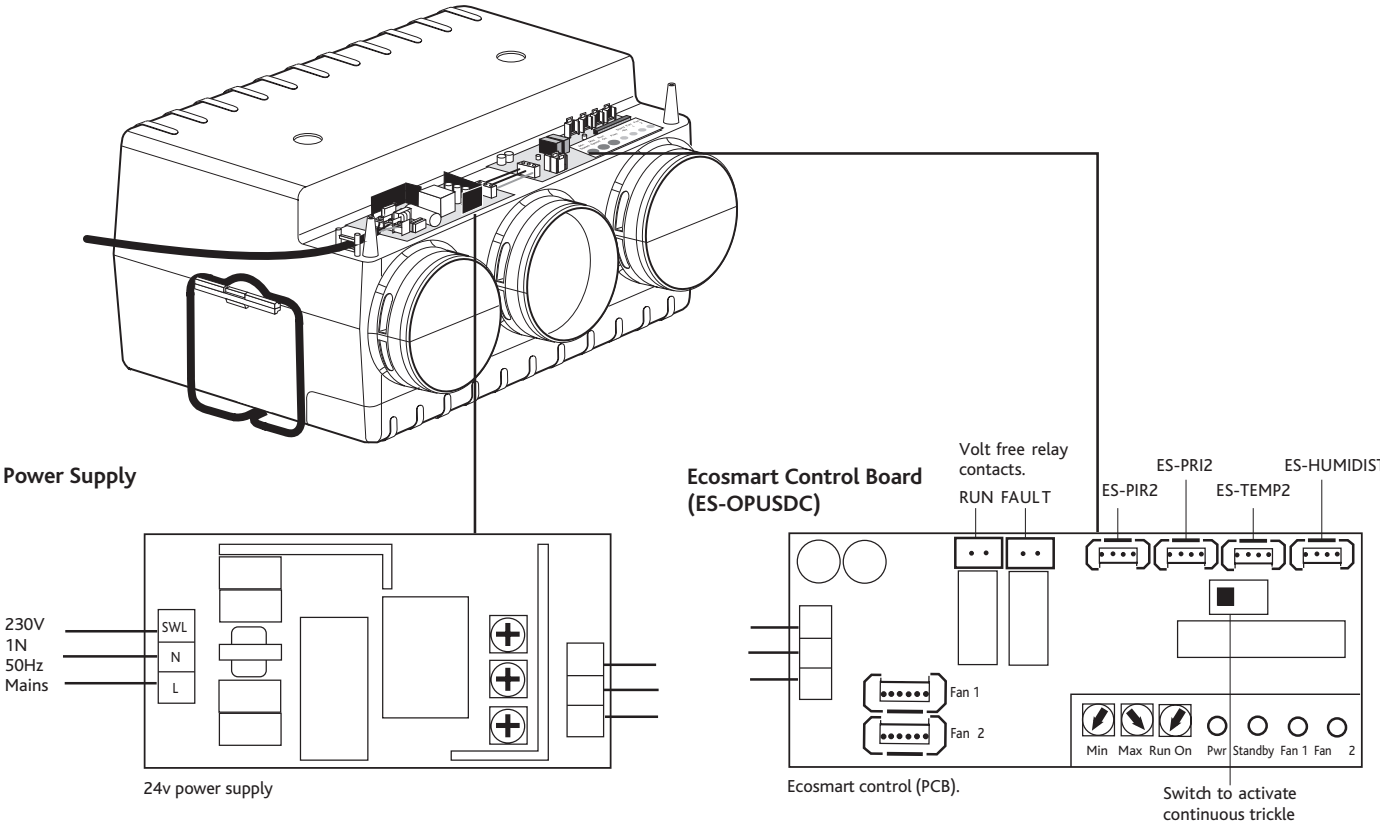


View from the side

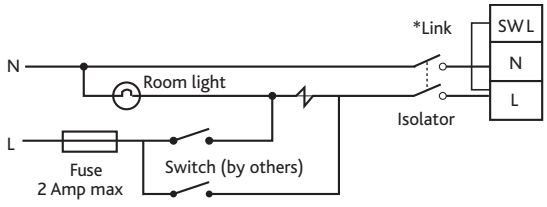


All spigots 100mm dia.
Unit weight = 3kg

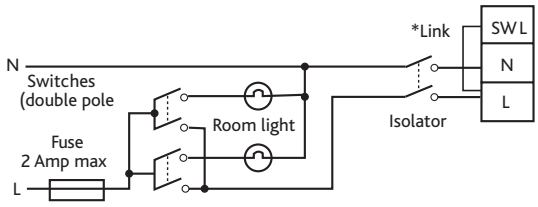
WIRING ES-OPUSDC



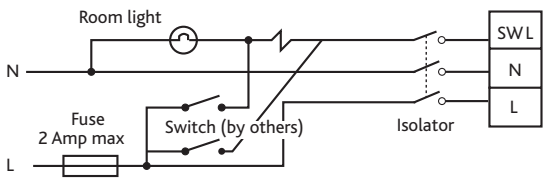
Unit ventilating one room



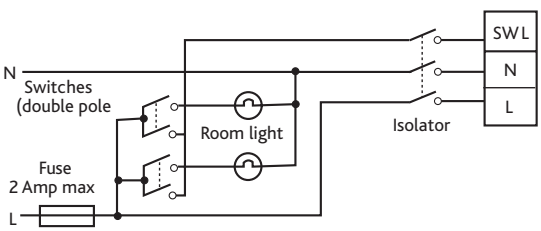
Unit ventilating two rooms



Unit ventilating one room (Using run on circuit)



Unit ventilating two rooms (Using run on circuit)



CONSULTANTS SPECIFICATION

OPERATION

The extract fans shall be as indicated on the drawings and shall be in accordance with the fan schedule in the specification. The vitiated air shall be extracted from each area via ductwork as shown. All necessary ductwork fittings and ancillaries shall be allowed for by the mechanical sub contractor. The extract fan shall automatically vary its speed as it receives signals from one of the interconnected sensors sited in the rooms being ventilated. When the signal is received the fan shall have the ability to increase speed gradually until the required level is achieved or it will work on a trickle and boost principle i.e. increase ventilation rate from the continuous background rate to the design maximum in one step.

FAN SPECIFICATION

The fans shall have low energy, high efficiency DC fan/motor assembly with sealed for life bearings, mounted within an acoustically lined, 100% recyclable plastic case, ensuring a very efficient quiet solution. It shall have noise levels and power requirements as detailed in the specification and in accordance with the manufacturers details.

The unit shall incorporate a quick release mounting bracket. The bracket shall enable the unit to be mounted horizontally or vertically, enabling the unit to be removed without the aid of specialist tools. The depth of the unit shall not be greater than 190mm (including mounting bracket). The unit shall be constructed with one removable panel allowing quick and easy access to the electrical connections.

For commissioning purposes the unit shall have a miniature control panel mounted in its facia facilitating high and low speed adjustment (trickle and boost) together with run on timer (1- 60minutes) and shall be accessible without the need of removing any access panels or the unit itself. Any adjustments shall be quickly and easily achieved with a standard screwdriver. The control panel shall also have status indication lamps on the underside of the unit.

Run and standby versions shall have autochangeover and duty share as standard, the fan shall changeover every twelve hours of run time to maximise the units effective life span.

Three number 100 diameter circular spigots on the system side of the unit are available to allow the ventilation of a number of rooms or points from a single unit. Two of the spigots have blanks fitted which are easily removed to facilitate the interconnection of ductwork.

CONTROL SPECIFICATION

The fan unit shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components
pre-wired and factory fitted by the manufacturer: -

ES-OPUSDC

- Integrated Infinitely variable speed control.
- Integral background ventilation commissioning facility.
- Integral boost ventilation commissioning facility.
- Autochangeover and duty share (twin fan unit only).
- Integral adjustable run on timer.
- Integral S/L terminal for boost trigger from remote switch, e.g. light switch.
- 4no. IDC sockets for interconnection of Ecosmart fans or low voltage sensors using pre-plugged 4-core low voltage cable. Multiple fans can be interconnected and run from one or more sensor or controller.
- Remote volt free run and fail status indication.
- Facia mounted fan failure, system status indication as follows:
- Fan 1 status.
- Fan 2 status.
- Power to fan.
- System standby.
- 5 year warranty.

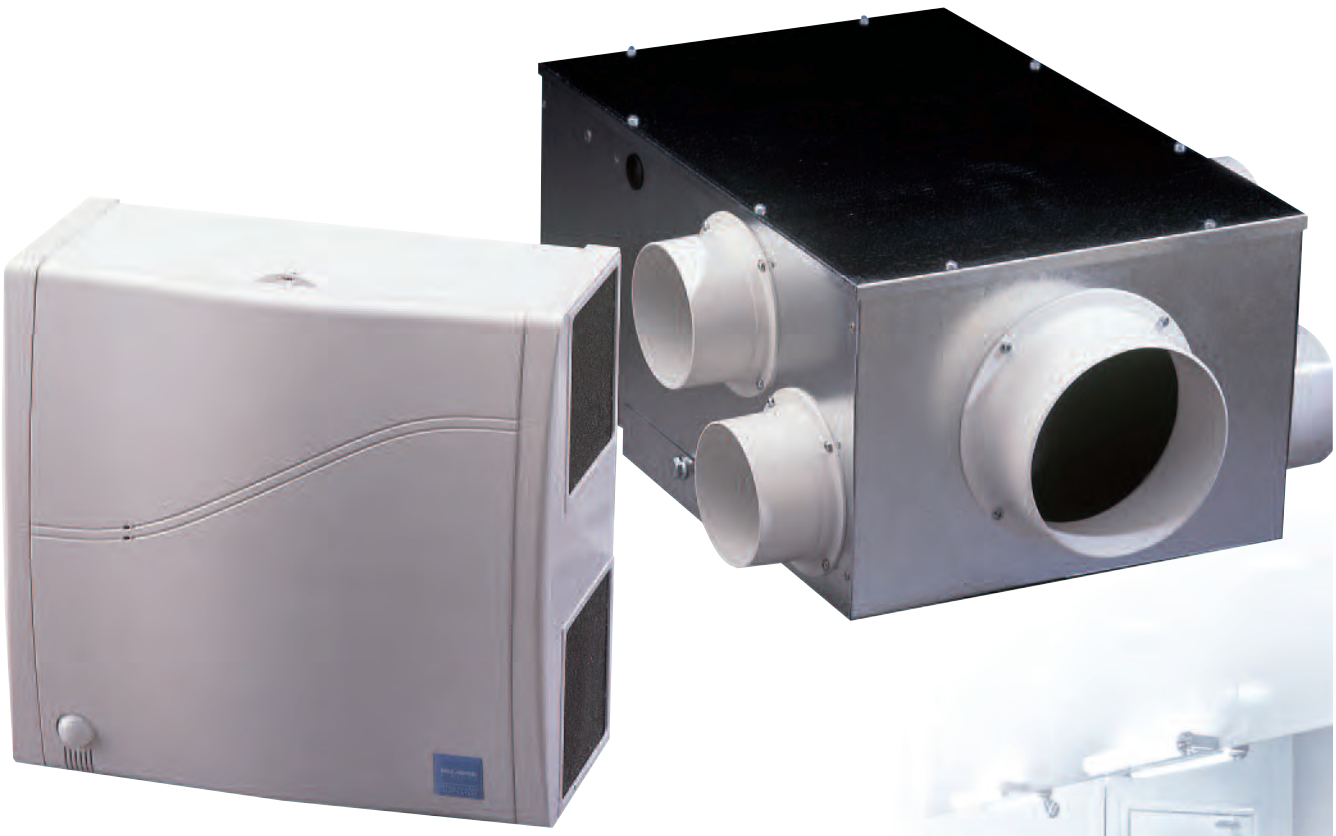
Fan shall be the ES-Opusdc type unit as manufactured by Nuaire.

The user control and low voltage sensors are supplied complete with a 10m length of low voltage, pre-plugged cable to facilitate their interconnection (other length of cables available).

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

OPUS PLUS TWINFANS

COMPACT & POWERFUL, IDEAL FOR LARGER ROOM APPLICATIONS
WHILST MAINTAINING LOW NOISE LEVELS.



BENEFITS

COMPACT & POWERFUL
Small design, high performance up to 150l/s - ideal for larger room applications.

CONTINUOUS VENTILATION
Twin fans allow for automatic changeover to stand by fan in event of fan failure. They also feature auto duty share.

VERY QUIET OPERATION
Acoustically treated case and 'on board' speed control offers high performance with low noise levels.

SIMPLE COMMISSIONING
Integrated speed control enabling maximum fan speed is easily adjusted between 50% and 100%.

INCREASED LIFECYCLE
Fans automatically change over to standby every 12 hours of run time, increasing units overall lifecycle. (Only twin fan models).

LOW MAINTENANCE COST
Easy clean filters protect motor and fan assembly, reducing maintenance costs and extending fan life.

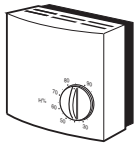
HEALTHY ATMOSPHERE
MInimum fan speed can easily be adjusted between 0% and 50% for continuous background ventilation without wasting motor power. Enabling background ventilation to be provided without unnecessary controls.

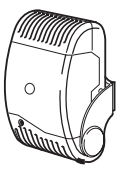
CONTROLLABILITY
A choice of 'on-board' and 'remote' control options are available.

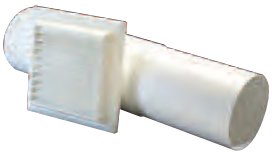
SPEED CONTROL INCLUDED
All units has speed control included as standard to provide a packaged solution.

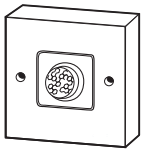
WARRANTY
Opus Plus have a 3 year warranty.

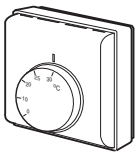
ANCILLARIES

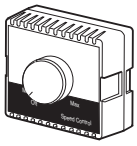

Humidistat.


Audio visual fault indicator.


Wall kit.


Remote P.I.R. sensor.


Thermostat.


Remote speed control.

Easy maintenance.

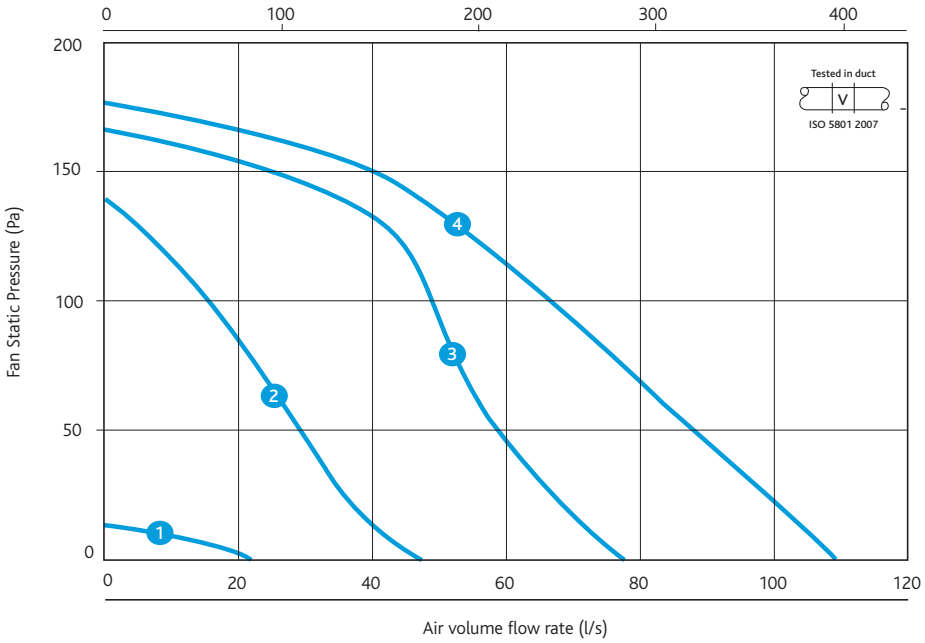
Simple controls.


Easy filter access.

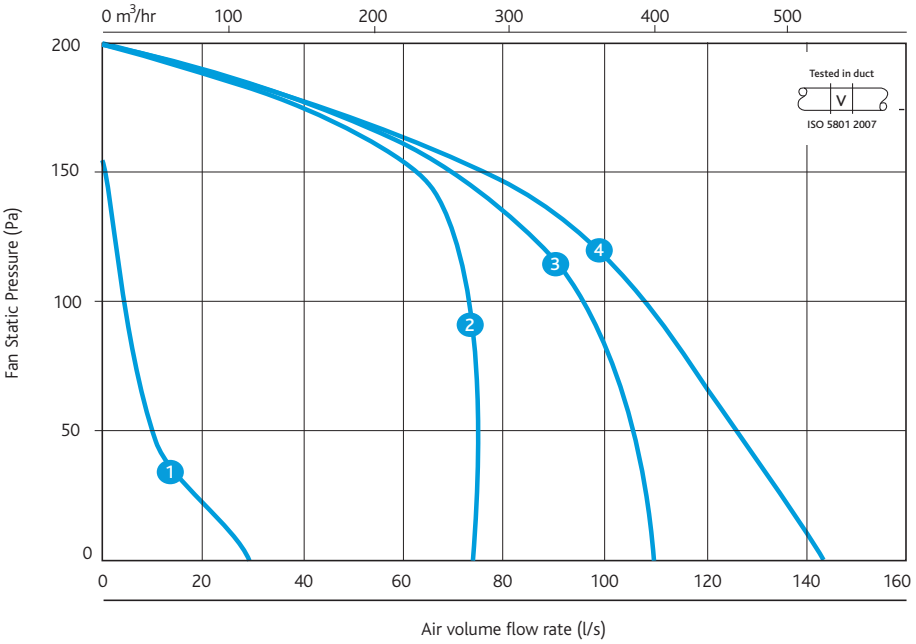

Knockout spigots.

PERFORMANCE - OPUS PLUS FANS

Opus 100 - Single and Twin Fans



Opus 150 - Dual Fans



Note: Speeds are 0-50% (1 & 2) 50-100%(3 & 4) Curves are for indication only

Opus 150 - In event of fan failure, the second fan will continue to run. Performance will be as Opus 100.

Code Descriptions

OPUS 100 - 2 B P

1 2 3 4 5

1. Opus-Plus range
2. Duty indication:
   100 = 100 l/s
   150 = 150 l/s
3. 2 = Twin fan
   No reference = Single fan.
4. Unit application:
   B = Surface mounted
   M = Duct mounted
5. P = integral PIR. Option for surface mounted models only

PERFORMANCE - OPUS PLUS FANS

ELECTRICAL & SOUND

100 '2B' Surface Mounted

Curve	Fan Code	Speed Control Setting	Input Power (watts)	FLC amps	Sound Power Levels (dB re 1pW) Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	dBA @ 3m
1	OPUS100	25%	24	0.10	28	27	32	27	19	10	4	13
2	OPUS100	50%	36	0.15	43	42	48	42	34	25	20	28
3	OPUS100	75%	44	0.19	51	50	56	51	44	39	33	37
4	OPUS100	100%	100	0.39	59	59	62	58	54	48	45	45

100 '2M' Duct Mounted

1	OPUS100	25%	24	0.10	30	24	20	18	12	1	-	4
2	OPUS100	50%	36	0.15	45	39	36	33	27	16	7	20
3	OPUS100	75%	46	0.19	53	47	44	42	37	30	20	30
4	OPUS100	100%	100	0.39	61	56	50	49	47	39	32	37

150 'B' Surface Mounted

1	OPUS150	25%	55	0.23	30	31	35	30	23	14	7	16
2	OPUS150	50%	65	0.27	45	47	51	46	38	30	25	31
3	OPUS150	75%	130	0.55	53	56	61	56	51	44	40	41
4	OPUS150	100%	200	0.78	57	61	65	61	57	51	47	48

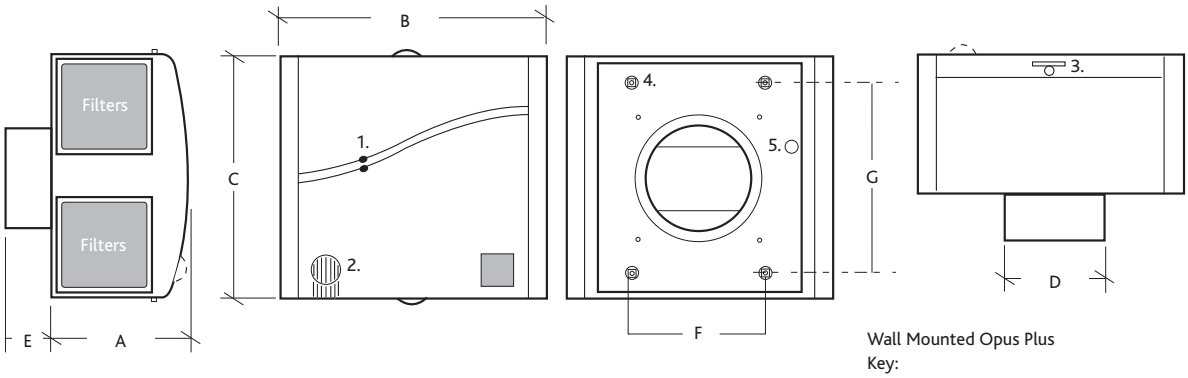
150 'M' Duct Mounted

1	OPUS150	25%	55	0.23	31	27	22	18	13	2	-	4
2	OPUS150	50%	65	0.27	46	43	38	34	28	18	10	20
3	OPUS150	75%	130	0.55	54	52	48	44	41	32	25	30
4	OPUS150	100%	200	0.78	58	58	52	49	46	39	32	37

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

DIMENSIONS - SURFACE MOUNTED OPUS PLUS UNITS

End View | Rear View | View from below



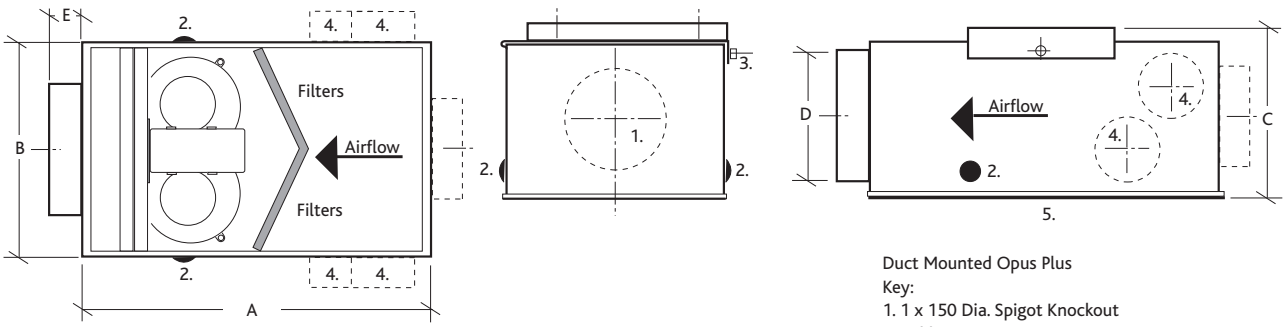
Wall Mounted Opus Plus
Key:
1. LED Run and Fail Indicators
2. Optional Fascia P.I.R.
3. Cover Fixing Screws
4. Fixing Points
5. Cable Access

DIMENSIONS (mm) & WEIGHTS

Fan Unit	A	B	C	D	E	F	G	Weight Kg
OPUS100-2B	160	335	320	125	50	160	248	6
OPUS100-B	160	335	320	125	50	160	248	5
OPUS150-B	160	335	320	125	50	160	248	6

DIMENSIONS - DUCT MOUNTED OPUS PLUS UNITS

Top View | End View | Side View



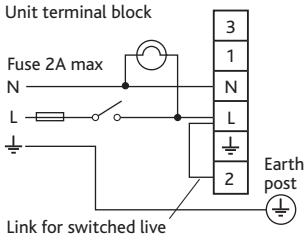
Duct Mounted Opus Plus
Key:
1. 1 x 150 Dia. Spigot Knockout
2. Cable Access
3. Single Screw Unit Fixing
4. 4 x 100 Dia. Spigot Knockouts
5. Access Panel (full length of unit)

DIMENSIONS (mm) & WEIGHTS

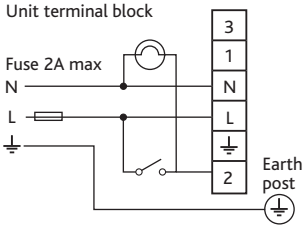
Fan Unit	A	B	C	D	E	Weight Kg
OPUS100-2M	500	330	260	200	50	11
OPUS150-M	500	330	260	200	50	12

WIRING

Wire for full speed operation only.



Wire for trickle vent/boost and timed overrun.



CONSULTANTS SPECIFICATION

OPERATION

The extract fans shall be as indicated on the drawings and shall be in accordance with the particular fan schedule in this specification. The vitiated air shall be extracted from each area via ductwork as shown. All necessary ductwork fittings and ancillaries shall be allowed for by the mechanical sub contractor.

The extract fans shall be operated as it receives signals from one of the interconnected sensors or an external signal e.g. light switch. The OPUS plus shall have the facility to increase speed on a trickle and boost principle when triggered.

GENERAL FAN SPECIFICATION

The fans are acoustically lined with high density class "O" flame retardant acoustic insulation, giving extremely low noise levels and shall be complete with an integral filter (surface mounted versions only); integral controls, magnetic backdraught shutters and facia mounted run and fail indication. The breakout noise level and power requirements shall be in accordance with the schedule and the manufacturer's details.

The fans shall have low energy, high efficiency fan/motor assembly with sealed for life bearings.

OPUS PLUS

The unit shall be supplied complete with automatic fan changeover in the event of failure, sensed via a "hall effect" airflow sensor, and auto duty share every 12 hours of run time. (For twin fan only).

DUCT MOUNTED

The unit shall incorporate a low profile single point mounting bracket, incorporating a pre-stressed synthetic anti vibration seal. The bracket shall enable the unit to be mounted horizontally or vertically. The depth of the unit shall not be greater than 260mm. The unit shall be constructed with one removable panel allowing full maintenance access. To facilitate the interconnection of branch ducts the unit shall have 4x100 dia & 1x 125 dia knockouts on the suction side of the unit (spigots provided).

Fan shall be the OPUS100- (2) M or the OPUS150-M as manufactured by Nuaire.

SURFACE MOUNTED

All fan components are manufactured from ABS polymer and pre-coated steel. Unit finish shall be white.

Fan to have the option of an integrated PIR detector to switch the unit from trickle or off to full speed. Fans complete with integrated magnetic backdraught shutters. Air inlet grilles are fitted with foam filters to protect the fan/motor assembly from airborne dust and contaminants. The unit shall have a 125dia spigot to connect to ductwork or wall mounting kit. Surface mounted LED indicators shall show the unit operational status.

The unit shall be supplied complete with automatic fan changeover in the event of failure, sensed via a "hall effect" airflow sensor, and auto duty share every 12 hours of run time. (For twin fan only).

All versions shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components pre-wired and factory fitted by the manufacturer:

- Integral adjustable background ventilation control/set point (0 – 50%).
- Integral adjustable trickle ventilation control/set point (50 – 100%).
- Integral adjustable run on timer.
- Integral S/L terminal for boost trigger from remote switch, e.g. light switch.
- Integral low voltage terminal for boost trigger from remote low voltage switch.
- Volt free failure/status indication.
- 3 years manufacturers warranty.

The unit shall be controlled by one of the following remote options:

- OPUS –SPD – Low voltage (12V) speed control, ON/OFF and speed control between min and max settings.
- 230-PIR - (passive infra-red) movement detector (includes run-on timer), 2-30 mins).
- 230-PIRNT - (passive infra-red) movement detector (without run-on timer).
- HUMISEN - Humidity sensor.
- 230-TSTATR – Room thermostat.
- CT- AVI – Remote failure indication.

Fan shall be the OPUS100- 2 B or M or the OPUS150- B or M as manufactured by Nuaire Ltd.

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

XS EXTRACT FANS

WIDE RANGE OF MULTIPURPOSE WALL, WINDOW AND ROOF EXTRACT FANS WITH OPTIONAL INTEGRATED CONTROLS.

BENEFITS

MARKET LEADING DESIGN
Wide range to suit most applications including wall, window, roof and ceiling (6, 9 & 12").

QUIETEST OPERATION
Ultra quiet wax thermo actuator, together with market leading motor and impeller technology combine to produce one of the quietest wall fans available.

'MULTI' FAN SPEED CONTROL
Allows up to 5 fans to be connected to one speed control.

HIGH PERFORMANCE
High efficiency impeller and external rotor motor out performs (up to 530l/s / 1908m³/hr) its competitors at much lower noise levels (from 31dBA).

FLEXIBLE SOLUTION
Reversible for extract and input with infinitely variable speed control.

SAVE ENERGY & MONEY
Economy speed setting that will maximise performance at the lowest energy use.

COMPLETE USER SAFETY
Robust construction, manufactured from flame retardant ABS polymer IP44 rated for long life.

EASY REFURBISHMENT
XS refurb kits are quick to install and can be used to replace most existing systems.

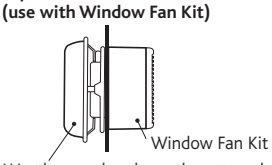
FLEXIBLE CONTROLS
A wide range of sensors including PIR, humidity, air quality, run on timer and thermostat can be integral within the unit or mounted separately.

EASY TO SPECIFY AND ORDER
Fans are supplied complete with kit ensuring no missing components on-site.

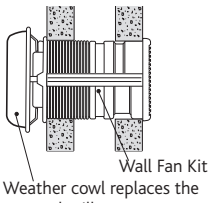
WARRANTY
XS has a 3 year warranty.

TYPICAL INSTALLATION

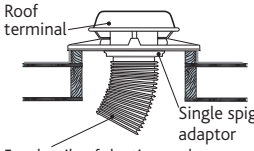
Exposed site window installation (use with Window Fan Kit)



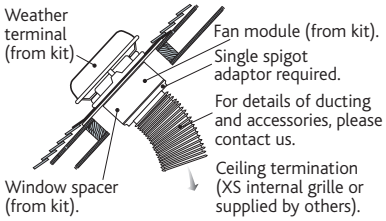
Exposed site wall installation (use with Wall Fan Kit)



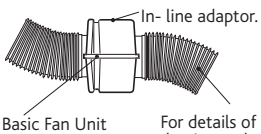
Flat roof (ducted to ceiling) installation (use with Ceiling Fan Kit)



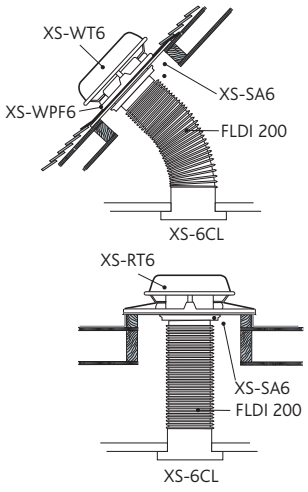
Pitched roof (ducted to ceiling) installation (use with Pitched Roof Fan Kit)



In-Duct installation (use with Basic Fan Unit)

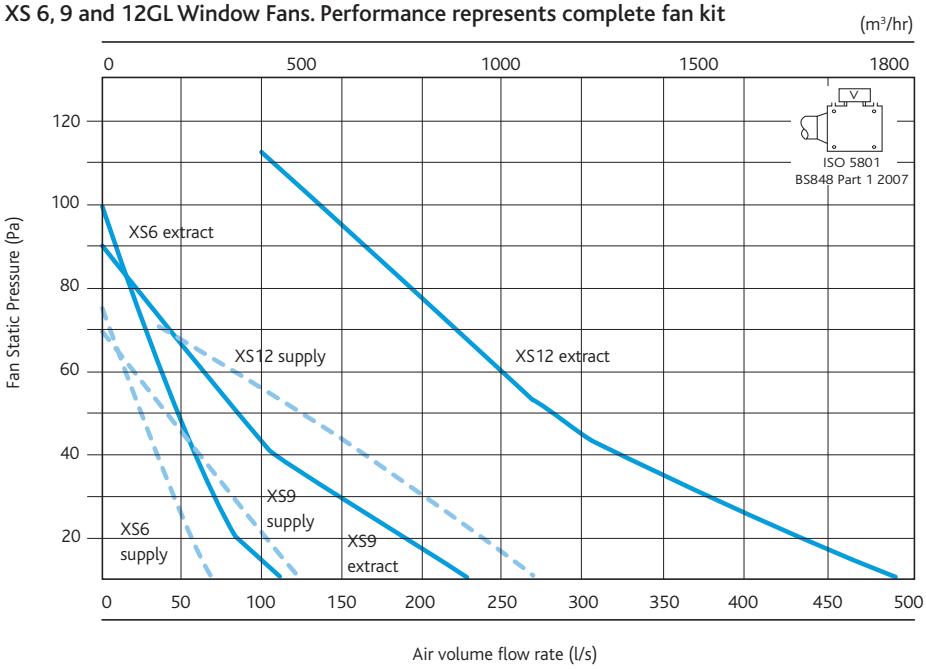


Ceiling mounted fans for ducted applications

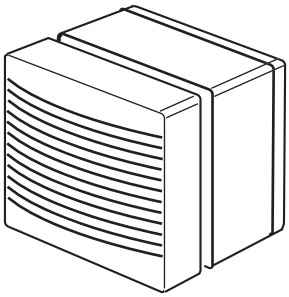


PERFORMANCE - XS (GL) WINDOW EXTRACT FANS

XS 6, 9 and 12GL Window Fans. Performance represents complete fan kit



Casing



Code descriptions

XS 6 GL

1 2 3

1. XS range
2. Size indication
3. GL = Window model

ELECTRICAL & SOUND

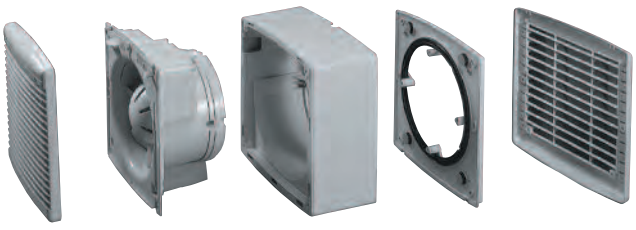
Code	Noise/Sound levels (dBA @ 3m) Extract	Extract economy	Supply	Supply economy	Input power (watts) Standard	Economy
XS6GL	42	31	43	32	38	20
XS9GL	41	30	43	32	50	37
XS12GL	47	36	48	37	100	70

FAN PRESSURE PA

XS6GL Extract	**0**	**20**	**40**	**60**
Air Volume Flow rate (l/s)	130	105	65	40
Input Power (w)	36	37	37	37
SFP(W/l/s)	0.3	0.4	0.6	0.9
XS9GL Extract				
Air Volume Flow rate (l/s)	230	180	105	50
Input Power (w)	50	50	50	51
SFP(W/l/s)	0.2	0.3	0.5	1.0
XS12GL Extract				
Air Volume Flow rate (l/s)	530	440	340	260
Input Power (w)	103	106	106	108
SFP(W/l/s)	0.2	0.2	0.3	0.4

For SFP please contact Nuaire.

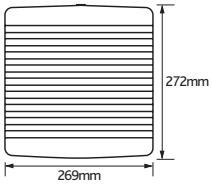
XS (GL) WINDOW FAN KITS



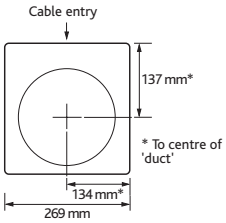
Internal Grille | Fan Module | Fan Spacer | Sealing Plate | External Grille

6" Fan XS6GL

Front view

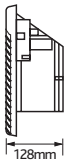


Rear view



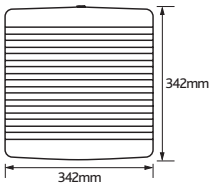
Required window aperture =184 mm dia

Side view

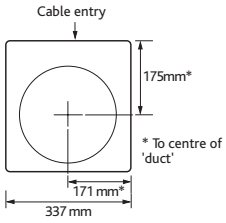


9" Fan XS9GL

Front view

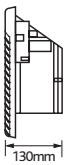


Rear view



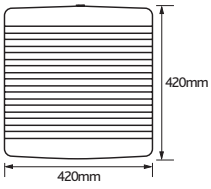
Required window aperture = 260 mm dia

Side view

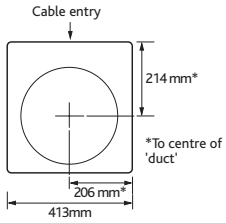


12" Fan XS12GL

Front view

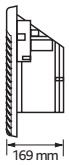


Rear view

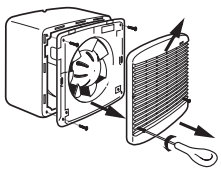


Required window aperture = 337 mm dia

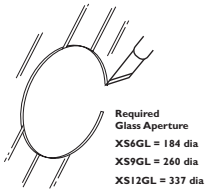
Side view



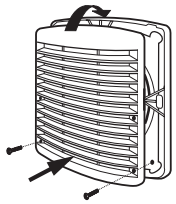
XS (GL) WINDOW FAN KIT INSTALLATION



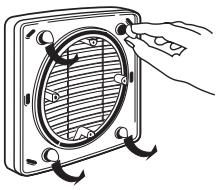
Remove front grille. Release screws, lift grille upward.



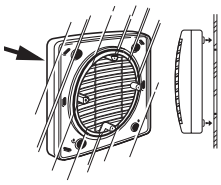
Prepare window.



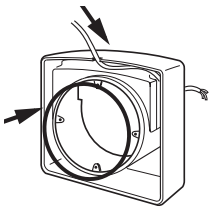
Fix outer grille to spigot plate. Check plate orientation is vertical. Note grille locates over top lugs on spigot plate.



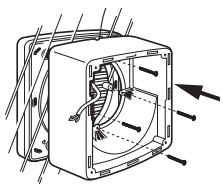
Remove adhesive pad covers.



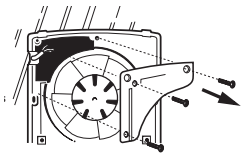
Clean the window glass and affix the outer grille assembly over the window aperture.



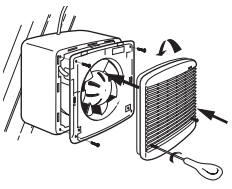
Ensure rubber seal is located into case spigot. Feed cable into the case.



Screw the case/grille assembly together.



Release the electrical cover from the fan plate. Bring the cable through the fan plate.

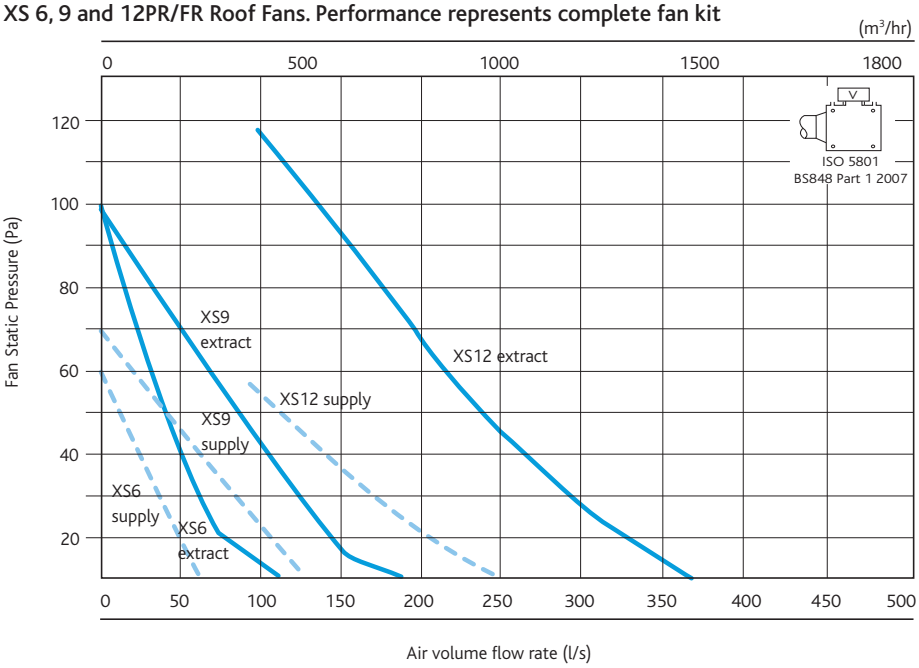


Assemble the fan plate to the case. Fit the inside grille locating it over the top lip before engaging screws

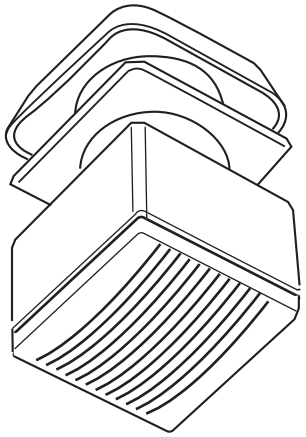
For further information please refer to full installation and wiring diagram.

PERFORMANCE - XS (PR/FR) ROOF EXTRACT FANS

XS 6, 9 and 12PR/FR Roof Fans. Performance represents complete fan kit



Casing



Code descriptions

XS 6 PR/FR

1 2 3

1. XS range
2. Size indication
3. PR/FR = Roof model

ELECTRICAL & SOUND

Code	Noise/Sound levels (dBA @ 3m)				Input power (watts)	
	Extract	Extract economy	Supply	Supply economy	Standard	Economy
XS6PR/FR	42	31	45	34	38	38
XS9PR/FR	41	30	43	32	50	37
XS12PR/FR	49	38	48	37	100	70

FAN PRESSURE PA

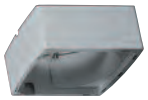
XS6PR/FR Extract	0	20	40	60
Air Volume Flow rate (l/s)	130	105	65	40
Input Power (w)	36	37	37	37
SFP(W/l/s)	0.3	0.4	0.6	0.9
XS9PR/FR Extract				
Air Volume Flow rate (l/s)	230	180	105	50
Input Power (w)	50	50	50	51
SFP(W/l/s)	0.2	0.3	0.5	1.0
XS12PR/FR Extract				
Air Volume Flow rate (l/s)	530	440	340	260
Input Power (w)	103	106	106	108
SFP(W/l/s)	0.2	0.2	0.3	0.4

XS (PR/FR) ROOF FAN KITS

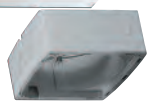
Flat Roof Cowl

Pitched Roof Cowl

Fan Spacer



Fan Spacer



Fan Module

Fan Module

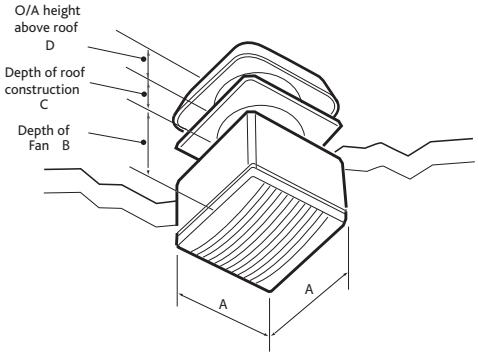
Internal Grille

Internal Grille

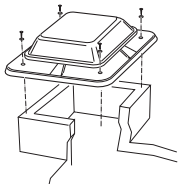
DIMENSIONS (MM)

XS	6	9	12
A x A	272x272	342x342	420x420
B	161	158	172
C	150	150	150
D	170	180	185
Kg	6.3	9.1	11.8

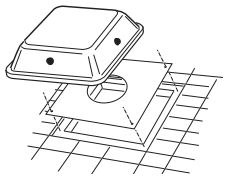
A = Opening size
B = Overall size



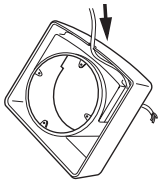
XS (PR/FR) ROOF FAN KIT INSTALLATION



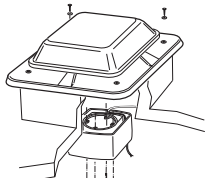
Drill through the dimples in the roof terminal. Position centrally & squarely over curb and fix using 6mm wood screws and sealing washers.



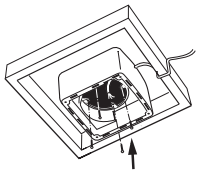
Fix the wall fixing plate centrally over the roof aperture. Locate the weather terminal centrally over the plate. Use the foam adhesive strip to fix.



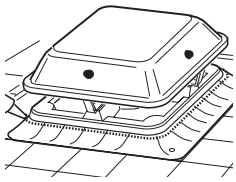
Feed the supply cable through the spacer.



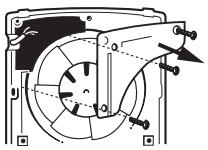
Offer up the spacer section to the terminal underside using 4.5mm screws provided.



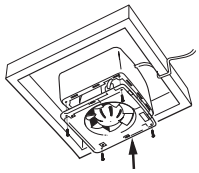
Offer the spacer section up and fix through to the weather terminal fixing inserts.



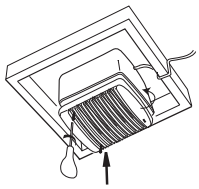
Apply flashing from the tiles, over the fixing plate and overlap the base roof terminal by 25mm.



Release the electrical cover from the fan plate. For various wiring options.



Assemble the fan to the spacer section 4 set screws.

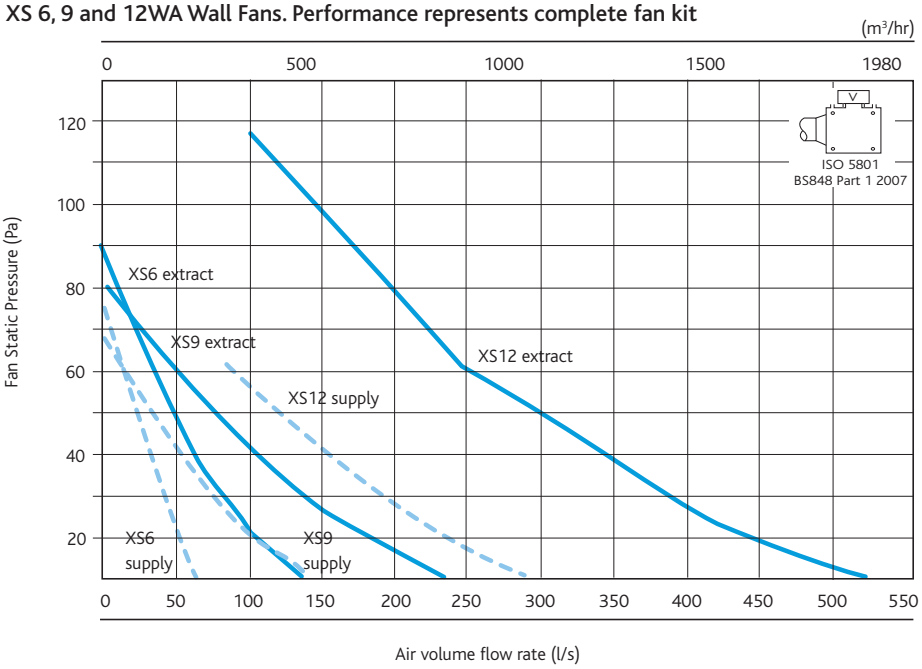


Fit the grille to the fan, locating top lip before fixing.

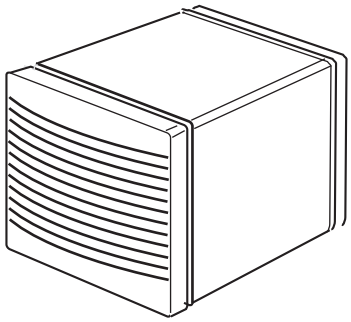
For further information please refer to full installation and wiring diagram.

PERFORMANCE - XS (WA) WALL EXTRACT FANS

XS 6, 9 and 12WA Wall Fans. Performance represents complete fan kit



Casing



Code descriptions

XS 9 WA

1 2 3

1. XS range
2. Size indication
3. WA = Wall model

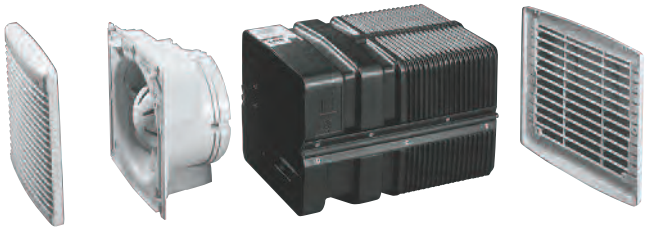
ELECTRICAL & SOUND

Code	Noise/Sound levels (dBA @ 3m)				Input power (watts)	
	Extract	Extract economy	Supply	Supply economy	Standard	Economy
XS6WA	42	31	45	34	38	20
XS9WA	45	34	45	34	50	37
XS12WA	47	36	47	36	100	70

FAN PRESSURE PA

XS6WA Extract	**0**	**20**	**40**	**60**
Air Volume Flow rate (l/s)	130	105	65	40
Input Power (w)	36	37	37	37
SFP(W/l/s)	0.3	0.4	0.6	0.9
XS9WA Extract				
Air Volume Flow rate (l/s)	230	180	105	50
Input Power (w)	50	50	50	51
SFP(W/l/s)	0.2	0.3	0.5	1.0
XS12WA Extract				
Air Volume Flow rate (l/s)	530	440	340	260
Input Power (w)	103	106	106	108
SFP(W/l/s)	0.2	0.2	0.3	0.4

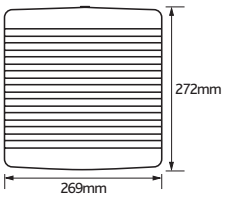
XS (WA) WALL FAN KITS



Internal Grille | Fan Module | Adjustable Wall Sleeve | External Grille

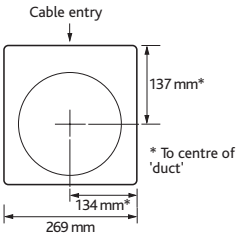
6" Fan XS6WA

Front view

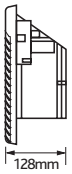


Aperture required
260 mm x 260 mm sq.

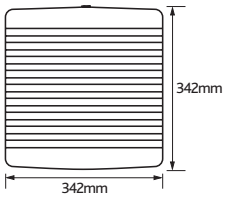
Rear view



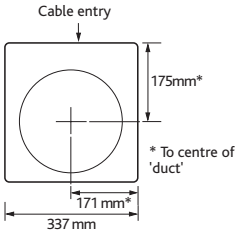
Side view

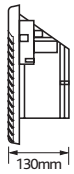


9" Fan XS9WA

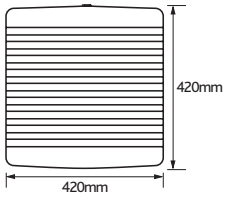


Aperture required
330 mm x 330 mm sq.

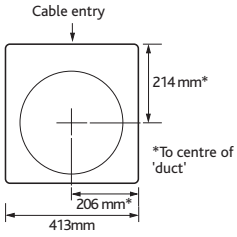


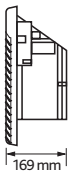


12" Fan XS12WA

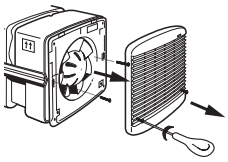


Aperture required
410 mm x 410 mm sq.

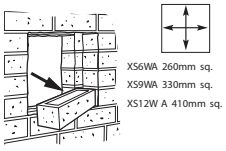




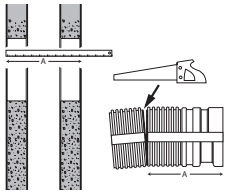
XS (WA) WALL FAN KIT INSTALLATION



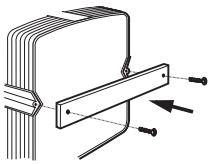
Remove front grille, release screws, lift grille. Remove fan.



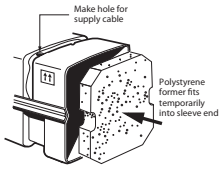
Prepare the wall aperture to dimensions shown.



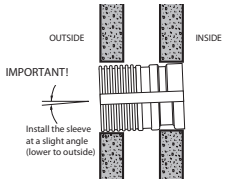
Cut the spacer to match the walls total thickness using a fine/med cut wood saw.



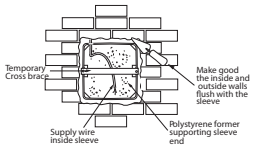
Fit temporary cross brace across wall sleeves outer end to support the side during installation.



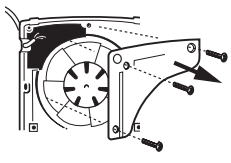
Locate the temporary plug to support the end.



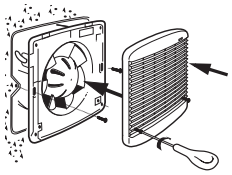
When fitting the sleeve, introduce a slight downward slope to the outside, this will allow any water to drain out.



Make good the wall sleeve. Remove the temporary cross brace when the cement is dry and fit the outer grille (note grille blocks sloping downwards to shed water).



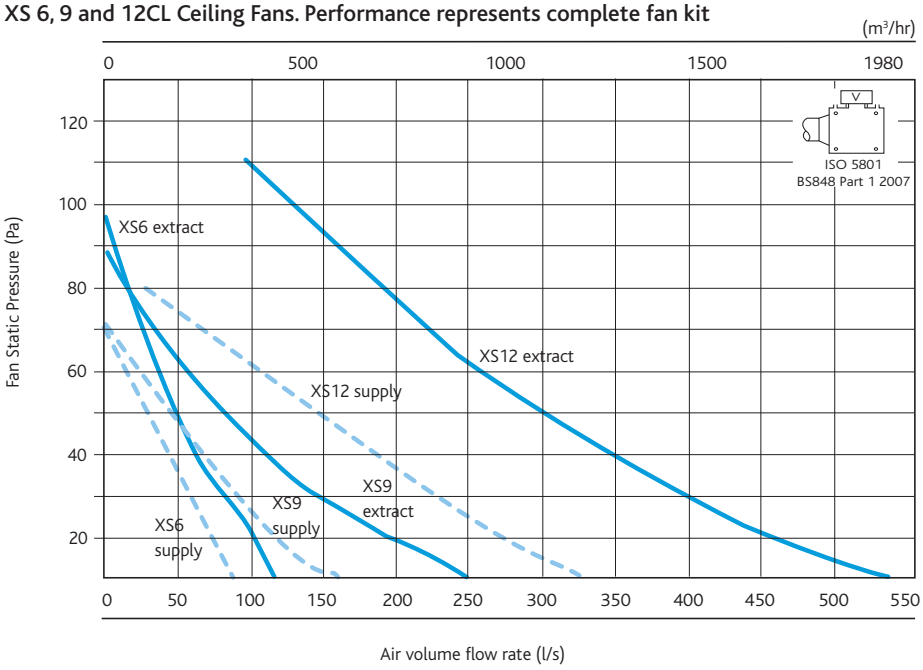
Release the electrical case from the plate.
Bring the cable through the fan plate.



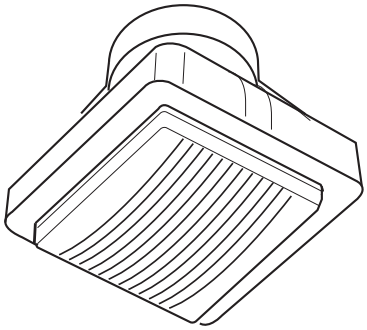
Assemble the fan to the inner sleeve. Fit the inside grille to the fan plate locating grille over the top lip before engaging screws.

PERFORMANCE - XS (CL) CEILING EXTRACT FANS

XS 6, 9 and 12CL Ceiling Fans. Performance represents complete fan kit



Casing



Code descriptions

XS 6 CL

1 2 3

1. XS range
2. Size indication
3. CL = Ceiling model

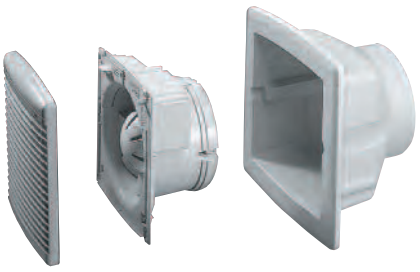
ELECTRICAL & SOUND

Code	Noise/Sound levels (dBA @ 3m)				Input power (watts)	
	Extract	Extract economy	Supply	Supply economy	Standard	Economy
XS6CL	42	31	45	35	38	20
XS9CL	41	30	43	32	50	37
XS12CL	49	38	48	37	100	70

FAN PRESSURE PA

XS6CL Extract	**0**	**20**	**40**	**60**
Air Volume Flow rate (l/s)	130	105	65	40
Input Power (w)	36	37	37	37
SFP(W/l/s)	0.3	0.4	0.6	0.9
XS9CL Extract				
Air Volume Flow rate (l/s)	230	180	105	50
Input Power (w)	50	50	50	51
SFP(W/l/s)	0.2	0.3	0.5	1.0
XS12CL Extract				
Air Volume Flow rate (l/s)	530	440	340	260
Input Power (w)	103	106	106	108
SFP(W/l/s)	0.2	0.2	0.3	0.4

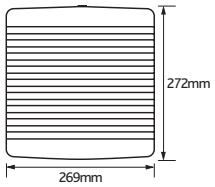
XS (CL) CEILING FAN KITS



Internal Grille Fan Module Fan Duct Connecting Plenum

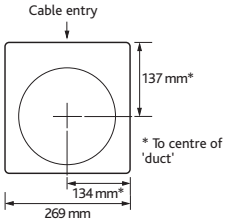
6" Fan XS6CL

Front view

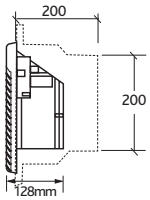


Required ceiling / panel aperture
270mm x 270mm square

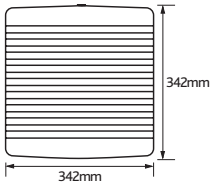
Rear view



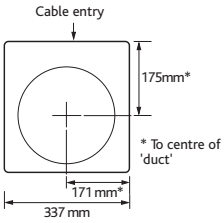
Side view

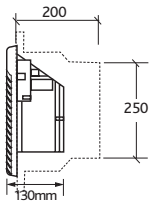


9" Fan XS9CL

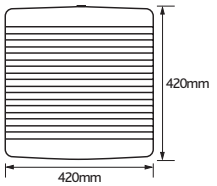


Required ceiling / panel aperture
340mm x 340mm square

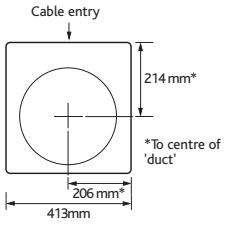


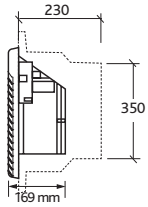


12" Fan XS12CL

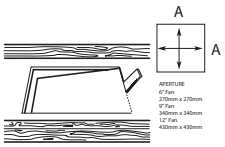


Required ceiling / panel aperture
430mm x 430mm square

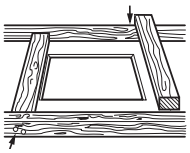




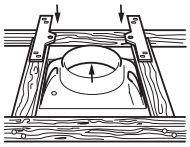
XS (CL) CEILING FAN KIT INSTALLATION



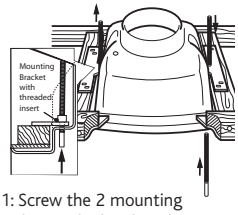
Prepare aperture to suit the fan size.



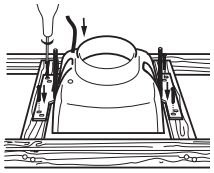
Cut and fit timber supports (not supplied) for aperture as shown.



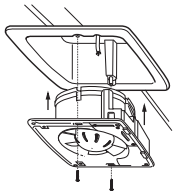
Offer the duct adaptor and two metal brackets into position.



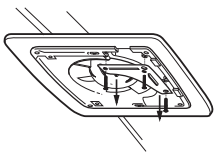
1: Screw the 2 mounting rods into the brackets from below.
2: Lock the screw rods with the nuts provided.



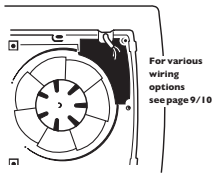
Fit metal brackets to the cross battens. Feed the the supply cable through the duct adaptor.



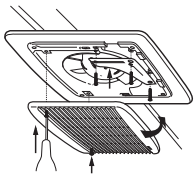
Offer the fan up into the duct adaptor and fix using the two screws.



Remove the electrical connection panel (top left).



Bring the cable through the fan late approx 150mm.

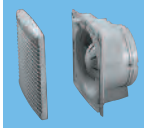
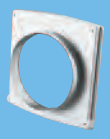
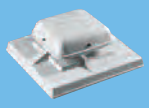


Fix the electrical connection before offering up the internal grille.
Note grille clips over the top edge before fixing.

XS FAN ANCILLARIES

Unit Size	Speed Control	Integral Sensors PIR	Integral Sensors Humidistat	Integral Sensors Air Quality	Timer	Temp	Remote Sensors PIR	Remote Sensors Humidistat	Remote Sensors Air Quality	Refurb Kit
Desc	With Economy 50% setting, forward, reverse on/off switch.									Fan, frame adaptor, 2 fixing brackets Suits all leading brands.
Wall										
6	XS-MFC	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6	XS-PIRR	XS-HR	XS-AQR	XS6RE
9	XS-MFC	XS-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9	XS-PIRR	XS-HR	XS-AQR	XS9RE
12	XS-MFC	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12	XS-PIRR	XS-HR	XS-AQR	XS12RE
Window										
6	XS-MFC	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6	XS-PIRR	XS-HR	XS-AQR	XS6RE
9	XS-MFC	XS-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9	XS-PIRR	XS-HR	XS-AQR	XS9RE
12	XS-MFC	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12	XS-PIRR	XS-HR	XS-AQR	XS12RE
Ceiling										
6	XS-MFC	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6	XS-PIRR	XS-HR	XS-AQR	XS6RE
9	XS-MFC	XS-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9	XS-PIRR	XS-HR	XS-AQR	XS9RE
12	XS-MFC	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12	XS-PIRR	XS-HR	XS-AQR	XS12RE
Flat Roof										
6	XS-MFC	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6	XS-PIRR	XS-HR	XS-AQR	XS6RE
9	XS-MFC	XS-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9	XS-PIRR	XS-HR	XS-AQR	XS9RE
12	XS-MFC	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12	XS-PIRR	XS-HR	XS-AQR	XS12RE
Pitch Roof										
6	XS-MFC	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6	XS-PIRR	XS-HR	XS-AQR	XS6RE
9	XS-MFC	XS-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9	XS-PIRR	XS-HR	XS-AQR	XS9RE
12	XS-MFC	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12	XS-PIRR	XS-HR	XS-AQR	XS12RE

Note: * Up to 5 fans (size 6"/9") can be controlled by one XS-MFC.
Up to 2 fans (size 12") can be controlled by one XS-MFC.
** Do not mix different fans sizes on the same controller.

								
Basic Fan Unit	**Window Spacer**	**Single Spigot Adaptor**	**Weather Terminal**	**Roof Terminal**	**In-line Adaptor**	**Wall Fixing Plate**	**Picture Frame Adaptor**	**Extended Fixing Rods**
Fan, module internal grille.	Used for exposed site installation 1 spacer. Use with weather terminals.	For ducted systems. To be mounted onto front of XS-WS.	For exposed window installations. Used with XS-WS.	No fan included.	For use with in-line duct applications.	Used for timber and thin walls, pitched roof and above ceiling. One fixing plate. Used with window kits spacers &/or weather terminals.	For panel, ceiling or retro installations where uneven walls need to be fixed.	For glazing over 32mm and up to 360mm thick.
Wall cont.								
XS6	XS-WS6	XS-SA6	XS-WT6	N/A	XS-IDK6	N/A	XS-PFA6	N/A
XS9	XS-WS9	XS-SA9	XS-WT9	N/A	XS-IDK9	N/A	XS-PFA9	N/A
XS12	XS-WS12	XS-SA12	XS-WT12	N/A	XS-IDK12	N/A	XS-PFA12	N/A
Window cont.								
XS6	XS-WS6	XS-SA6	XS-WT6	N/A	N/A	XS-WFP6	N/A	XS-EFR
XS9	XS-WS9	XS-SA9	XS-WT9	N/A	N/A	XS-WFP9	N/A	XS-EFR
XS12	XS-WS12	XS-SA12	XS-WT12	N/A	N/A	XS-WFP12	N/A	XS-EFR
Ceiling cont.								
XS6	N/A	XS-SA6	XS-WT6	XS-RT6	XS-IDK6	XS-WFP6	XS-PFA6	N/A
XS9	N/A	XS-SA9	XS-WT9	XS-RT9	XS-IDK9	XS-WFP9	XS-PFA9	N/A
XS12	N/A	XS-SA12	XS-WT12	XS-RT12	XS-IDK12	XS-WFP12	XS-PFA12	N/A
Flat Roof cont.								
XS6	N/A	XS-SA6	N/A	N/A	XS-IDK6	XS-WFP6	XS-PFA6	N/A
XS9	N/A	XS-SA9	N/A	N/A	XS-IDK9	XS-WFP9	XS-PFA9	N/A
XS12	N/A	XS-SA12	N/A	N/A	XS-IDK12	XS-WFP12	XS-PFA12	N/A
Pitch Roof cont.								
XS6	N/A	XS-SA6	N/A	XS-RT6	XS-IDK6	XS-WFP6	XS-PFA6	N/A
XS9	N/A	XS-SA9	N/A	XS-RT9	XS-IDK9	XS-WFP9	XS-PFA9	N/A
XS12	N/A	XS-SA12	N/A	XS-RT12	XS-IDK12	XS-WFP12	XS-PFA12	N/A

XS CONTROLS

MULTI-FAN CONTROL

Fitting Remote Controller XS-MFC or Remote Sensors (optional)
The XS-MFC Multi Fan Control provides supply or extract, variable speed and automatic or manual switching of several fans if desired.
The control is best mounted approx. 1.5m above the floor.
Remote Sensors are available for Humidity, Air Quality and Passive Infra Red control.
Remote Sensors should be positioned at least 1.5m above the floor and away from direct heat sources e.g. radiators.
NOTE:
Up to 5 fans (size 6"/9") can be controlled by one XS-MFC.
Up to 2 fans (size 12") can be controlled by one XS-MFC.
Do not mix different fans sizes on the same controller.

Description	Length	Depth	Height
Remote Control	155	87	60

Speed Control;
with "Economy" (50%) setting, forward and reverse, on/off switches.
Typical code: XS-MFC

MULTI-FAN CONTROL CONT.

Note:
If 2 x 12 inch fans or 3 x 6 or 9 inch fans are used in the same operating mode in the same room they should all be controlled from the same MFC speed control. This avoids the possibility of one fan (if speed controlled at a lower flow rate) being stalled by the other fan(s). Adequate make-up air provision sufficient to provide ventilation in accordance with building regulations is required in all rooms. This should be checked during commissioning with all fans in the same room running together in all possible configurations.

The automatic shutters, motor bearings should be frequently inspected and maintained to ensure they open fully/operate satisfactorily.

Use of an RCD and fused spur with 1A, Bussmann TDC180, BS1362, fuse (Farnell order no: 1123029) for 1 fan or 2A, Bussmann TDC180, BS1362 fuse (Farnell order no: 1123032) for 2 or 3 fans is recommended. Always confirm airflow direction before commissioning.

INTEGRAL SENSORS

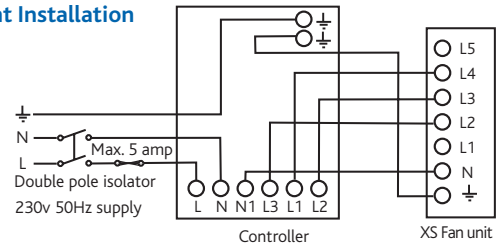
Fan Size	PIR	Humidistat	Air Quality	Timer	Temp
6	XS-PIR6	XS-H6	XS-AQ6	XS-TA6	XS-TH6
9	S-PIR9	XS-H9	XS-AQ9	XS-TA9	XS-TH9
12	XS-PIR12	XS-H12	XS-AQ12	XS-TA12	XS-TH12

REMOTE SENSORS

Fan Size	PIR	Humidistat	Air Quality
6	XS-PIRR	XS-HR	XS-AQR
9	XS-PIRR	XS-HR	XS-AQR
12	XS-PIRR	XS-HR	XS-AQR

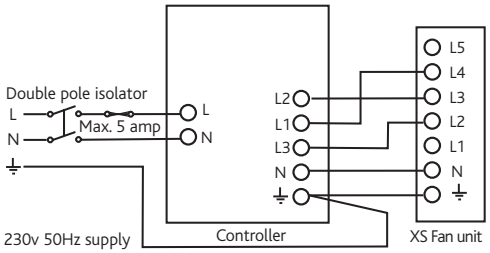
WIRING - XS

Refurbishment Installation



This arrangement will give the following operating features:
- Adjustable speed
- Adjustable minimum speed
- Extract/intake
- Fan off - shutter open
- Fan off - shutter closed

Limitations are:
- Control of single fan only
- Integral sensors not possible
- Automatic ECO setting not available

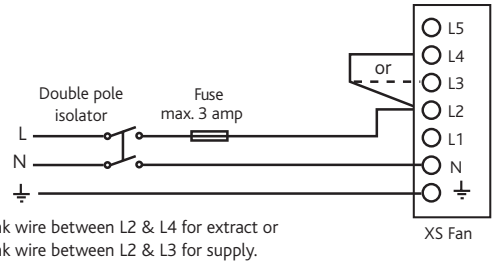


This arrangement will give the following operating features:
- Single speed
- Extract/intake
- On/off

Limitations are:
- Control of single fan only
- Integral sensors not possible
- Automatic ECO setting not available

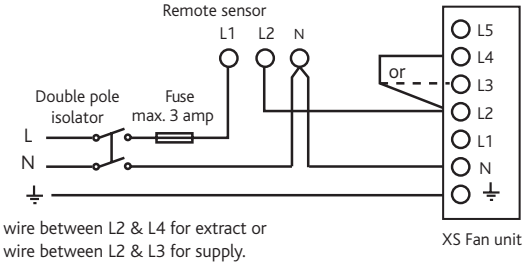
Fans should be installed in line with the IEE wiring regulations.

Fan Operated by On/Off Switch



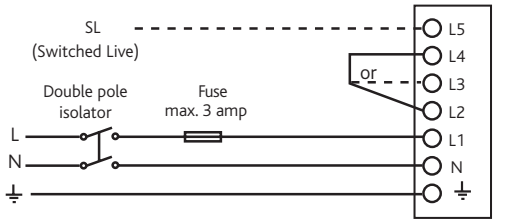
Connect link wire between L2 & L4 for extract or
Connect link wire between L2 & L3 for supply.

Basic Fan Operated by Remote Sensor



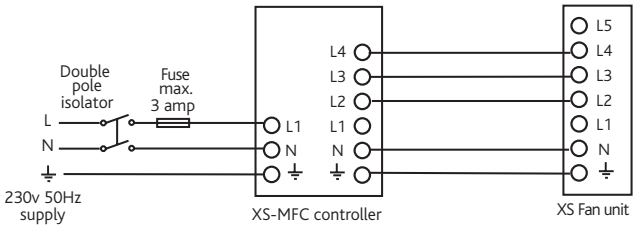
Connect link wire between L2 & L4 for extract or
Connect link wire between L2 & L3 for supply.

Fan Operated by Integral Sensor



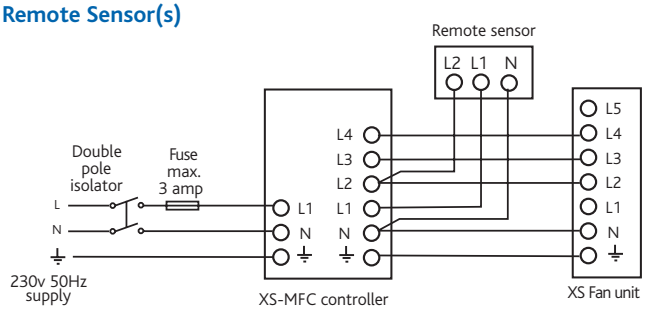
Connect link wire between L2 & L4 for extract or
Connect link wire between L2 & L3 for supply.
Connect switched live signal to L5 for integral timer module.

Supply / Extract Fan Operated via Remote XS-MFC Control



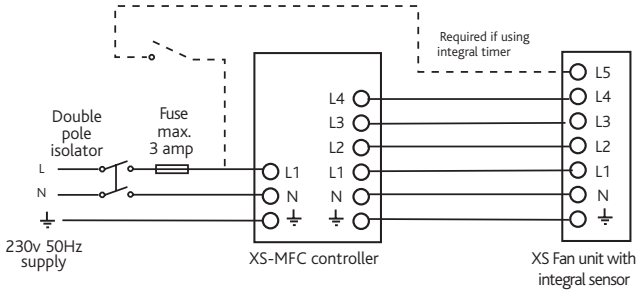
Remote switch may be set: On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.

Supply / Extract Fan operated via Remote XS-MFC Control & Remote Sensor(s)



Remote switch may be set: On / Off, Forward / Reverse, Economy / Std.(variable speed), Auto / Manual.
One or more Remote Sensors may be wired in parallel to one XS-MFC Control.
Humidity Sensor: XS-HR, Air Quality Sensor: X S-AQR.
Passive Infra Red Sensor: XS-PIRR.
Note: Multi-fan options:
Up to 5 fans (size 6" / 9") can be controlled by one XS-MFC. Up to 2 fans (size 12") can be controlled by one XS-MFC. Do not mix different fan sizes on the same controller.

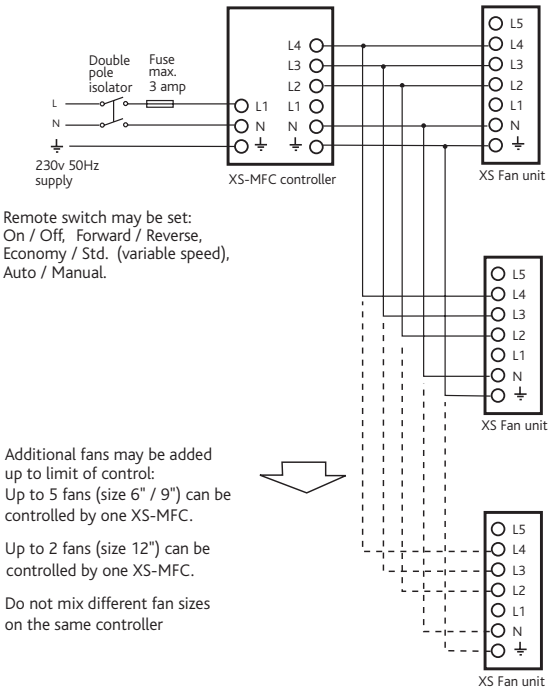
Supply / Extract Fan Operated via Remote XS-MFC Control and Integral Sensor



Remote switch may be set: On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.
Maximum one Integral Sensor per fan 6/9/12 denotes unit size identity.
Humidity Sensor: XS-H6/9/12, Air Quality Sensor: XS-AQ6/9/12.
Passive Infra Red Sensor: XS-PIR6/9/12, Temperature Sensor: XS-TH6/9/12.
Run on Timer: XS-TA6/9/12.
A single sensor will switch all fans if more than one fan is being operated by a single XS-MFC controller.

WIRING - MULTIPLE FANS

Multiple fans operated via remote XS-MFC control



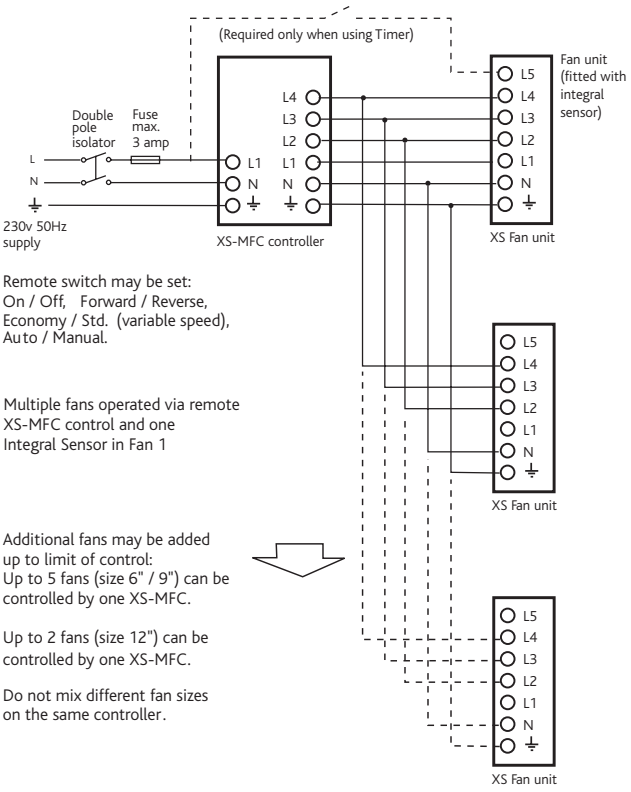
Remote switch may be set:
On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.

Additional fans may be added up to limit of control:
Up to 5 fans (size 6" / 9") can be controlled by one XS-MFC.

Up to 2 fans (size 12") can be controlled by one XS-MFC.

Do not mix different fan sizes on the same controller

Multiple fans operated via remote XS-MFC control and one Integral Sensor in Fan 1



Remote switch may be set:
On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.

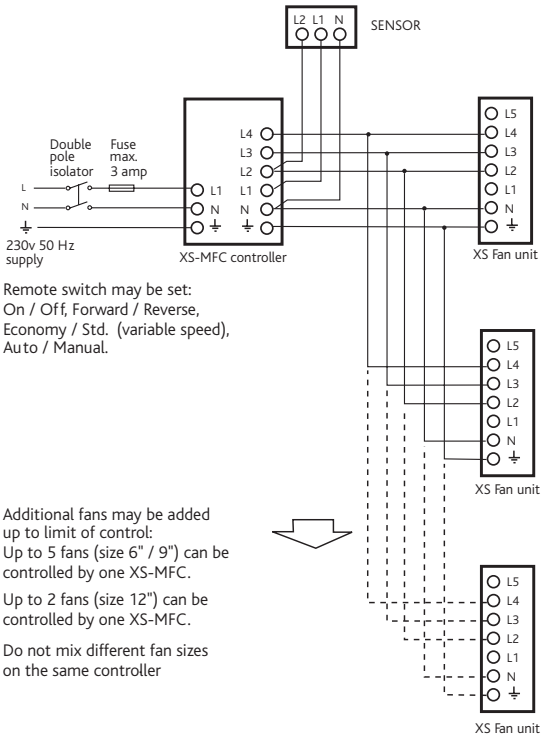
Multiple fans operated via remote XS-MFC control and one Integral Sensor in Fan 1

Additional fans may be added up to limit of control:
Up to 5 fans (size 6" / 9") can be controlled by one XS-MFC.

Up to 2 fans (size 12") can be controlled by one XS-MFC.

Do not mix different fan sizes on the same controller.

Multiple fans operated via remote XS-MFC control and a Remote Sensor



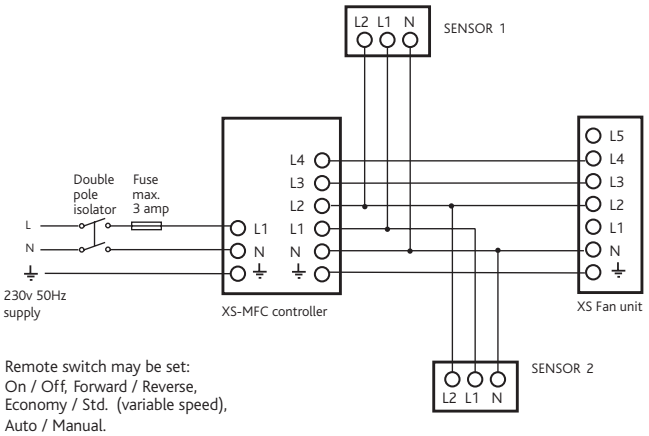
Remote switch may be set:
On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.

Additional fans may be added up to limit of control:
Up to 5 fans (size 6" / 9") can be controlled by one XS-MFC.

Up to 2 fans (size 12") can be controlled by one XS-MFC.

Do not mix different fan sizes on the same controller

Fan operated using remote XS-MFC control and a Multiple Remote Sensor



Remote switch may be set:
On / Off, Forward / Reverse, Economy / Std. (variable speed), Auto / Manual.

CONSULTANTS SPECIFICATION

FAN DESCRIPTION

The extract fan/s shall be located in the positions indicated on the drawings and in accordance with the relevant fan schedule.

The fan shall be of the XS type and shall be supplied complete with integrated low loss radial backdraught shutter, silent operation via a thermo actuator, room side grille, connection kit and external louvre/roof cowl to suit the particular application.

The high efficiency, low noise axial flow impeller shall be directly driven by an external rotor motor featuring enclosure protection to IP 44, class B winding insulation and maintenance free ball bearings. All models shall be suitable for air over motor temperatures of up to 60°C and 95% R.H (non-condensing). The motor and impeller shall be dynamically balanced as an assembly.

Fan casing, impeller and shutter shall be manufactured from UV stabilised ABS polymer. All models shall include an economy/high efficiency setting facility and are dove grey in colour.

The fan shall be provided complete with integrated or remote controls as detailed in the schedule and as described below.

Where indicated the fans shall be interlinked and controlled from 1No. controller (up to 5 fans sizes 6 & 9, up to 3 fans size 12).

Fans shall be reversible via reversing switch on XS-MFC fan controller.

Fan to have a manufacturers 3 year warranty.

Fan to be of the XS type as manufactured by Nuaire Ltd.

FAN CONTROL OPTION

The fan shall be provided with either integrated sensor to activate the fan or one of the remote options:

INTEGRATED CONTROL OPTIONS:

- PIR (passive infra-red) movement detector (includes run-on timer), 2-40 mins
- Humidity sensor (includes run-on timer), 30-90% RH - 2-40 mins RT
- Air quality sensor (includes run-on timer), 2-40 mins
- Run-on timer (all adjustable between 2-40 mins)
- Temperature sensor (includes run-on timer), 5-35°C (fixed 2mm overrun)

REMOTE CONTROL OPTIONS:

- PIR (passive infra-red) movement detector (includes run-on timer), 2-40 mins
- Humidity sensor (includes run-on timer), 30-90% RH - 2-40 mins RT
- Air quality sensor (includes run-on timer), 2-40 mins RT
- Anti-tamper security strap.
- XS-MFC controller incorporating economy switch, reversing switch and rotary speed control –

1No. XS-MFC controller may be used to control up to 5 fans.

Fan, integrated controls or associated sensors/controllers shall be as manufactured by Nuaire Ltd all with a 3 years warranty.

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

SQURBO SINGLE FANS

LOW DEPTH SOLUTION IDEAL FOR SPACE RESTRICTED APPLICATIONS.

BENEFITS

LOW PROFILE
Reduced case depth makes unit ideal for applications where space is limited.

HIGH PERFORMANCE
Centrifugal impellers offer high performance combined with extremely low noise levels. Meeting all your requirements.

QUIET SOLUTION
Fan/silencer combinations available to meet our design requirements.

PEACE OF MIND
Squrbo fans are tested to comply with all relevant standards.

UNIQUE 'QUICK' FIXING BRACKET
Reduces cost by saving time spent on site. Also incorporates an anti vibration seal - no additional AV mounts required.

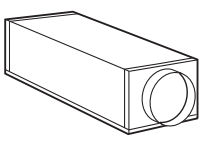
REMOVABLE FAN ASSEMBLY
Quick and easy to remove access panel for easy maintenance.

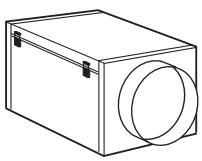
'PERFECT MATCH' CONTROLS & ANCILLARIES
Controls and ancillaries are available to suit exact requirements.

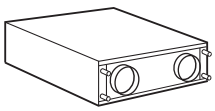
FOR BUILT-IN CONTROLS PLEASE SEE ECOSMART SQURBO

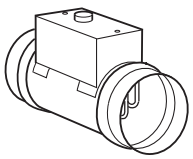
WARRANTY
Squrbo has a 3 year warranty.

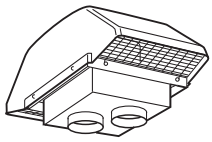
SQURBO ANCILLARIES


In-line Attenuator.

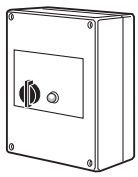

Filter Cassette.

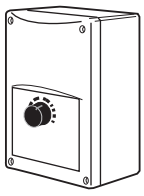

Heat Exchanger.


Duct Heater.


Supply/Extract Cowl.

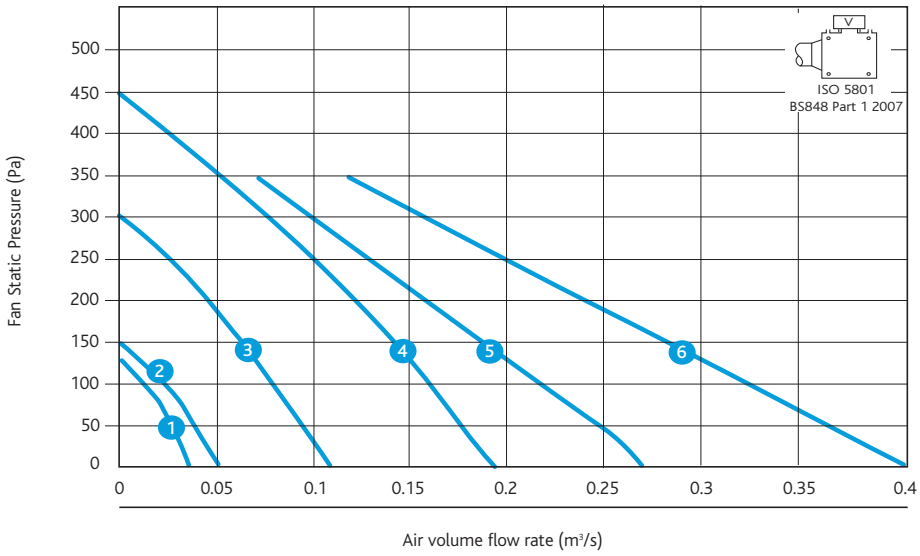
CONTROLS


Auto Transformer.

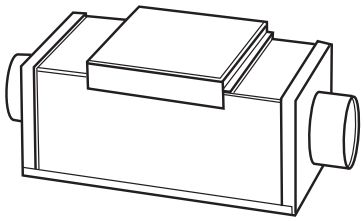

Electronic Speed Control.

PERFORMANCE - SQURBO SINGLE FANS

Squrbo Fan Unit



Casing



Squrbo Centrifugal Single Fan

Code descriptions

S 2 - SIL 125

1 2 3 4

1. Squrbo Centrifugal Single Fan
2. Case Size
3. Fan/silencer combination
4. Spigot Diameter

SQURBO UNITS

ELECTRICAL & SOUND

Curve	Code	Phase	RPM	Input Power (watts)	FLC (amps)	SC (amps)	Data Type	Sound Power Levels (dB re 10 -12 W) Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	dBA @ 3m
1	S1-100	1	2724	43	0.32	0.47	I	65	59	60	49	44	36	30	30
							O	66	59	65	51	47	42	36	
1	S1-SIL100	1	2724	43	0.32	0.47	I	51	47	47	22	17	15	26	30
							O	66	59	65	51	47	42	36	
2	S2-125	1	2724	43	0.32	0.47	I	65	59	60	49	44	36	30	30
							O	73	64	59	48	48	43	37	
2	S2-SIL125	1	2724	43	0.32	0.47	I	60	50	49	22	26	22	24	30
							O	73	64	59	48	48	43	37	
3	S3-150	1	2285	75	0.34	0.47	I	65	62	65	56	50	45	37	34
							O	69	64	65	56	53	49	41	
3	S3-SIL150	1	2285	75	0.34	0.47	I	64	56	48	21	16	32	33	34
							O	69	64	65	56	53	49	41	
4	S4-200	1	2544	150	0.72	1.49	I	70	75	73	65	60	56	49	42
							O	76	74	75	68	65	62	57	
4	S4-SIL200	1	2544	150	0.72	1.49	I	67	66	61	39	42	50	43	42
							O	76	74	75	68	65	62	57	
5	S5-250	1	2313	170	0.92	1.54	I	71	74	75	67	65	61	57	43
							O	74	75	75	70	70	67	62	
5	S5-SIL250	1	2313	170	0.92	1.54	I	69	70	63	45	55	57	53	43
							O	74	75	75	70	70	67	62	
6	S6-315	1	2313	170	0.92	1.54	I	76	72	73	67	67	65	61	43
							O	70	74	76	71	70	67	63	
6	S6-SIL315	1	2313	170	0.92	1.54	I	67	70	66	49	56	57	52	43
							O	70	74	76	71	70	67	63	

The electrical and sound information in the table is nominal. Breakout dBA@3m is spherical, free field.
(Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta.) Applies to single phase motors.

* Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz). I = Induct inlet. O = Induct outlet.

QUICK SELECTION GUIDE

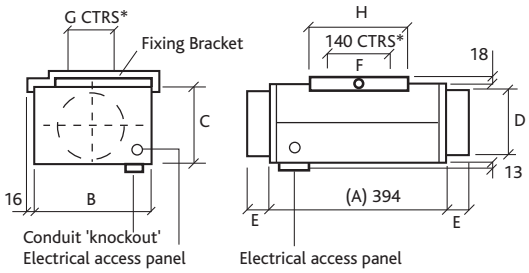
SQURBO SINGLE FANS

Code	Silencer	Filter Cassette	Electric Duct Heater	Heat Exchanger	Flexible Connector	Fast Clamp	Speed Control
S1-100	SIL-100	SF-100	SH-100	HX100	CFC10	FC-100	NSC1-3A
S2-125	SIL-125	SF-125	SH-125	HX125	CFC12	FC-125	NSC1-3A
S3-150	SIL-150	SF-150	SH-150	HX150	CFC15	FC-150	NSC1-3A
S4-200	SIL-200	SF-200	SH-200	HX200	CFC20	FC-200	NSC1-3A
S5-250	SIL-250	SF-250	SH-250	HX250	CFC25	FC-250	NSC1-3A
S6-315	SIL-315	SF-315	SH-315	HX315	CFC31	FC-315	NSC1-3A

* For filter, fan & heater in a single case with all the necessary controls in-built, please refer to the Ecosmart Squrbo supply unit in the AHU section.
Note: Also available to suit all models: 230-RTIM Run On Timer; 230 - PIR Passive Infra Red; 230 - TSTATR Room Thermostat; Humisen Humidistat).

SQURBO DIMENSIONS (mm) & WEIGHT

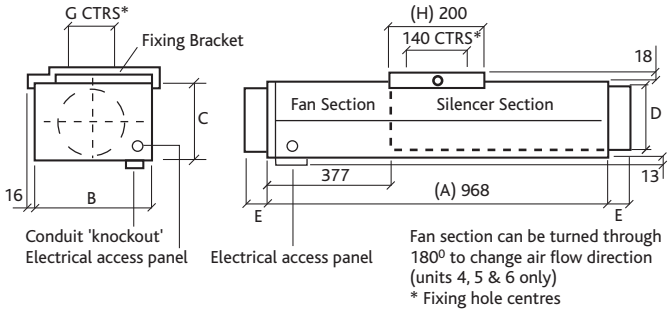
Fan Unit	A	B	C	D	E	F	G	H	Weight Kg
S1-100	394	230	159	100	50	140	115	200	6.0
S2-125	394	230	159	125	50	140	115	200	6.0
S3-150	394	300	184	150	50	140	150	200	7.0
S4-200	394	350	234	200	50	140	170	200	12.0
S5-250	394	350	284	250	50	140	170	200	13.0
S6-315	394	400	349	315	50	140	200	200	14.0



SILENCER COMBINATION DIMENSIONS (mm) & WEIGHT

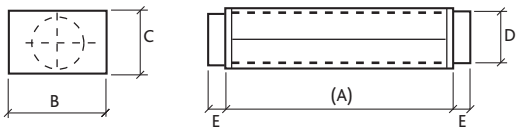
Fan Unit	A	B	C	D	E	F	G	H	Weight Kg
S1-SIL100	968	230	159	100	50	140	115	200	8.0
S2-SIL125	968	230	159	125	50	140	115	200	8.0
S3-SIL150	968	300	184	150	50	140	150	200	11.0
S4-SIL200	968	350	234	200	50	140	170	200	17.0
S5-SIL250	968	350	284	250	50	140	170	200	19.0
S6-SIL315	968	400	349	315	50	140	200	200	22.0

From Fan Selector



MATCHING SILENCERS DIMENSIONS (mm)

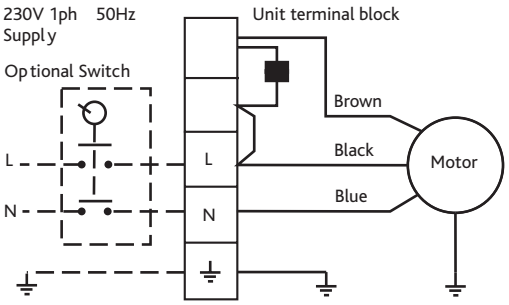
Fan Unit	A	B	C	D	E	Weight Kg
SIL-100	600	230	159	100	50	4.9
SIL125	600	230	159	125	50	4.8
SIL-150	600	300	184	150	50	6.6
SIL-200	600	350	234	200	50	9.9
SIL-250	600	350	284	250	50	10.9
SIL-315	600	400	349	315	50	12.2



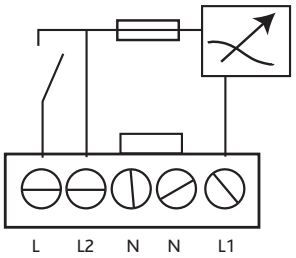
SILENCER INSERTION LOSSES

	Sound Reduction in dB Octave band mid frequency Hz						
Code	125	250	500	1K	2K	4K	8K
SIL-100	15	12	18	29	45	27	15
SIL-125	13	9	16	26	39	21	13
SIL-150	5	8	17	35	40	17	8
SIL-200	9	8	14	29	23	12	14
SIL-250	5	5	12	25	15	10	9
SIL-315	3	4	10	22	14	10	11

WIRING - SQURBO UNIT

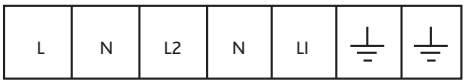


Electronic Speed Control



L = Mains LIVE connection
L2 = Unregulated 230V output
(or switch live to eg damper)
N = Mains NEUTRAL
N = Motor NEUTRAL
L1 = Regulated output to motor

Transformer Speed Control



L = Mains LIVE connection
L2 = Unregulated 230V output
(or switch live to eg damper)
N = Mains NEUTRAL
N = Motor NEUTRAL
L1 = Regulated output to motor
⏚ = Earth
⏚ = Earth

CONSULTANTS SPECIFICATION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the SQURBO type as manufactured by Nuaire. The units shall be manufactured heavy gauge Aluzinc corrosion resistant steel, acoustically lined with class 'O' flame retardant acoustic foam and fitted with rigid circular spigots. The general construction is to class A leakage.

The fan performance and noise levels shall be as detailed in the fan schedule and in accordance with the manufacturers details.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be backward curve, direct drive with high efficiency motors to BS5000 as standard, class B insulation and IP44 protection. It shall be capable of operating at an ambient temperature of up to 50 degrees C (40 degrees C with speed control). The unit shall incorporate an access panel for removal of fan module and for general maintenance.

For ease of installation the unit shall be provided with a single fixing mounting bracket with integrated anti vibration seals.

The unit shall be supplied, where indicated, with an integrated silencer to form a compact package, avoiding unnecessary sound breakout from fan/silencer connections.

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.

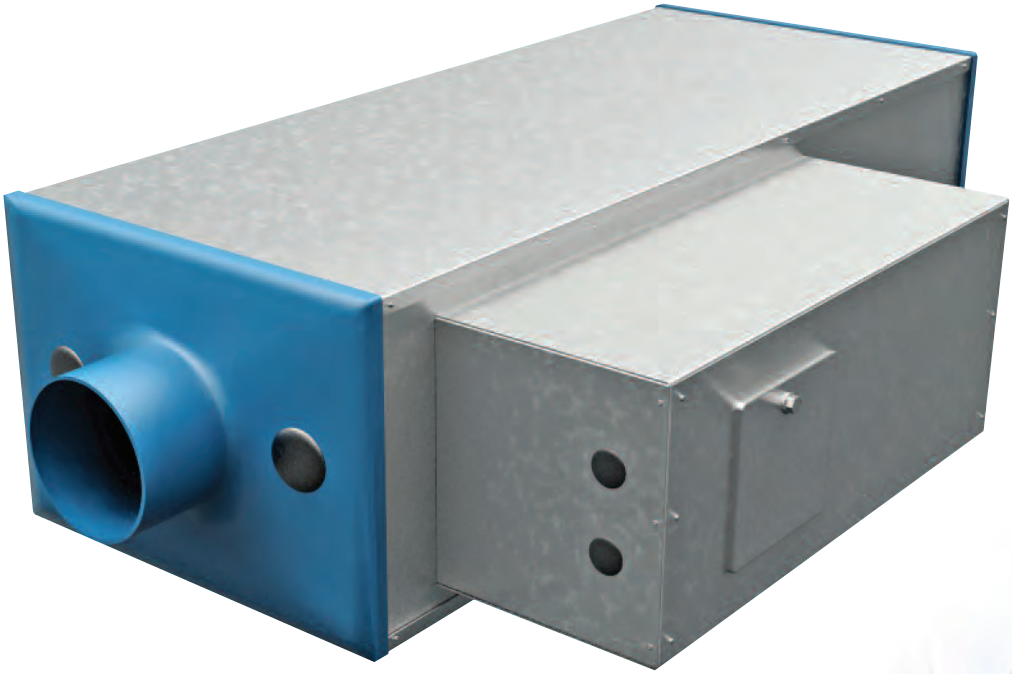
The Fan unit shall have a 3 year warranty.

The fan and ancillaries shall be of the SQURBO type as manufactured by Nuaire Limited.

All other components shall be in accordance with the manufacturer's specification.

SQURBO EXTRACT OR SUPPLY

LOW DEPTH EXTRACT OR SUPPLY FANS THAT AUTOMATICALLY REACT TO THE ENVIRONMENTAL CONDITIONS.



BENEFITS

ENERGY EFFICIENT
All models have Ecosmart controls which provide the most energy efficient and cost effective solution by varying fan speed to suit the required units.

EXACT VENTILATION
Low voltage plug-in sensors allow the extract rate to be automatically adjusted to suit the rooms specific requirement. Plug-in sensors and controls reduce the installation time on site.

COMPACT DESIGN
Low case height makes this unit ideal for restricted ceiling spaces. Unique, removable mounting bracket and integral AV mounts ensure quick and efficient installation and maintenance.

QUIETER UNITS
Casing is fully lined to provide high acoustic and thermal insulation properties ensuring very low noise.

COST EFFECTIVE
All sensors are safe extra low voltage therefore eliminating the need for expensive main wiring between fan and controls.

EFFICIENT PACKAGED SOLUTION
All fans and controls are an integrated package providing a simple to select and install system – eliminating the need for traditional control panels.

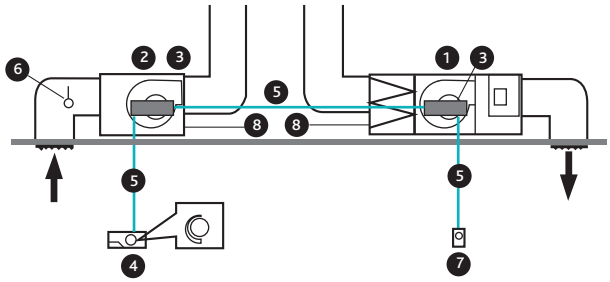
SIMPLE COMMISSIONING
On board control pad allows for pre-setting of minimum and maximum fan speeds to suit design requirements – no main balancing damper required.

DESIGN FLEXIBILITY
Available in 6 case sizes, supply unit with LPHW or electric heater.

ANCILLARIES
Full range of heat exchangers, attenuators, smart heaters and cowls etc. are available to complete your installation.

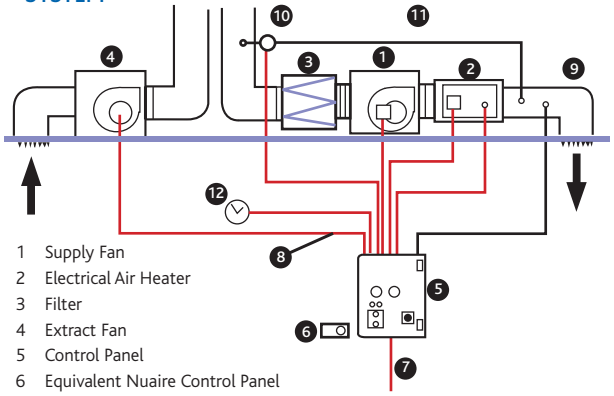
WARRANTY
Ecosmart squrbo has a 5 year warranty.

"ECOSMART" SUPPLY AND EXTRACT VENTILATION SYSTEM



1 Supply Unit
2 Extract Unit
3 Integral Controls
4 User Controls (on/off, speed, heating) or BMS control
5 Safe Extra Low Voltage (SELV) 12V Cable
6 CO2 Sensor (optional)
7 PIR (Occupancy Sensor) optional
8 230V electricity supply to fan

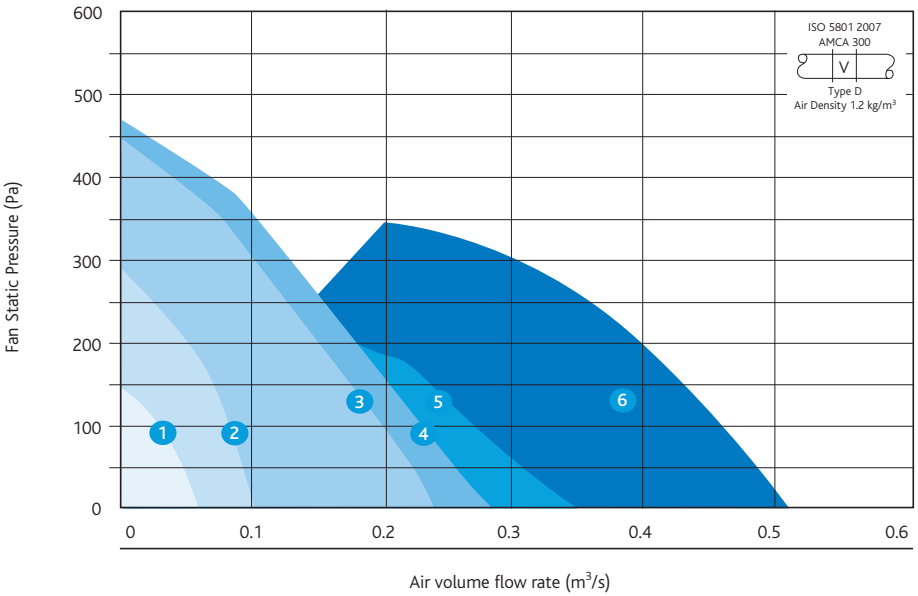
"CONVENTIONAL" SUPPLY AND EXTRACT VENTILATION SYSTEM



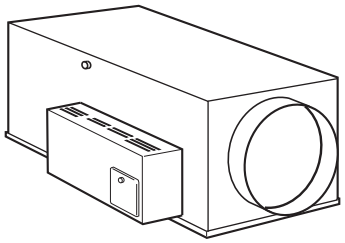
1 Supply Fan
2 Electrical Air Heater
3 Filter
4 Extract Fan
5 Control Panel
6 Equivalent Nuaire Control Panel (User Control) for comparative purposes
7 230V/400V Electrical Supply
8 Various Control & 230v/400v Electricity Cabling
9 Temperature Switch
10 Air Pressure Switch
11 PVC Tubing
12 Time Clock

PERFORMANCE - ECOSMART SQURBO EXTRACT

Ecosmart Squrbo Extract Unit



Casing



ESSE Extract units

Code descriptions

ESSE 2-WP

1 2 3

1. ESSE = Ecosmart Squrbo extract fan
2. Case Size/Curve Reference
3. WP = Weatherproof enclosure

ECOSMART SQURBO EXTRACT UNITS

ELECTRICAL & SOUND

Curve	Code	Phase	RPM	Motor Power (kW)	FLC (amps)	SC (amps)	Data Type	Sound Power levels (dB re 10-12W) Octave Band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Breakout dBA @ 3m
1	ESSE1	1	2724	0.043	0.32	0.32	I	63	59	63	50	45	37	27	30
							O	68	62	65	51	48	44	34	30
2	ESSE2	1	2285	0.075	0.34	0.34	I	64	64	66	57	52	57	37	34
							O	71	66	68	61	56	65	44	34
3	ESSE3	1	2544	0.15	0.72	0.72	I	70	75	75	66	63	57	49	42
							O	76	75	76	70	69	66	55	42
4	ESSE4	1	2313	0.17	0.92	0.92	I	70	75	75	66	64	61	58	43
							O	76	75	79	69	69	63	65	43
5	ESSE5	1	2313	0.17	0.92	0.92	I	74	70	73	68	66	64	60	43
							O	78	69	77	73	72	70	66	43
6	ESSE6	1	1110	0.66	2.95	2.95	I	71	67	59	60	56	51	46	45
							I	76	74	73	73	71	67	62	45

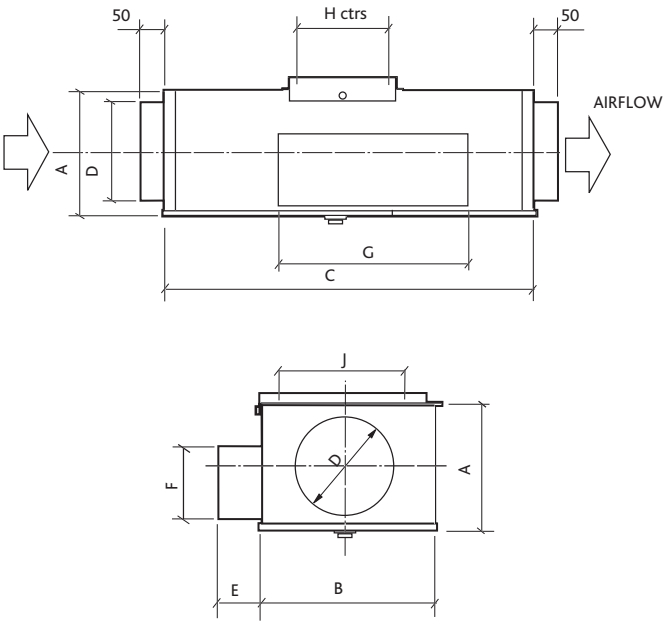
The electrical and sound information in the table is nominal. Breakout dBA@3m is spherical, free field.
SC = FLC due to soft starting control.

* Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz).

Unit has facility to operate motorised damper fan frost protection. I = Induct inlet. O = Induct outlet.

Please note: With Ecosmart, Ecosmart BMS & Ecosmart Commissioning options the units are pre-programmed with a soft start facility.

DIMENSIONS - ECOSMART SQURBO EXTRACT



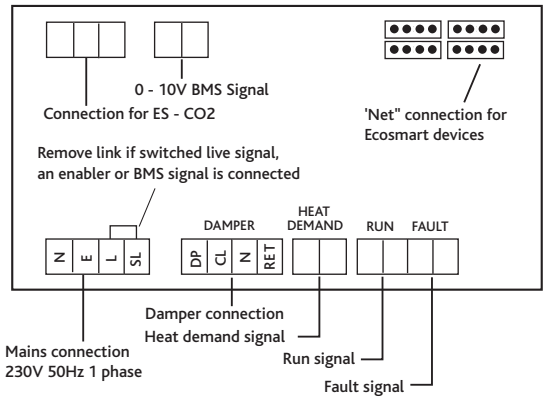
Extract - No heater

DIMENSIONS (mm) & WEIGHTS

	A	B	C	Dia D	E	F	G	Fixing ctrs H	J	Weight (Kg)
ESSE1	160	230	640	125	150	150	330	140	115	7.4
ESSE2	185	302	630	150	150	150	330	140	150	8.1
ESSE3	235	350	700	200	150	150	330	140	170	13
ESSE4	285	350	672	250	150	150	330	140	170	13.8
ESSE5	350	400	726	315	150	150	330	140	200	15.2
ESSE6	430	682	700	400	175	150	330	140	200	38

WIRING - ECOSMART SQURBO EXTRACT

ESSE1-5 Extract



CONSULTANTS SPECIFICATION

EXTRACT UNIT SPECIFICATION

The Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment.

Unit shall be manufactured from acoustically lined, heavy gauge pre-galvanised, corrosion resistant steel. The units shall provide exceptional thermal and acoustic insertion. The general construction is to class A leakage.

The unit will be manufactured to provide a low height solution to enable it to be located in low depth ceiling and floor voids. For ease of installation the unit shall be provided with a single point mounting bracket with integrated, anti vibration strips.

The extract fan shall have complimentary controls which will enable it to interface directly with the supply unit via a low voltage pre-plugged cable.
The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with high efficiency motors to BS5000 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel.

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.

The unit and ancillaries shall be of the Ecosmart Squrbo type as manufactured by Nuaire Ltd.

All other components shall be in accordance with the manufacturer's specification.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

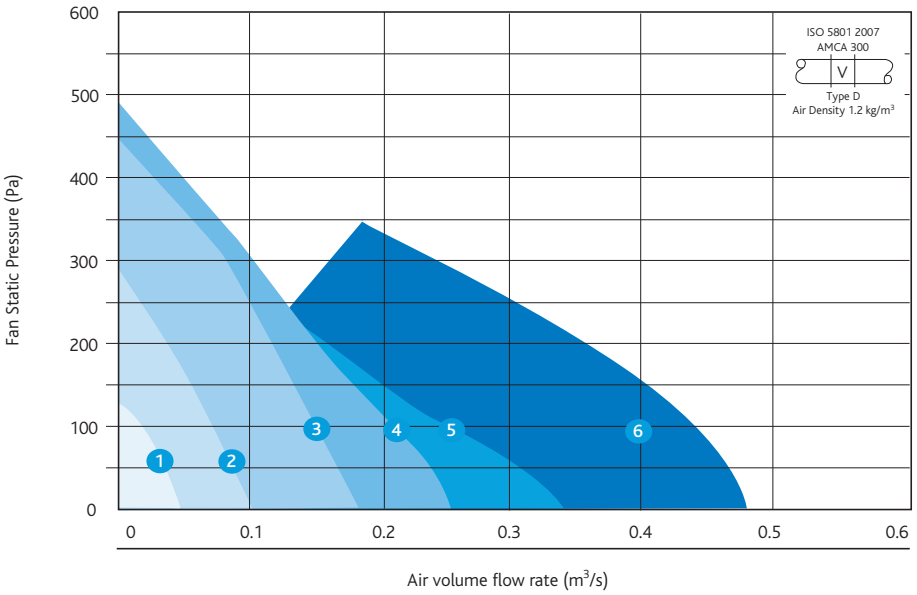
The Unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – heating/cooling switching, 0-10V speed adjustment. (using ES - CI).
- Volt free failure and status indication.
- Integral air off temperature adjustment.
- Facility for remote temperature control.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.
- Volt free frost alarm/heat demand interface.
- Frost protection/hold off stat.

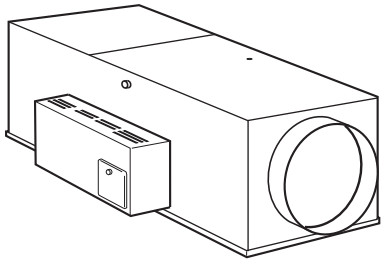
The Fan unit shall have a 5 year warranty.

PERFORMANCE - ECOSMART SQURBO SUPPLY

Ecosmart Squrbo Supply Unit



Casing



ESSE Supply units

Code descriptions

ESS 2 - E

1 2 3

1. ESS = Ecosmart Squrbo supply fan
2. Case Size/Curve Reference
3. No suffix = without heater
   E = With electric heating
   L = Heating
   2L = with 2 row LPHW heating

Note: Performance curves make allowance for the internal filter and heater battery and you only need apply the resistance external to the unit and any additional units eg. HX, Filter etc.

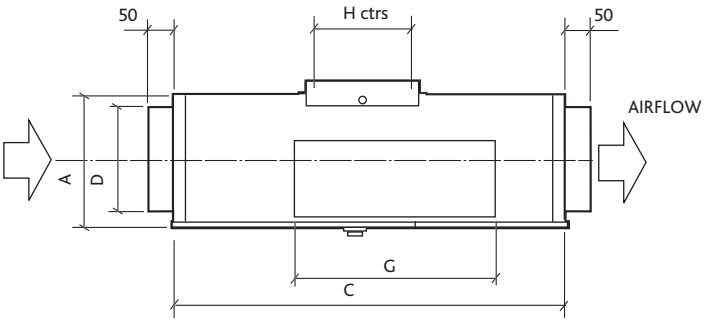
ECOSMART SQURBO SUPPLY UNITS

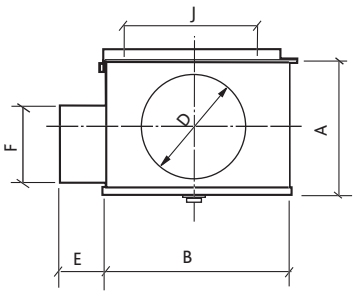
ELECTRICAL & SOUND

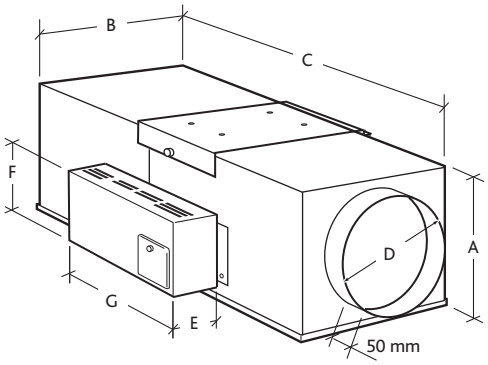
Curve	Code	Phase	RPM	Motor Power (kW)	Electric Heater (kW)	LPHW kW L	LPHW kW 2L	FLC (amps)	Inlet/ Outlet Type	Sound Power levels (dB re 10-12W) Octave Band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Breakout dBA @ 3m
1	ESS1-E	1	2724	0.043	1.0	-	-	4.7	I	61	62	61	49	43	34	26	30
	ESS1	1	-	-	-	-	-	0.32	O	69	62	63	51	45	42	32	30
2	ESS2-E	1	2285	0.075	1.5	-	-	7.0	I	62	63	63	55	53	44	34	34
	ESS2-L/2L	1	-	-	-	3	4.5	0.34	O	70	66	66	59	57	53	42	34
3	ESS3-E	1	2544	0.15	2.0	-	-	9.5	I	67	72	71	63	60	54	46	42
	ESS3-L/2L	1	-	-	-	4.5	6	0.72	O	74	73	74	68	67	64	53	42
4	ESS4-E	1	2313	0.17	3.0	-	-	14	I	68	72	71	67	63	60	56	43
	ESS4-L/2L	1	-	-	-	5	8.5	0.92	O	74	74	74	72	71	68	64	43
5	ESS5-E	1	2313	0.17	4.5	-	-	20.5	I	73	71	72	67	63	62	58	43
	ESS5-L/2L	1	-	-	-	5.5	10	0.92	O	79	74	76	72	72	69	66	43
6	ESS6-E	3	1110	0.66	12*	-	-	20	I	71	67	59	60	56	51	46	45
	ESS6-2L	1	-	-	-	-	12	2.95	O	76	74	73	73	71	67	62	45

Note: there is no LPHW coil available for size 1 (ESS1). Unit has facility to open a remote motorised damper if frost protection is required.
*3 - phase electrical supply required at Nuaire specified design conditions.

DIMENSIONS - ECOSMART SQURBO SUPPLY







Supply - No heater

DIMENSIONS (mm) & WEIGHTS

	A	B	C	Dia D	E	F	G	Fixing ctrs H	J	Weight (Kg)
ESS1	160	230	640	125	150	150	330	140	115	7.4
ESS2	185	302	630	150	150	150	330	140	150	8.1
ESS3	235	350	700	200	150	150	330	140	170	13
ESS4	285	350	672	250	150	150	330	140	170	13.8
ESS5	350	400	726	315	150	150	330	140	200	15.2
ESS6	430	682	700	400	175	150	330	140	200	35

Supply - Electric heater

DIMENSIONS (mm) & WEIGHTS

	A	B	C	Dia D	E	F	G	Fixing ctrs H	J	Weight (Kg)
ESS1-E	160	230	968	125	150	150	403	140	115	12.1
ESS2-E	185	302	968	150	150	150	403	140	150	14.5
ESS3-E	235	350	968	200	150	150	403	140	170	21.5
ESS4-E	285	350	968	250	150	150	403	140	170	23.4
ESS5-E	350	400	968	315	150	200	450	140	200	27.1
ESS6-E	430	682	1002	400	175	200	450	140	200	60

Supply - LPHW heater

DIMENSIONS (mm) & WEIGHTS

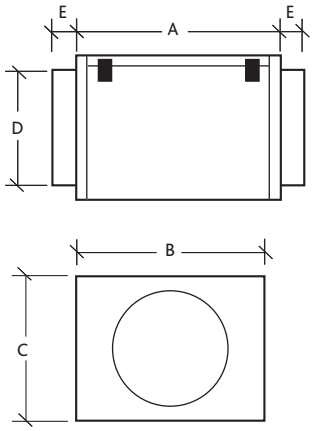
	A	B	C	Dia D	E	F	G	Fixing ctrs H	J	Weight (Kg)
ESS2-L/2L	285	450	968	150	150	170	515	140	250	25
ESS3-L/2L	285	450	968	200	150	170	515	140	250	25
ESS4-L/2L	285	450	968	250	150	170	515	140	250	26
ESS5-L/2L	350	450	968	315	150	170	515	140	250	29
ESS6-L/2L	430	682	1002	400	175	170	515	140	250	60

ANCILLARIES FOR ECOSMART SQURBO SUPPLY OR EXTRACT

FILTER CASSETTE

Filter Cassettes are constructed from galvanised steel and are fitted with circular spigots. The filter media is of non woven synthetic fibres which are resistant to moisture, fungus, bacteria and frost to G4 specification. Filter media access panel with quick release clips.

Typical code: SF-100

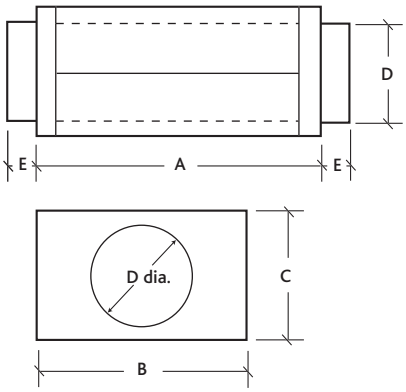


Dimensions (mm)							Resistance (Pa) @ Airflow (m³/s)																
Code	A	B	C	D	E	Kg	.02	.03	.04	.05	.06	.07	0.8	.09	.1	.15	.2	.25	.3	.4	.5	.6	.7	.8
SF-100	264	230	159	100	50	2	2	3	4	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SF-125	264	230	159	125	50	2	2	3	4	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SF-150	264	300	184	150	50	3	1	2	3	4	5	5	6	7	8	-		-	-	-	-	-	-	-
SF-200	264	350	234	200	50	4	-	1	1	1	2	2	3	3	4	6	8	-	-	-	-	-	-	-
SF-250	264	350	284	250	50	6	-	-	1	1	1	2	2	3	3	5	7	9	-	-	-	-	-	-
SF-315	264	400	349	315	50	9	-	-	-	1	1	1	1	2	2	3	5	6	7	10	-	-	-	-
SF-400	264	900	475	400	50	11	-	-	-	-	-	-	-	-	-	1	2	2	3	4	6	7	8	10

SILENCERS

The In-line attenuator shall be constructed in galvanised steel and be fitted with duct work connection spigots. Acoustic media shall be a low density foam to prevent material migration into the airstream. Resistance to airflow is negligible.

Typical code: SIL-100



Dimensions (mm)

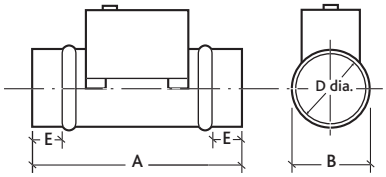
Code	A	B	C	D	E	Weight Kg	125	250	500	1K	2K	4K	8K
SIL-125	600	230	159	125	50	4.8	-11	-13	-16	-26	-39	-21	-13
SIL-150	600	300	184	150	50	6.6	-5	-8	-17	-35	-40	-17	-8
SIL-200	600	350	234	200	50	9.9	-9	-8	-14	-29	-23	-12	-14
SIL-250	600	350	284	250	50	10.9	-5	-5	-12	-25	-15	-10	-9
SIL-315	600	400	349	315	50	12.2	-3	-4	-10	-22	-14	-10	-11
SIL-400	900	700	475	400	50	31.7	-4	-9	-11	-14	-10	-8	-6

ECOSMART DUCT HEATER

Provided to boost the air temperature if the standard heating is not sufficient. Controlled directly from the Ecosmart Squrbo controls. Duct Heaters are constructed from galvanised steel, and can be fitted in the horizontal or vertical position. Terminals are provided for electrical connection to heating elements which are centrally located in air stream.

All heaters are fitted with a high temperature safety cut out (rated 13 amps) with a manual re-set button located on the unit terminal box.

Typical code: ESH2



Dimensions (mm)

						Weight		Resistance (Pa) @ Airflow (m³/s)																
Code	A	B	C	D	E	Kg	kW/ph	.02	.03	.04	.05	.06	.07	0.8	.09	.1	.15	.2	.25	.3	.4	.5	.6	.7	.8
ESH2	400	150	200	150	45	3.5	3/1	-	6	11	16	21	26	32	38	45	-	-	-	-	-	-	-	-	-
ESH3	400	200	250	200	45	4	3/1	-	-	-	6	9	12	15	17	20	36	-	-	-	-	-	-	-	-
ESH4	400	250	300	250	45	5	3/1	-	-	-	-	-	-	6	8	10	19	28	39	-	-	-	-	-	-
ESH5	400	315	369	315	45	4.5	3/1	-	-	-	-	-	-	-	-	-	9	14	20	26	40	-	-	-	-

Note: The Duct Heater requires a separate power supply.

ANCILLARIES FOR ECOSMART SQURBO SUPPLY OR EXTRACT CONT.

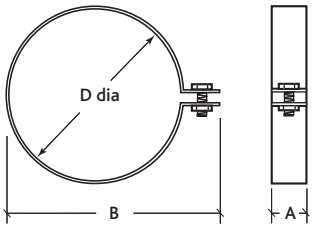
FAST CLAMP DIMENSIONS (mm)

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
FC125	90	125	FC315	90	315
FC150	90	150	FC400	90	400
FC200	90	200	-	-	-
FC250	90	250	-	-	-



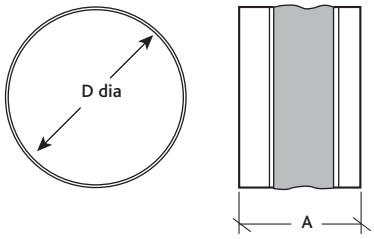
CIRCULAR FLEXIBLE CONNECTOR DIMENSIONS (mm)

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
CFC12	150	127	CFC31	150	317
CFC16	150	152	CFC40	150	402
CFC20	150	202	CFC50	150	502
CFC25	150	252	-	-	-



HEAT EXCHANGER DIMENSIONS (mm) & WEIGHTS

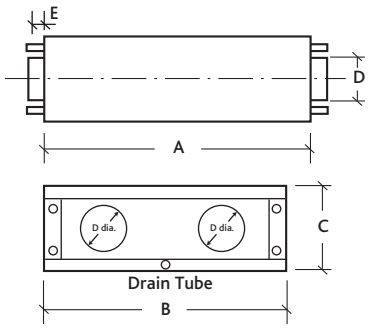
Manufactured from galvanised steel The units provide a means of recovering heat from an extract system and transferring the heat to a complementary air supply system. Designed for horizontal mounting only, consisting of an insulated casing housing a plate heat exchanger. An internal drip tray and drain connection is provided. The access panel can be configured top or bottom. Filters must be fitted upstream on both sides to protect matrix.

Typical code: HX100

Dimensions (mm)

							Resistance (Pa) @ Airflow (m^3/s)																
Code	A	B	C	D	E	Kg	.02	.03	.04	.05	.06	.07	0.8	.09	.1	.15	.2	.25	.3	.4	.5	.6	.7	.8
HX125	617	547	181	125	50	15	7	14	24	37	52	70	90	-	-	-	-	-	-	-	-	-	-	-
HX150	617	547	216	150	50	15	7	113	21	31	42	55	70	86	104	221	-	-	-	-	-	-	-	-
HX200	617	547	266	200	50	17	-	12	1	21	26	31	37	43	49	84	140	-	-	-	-	-	-	-
HX250	617	667	316	250	50	21	-	-	-	2	4	5	8	10	13	32	60	96	141	-	-	-	-	-
HX315	617	967	381	315	50	26	-	-	-	-	-	-	8	10	12	24	38	60	89	161	256	-	-	-
HX400	617	967	466	400	50	31	-	-	-	-	-	-	8	9	10	19	29	42	56	93	137	190	252	323

Note: Duct Heater requires a separate power supply.



ANCILLARIES FOR ECOSMART SQURBO SUPPLY OR EXTRACT CONT.

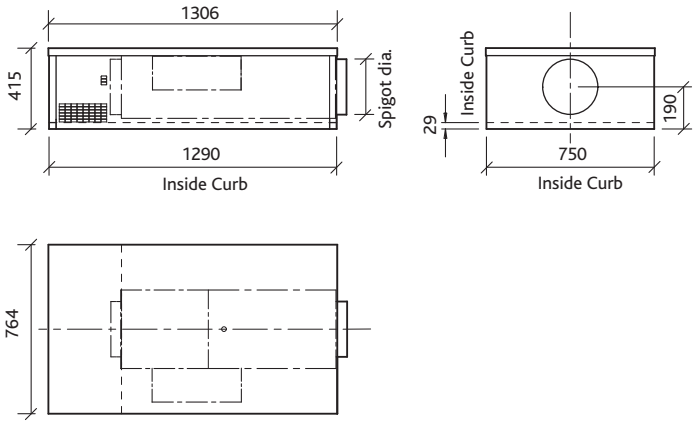
WEATHERPROOF ENCLOSURE DIMENSIONS (mm)

Typical code: ESS2-EWP

Dimensions (mm)

Code	Spigot dia.	Weight Kg
ESS1-EWP	125	40.1
ESS2-EWP	150	42.5
ESS3-EWP	200	49.5
ESS4-EWP	250	51.4
ESS5-EWP	315	55.1

Suitable for electric heater version only.
Note: Above code is fan and weatherproof enclosure.



TERMINATOR COWLS DIMENSIONS (mm) & WEIGHTS

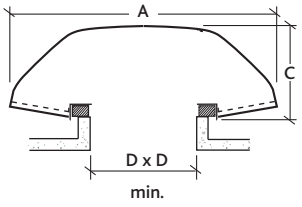
To provide a weatherproof route for supply & exhaust air to your ducted system.

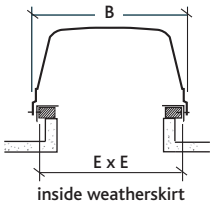
Cowls are manufactured from flame retardant polymer and can be supplied with gravity backdraught shutters, bird guards and hand guards. The terminal is finished in BS00A05 Grey as standard. All BS or RAL colours are available. The cowl will normally be fitted to the upstand by a roofing contractor or 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, BG = Bird Guard

Note: Air Pressure Drop of Attenuator (Pa) = Z x Q2

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



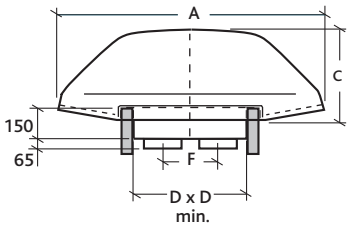


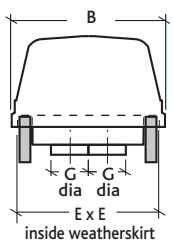
Code	A	B	C	D	E	Weight Kg	Discharge	Z Intake
TRTS-A	900	620	340	460	600	12.3	67	118
TRTS-B	1080	740	375	560	695	14.7	39	87
TRTS-C	1320	964	475	700	945	26.0	28	62
TRTS-D	1470	1076	490	800	1050	28.2	19	32
TRTS-E	1780	1170	485	900	1150	50.0	7	11.3
TRTS-F	2260	1476	600	1200	1452	88.0	2.5	3.6

SUPPLY/EXTRACT COWLS DIMENSIONS (mm) & WEIGHTS

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



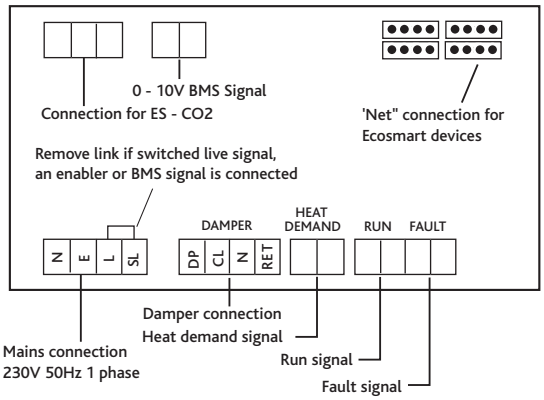


Code	A	B	C	D	E	F	G	Weight Kg
TRSE1	900	620	340	460	600	200	100	21.3
TRSE2	900	620	340	460	600	200	125	21.3
TRSE3	900	620	340	460	600	200	150	21.3
TRSE4	1320	964	475	700	945	345	200	41.4
TRSE5	1320	964	475	700	945	345	250	41.4
TRSE6	1320	964	475	700	945	345	315	41.4
TRSE7	1780	1170	485	900	1150	450	400	76.8

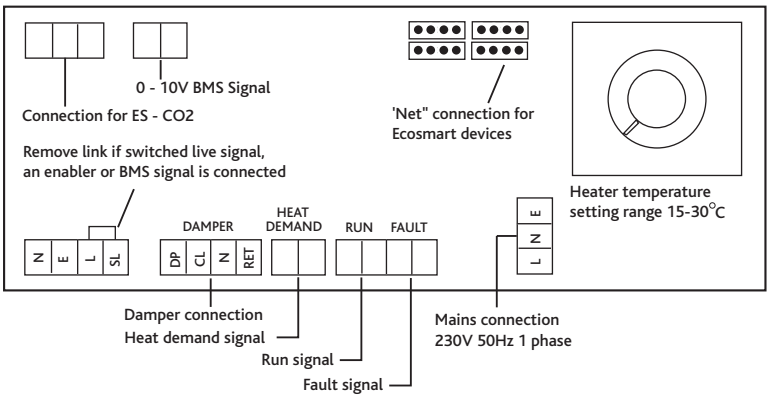
Resistance to airflow of this item is negligible.

WIRING - ECOSMART SQURBO SUPPLY

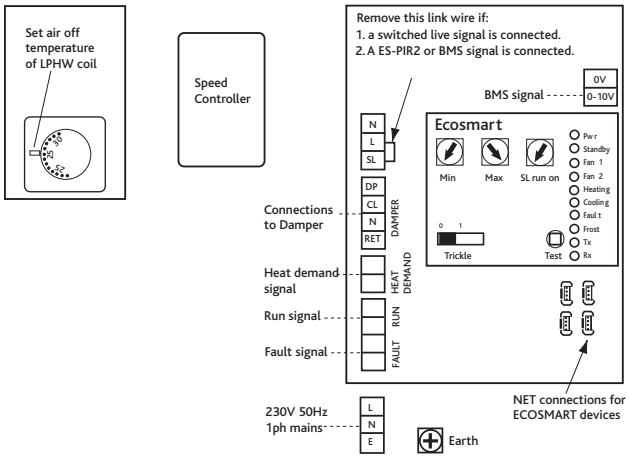
ESS1-5 LPHW



ESS1-5E (Electric Coil)

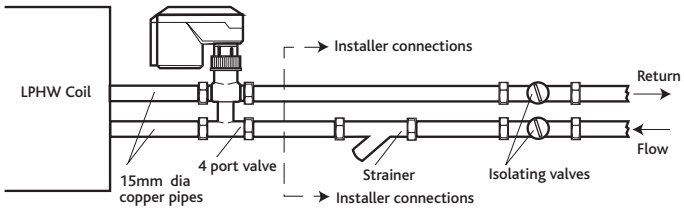


ESS6-L (LPHW Coil)

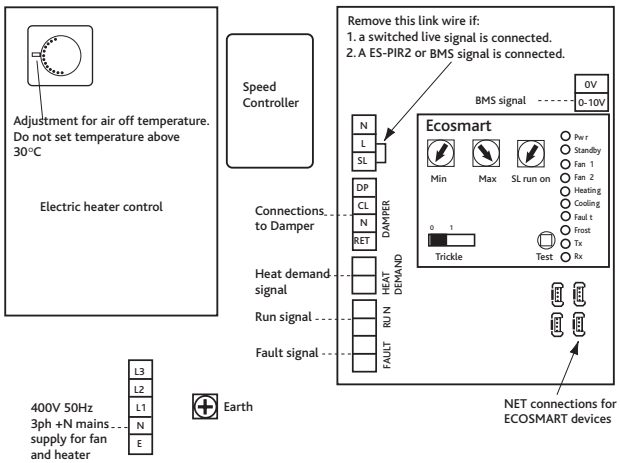


Installing the water circuit

It is recommended that a strainer and isolating valves are fitted (by others) for ease of maintenance.



ESS6-E (12kW Electric Coil)



CONSULTANTS SPECIFICATION

MAKE UP AIR SUPPLY UNIT SPECIFICATION

The Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment. Unit shall be manufactured from acoustically lined, heavy gauge pre-galvanised, corrosion resistant steel. The units shall provide exceptional thermal and acoustic insertion. The general construction is to class A leakage.

The unit will be manufactured to provide a low height solution to enable it to be located in low depth ceiling and floor voids. For ease of installation the unit shall be provided with a single point mounting bracket with integrated, anti vibration strips.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with high efficiency motors to BS5000 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel.

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.

The unit and ancillaries shall be of the Ecosmart Squrbo type as manufactured by Nuaire Ltd.

All other components shall be in accordance with the manufacturer's specification.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The Unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – heating/cooling switching, 0-10V speed adjustment. (using ES - CI).
- Volt free failure and status indication.
- Integral air off temperature adjustment.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.
- Volt free frost alarm/heat demand interface.
- Frost protection/hold off stat for LPHW units.

COIL TYPES AND CONTROLS

- Low Pressure Hot Water.
  The Low Pressure Hot Water heating coil shall be factory fitted with a 4-port valve, double regulating valve, drain cocks and air vents. The actuator controlling the 4-port valve shall be controlled via the on-board PCB by the off coil temperature sensor. All components pre-piped, assembled and tested by the manufacturers.

The control for the coils shall be fully integrated and shall maintain a constant off coil temperature. The system shall have frost protection which shall, at temperatures below 4 degrees C, fully open the 4-port valve and only start the fan when the temperature at the filter has risen above the designated set point. Unit shall have contacts which shall act as a frost alarm and/or signal boiler and circulating pumps to switch on.

ELECTRIC HEATER BATTERY

The Electric Heater Battery shall be factory fitted and pre-wired to an integral closed loop thyristor control.

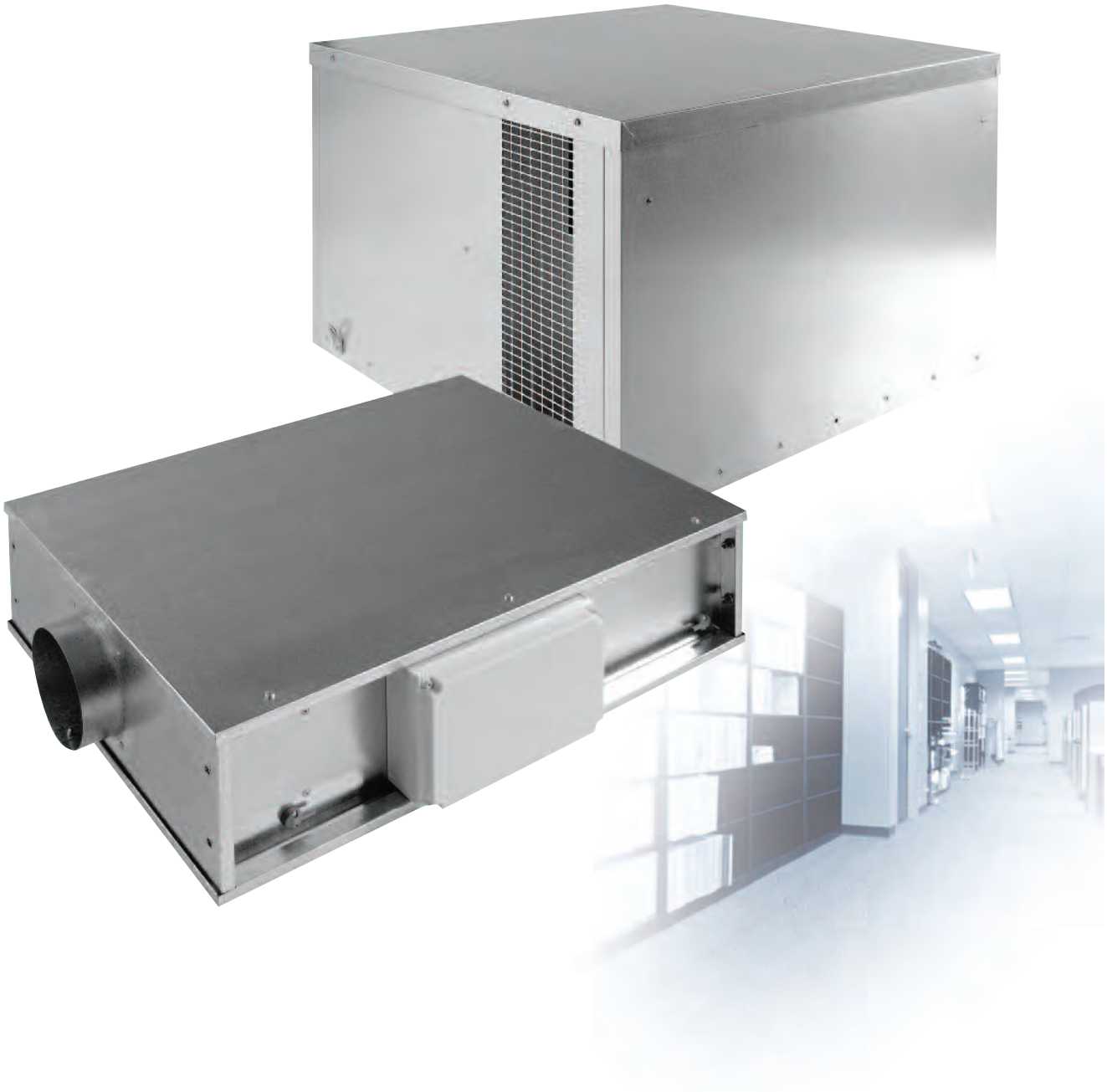
NOTE: Heaters will need an enable signal for heater (ES-LCD, 0-10V Bms or ES-CI).

The Fan unit shall have a 5 year warranty.

All equipment to be as manufactured by Nuaire Ltd.

XTRACTOR SINGLE FANS

THE QUIETEST NOISE TO DUTY RATIO UNIT AVAILABLE.



ecosmart
OPTIONS AVAILABLE

BENEFITS

QUIETEST INSTALLATION
The high rigidity, double skinned construction produces the quietest noise to duty ratio unit in the industry, ensuring that your system requirements are easily met.

LOW DEPTH 350MM (INTERNAL ONLY)
For applications where the space is at a premium, the ESXL version at only 350mm deep provides the perfect fit.

PART L EFFICIENT
The fan impeller and motor are high efficiency IE2 motors to EN60034-30 with high efficiency forward or backward curved centrifugal impellers provide the most efficient solution. (Available on larger sizes, 11 and above).

FLEXIBLE SOLUTION
Ideal for either internal or external applications. (See below for specific code).

EASE OF ACCESS
Access panels provide quick and easy access for quick and easy maintenance – limiting maintenance costs.

SAFETY TESTED
Motors are pre-wired to external IP55 rated terminal box for ease of installation.

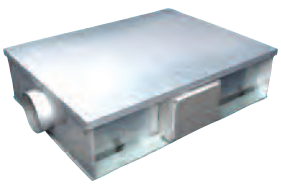
'PERFECT MATCH' ATTENUATORS
Wide range of attenuators available to assist in meeting design criteria. Contact Nuaire for details.

ECOSMART COMPATIBILITY
Units can be supplied with Ecosmart controls, providing a simple to install, easy to commission, energy efficient solution. Also facilitates the interconnection of a supply AHU.

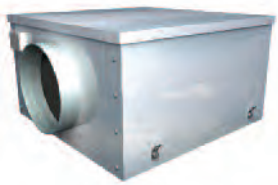
BMS & COMMISSIONING OPTION
Unit can be provided with integrated speed controls for commissioning purposes. This can be upgraded to a BMS option which gives these features plus BMS interfaces. Ecosmart has these features as standard.

WARRANTY
Ecosmart Xtractor has a 5 year warranty.

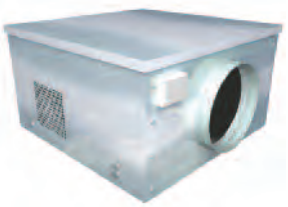
EXTRACTOR UNITS



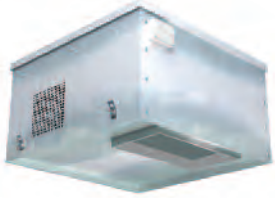
ESX internal in-line fans.



ESX-X External in-line fans.

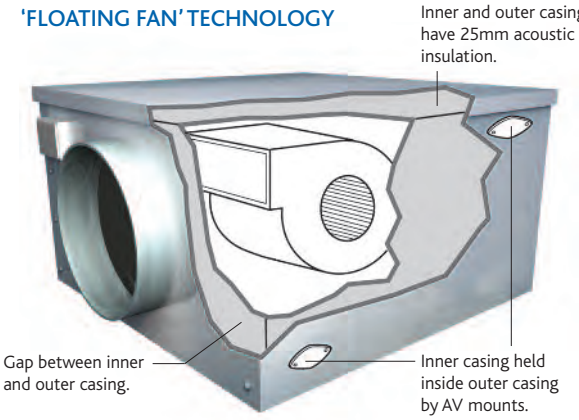


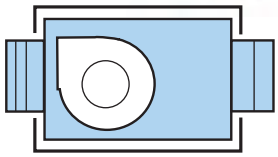
ESX-R Roof mounted fan with end inlet and side discharge.



ESX-B Roof mounted fan with bottom inlet and side discharge.

'FLOATING FAN' TECHNOLOGY

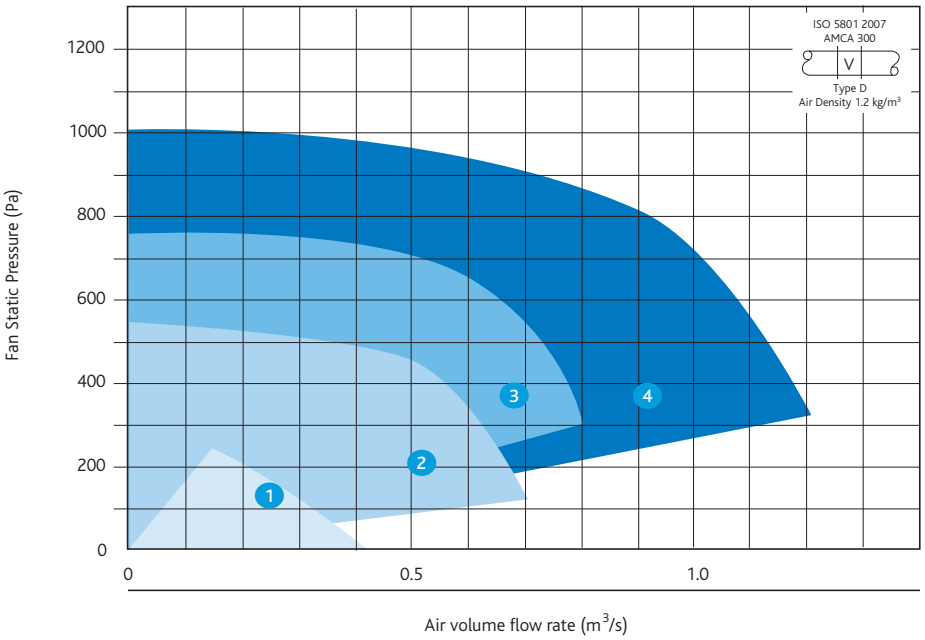




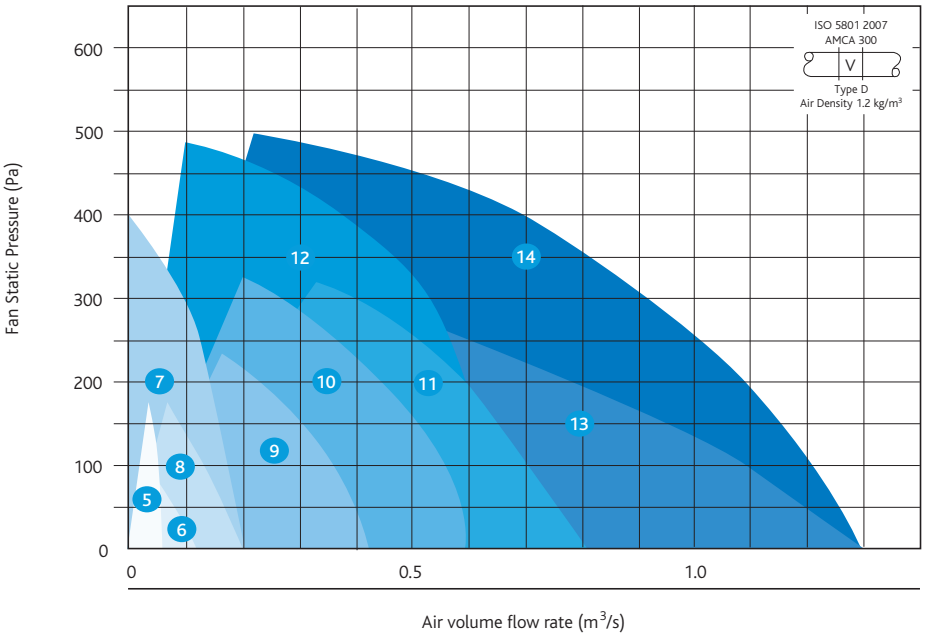
This is why the ESX is so quiet - Floating fan double skinned with direct coupled attenuators - patented by Nuaire.

PERFORMANCE - INTERNALLY MOUNTED XTRACTOR UNITS

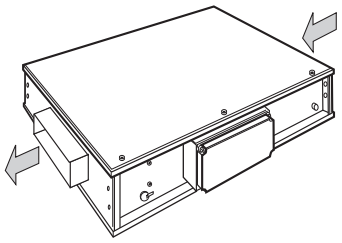
Xtractor Internally Mounted Fan Units 1-4



Xtractor Internally Mounted Fan Units 5-14



Casing



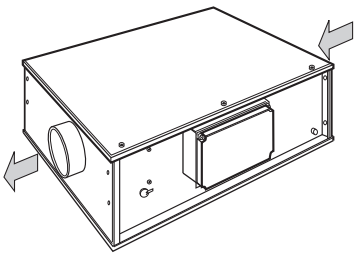
ESXL internal in-line fans

Code descriptions

ESX L1- ES B C

1 2 3 4 5 6

1. Single range
2. High efficiency
3. Sizes 1 - 25
4. ES = Full Ecosmart controls.
   – BMS interfaces and commissioning controls (as 2 & 3 below) full compatibility with Ecosmart sensors.
   DS = Double Skin.
5. B = BMS interfaces 0-10V, volt free run and fail indication.
   Commissioning/speed control built in.
   Adjustable trickle and boost if required.
6. C = Commissioning/speed control built in.
   Adjustable trickle and boost if required.
   All the above control options are pre-programmed with a soft start function.



ESX internal in-line fans

INTERNALLY MOUNTED XTRACTOR UNITS

ELECTRICAL & SOUND UNITS 1 - 14

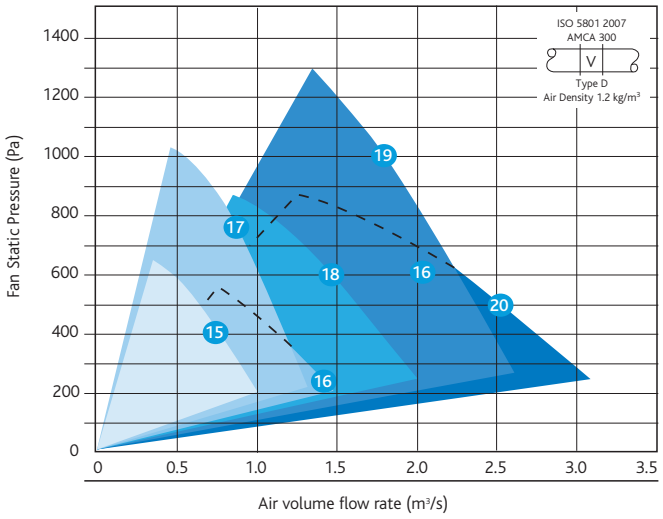
								Induct Sound Power Level dB re 1pW							
				Input power	FLC	SC	Inlet	Frequency (Hz)							Breakout
Curve	Unit	Phase	RPM	Watts	A	A	/Outlet	125	250	500	1K	2K	4K	8K	dBA@ 3m
1	ESXL1	1	1140	410	1.6	1.6	I	61	61	45	37	31	30	24	30
							O	67	62	54	53	49	45	38	
2	ESXL2-DS	1	1250	1250	6	6	I	73	68	68	66	61	59	54	34
							O	79	87	88	87	76	74	69	
3	ESXL3-DS	1	1160	1750	7.9	7.9	I	77	72	72	70	65	63	58	36
							O	83	91	92	91	80	78	73	
4	ESXL4-DS	3	1310	3000	5	5	I	80	75	75	73	68	66	61	38
							O	86	94	95	94	83	81	76	
5	ESX1-DS	1	2040	86	0.65	0.65	I	66	52	47	44	28	21	17	20
							O	66	61	53	56	40	32	25	
6	ESX2-DS	1	1320	104	0.56	0.56	I	76	51	50	38	30	24	22	22
							O	69	56	50	48	48	40	33	
7	ESX2H-DS	1	1700	191	0.8	0.8	I	70	64	58	48	44	44	36	23
							O	73	66	65	60	59	59	54	
8	ESX3-DS	1	1260	230	1.6	1.6	I	78	56	55	44	38	36	33	25
							O	81	76	64	59	58	55	49	
9	ESX4-DS	1	1140	370	1.6	1.6	I	68	62	56	50	44	42	38	24
							O	75	67	62	62	59	57	54	
10	ESX5-DS	1	1110	660	2.95	2.95	I	71	67	59	60	56	51	46	26
							O	76	74	73	73	71	67	62	
11	ESX6-DS	1	1272	1110	4.84	4.84	I	80	74	66	65	64	61	56	33
							O	86	80	77	78	79	78	72	
12	ESX6H-DS	1	1480	1230	7.6	7.6	I	83	77	69	68	67	64	59	34
							O	89	83	80	81	82	81	75	
13	ESX9-DS	1	960	1600	7.3	7.3	I	84	75	69	66	65	59	52	36
							O	86	77	78	75	73	70	65	
14	ESX9H-DS	1	1065	1600	9.4	9.4	I	88	79	73	70	69	63	56	39
							O	90	81	82	79	77	74	69	

Please note that the units are pre-programmed with a soft start function - therefore the starting current is identical to the FLC.
The electrical and sound information in the table is nominal.
* Motor electrical supply, 1=1 phase (230V, 50Hz) (3=3phase (400V, 50Hz).

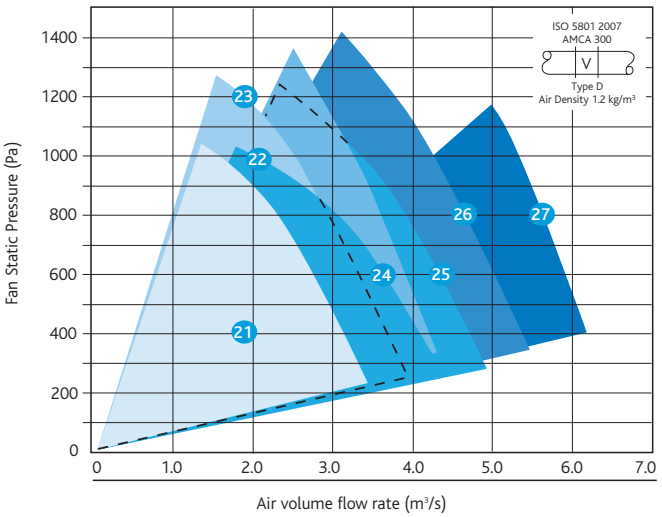
Note: DS = Double skin casework. For specification see page 166.

PERFORMANCE - INTERNALLY MOUNTED XTRACTOR UNITS CONT.

Xtractor Internally Mounted Fan Units 15-20



Xtractor Internallly Mounted Fan Units 21-27



INTERNALLY MOUNTED XTRACTOR UNITS

ELECTRICAL & SOUND UNITS 15 - 27

Curve	Unit	Phase	RPM	kW	FLC (A)	SC (A)	Inlet /Outlet	Induct Sound Power Level dB re 1pW (+ correction for outlet) Frequency (Hz) 125	250	500	1K	2K	4K	8K	Breakout dBA @3m
15	ESX15-DS	3	2415	0.55	1.6	1.6	I	79	76	81	77	74	67	61	36
							O	76	75	79	81	78	69	62	
16	ESX16-DS	3	1830	0.76	2.1	2.1	I	88	85	78	75	73	68	62	42
							O	88	83	79	80	76	69	63	
17	ESX17-DS	3	3080	1.1	2.5	2.5	I	87	77	84	78	78	73	66	40
							O	88	77	82	80	84	76	67	
18	ESX18-DS	3	2300	1.5	3.5	3.5	I	89	88	86	79	76	74	68	45
							O	93	90	86	82	81	76)	69	
19	ESX19-DS	3	2920	3.029	6.5	6.5	I	93	92	90	83	80	78	72	49
							O	97	94	90	86	85	80	73	
20	ESX20-DS	3	1800	2.249	5.0	5.0	I	79	85	79	78	75	69	65	41
							O	79	86	82	83	77	70	65	
21	ESX21-DS	3	1970	3	6.5	6.5	I	82	79	84	79	77	72	67	39
							O	83	81	84	83	82	74	68	
22	ESX22-DS	3	1760	4	8.5	8.5	I	82	83	84	80	76	72	66	41
							O	83	83	83	85	80	73	66	
23	ESX23-DS	3	2180	4	8.5	8.5	I	85	82	87	82	80	75	70	42
							O	86	84	87	86	85	77	71	
24	ESX24-DS	3	2430	5.5	11.0	11.0	I	87	84	89	84	82	77	72	44
							O	88	86	89	88	87	79	73	
25	ESX25-DS	3	1960	5.5	11.0	11.0	I	85	86	87	83	79	75	69	44
							O	86	86	86	88	83	76	69	
26	ESX26-DS	3	2180	7.5	15.5	15.5	I	87	88	89	85	81	77	71	46
							O	88	88	88	90	85	78	71	
27	ESX27-DS	3	2460	11	21.5	21.5	I	88	90	93	88	85	82	77	48
							O	93	93	91	91	91	84	78	

Please note that the units are pre-programmed with a soft start function - therefore the starting current is identical to the FLC.

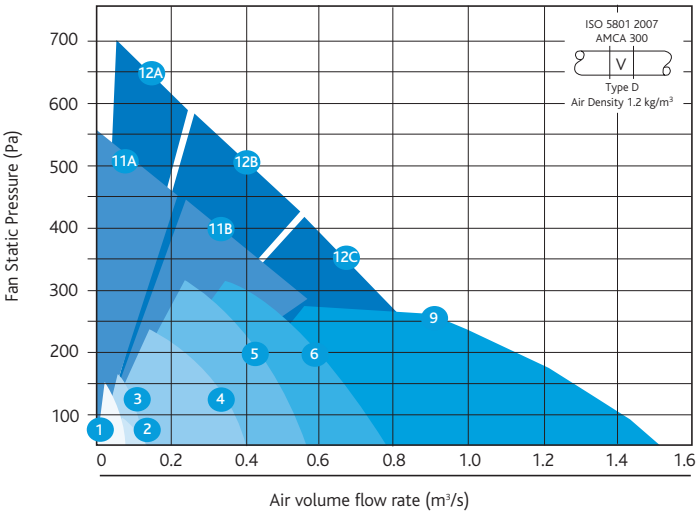
The electrical and sound information in the table is nominal. Breakout dBA@3m is spherical, free field.
Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta applies to single phase motors only.

* Motor electrical supply, 1=1 phase (230V, 50Hz) (3=3phase (400V, 50Hz).

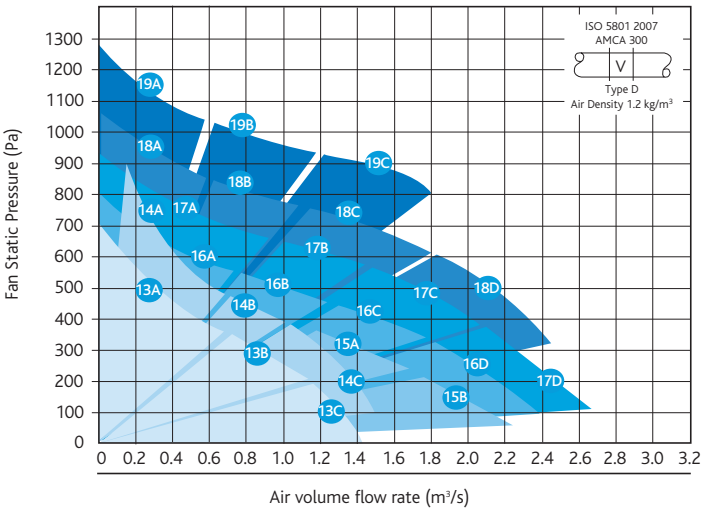
Note: DS = Double Skin Casework for specification see page 166.

PERFORMANCE - EXTERNALLY MOUNTED XTRACTOR UNITS

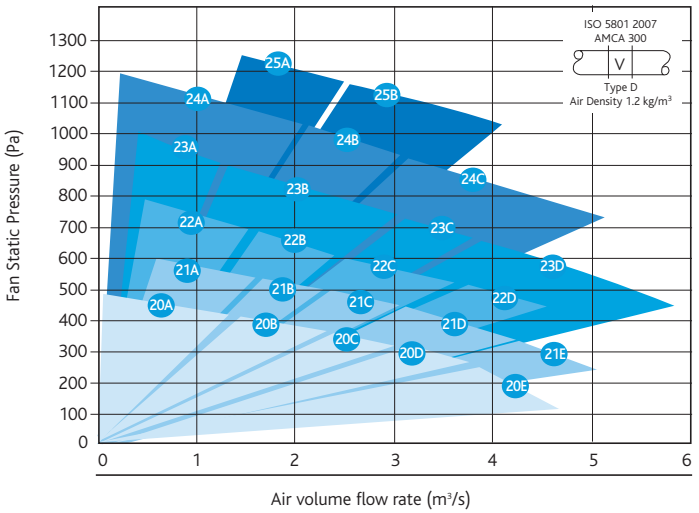
Xtractor Externally Mounted Fan Units 1-12



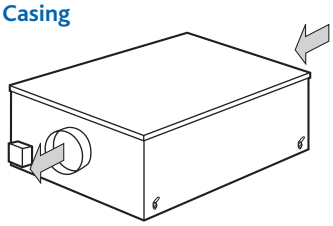
Xtractor Externally Mounted Fan Units 13-19



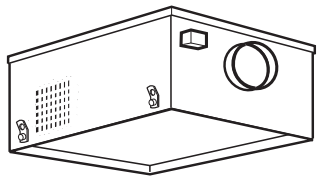
Xtractor Externally Mounted Fan Units 20-25



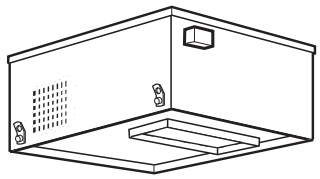
Casing



ESX-X External In-line Fans



ESX-R External Fans



ESX-B External Fans

Code descriptions

ESX1 - B ES B C

1 2 3 4 5 6

1. Single range
2. Sizes 1 to 25
3. Case type/spigot position
   X = External in-line unit
   R = Back inlet, grille outlet external roof mounted unit
   B = Bottom inlet, grille outlet external roof mounted unit.
4. ES = Full Ecosmart controls – BMS interfaces and commissioning controls (as 5 & 6 below) full compatibility with Ecosmart sensors.
5. B = BMS interfaces 0-10V, volt free run and fail indication. Commissioning/speed control built in Adjustable trickle and boost if required.
6. C = Commissioning/speed control built in. Adjustable trickle and boost if required.

   All the above control options are pre-programmed with a soft start function.

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-X

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct Sound Power level dB re 1pW (+ correction for outlet) Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Breakout dBA@3m	Weight (Kg)
ESX1-X	1	2040	0.086	0.65	0.65	66(+8)	55(+3)	46(+0)	47(+6)	39(+13)	35(+11)	31(+8)	29	22
ESX2-X	1	1320	0.104	0.56	0.56	62(+11)	46(+4)	40(+9)	35(+15)	32(+17)	31(+13)	31(+5)	25	35
ESX3-X	1	1260	0.23	1.6	1.6	72(+2)	55(+6)	47(+7)	43(+14)	40(+14)	36(+15)	32(+13)	32	45
ESX4-X	1	1140	0.37	1.6	1.6	68(+8)	59(+6)	51(+10)	29(+17)	46(+15)	42(+16)	35(+18)	37	72
ESX5-X	1	1110	0.66	2.95	2.95	68(+8)	58(+10)	49(+14)	49(+19)	50(+18)	48(+17)	43(+17)	40	75
ESX6-X	1	1272	1.28	4.84	4.84	71(+5)	63(+4)	55(+12)	58(+13)	58(+13)	55(+13)	48(+12)	47	86
ESX9-X	1	960	1.6	7.3	7.3	82(0)	70(+6)	66(+6)	62(+12)	61(+6)	56(+9)	50(+10)	50	133
ESX11A-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
ESX11B-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
ESX12A-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
ESX12B-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
ESX12C-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
ESX13A-X	3	1085	0.75	2.1	2.1	70(+5)	67(+8)	67(+8)	63(+8)	56(+8)	57(+7)	51(+7)	50	116
ESX13B-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
ESX13C-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
ESX14A-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
ESX14B-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
ESX14C-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
ESX15A-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
ESX15B-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
ESX16A-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
ESX16B-X	3	1040	2.2	5.4	5.4	81(+8)	81(+3)	76(+2)	76(+11)	74(+9)	71(+9)	68(+9)	61	168.7
ESX16C-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
ESX16D-X	3	1040	4	10	10	84(+7)	82(+1)	80(+10)	79(+9)	77(+8)	75(+9)	70(+8)	63	193.6
ESX17A-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
ESX17B-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
ESX17C-X	3	1160	4	10	10	84(+4)	83(0)	77(+11)	78(+8)	75(+7)	73(+7)	70(+6)	61	193.6
ESX17D-X	3	1160	5.5	12	12	85(+4)	83(-1)	80(+10)	80(+7)	77(+7)	76(+7)	71(+6)	62	231.6
ESX18A-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
ESX18B-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
ESX18C-X	3	1260	4	10	10	84(+4)	83(-2)	79(+9)	80(+5)	77(+6)	74(+5)	69(+7)	61	193.6
ESX18D-X	3	1260	5.5	12	12	85(+4)	83(-1)	81(+8)	81(+5)	78(+5)	76(+6)	71(+7)	62	231.6
ESX19A-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
ESX19B-X	3	1440	4	10	10	87(-2)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	60	193.6
ESX19C-X	3	1440	5.5	12	12	86(+1)	84(0)	82(+6)	81(+6)	79(+2)	77(+3)	73(+3)	62	231.6

Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.
The electrical and sound information in the table is nominal.

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-X CONT.

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct Sound Power level dB re 1pW (+ correction for outlet) Octave band mid frequency (Hz)							Breakout dBA@3m	Weight (Kg)
						125	250	500	1K	2K	4K	8K		
ESX20A-X	3	700	1.5	3.7	3.7	83(+1)	81(-2)	79(+7)	68(+5)	69(+4)	62(+4)	63(+4)	58	682
ESX20B-X	3	700	2.2	5.4	5.4	83(+1)	80(-1)	80(+6)	69(+5)	68(+4)	62(+3)	62(+5)	58	691
ESX20C-X	3	700	3	6.9	6.9	83(+1)	80(-1)	80(+7)	69(+5)	68(+4)	61(+3)	62(+4)	59	697
ESX20D-X	3	700	4	10	10	83(+3)	81(0)	81(+8)	70(+6)	67(+6)	60(+5)	60(+6)	61	716
ESX20E-X	3	700	5.5	12	12	86(+3)	84(0)	84(+7)	73(+6)	70(+6)	63(+5)	63(+6)	63	730
ESX21A-X	3	800	2.2	5.4	5.4	86(+1)	83(-1)	83(+6)	72(+5)	71(+4)	65(+3)	65(+5)	61	691
ESX21B-X	3	800	3	6.9	6.9	86(+4)	83(-1)	83(+8)	72(+5)	71(+5)	64(+6)	65(+7)	63	697
ESX21C-X	3	800	4	10	10	86(+3)	84(0)	84(+8)	73(+6)	70(+6)	63(+5)	63(+6)	64	716
ESX21D-X	3	800	5.5	12	12	89(+2)	87(-1)	87(+6)	76(+5)	73(+5)	66(+4)	66(+5)	65	730
ESX21E-X	3	800	7.5	16	16	90(+2)	88(-1)	87(+7)	77(+5)	74(+5)	67(+4)	67(+5)	66	750
ESX22A-X	3	900	3	6.9	6.9	88(+1)	85(-1)	85(+6)	74(+5)	73(+4)	67(+3)	67(+5)	63	697
ESX22B-X	3	900	4	10	10	88(+2)	85(-2)	85(+5)	74(+4)	73(+5)	66(+3)	67(+3)	62	716
ESX22C-X	3	900	5.5	12	12	88(+3)	86(0)	86(+8)	75(+6)	72(+6)	65(+5)	65(+6)	66	730
ESX22D-X	3	900	7.5	16	16	91(+2)	89(-1)	89(+6)	78(+5)	75(+5)	68(+4)	68(+5)	67	750
ESX23A-X	3	1000	4	10	10	90(-2)	87(-1)	87(+5)	76(+5)	75(+3)	69(+2)	69(+3)	64	716
ESX23B-X	3	1000	5.5	12	12	90(+1)	87(-1)	87(+7)	76(+5)	75(+4)	68(+3)	69(+4)	66	730
ESX23C-X	3	1000	7.5	16	16	90(+3)	88(0)	88(+8)	77(+6)	74(+6)	67(+5)	67(+6)	68	750
ESX23D-X	3	1000	11	23	23	93(+1)	91(-1)	91(+6)	80(+5)	77(+4)	70(+4)	70(+5)	69	794
ESX24A-X	3	1100	5.5	12	12	92(+1)	89(-1)	89(+6)	78(+5)	77(+4)	71(+3)	71(+5)	67	730
ESX24B-X	3	1100	7.5	16	16	92(+1)	89(-1)	89(+7)	78(+5)	77(+4)	70(+3)	71(+4)	68	750
ESX24C-X	3	1100	11	23	23	92(+3)	90(0)	90(+8)	79(+6)	76(+6)	69(+5)	69(+6)	70	794
ESX25A-X	3	1200	7.5	16	16	93(+1)	90(-1)	90(+6)	79(+5)	78(+4)	72(+3)	72(+5)	68	750
ESX25B-X	3	1200	11	23	23	93(+1)	90(-1)	90(+7)	79(+5)	78(+4)	71(+3)	72(+4)	69	794

Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.
The electrical and sound information in the table is nominal.

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-R AND ESX-B

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Inlet /Outlet	Power levels dB re 1pW inlet Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	Open inlet Open outlet 8K	dBA@3m	Weight (Kg)
ESX1-R	1	2040	0.086	0.65	0.65	I	66	55	46	47	39	35	31	29	22
						O	66	61	54	57	56	50	45	44	22
ESX2-R	1	1320	0.104	0.56	0.56	I	62	46	40	35	32	31	31	23	35
						O	67	58	52	52	50	45	38	40	35
ESX3-R	1	1260	0.23	1.6	1.6	I	72	55	47	43	40	36	32	31	45
						O	72	63	57	60	57	53	49	46	45
ESX4-R	1	1140	0.37	1.6	1.6	I	68	59	51	49	46	42	35	37	72
						O	75	70	64	66	62	59	56	52	72
ESX5-R	1	1110	0.46	2.95	2.95	I	68	58	49	49	50	48	43	38	75
						O	75	70	70	73	68	63	62	58	75
ESX6-R	1	1272	1.28	4.84	4.84	I	73	66	54	50	49	47	41	45	86
						O	73	73	69	70	68	66	61	62	86
ESX9-R	1	960	1.6	7.3	7.3	I	82	70	66	62	61	56	50	48	133
						O	75	73	71	70	67	65	60	68	133
ESX11A-R	3	1225	0.37	1.3	1.3	I	73	67	62	63	55	49	45	47	77.5
						O	70	70	71	74	64	60	54	58	77.5
ESX11B-R	3	1225	0.55	1.7	1.7	I	74	68	64	65	57	52	48	49	82.4
						O	72	72	72	75	65	61	55	59	82.4
ESX12A-R	3	1400	0.55	1.7	1.7	I	75	71	66	66	58	51	45	51	82.4
						O	70	72	72	75	65	59	50	59	82.4
ESX12B-R	3	1400	0.75	2.1	2.1	I	74	70	65	66	58	51	44	50	84.4
						O	73	75	74	78	67	62	53	61	84.4
ESX12C-R	3	1400	1.1	2.9	2.9	I	77	73	67	69	60	54	47	53	90.4
						O	75	77	76	79	68	64	58	63	90.4
ESX13A-R	3	1085	0.75	2.1	2.1	I	70	67	67	63	56	57	51	50	116
						O	75	75	75	71	64	64	58	56	116
ESX13B-R	3	1085	1.1	2.9	2.9	I	72	68	69	65	58	59	54	52	116
						O	71	74	77	73	66	66	61	59	116
ESX14A-R	3	1225	1.1	2.9	2.9	I	73	68	68	62	56	58	48	50	116
						O	72	73	75	72	64	64	55	58	116
ESX14B-R	3	1225	1.5	3.7	3.7	I	74	68	68	63	57	59	49	50	125
						O	73	75	78	74	67	67	61	60	125
ESX14C-R	3	1225	2.2	5.4	5.4	I	75	70	71	65	60	62	55	53	134
						O	74	77	80	76	69	69	64	62	134
ESX14D-R	3	1225	2.2	6.9	6.9	I	76	72	73	67	62	64	58	55	140
						O	74	77	80	76	69	69	64	62	140

Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.
Please insert R or B into code for spigot position eg. ESX11B-B.
The electrical and sound information in the table is nominal. dBA@3m is hemispherical.

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-R AND ESX-B CONT.

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Inlet /Outlet	Power levels dB re 1pW inlet Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Open inlet Open outlet dBA@3m	Weight (Kg)
ESX15A-R	3	925	2.2	5.4	5.4	I	80	79	78	76	73	70	64	62	168.7
						O	81	80	86	84	80	76	73	70	168.7
ESX15B-R	3	925	3	6.9	6.9	I	83	81	79	78	76	74	68	65	174.6
						O	86	83	87	87	85	84	80	74	174.6
ESX16A-R	3	1040	1.5	3.7	3.7	I	80	80	75	75	73	71	67	62	159.6
						O	80	80	82	82	79	77	75	68	159.6
ESX16B-R	3	1040	2.2	5.4	5.4	I	81	81	76	76	74	71	68	63	168.7
						O	84	82	87	87	83	80	77	73	168.7
ESX16C-R	3	1040	3	6.9	6.9	I	81	82	77	77	74	71	68	63	174.6
						O	83	82	87	87	82	80	76	72	174.6
ESX16D-R	3	1040	4	10	10	I	84	82	80	79	77	75	70	66	193.6
						O	86	81	89	88	85	84	78	74	193.6
ESX17A-R	3	1160	2.2	5.4	5.4	I	83	81	75	76	74	73	69	63	168.7
						O	83	80	81	83	79	78	75	69	168.7
ESX17B-R	3	1160	3	6.9	6.9	I	84	82	76	77	75	73	70	64	174.6
						O	84	82	87	86	83	80	77	73	174.6
ESX17C-R	3	1160	4	10	10	I	84	83	77	78	75	73	70	64	193.6
						O	83	82	87	86	82	80	76	72	193.6
ESX17D-R	3	1160	5.5	12	12	I	85	83	80	80	77	76	71	67	231.6
						O	84	81	89	87	84	83	77	74	231.6
ESX18A-R	3	1260	2.2	5.4	5.4	I	83	84	78	80	76	75	69	66	168.7
						O	81	82	84	85	81	79	74	71	168.7
ESX18B-R	3	1260	3	6.9	6.9	I	84	83	79	80	77	74	69	66	174.6
						O	84	80	87	85	83	79	76	72	174.6
ESX18C-R	3	1260	4	10	10	I	84	83	79	80	77	74	69	66	193.6
						O	83	81	87	85	83	79	76	72	193.6
ESX18D-R	3	1260	5.5	12	12	I	85	83	81	81	78	76	71	67	231.6
						O	84	81	88	86	83	82	78	73	231.6
ESX19A-R	3	1440	3	6.9	6.9	I	90	83	82	80	79	78	73	68	174.6
						O	89	81	87	84	84	81	77	72	174.6
ESX19B-R	3	1440	4	10	10	I	87	82	81	79	79	77	73	67	193.6
						O	82	81	86	84	82	79	76	71	193.6
ESX19C-R	3	1440	5.5	12	12	I	86	84	82	81	79	77	73	68	231.6
						O	84	84	87	87	82	80	76	73	231.6

Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.

Please insert R or B into code for spigot position eg. ESX11B-B.

The electrical and sound information in the table is nominal. Breakout dBA@3m is hemispherical.
(Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta.) Applies to single phase motors.
* Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz).

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-R AND ESX-B CONT.

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Inlet /Outlet	Power levels dB re 1pW inlet Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Open inlet Open outlet dBA@3m	Weight (Kg)
ESX20A-R	3	700	1.5	3.7	3.7	I	83	81	79	68	69	62	63	61	682
						O	82	78	86	73	73	66	67	66	682
ESX20B-R	3	700	2.2	5.4	5.4	I	83	80	80	69	68	61	62	61	691
						O	82	78	87	74	72	64	66	66	691
ESX20C-R	3	700	3	6.9	6.9	I	83	80	80	69	68	61	62	61	697
						O	82	78	87	74	72	64	66	67	697
ESX20D-R	3	700	4	10	10	I	83	81	81	70	67	60	60	62	716
						O	84	80	89	76	73	65	66	68	716
ESX20E-R	3	700	5.5	12	12	I	86	84	84	73	70	63	63	65	730
						O	86	83	91	79	75	68	69	71	730
ESX21A-R	3	800	2.2	5.4	5.4	I	86	83	83	72	71	65	65	64	691
						O	85	81	89	77	75	68	70	69	691
ESX21B-R	3	800	3	6.9	6.9	I	86	83	83	72	71	64	65	64	697
						O	88	81	91	77	76	70	72	71	697
ESX21C-R	3	800	4	10	10	I	86	84	84	73	70	63	63	65	716
						O	87	83	92	79	76	68	69	72	716
ESX21D-R	3	800	5.5	12	12	I	89	87	87	76	73	66	66	68	730
						O	89	85	93	81	78	70	71	73	730
ESX21E-R	3	800	7.5	16	16	I	90	88	87	77	74	67	67	68	750
						O	90	86	94	82	79	71	72	74	750
ESX22A-R	3	900	3	6.9	6.9	I	88	85	85	74	73	67	67	66	697
						O	87	83	91	79	77	70	72	71	697
ESX22B-R	3	900	4	10	10	I	88	85	85	74	73	66	67	66	716
						O	88	82	90	78	78	69	71	70	716
ESX22C-R	3	900	5.5	12	12	I	88	86	86	75	72	65	65	67	730
						O	87	84	92	80	76	69	70	73	730
ESX22D-R	3	900	7.5	16	16	I	91	89	89	78	75	68	68	70	750
						O	91	87	95	83	80	72	73	75	750
ESX23A-R	3	1000	4	10	10	I	90	87	87	76	75	69	69	68	716
						O	86	85	92	81	78	71	72	72	716
ESX23B-R	3	1000	5.5	12	12	I	90	87	87	76	75	68	69	68	730
						O	89	85	94	81	79	71	73	74	730
ESX23C-R	3	1000	7.5	16	16	I	90	88	88	77	74	67	67	69	750
						O	91	87	96	83	80	72	73	75	750

Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.

Please insert R or B into code for spigot position eg. ESX11B-B.

The electrical and sound information in the table is nominal. Breakout dBA@3m is hemispherical.
(Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta.) Applies to single phase motors.
* Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz).

EXTERNALLY MOUNTED XTRACTOR UNITS - ESX-R AND ESX-B CONT.

ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Inlet /Outlet	Power levels dB re 1pW inlet Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Open inlet Open outlet dBA@3m	Weight (Kg)
ESX23D-R	3	1000	11	23	23	I	93	91	91	80	77	70	70	72	794
						O	93	89	97	85	82	74	75	77	794
ESX24A-R	3	1100	5.5	12	12	I	92	89	89	78	77	71	71	70	730
						O	91	87	95	83	81	74	76	75	730
ESX24B-R	3	1100	7.5	16	16	I	92	89	89	78	77	70	71	70	750
						O	91	87	96	83	81	73	75	76	750
ESX24C-R	3	1100	11	23	23	I	92	90	90	79	76	69	69	71	794
						O	93	89	98	85	82	74	75	77	794
ESX25A-R	3	1200	7.5	16	16	I	93	90	90	79	78	72	72	71	750
						O	92	88	96	84	82	75	77	76	750
ESX25B-R	3	1200	11	23	23	I	93	90	90	79	78	71	72	71	794
						O	92	88	97	84	82	74	76	77	794

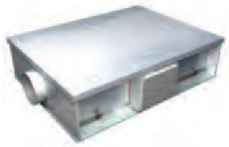
Fan size 11A to 25B inc. are belt drive and cannot be mounted at an angle of no greater than 5°.
Please contact your local Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.

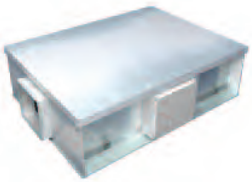
Please insert R or B into code for spigot position eg. ESX11B-B.

The electrical and sound information in the table is nominal. Breakout dBA@3m is hemispherical.
(Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta.) Applies to single phase motors.
* Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz).

XTRACTOR UNITS

ESXL LOW PROFILE INTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)


ESXL1-DS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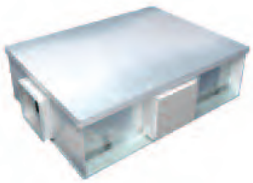
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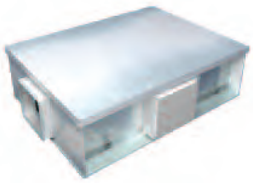
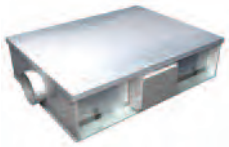
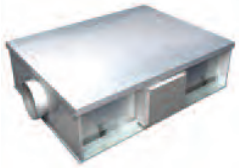

ESXL4-DS

ESX INTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)


ESX1-DS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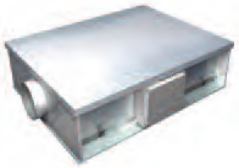
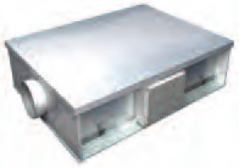
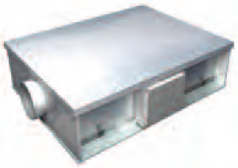
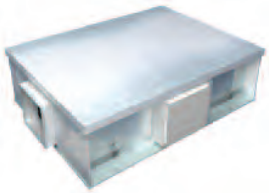
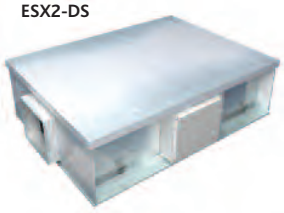

ESX3-DS


ESX4-6-DS


ESX9-DS


ESX15-19-DS


ESX20-27-DS

ESX-B (RECTANGULAR SPIGOTS) & ESX-R EXTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)


ESX1-B


ESX2-3B


ESX4-6B

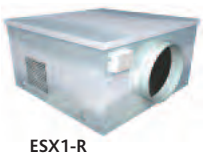

ESX9-10B

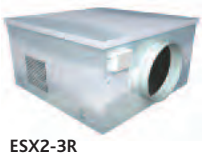

ESX11-12B

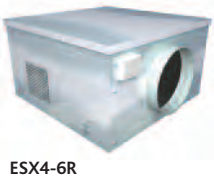

ESX13-14B

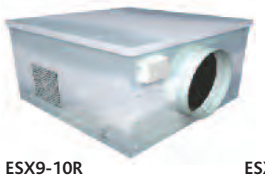

ESX15-19B

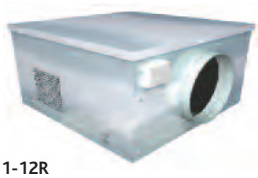

ESX20-26B

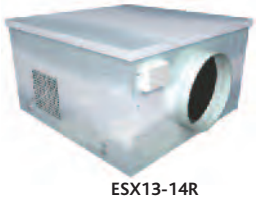

ESX1-R

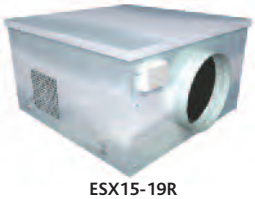

ESX2-3R

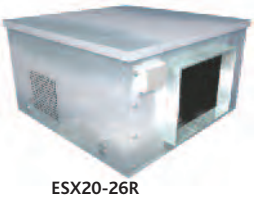

ESX4-6R


ESX9-10R

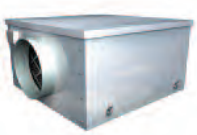

ESX11-12R

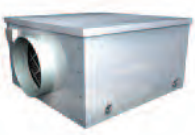

ESX13-14R


ESX15-19R

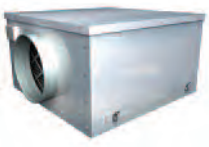

ESX20-26R

ESX-X EXTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)

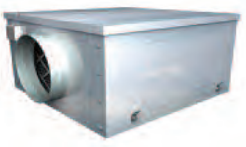

ESX1-X

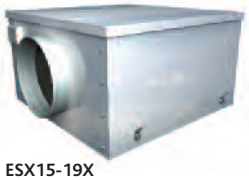

ESX2-3X

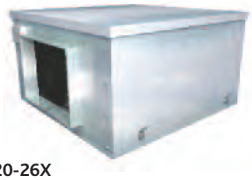

ESX4-6X


ESX9-10X


ESX11-12X


ESX13-14X


ESX15-19X

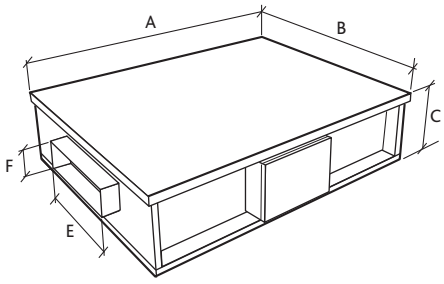

ESX20-26X

Note: The above illustrations show number of units in the range.
For accurate dimensions refer to page 159.

DIMENSIONS

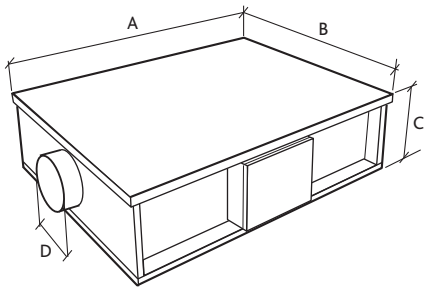
ESXL LOW PROFILE INTERNAL FAN DIMENSIONS (mm)

Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESXL1	1063	650	352	250	-	-	40
ESXL2	1006	1000	350	-	500	250	118
ESXL3	1006	1000	350	-	500	250	118
ESXL4	1006	1000	350	-	500	250	118



ESX INTERNAL FAN DIMENSIONS (mm)

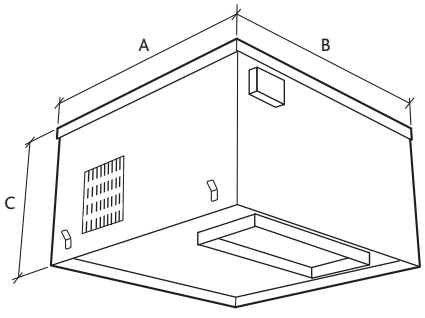
Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESX1-DS	328	462	266	150	-	-	14
ESX2-DS	373	524	340	200	-	-	19
ESX2H-DS	373	524	340	200	-	-	19
ESX3-DS	432	570	405	200	-	-	29
ESX4-DS	563	807	481	250	-	-	46
ESX5-DS	563	807	481	400	-	-	49
ESX6-DS	563	807	481	400	-	-	57
ESX6H-DS	563	807	481	400	-	-	60
ESX9-DS	655	840	630	500	-	-	97
ESX9H-DS	655	840	630	500	-	-	97
ESX15-19-DS	1200	1000	800	-	400	400	217
ESX20-27-DS	1500	1300	1000	-	500	500	293

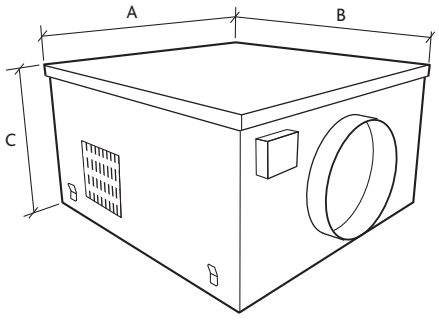


ESX-B OR ESX-R EXTERNAL FAN DIMENSIONS (mm)

Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESX1-B/R	705	505	355	125	152	76	22
ESX2-3B/R	970	720	485	200	229	127	45
ESX4-6B/R	1165	980	575	250	305	152	*86
ESX9-10B/R	1195	1174	575	500	762	304	162
ESX11-12B/R	974	974	622	400	457	229	*91
ESX13-14B/R	1233	1233	701	500	762	304	134
ESX15-19B/R	1430	1190	796	630	889	381	*232
ESX20-26B/R	2030	1466	1183	-	1200	700	*750

* Approximate weight, contact Nuaire for details.



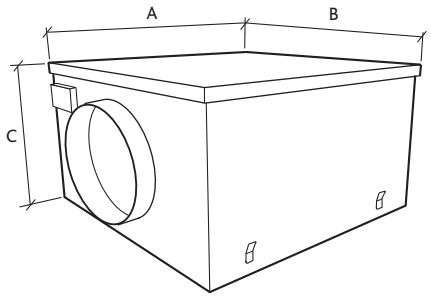


DIMENSIONS CONT.

ESX-X EXTERNAL FANS DIMENSIONS (mm)

Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESX1-X	705	505	355	125			22
ESX2-3X	875	720	265	200			*35
ESX4-6X	1165	980	575	250			*86
ESX9-10X	1495	1125	710	500			*133
ESX11-12X	974	974	622	400			*91
ESX13-14X	1233	1233	701	500			*134
ESX15-19X	1430	1190	780	630			*232
ESX20-26X	2030	1470	1183	-	1200	700	*750

* Approximate weight, contact Nuaire for details.



QUICK SELECTION GUIDE

XTRACTOR FANS

Fan code	A.V. Mounts	Silencer	Flexible Connectors	Acoustic Flexible Connectors
ESXL1	NAV2	ES4SIL	CFC25	ACFXRD250
ESXL2-DS	NAV3	SIL2-LDS	-	-
ESXL3-DS	NAV3	SIL2-LDS	-	-
ESXL4-DS	NAV3	SIL2-LDS	-	-
ESX1-DS	NAV2	SIL1-LDS	CFC16	ACFXRD150
ESX2-DS	NAV2	SIL2-LDS	CFC20	ACFXRD200
ESX2H-DS	NAV2	SIL2-LDS	CFC20	ACFXRD200
ESX3-DS	NAV2	SIL3-LDS	CFC20	ACFXRD200
ESX4-DS	NAV2	SIL4-LDS	CFC25	ACFXRD250
ESX5-DS	NAV2	SIL4-LDS	CFC40	ACFXRD400
ESX6-DS	NAV2	SIL4-LDS	CFC40	ACFXRD400
ESX6H-DS	NAV3	SIL4-LDS	CFC40	ACFXRD400
ESX9-DS	NAV3	SIL5-LDS	CFC50	ACFXRD500
ESX9H-DS	NAV3	SIL5-LDS	CFC50	ACFXRD500
ESX15DS - 19DS	-	SIL6-LDS*	-	-
ESX20DS - 27DS	-	SIL7-LDS*	-	-

DS = Double Skinned.

*Flexible connectors:
Sizes: 20-21 = FXSQ509
22 = FXSQ573
23-24 = FXSQ509
25-27 = FXSQ573

QUICK SELECTION GUIDE CONT.

XTRACTOR FANS

Fan code	Duct Mounted Silencer	Bottom Inlet Flexible Connector	Purlin Box
ESX1B	SIL125	FXRC1	ESPFC1
ESX2B	SIL200	FXRC4	ESPFC2
ESX3B	SIL250	FXRC4	ESPFC3
ESX4B	SIL315	FXRC5	ESPFC4
ESX5B	ES5SIL	FXRC7	ESPFC4
ESX6B	ES6SIL	FXRC7	ESPFC4
ESX9B	ES8SIL	FXRC9	ESPFC5
ESX11B	ES6SIL	FXRC7	ESPFC4
ESX12B	ES6SIL	FXRC7	ESPFC4
ESX13B	ES7SIL	FXRC9	ESPFC5B
ESX14B	ES8SIL	FXRC9	ESPFC5B
ESX15B	CA63S	FXRC10	ESPFC5B
ESX16B	CA63S	FXRC10	ESPFC6B
ESX17B	CA63S	FXRC10	ESPFC6B
ESX18B	CA63S	FXRC10	ESPFC6B
ESX19B	CA63S	FXRC10	ESPFC6B
ESX20B	CA100S	FXRC11	Note 1
ESX21B	CA100S	FXRC11	Note 1
ESX22B	CA100S	FXRC11	Note 1
ESX23B	CA100S	FXRC11	Note 1
ESX24B	CA100S	FXRC11	Note 1
ESX25B	CA100S	FXRC11	Note 1

XTRACTOR FANS

Fan code	Duct Mounted Silencer	End Inlet Flexible Connector	Roof Curb
ESX1R	CA25S	CFC12	ESPFC1
ESX2R	CA25S	CFC20	ESPFC2
ESX3R	CA25S	CFC20	ESPFC3
ESX4R	CA25S	CFC25	ESPFC4
ESX5R	CA40S	CFC40	ESPFC4
ESX6R	CA40S	CFC40	ESPFC4
ESX9R	CA50S	CFC50	ESPFC5
ESX11R	CA40S	CFC40	ESPFC4
ESX12R	CA40S	CFC40	ESPFC4
ESX13R	CA50S	CFC50	ESPFC5B
ESX14R	CA50S	CFC50	ESPFC5B
ESX15R	CA63S	CFC63	ESPFC5B
ESX16R	CA63S	CFC63	ESPFC6B
ESX17R	CA63S	CFC63	ESPFC6B
ESX18R	CA63S	CFC63	ESPFC6B
ESX19R	CA63S	CFC63	ESPFC6B
ESX20R	CA100S	FXRC11	Note 1
ESX21R	CA100S	FXRC11	Note 1
ESX22R	CA100S	FXRC11	Note 1
ESX23R	CA100S	FXRC11	Note 1
ESX24R	CA100S	FXRC11	Note 1
ESX25R	CA100S	FXRC11	Note 1

Roof curb sizes EST20R - 25R & EST20B - 25B are as builders requirements.

ANCILLARIES FOR XTRACTOR UNITS

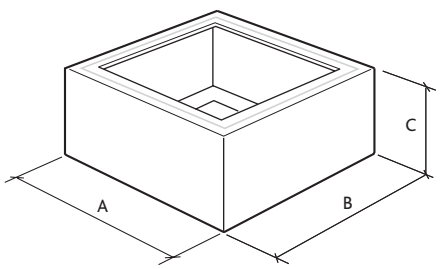
PREFABRICATED CURB DIMENSIONS (mm)

Manufactured in pre-galvanised steel 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.

Table 3. Prefabricated curb dimensions (mm).

Unit Code	Prefab Curb Code	A	B	C
ESX1-*	ESPFC1	635	435	250
ESX2-*	ESPFC2	805	650	250
ESX3-*	ESPFC3	900	650	250
ESX4-*	ESPFC4	1095	910	250
ESX5-*	ESPFC4	1095	910	250
ESX6-*	ESPFC4	1095	910	250
ESX9-*	ESPFC5	1425	435	250
ESX11-12	ESPFC4B	917	917	250
ESX13-14	ESPFC5B	1173	1173	250
ESX15-19	ESPFC6BS	1374	1136	250



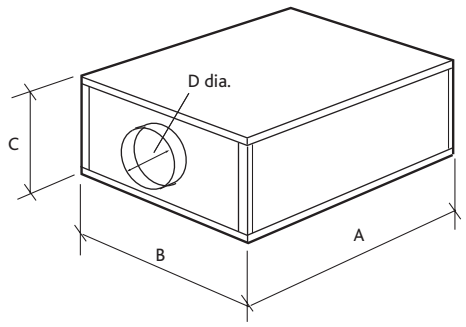
ANCILLARIES FOR XTRACTOR UNITS

MATCHED SILENCER DIMENSIONS (mm)

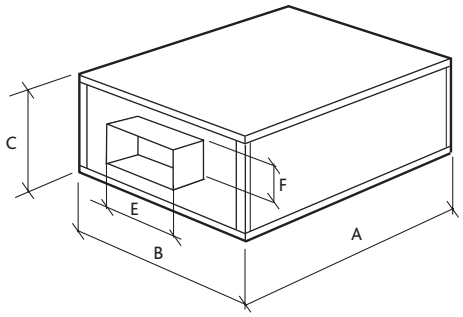
Silencers have mineral wool packed to a density greater than 45kg/m^3. The mineral wool is inert, non combustible and vermin proof for long life and safety. Case is manufactured from 'Solissime' coated galvanised steel, and designed for fixing directly to the fan outlet. Fan spigot used on open end of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

Fan Code	Silencer ref	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F
ESXL1	ES4SIL	613	764	352	250	-	-
ESXL2-DS/3-DS/4-DS	SIL2-LDS	1000	1000	350		500	350
ESX1-DS	SIL1-DS	400	462	266	125	-	-
ESX2-DS	SIL2-DS	400	524	340	200	-	-
ESX2H-DS	SIL2-DS	400	524	340	200	-	-
ESX3-DS	SIL3-DS	600	570	405	200	-	-
ESX4-DS	SIL4-DS	600	807	481	250	-	-
ESX5-DS	SIL4-DS	600	807	481	400	-	-
ESX6-DS	SIL4-DS	600	807	481	400	-	-
ESX6H-DS	SIL4-DS	600	807	481	400	-	-
ESX9-DS	SIL5-DS	700	840	630	500	-	-
ESX9H-DS	SIL5-DS	700	840	630	500	-	-
ESX15-DS TO 19-DS	SIL6-DS	900	1000	800	-	600	600
ESX20-DS TO 27DS	SIL7-DS	900	1300	1000	-	800	800

Refer to fan selector for silencer details.



SIL*-DS



SIL2-LDS

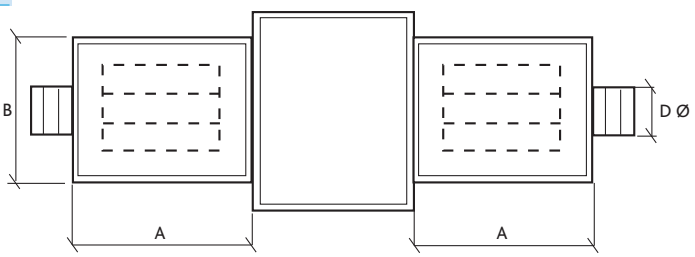
Double skinned silencer Dynamic Attenuation Frequency (Hz) (for double skinned fans).

Code	125 DS	250 DS	500 DS	1K DS	2K DS	4K DS	8K DS
ES4SIL	1	4	8	12	11	14	16
S2SIL-LDS	5	8	15	25	25	25	22
SIL1-DS	10	10	17	22	23	27	25
SIL2-DS	10	10	17	22	23	27	25
SIL3-DS	7	7	15	20	23	25	21
SIL4-DS	4	6	11	17	17	20	20
SIL5-DS	4	6	11	17	17	20	20
SIL6-DS	6	8	18	22	20	16	15
SIL7-DS	6	8	18	22	20	16	15

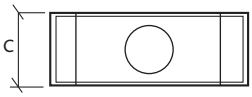
Note: In order to benefit effectively from the low casing radiated noise levels that are a feature of this range, the system design must consider acoustic breakout from adjacent components, ducting etc.

Nuaire strongly recommends that its range of matched compact double skinned attenuators is used, directly coupled to the fan.

Top view



End view



Side view

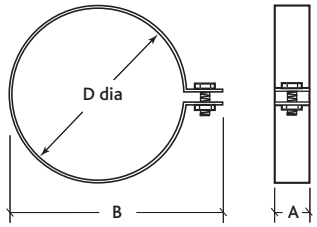
ANCILLARIES FOR XTRACTOR UNITS CONT.

FAST CLAMP DIMENSIONS (mm)

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

Typical code: FC-100

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	-	-	-

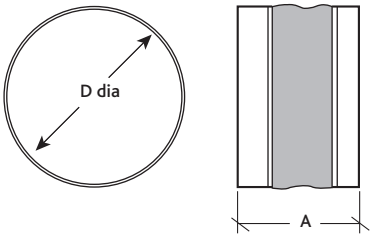


CIRCULAR FLEXIBLE CONNECTOR DIMENSIONS (mm)

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

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	-	-	-



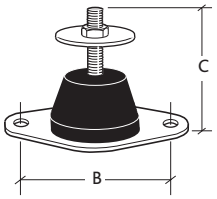
ANTI-VIBRATION MOUNTINGS DIMENSIONS (mm)

Supplied as a set of 4. To select/match isolated assembly weight to max supporting weight.

Typical code: NAV1 - Resilient Rubber

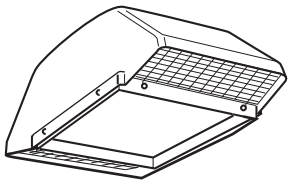
Code	Type	B	C	Max supporting weight Kg Per set of 4
NAV1	Rubber	30	50	20.0
NAV2	Rubber	40	75	80.0
NAV3	Rubber	40	75	180.0
NAV4	Rubber	40	75	260.0

Note: Belt driven fans have built-in AV's.



ANCILLARIES FOR XTRACTOR UNITS CONT.

TERMINATOR COWLS DIMENSIONS (mm)

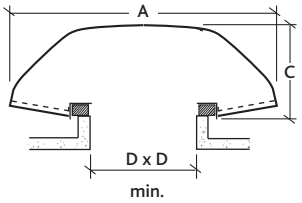


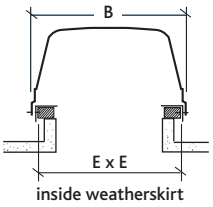
To provide a weatherproof route for supply & exhaust air to your ducted system.

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

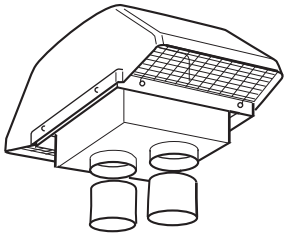
Note: Air Pressure Drop of Attenuator (Pa) = Z x Q^2
where Z = Factor listed in table below Q = Air Volume Flow Rate (m^3/s)





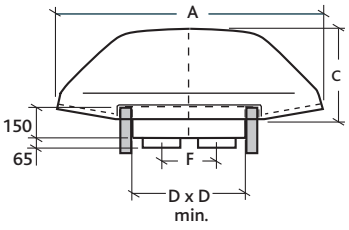
Code	A	B	C	D	E	Weight Kg	Discharge	Z Intake
TRTS-A	900	620	340	460	600	12.3	67	118
TRTS-B	1080	740	375	560	695	14.7	39	118
TRTS-C	1320	964	475	700	945	26.0	28	62
TRTS-D	1470	1076	490	800	1050	28.2	19	32
TRTS-E	1780	1170	485	900	1136	50.0	7	11.3
TRTS-F	2260	1476	600	1200	1452	88.0	2.5	3.6

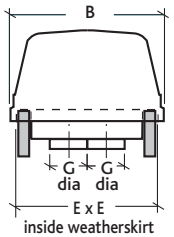
SUPPLY/EXTRACT COWLS DIMENSIONS (mm)



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



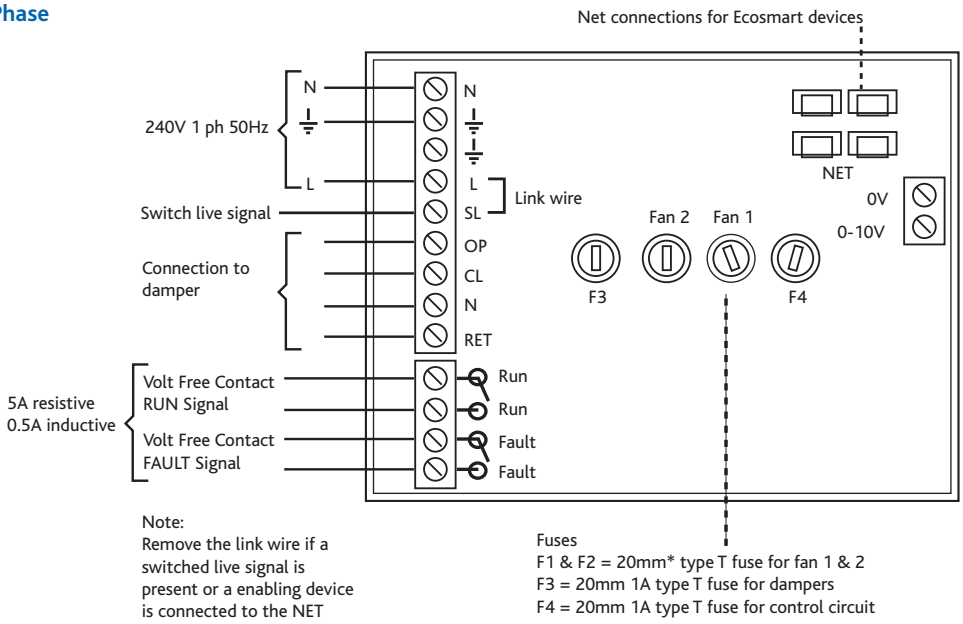


Code	A	B	C	D	E	F	G	Weight Kg
TRSE1	900	620	340	460	600	200	100	21.3
TRSE2	900	620	340	460	600	200	125	21.3
TRSE3	900	620	340	460	600	200	150	21.3
TRSE4	1320	964	475	700	945	345	200	41.4
TRSE5	1320	964	475	700	945	345	250	41.4
TRSE6	1320	964	475	700	945	345	315	41.4
TRSE7	1780	1170	489	900	1150	450	400	76.8

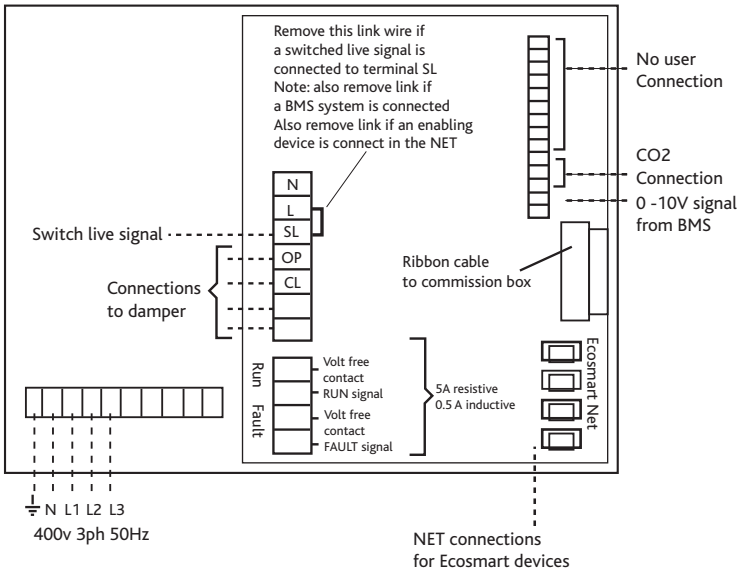
Resistance to airflow of this item is negligible.

WIRING - XTRACTOR

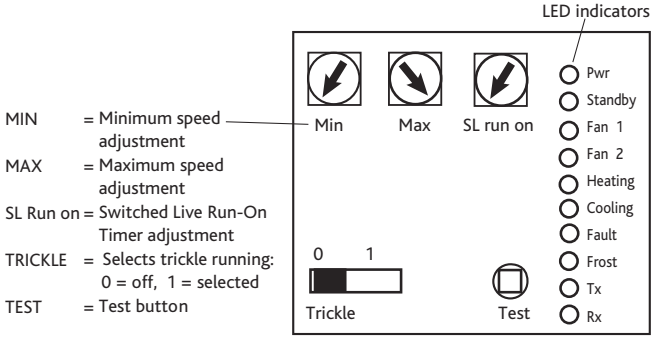
Single Phase



Three Phase



Set Up/Commissioning box



CONSULTANTS SPECIFICATION

INTERNALLY MOUNTED XTRACTOR UNIT

The ventilation fan unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment. It shall be of the Xtractor type as manufactured by Nuaire.

The unit sizes 1 to 4 inc. shall be provided in heavy gauge galvanised steel double skin casework. Double skin infill shall be of V0 grade acoustic foam and inner case shell. The units shall be of a low depth configuration to enable location in shallow ceiling and floor voids, maximum depth of unit 350mm.

Unit sizes 5 to 13 inc. shall be constructed using the Nuaire floating box format and shall incorporate heavy gauge galvanised steel double skin casework. Double skin infill shall be of V0 grade acoustic foam and inner case shall mechanically isolated from the outer case. General construction shall achieve class A leakage rates. The fan enclosure shall feature V0 internal acoustic foam lining.

The stated casing breakout sound levels shall not be exceeded.

Unit sizes 15 to 27 inc shall be manufactured from a highly rigid pentapost framework with 25mm double skinned infill panels. The panels shall contain inert high density infill. Panel materials are heavy gauge Aluzinc corrosion resistant steel.

The fan/motor assembly shall be in a self contained insulated enclosure which shall be acoustically isolated from external skin providing exceptional acoustic breakout characteristics. The very low breakout noise level through the unit casing must not be exceeded. The general construction is to class A leakage.

EXTERNALLY MOUNTED XTRACTOR UNIT

The unit shall be manufactured from heavy gauge, corrosion resistant Aluzinc steel, internally coated with fire retardant acoustic material. Fully detachable panels for maintenance/service and manometer test points. It shall have an integrated upstream attenuator keeping system noise levels to an absolute minimum.

The fan/motor assembly shall be in a self contained insulated enclosure which shall be acoustically isolated from external skin providing exceptional acoustic breakout characteristics. The very low breakout noise level through the unit casing must not be exceeded. The general construction is to class A leakage.

GENERAL SPECIFICATION

Fan assemblies to incorporate fan impeller and motors selected to provide the most energy efficient solution conforming to part L regulations. The fan impeller shall be a high efficiency forward or backward curved centrifugal design and shall be direct or belt drive with IF2 high efficiency motors to EN60034-30 as standard, belt or direct drive with motors fitted with "hall effect" air flow failure monitoring. All units suitable for operation in ambient temperatures of 40 degrees C.

The contractor shall allow for all necessary ductwork transformations to and from the fan unit and any associated components, the contractor shall also ensure that all necessary builders work and weathering is provided in accordance with the manufacturer's recommendations, DW 144 and general good practice.

The mechanical contractor shall ensure that all necessary ancillaries are included e.g. AV mounts, flexible connections, attenuators, etc and shall be in accordance with the manufacturer's specification and recommendations.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre plugged 4-core low voltage cable.

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

CONSULTANTS SPECIFICATION

2. BMS INTERFACES

The fan unit shall be provided with the following integrated BMS interfaces:

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-

  Switch the unit on/off.

  Switch from low speed to high speed.

  Full speed control facility.

- 2 No. volt free contacts to provide fan run and failure indication to provide system status.

- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

3. COMMISSIONING SET UP

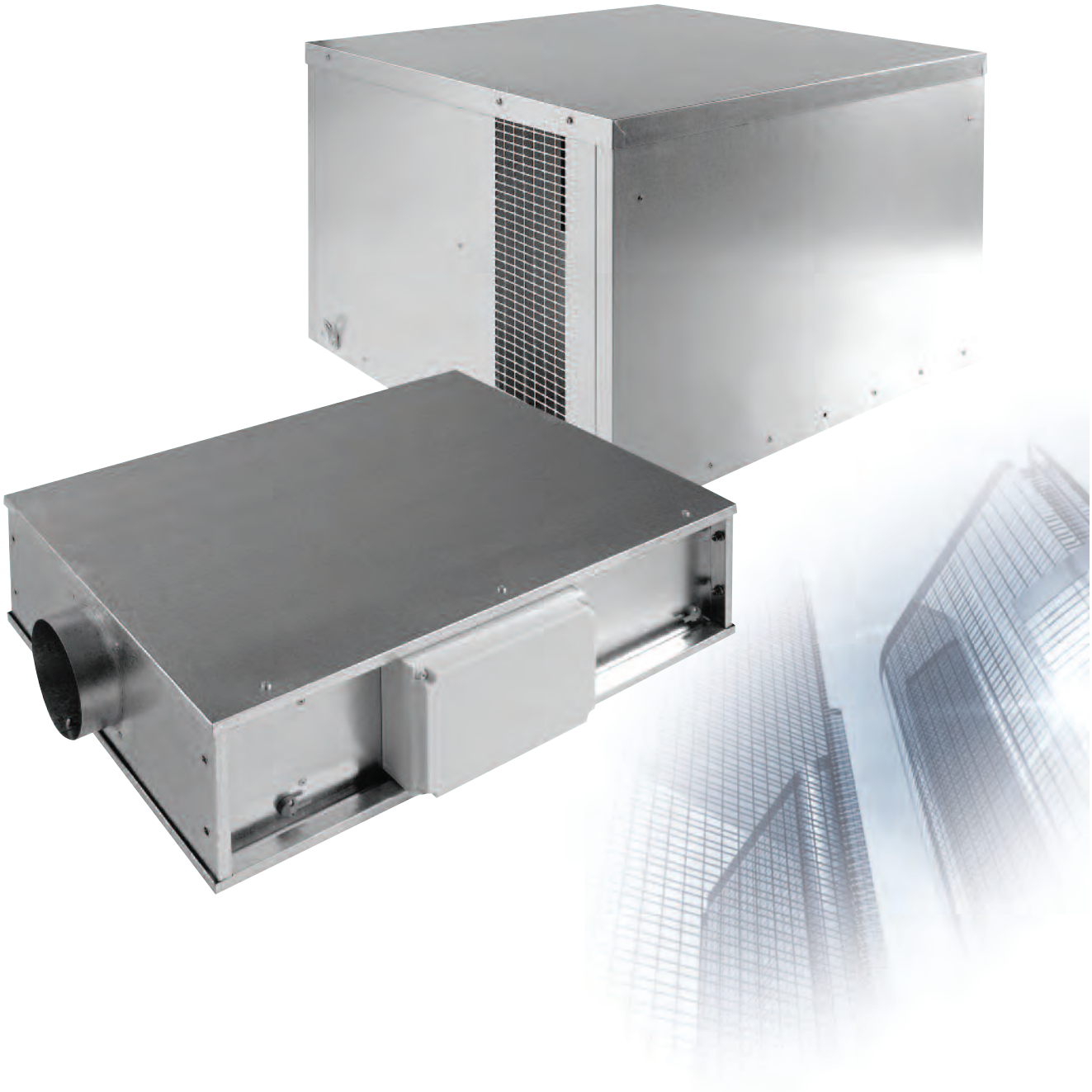
The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial.

Ecosmart Xtractor shall have a 5 year warranty.

The unit is to be of the Xtractor Type as manufactured by Nuaire Ltd.

CONSTANT PRESSURE SINGLE FANS

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



ecosmart
OPTIONS AVAILABLE

BENEFITS

QUIETEST SYSTEMS
Nuaire's unique integrated silencer means that your systems acoustic requirements both induct (suction side) and breakout are maintained whilst saving space on site.

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 Nuaire manufacturing facility.
- Simply plug and go.

ENHANCED CAPITAL ALLOWANCE COMPLIANT
Immediate benefits to your client.

INTEGRATED SILENCER
Sizes 6 and 9.

DUCT MOUNTED VERSION OF DAMPER
For unobtrusive flexibility.

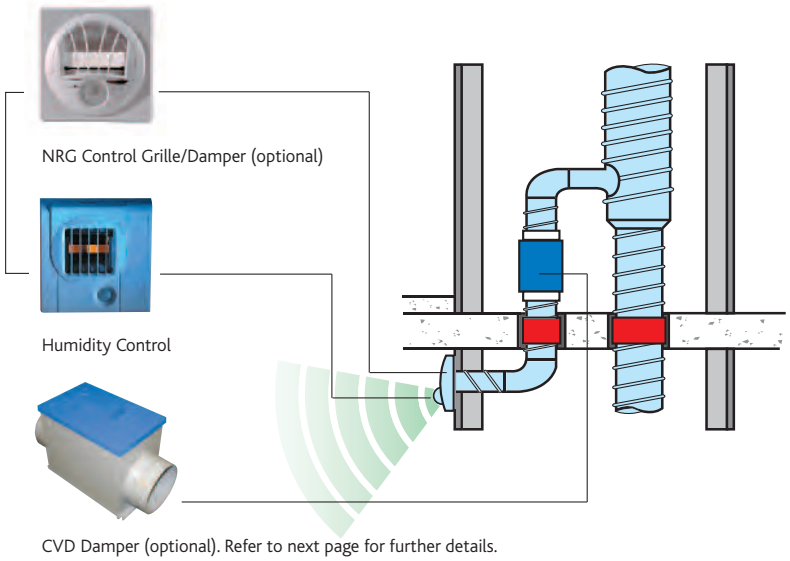
TWIN OR SINGLE
Twin or single fan options are available.

WARRANTY
Ecosmart Constant Pressure fans have a 5 year warranty.

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

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

WHAT IS CONSTANT PRESSURE?
Constant Pressure Variable Volume systems (CPVV) are systems of fans, controls & sensors installed in a ducted system. The system is intended to provide continuous background ventilation when the served space is unoccupied and will automatically increase the ventilation rate when occupied to the design requirement.



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

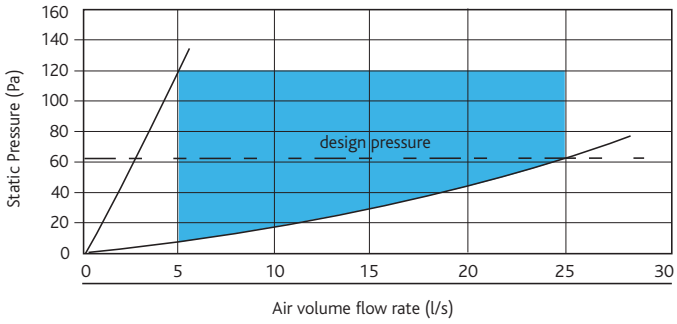
*Recommended maximum operating pressure to ensure the damper would work within calibration limits.

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

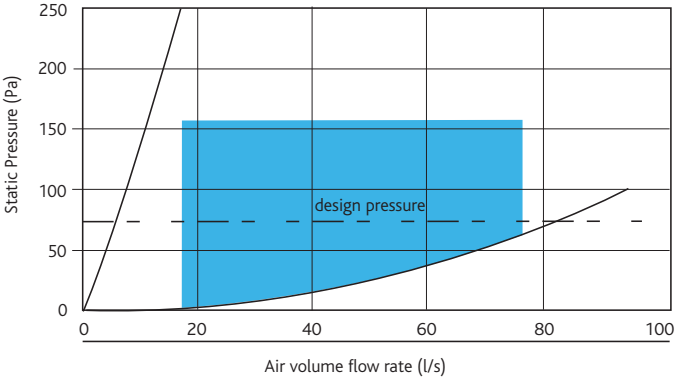
**Allow 90Pa for duties below 100l/s and 150Pa for duties between 100l/s and 125l/s.

Please refer to our commissionary guide 671405 for more detail regarding constant pressure systems.

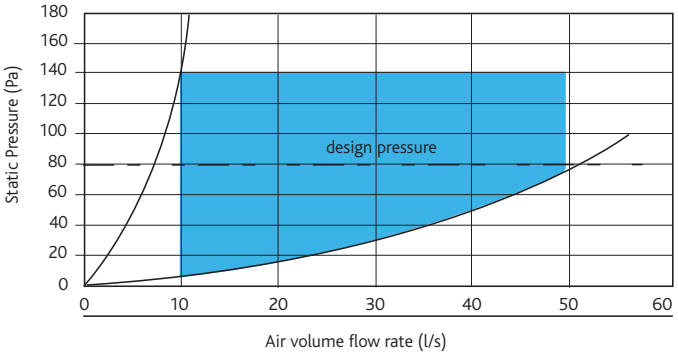
Performance envelope for CVD100



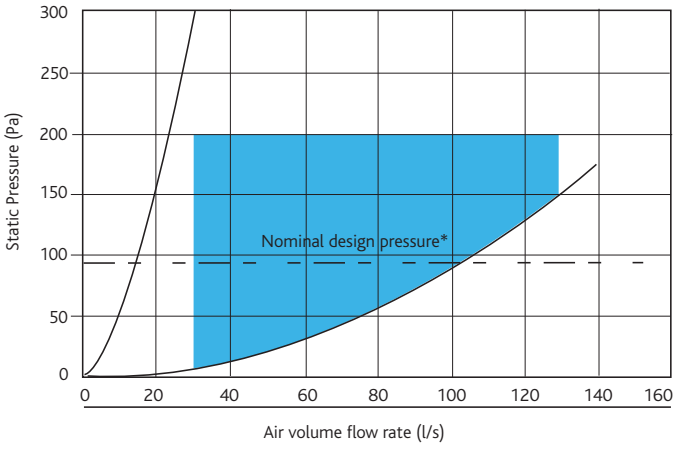
Performance envelope for CVD150



Performance envelope for CVD125

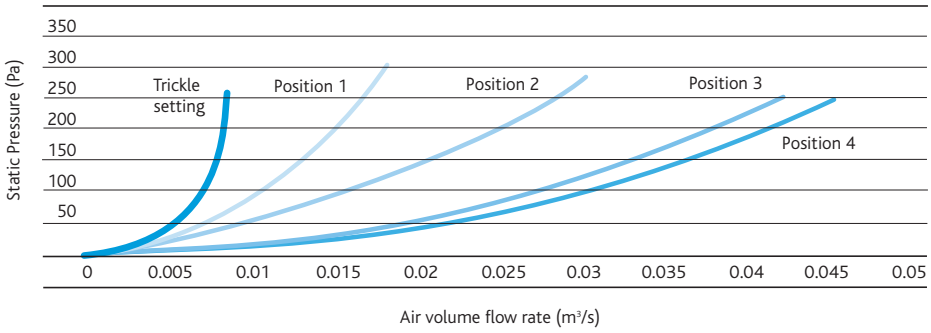


Performance envelope for CVD200

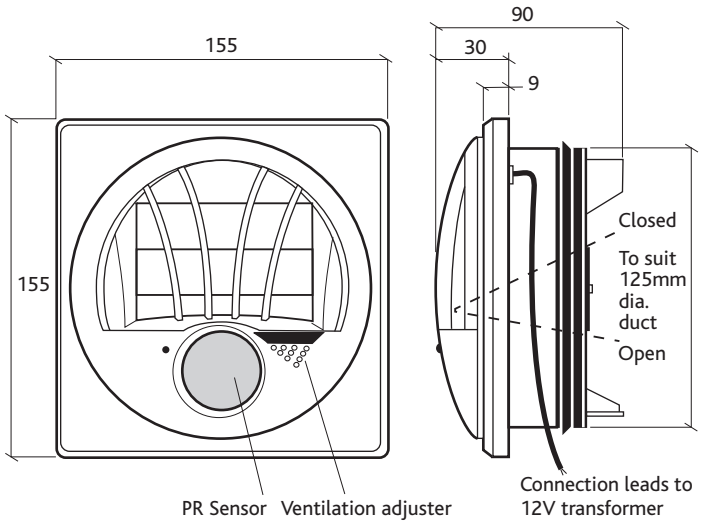


PERFORMANCE - NRG MOTORISED GRILLE/DAMPER

Motorised grille/damper type NRG Acoustic Information



DIMENSIONS NRG GRILLE DAMPER

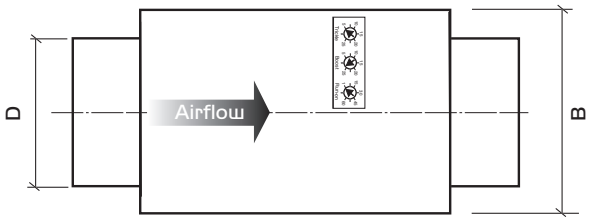


DIMENSIONS CVD DAMPERS

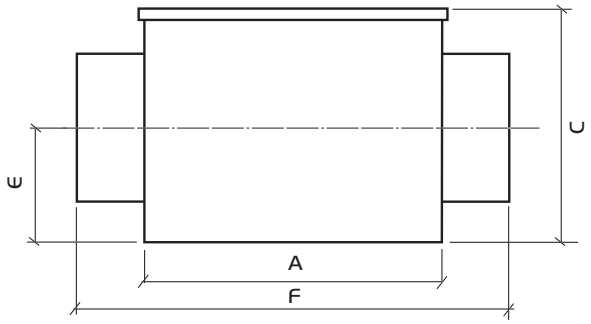
Dimensions in mm.

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

Plan view

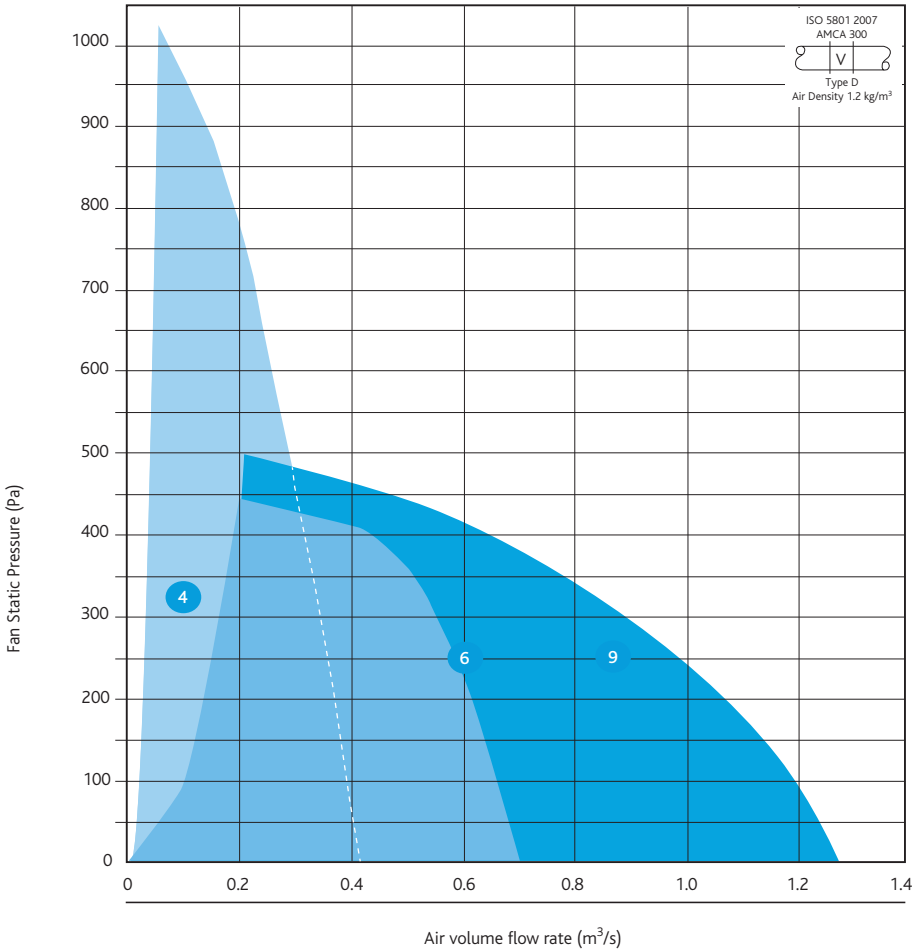


Side view

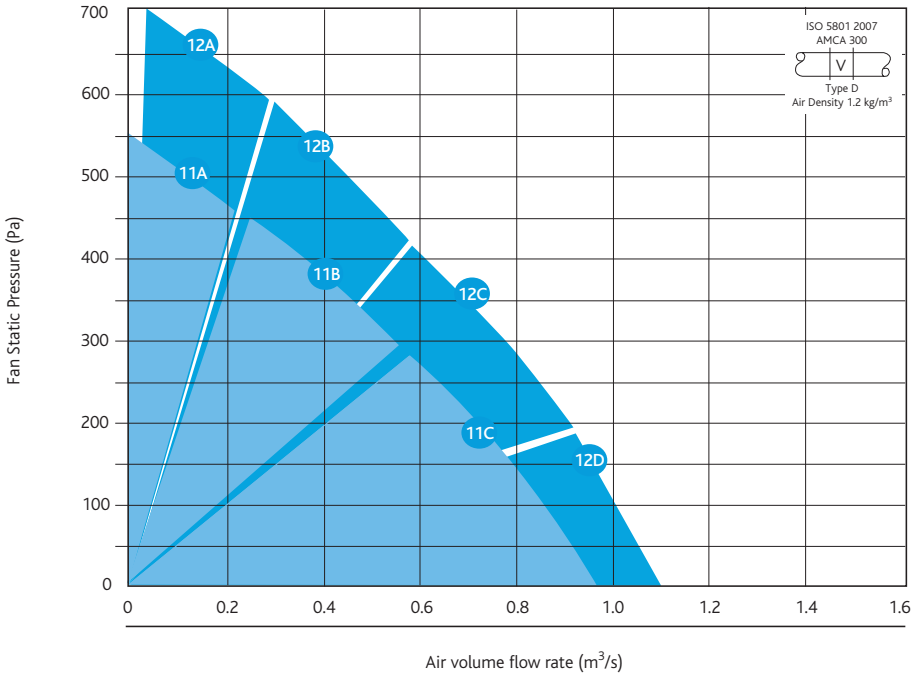


PERFORMANCE - CONSTANT PRESSURE SINGLE FANS

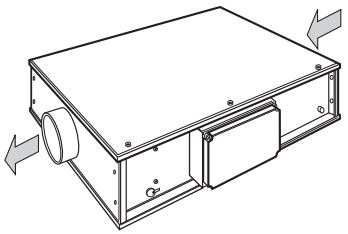
ESXCP Single Fans 4-9



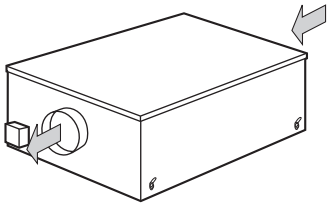
ESXCP Single Fans 11A-12D



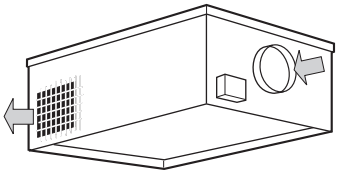
Casing



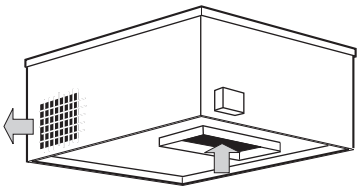
ESXCP Internal In-line Single Fans



ESXCP-X External In-line Single Fans



ESXCP-R Roof Single Fans with end inlet and side discharge



ESXCP-B Roof Single Fans with bottom inlet and side discharge

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

Code descriptions

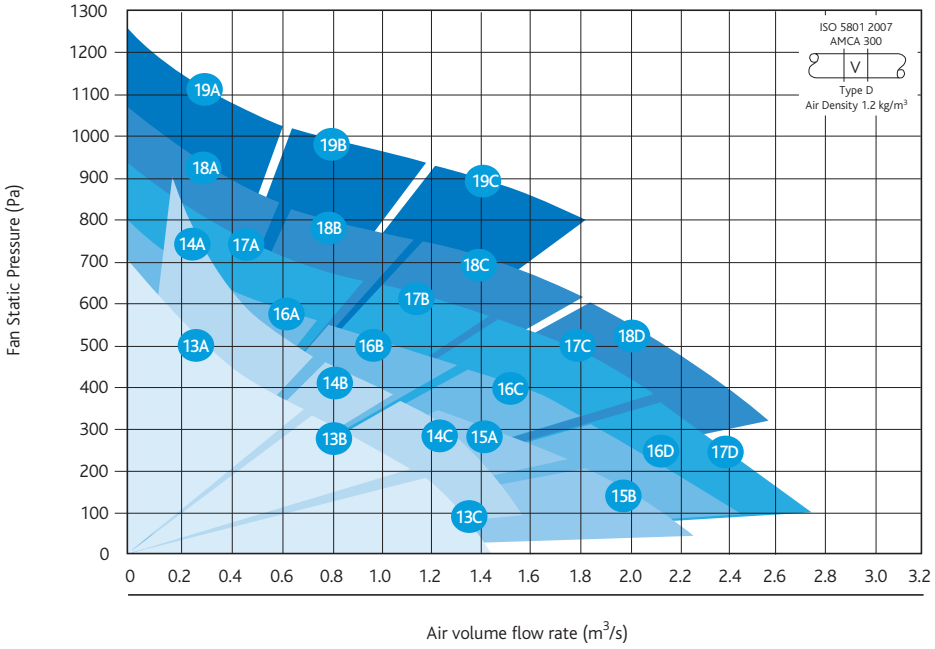
ESXCP 11 B - B

1 2 3 4

1. Ecosmart Constant Pressure Single 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 SINGLE FANS CONT.

ESXCP Single Fans 13A-19C



CONSTANT PRESSURE INTERNAL SINGLE FANS ESXCP

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) 125	250	500	1K	2K	4K	8K	Breakout dBA@3m	Weight (Kg)
ESXCP4	1	3600	0.52	3.1	3.1	78(+8)	72(+6)	60(+20)	52(+24)	46(+29)	40(+30)	31(+30)	45	62
ESXCP6	1	1300	1.23	7.6	7.6	77(+4)	70(+9)	56(+15)	52(+18)	49(+19)	46(+19)	38(+23)	43	63
ESXCP9	1	1065	1.6	7.4	7.4	74(+8)	71(+9)	70(+13)	67(+19)	67(+20)	63(+22)	56(+22)	47	125
ESXCP11A	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
ESXCP11B	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
ESXCP11C	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
ESXCP12A	3	1400	0.55	1.3	1.3	75(-1)	71(+4)	66(+7)	66(+9)	58(+7)	51(+8)	45(+5)	48	82.4
ESXCP12B	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
ESXCP12C	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
ESXCP12D	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
ESXCP13A	3	1085	0.75	2.1	2.1	70(+5)	67(+8)	67(+8)	63(+8)	56(+8)	57(+7)	51(+7)	48	116
ESXCP13B	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
ESXCP14A	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 Nuaire 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 SINGLE FANS ESXCP CONT.

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) 125	250	500	1K	2K	4K	8K	Breakout dBA@3m	Weight (Kg)
ESXCP14B	3	1225	1.5	3.7	3.7	74(+5)	68(+9)	68(+10)	63(+11)	57(+10)	59(+8)	49(+12)	50	125
ESXCP14C	3	1225	2.2	5.4	5.4	75(+5)	70(+9)	71(+9)	65(+11)	60(+9)	62(+7)	55(+9)	52	134
ESXCP14D	3	1225	3	6.9	6.9	76(+4)	72(+7)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	53	140
ESXCP15A	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
ESXCP15B	3	925	3	6.9	6.9	83(+8)	81(+3)	79(+9)	78(+9)	76(+9)	74(+10)	68(+12)	62	174.6
ESXCP16A	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
ESXCP16B	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
ESXCP16C	3	1040	3	6.9	6.9	81(+7)	82(+2)	77(+11)	77(+10)	74(+8)	71(+9)	68(+8)	61	174.6
ESXCP16D	3	1040	4	10	10	84(+7)	82(+1)	80(+10)	79(+9)	77(+8)	75(+9)	70(+8)	63	193.6
ESXCP17A	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
ESXCP17B	3	1160	3	6.9	6.9	84(+5)	82(+1)	76(+12)	77(+9)	75(+8)	73(+7)	70(+7)	61	174.6
ESXCP17C	3	1160	4	10	10	84(+4)	83(0)	77(+11)	78(+8)	75(+7)	73(+7)	70(+6)	61	193.6
ESXCP17D	3	1160	5.5	12	12	85(+4)	83(-1)	80(+10)	80(+7)	77(+7)	76(+7)	71(+6)	62	231.6
ESXCP18A	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
ESXCP18B	3	1260	3	6.9	6.9	84(+4)	83(-2)	79(+9)	80(+5)	77(+6)	74(+5)	69(+7)	61	174.6
ESXCP18C	3	1260	4	10	10	84(+4)	83(-1)	79(+8)	80(+5)	77(+5)	74(+6)	69(+7)	61	193.6
ESXCP18D	3	1260	5.5	12	12	85(+4)	83(-1)	81(+8)	81(+5)	78(+5)	76(+6)	71(+7)	62	231.6
ESXCP19A	3	1440	3	6.9	6.9	90(+2)	83(-2)	82(+5)	80(+4)	79(+5)	78(+3)	73(+4)	61	174.6
ESXCP19B	3	1440	4	10	10	87(-2)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	60	193.6
ESXCP19C	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 Nuaire 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 SINGLE FANS ESXCP-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 open outlet) 125	250	500	1K	2K	4K	8K	Breakout dBA@3m	Weight (Kg)
ESXCP4-X	1	3600	0.52	3.1	3.1	77(+9)	73(+5)	66(+14)	64(+12)	60(+15)	55(+15)	50(+11)	45	77
ESXCP6-X	1	1300	1.23	7.6	7.6	71(+5)	63(+4)	55(+12)	58(+13)	58(+13)	55(+13)	48(+12)	47	70
ESXCP9-X	1	1065	1.6	7.3	7.3	72(+13)	66(+19)	61(+18)	60(+18)	60(+17)	57(+19)	51(+18)	50	133
ESXCP11A-X	3	1225	0.37	2.1	2.1	73(+1)	67(+7)	62(+10)	63(+11)	55(+9)	49(+11)	45(+9)	46	77.5
ESXCP11B-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
ESXCP11C-X	3	1400	0.75	2.1	2.1	75(+2)	70(+8)	65(+9)	66(+10)	58(+6)	53(+8)	50(+6)	49	90.4
ESXCP11D-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
ESXCP12A-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
ESXCP12B-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
ESXCP12C-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
ESXCP12D-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
ESXCP13A-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
ESXCP13B-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
ESXCP13C-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
ESXCP14A-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
ESXCP14B-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
ESXCP14C-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
ESXCP14D-X	3	1225	3	6.9	6.9	76(+4)	72(+7)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	53	140
ESXCP15A-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
ESXCP15B-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
ESXCP16A-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
ESXCP16B-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
ESXCP16C-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
ESXCP16D-X	3	1040	4	10	10	84(+7)	82(+1)	80(+10)	79(+9)	77(+8)	75(+9)	70(+8)	63	193.6
ESXCP17A-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
ESXCP17B-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
ESXCP17C-X	3	1160	4	10	10	84(+4)	83(0)	77(+11)	78(+8)	75(+7)	73(+7)	70(+6)	61	193.6
ESXCP17D-X	3	1160	5.5	12	12	85(+4)	83(-1)	80(+10)	80(+7)	77(+7)	76(+7)	71(+6)	62	231.6
ESXCP18A-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
ESXCP18B-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
ESXCP18C-X	3	1260	4	10	10	84(+4)	83(-1)	79(+8)	80(+5)	77(+5)	74(+6)	69(+7)	61	193.6
ESXCP18D-X	3	1260	5.5	12	12	85(+4)	83(-1)	81(+8)	81(+5)	78(+5)	76(+6)	71(+7)	62	231.6
ESXCP19A-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
ESXCP19B-X	3	1440	4	10	10	87(-2)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	60	193.6
ESXCP19C-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 Nuaire 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 SINGLE FANS ESXCP-R AND B

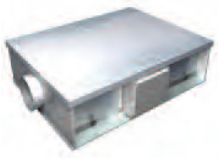
ELECTRICAL, SOUND & WEIGHT

Code/ Curve	Phase	RPM	Motor power (kW)	FLC (amps)	SC (amps)	Induct inlet Sound Power levels dB re lpW (+ correction for open outlet) 125	250	500	1K	2K	4K	8K	Open inlet (Open outlet) dBA@3m	Weight (Kg)
ESXCP4	1	3600	0.52	3.1	3.1	77(0)	73(+4)	66(+17)	64(+20)	60(+24)	55(+25)	50(+24)	69	80
ESXCP6	1	1300	1.23	7.6	7.6	71(+5)	63(+4)	55(+12)	58(+13)	58(+13)	55(+13)	48(+12)	43	70
ESXCP9	1	960	1.6	9.44	9.44	72(+13)	66(+19)	61(+18)	60(+18)	60(+17)	57(+19)	51(+18)	59	133
ESXCP11A	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
ESXCP11B	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
ESXCP11C	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
ESXCP11D	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
ESXCP12A	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
ESXCP12B	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
ESXCP12C	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
ESXCP12D	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
ESXCP13A	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
ESXCP13B	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
ESXCP13C	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
ESXCP14A	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
ESXCP14B	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
ESXCP14C	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
ESXCP14D	3	1225	3	6.9	6.9	76(-2)	72(+5)	73(+7)	67(+9)	62(+7)	64(+5)	58(+6)	55(+7)	140
ESXCP15A	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
ESXCP15B	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
ESXCP16A	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
ESXCP16B	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
ESXCP16C	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
ESXCP16D	3	1040	4	10	10	84(+2)	82(-1)	80(+9)	79(+9)	77(+8)	75(+9)	70(+8)	66(+8)	193.6
ESXCP17A	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
ESXCP17B	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
ESXCP17C	3	1160	4	10	10	84(-1)	83(-1)	77(+10)	78(+8)	75(+7)	73(+7)	70(+6)	64(+8)	193.6
ESXCP17D	3	1160	5.5	12	12	85(-1)	83(-2)	80(+9)	80(+7)	77(+7)	76(+7)	71(+6)	67(+7)	231.6
ESXCP18A	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
ESXCP18B	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
ESXCP18C	3	1260	4	10	10	84(-1)	83(-2)	79(+7)	80(+5)	77(+5)	74(+6)	69(+7)	66(+6)	193.6
ESXCP18D	3	1260	5.5	120	120	85(-1)	83(-2)	81(+7)	81(+5)	78(+5)	76(+6)	71(+7)	67(+6)	231.6
ESXCP19A	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
ESXCP19B	3	1440	4	10	10	87(-5)	82(-1)	81(+5)	79(+5)	79(+3)	77(+2)	73(+3)	67(+4)	193.6
ESXCP19C	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 Nuaire Technical Sales Engineer or the Technical Department to discuss your application requirements.
Please insert R or B into code for spigot position eg. ESTCP11B-B.
Breakout dBA@3m is hemispherical free field. The electrical and sound information in the table is nominal.

SINGLE FAN UNITS

ESXCP INTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)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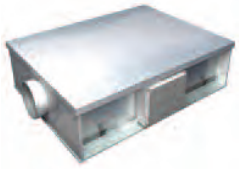
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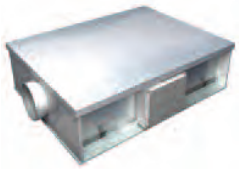
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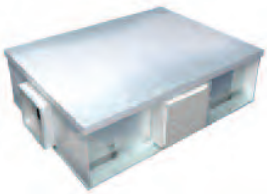

ESXCP15 - ESXCP27

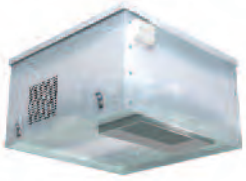
ESXCP-B (RECTANGULAR SPIGOTS) & ESXCP-R EXTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)


ESXCP4B


ESXCP6B


ESXCP9-10B


ESXCP11-12B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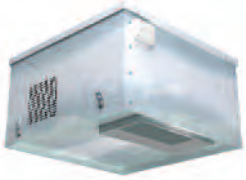
ESXCP15-19B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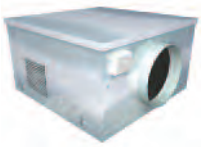
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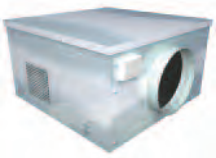
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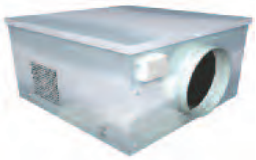
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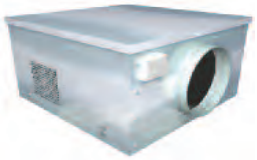
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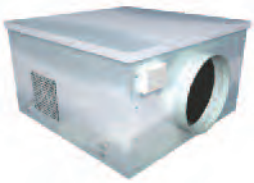
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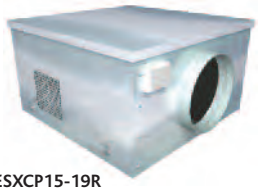
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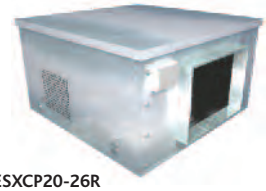
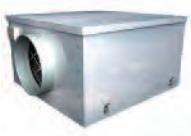
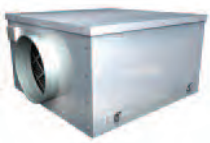
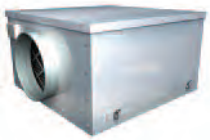

ESXCP20-26R

ESXCP-X EXTERNAL FANS (CIRCULAR & RECTANGULAR SPIGOTS)


ESXCP4X


ESXCP6X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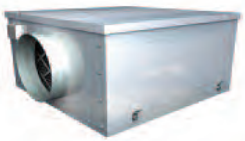
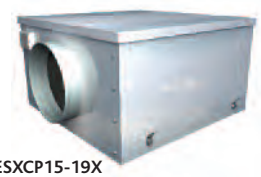

ESXCP11-12X


ESXCP13-14X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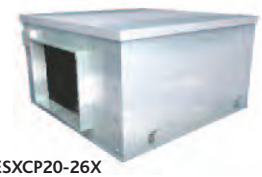
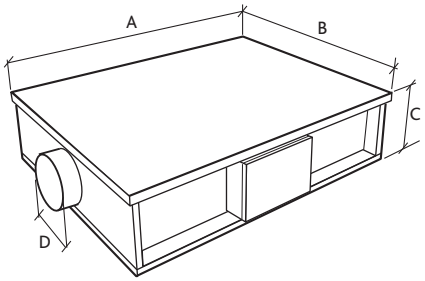

ESXCP20-26X

DIMENSIONS

ESXCP INTERNAL FANS DIMENSIONS (mm)

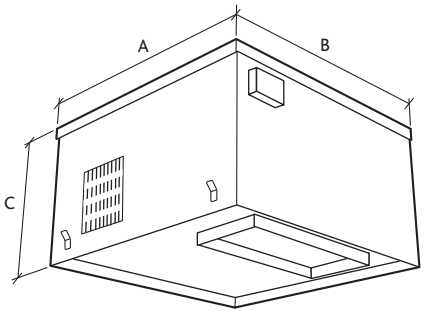
Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESXCP4	1063	1047	360	250	-	-	62
ESXCP6	1193	1047	423	400	-	-	63
ESXCP9	1195	1174	575	500	-	-	125
ESXCP15-19	1430	1190	780	630	-	-	162

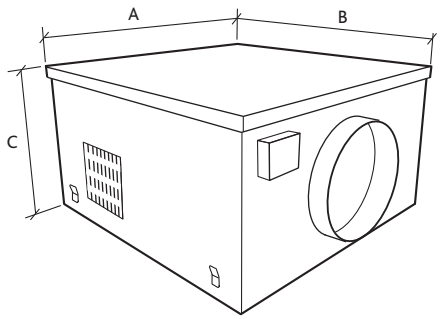


ESXCP-B/ESXCP-R EXTERNAL FANS DIMENSIONS (mm)

Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESXCP4B/R	1165	980	575	250	305	152	*77
ESXCP6B/R	1165	980	575	400	305	152	*70
ESXCP9-10B/R	1495	1125	710	500	762	304	133
ESXCP11-12B/R	974	974	622	400	457	229	*82.4
ESXCP13-14B/R	1233	1233	701	500	762	304	134
ESXCP15-19B/R	1430	1635	796	630	889	381	*232

* Approximate weight, contact Nuaire for details.

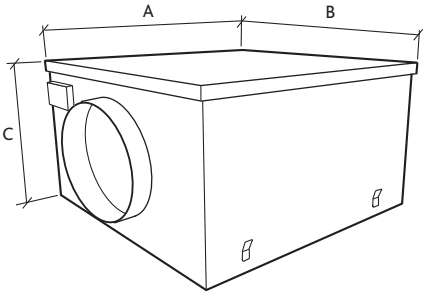




ESXCP-X EXTERNAL FANS DIMENSIONS (mm)

Fan Code	A	B	C	Circular Spigot DØ	Rectangular Spigot E	F	Weight Kg
ESXCP4X	1165	980	575	250	-	-	*77
ESXCP6X	1165	980	575	400	-	-	*70
ESXCP9-10X	1495	1125	710	500	-	-	*133
ESXCP11-12X	974	974	622	400	-	-	*77.5
ESXCP13-14X	1233	1235	701	500	-	-	*116
ESXCP15-19X	1430	1190	780	630	-	-	*174.6

* Approximate weight, contact Nuaire for details.



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). When the damper is closed, the grille will allow approx. 8 litres/sec flow rate, as background ventilation. 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.

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 Single fan shall be fitted with an integral Ecosmart control inclusive of 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: -

- Integral operating pressure adjustment (target pressure).
- BMS interface 0 - 10V.
- 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

- Optional trickle/boost flow rate.
- Externally adjusted settings.
- CVD helps balance system.
- MEMS provide precise measurements and control of flow rate.

Ecosmart Xtractor shall have a 5 year warranty.

INSTALLATION

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

The installer 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 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.

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

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

AIR MOVER SINGLE FANS

LOW NOISE FAN FOR HIGH PERFORMANCE APPLICATIONS.

ecosmart
OPTIONS AVAILABLE

BENEFITS

QUIETEST INSTALLATION
The high rigidity, double skinned construction produces the quietest noise to duty ratio unit in the industry, ensuring that your system requirements are easily met.

IDEAL FOR DUCTING
Units are constructed with a square case and mezz flange to suit ducted applications.

ROBUST PROTECTION
Strong aluzinc and pentapost construction provides long life and helps minimise onsite installation damage.

FLEXIBLE SOLUTION
Ideal for either internal or external applications.

EASE OF ACCESS
A panel provides quick and easy access reducing maintenance costs.

CONTROL-ABILITY AS STANDARD
All models have the flexibility to be speed controlled utilising a Nuaire Ecosmart control.

FAN TO SUIT ALL APPLICATIONS
2-speed options available. Class 'H' insulated motors are available. Contact Nuaire for details.

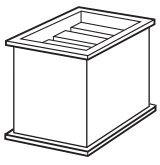
SAFETY TESTED
Motors are pre-wired to external IP55 rated terminal box for ease of installation.

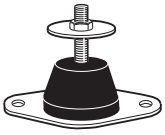
'PERFECT MATCH' ATTENUATORS
Wide range of attenuators available to assist in meeting design criteria.

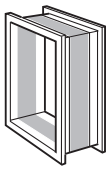
ECOSMART COMPATIBILITY
Units can be supplied with Ecosmart controls, providing a simple to install, easy to commission, energy efficient solution. Also facilitates the interconnection of a supply AHU.

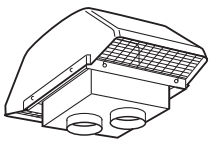
WARRANTY
Airmover has a 3 year warranty.
Ecosmart Airmover has a 5 year warranty.

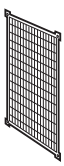
SQUIF ANCILLARIES


Splitter Attenuator.


AV Mounts.

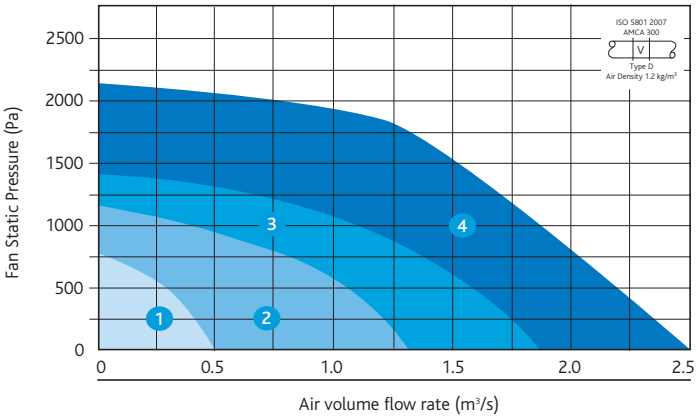

Flexible Connector.


Weatherproof Cowls.

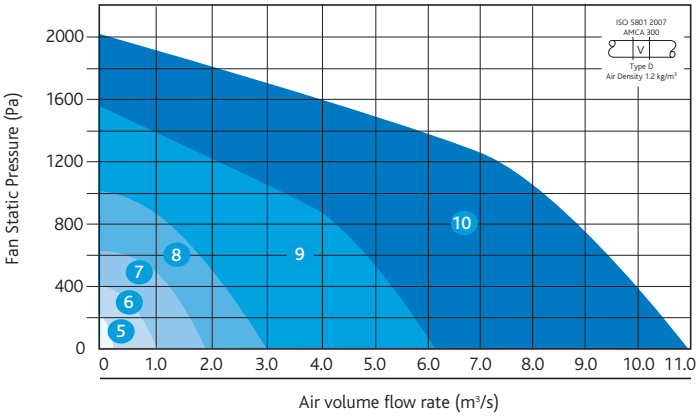

Guard for square units.

PERFORMANCE - AIRMOVER SINGLE FANS

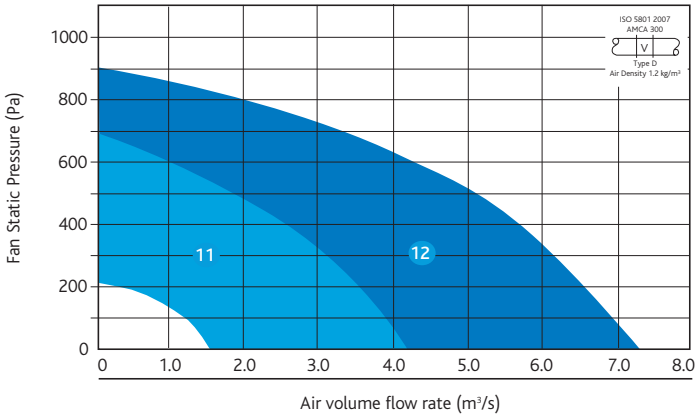
Airmover - 2 pole



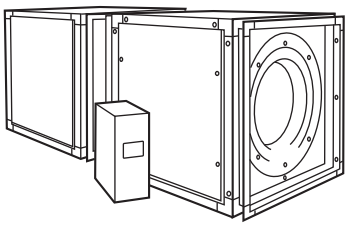
Airmover - 4 pole



Airmover - 6 pole



Casing



Code descriptions

AM 4 2 T - ES B C

1 2 3 4 5 6 7

1. Airmover
2. Pole (2, 4 or 6)
3. Size
4. Options
   T = Two speed.
   (Not available with Ecosmart control).
5. ES = Full Ecosmart controls – BMS interfaces and commissioning controls (as 2 & 3 below) full compatibility with Ecosmart sensors.
6. B = BMS interfaces 0-10V, volt free run and fail indication.
   Commissioning/speed control built in
   Adjustable trickle and boost if required.
7. C = Commissioning/speed control built in.
   Adjustable trickle and boost if required.
   All the above control options are pre-programmed with a soft start function
   The above control options are provided in a purpose made module, mounted remote from the unit.
   Other controls to be specified separately please contact Nuaire for details.

AIRMOVER EXTRACT UNITS

ELECTRICAL & SOUND

Curve	Code	Phase	RPM	Motor Power (kW)	FLC (amps)	SC (amps) (soft start)**	Data Type	Sound Power Levels (dB re 10 -12 W) Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	Breakout dBA @ 3m
1	AM 21	3	2820	0.37	1	1	I	81	84	69	67	68	68	71	42
							O	81	80	70	71	71	70	68	
2	AM 22	3	2855	1.1	2.5	2.5	I	82	87	84	78	77	80	80	46
							O	83	82	82	82	82	81	82	
3	AM 23	3	2875	2.2	4.2	4.2	I	86	92	87	80	82	83	83	50
							O	87	87	85	84	87	84	85	
4	AM 24	3	2890	4	7.8	7.8	I	87	96	88	89	98	84	89	57
							O	86	94	91	94	100	89	84	
5	AM 41	3	1430	0.25	0.8	0.8	I	71	63	53	51	56	58	45	25
							O	71	59	53	56	59	60	42	
6	AM 42	3	1430	0.37	1.1	1.1	I	81	76	70	63	69	68	56	36
							O	82	71	68	67	74	70	58	
7	AM 43	3	1445	1.1	2.5	2.5	I	88	85	81	73	76	76	68	45
							O	86	83	84	78	79	80	63	
8	AM 44	3	1442	2.2	4.5	4.5	I	93	89	82	77	80	80	71	48
							O	87	86	87	81	82	82	68	
9	AM 45	3	1455	7.5	15.8	15.8	I	103	92	86	86	85	86	83	54
							O	92	90	91	89	87	87	81	
10	AM 46	3	1460	18.5	34.7	34.7	I	102	98	90	92	92	92	96	58
							O	95	95	94	96	94	93	93	
11	AM 61	3	915	2.2	6.4	6.4	I	92	85	79	76	77	71	62	45
							O	80	83	84	80	79	71	61	
12	AM 62	3	975	5.5	12.8	12.8	I	97	88	77	81	83	80	66	49
							O	91	86	82	85	85	82	63	

The electrical and sound information in the table is nominal. Breakout dBA@3m is spherical, free field.
Start currents (sc) are DOL other than for motors of 4 kW and above which is star delta.

* Motor electrical supply, 3=3phase (400V, 50Hz). ** Soft start - when using Ecosmart or inverter control.

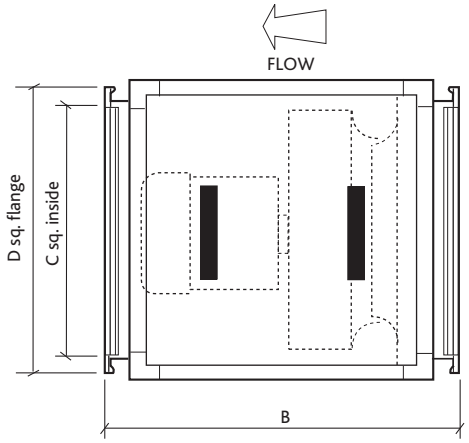
I - Induct Inlet O - Induct Outlet

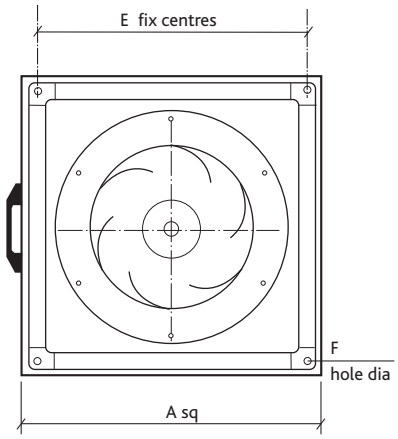
QUICK SELECTION GUIDE

AIRMOVER

Fan unit	Frequency Inverter	Standard Silencers	Long Silencers	Flexible Connectors	Fan Guards	AV Mounts
AM21	3ISC1.2A	AMSIL1-S	AMSIL1-L	AMDF 1	AMGD 1	NAV2
AM22	3ISC3.0A	AMSIL2-S	AMSIL2-L	AMDF 2	AMGD 2	NAV2
AM23	3ISC5.9A	AMSIL2-S	AMSIL2-L	AMDF 2	AMGD 2	NAV2
AM24	3ISC10.2A	AMSIL3-S	AMSIL3-L	AMDF 3	AMGD 2	NAV2
AM41	3ISC1.2A	AMSIL1-S	AMSIL1-L	AMDF 1	AMGD 1	NAV2
AM42	3ISC1.2A	AMSIL2-S	AMSIL2-L	AMDF 2	AMGD 2	NAV2
AM43	3ISC3.0A	AMSIL3-S	AMSIL3-L	AMDF 3	AMGD 2	NAV2
AM44	3ISC5.9A	AMSIL4-S	AMSIL4-L	AMDF 4	AMGD 4	NAV5
AM45	3ISC18.4A	AMSIL5-S	AMSIL5-L	AMDF 5	AMGD 5	NAV4
AM46	3ISC38.0A	AMSIL6-S	AMSIL6-L	AMDF 6	AMGD 6	NAV6
AM61	3ISC7.7A	AMSIL5-S	AMSIL5-L	AMDF 5	AMGD 5	NAV3
AM62	3ISC13.2A	AMSIL6-S	AMSIL6-L	AMDF 6	AMGD 6	NAV6

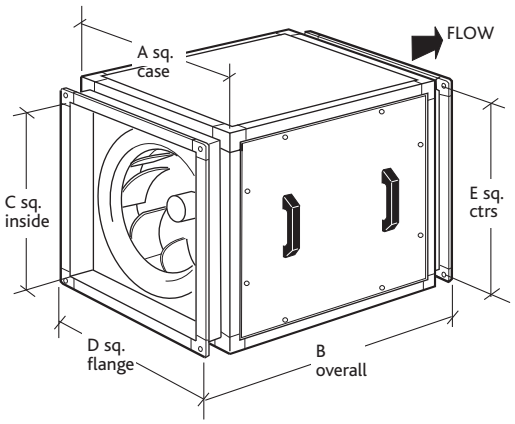
DIMENSIONS



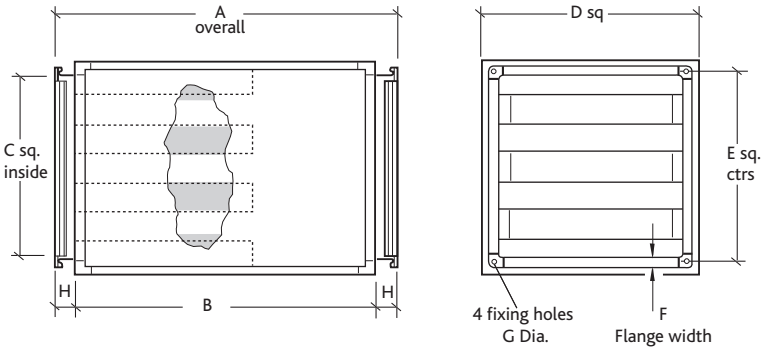


AIRMOVER DIMENSIONS (mm) & WEIGHTS

Fan Unit	A	B	C	D	E	F	Weight Kg
AM21/41	376	486	310	370	345	11	28
AM22/23/42	510	615	440	505	478	11	61
AM43/24	642	705	570	635	608	11	68
AM44	712	775	645	702	680	11	102
AM45/61	892	1030	805	865	840	13	194
AM46/62	1082	1155	990	1075	1028	13	305



DIMENSIONS INLINE SQUARE ATTENUATORS



AIRMOVER SQUARE ATTENUATORS DIMENSIONS (mm) & WEIGHTS

Matching	Attenuator	Attenuator	Static Attenuation							Dimensions & Weights									
Unit	Code	Type	125	250	500	1K	2K	4K	8K	A	B	C	D	E	F	G	H	Weight Kg	Z
AM 21	AMSIL1-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	310	376	345	30	11	45	16	434
AM 22	AMSIL2-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	445	510	478	30	11	45	22	142
AM 23	AMSIL2-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	445	510	478	30	11	45	22	142
AM 24	AMSIL3-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	575	642	608	30	11	45	35	36.8
AM 41	AMSIL1-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	310	376	345	30	11	45	16	434
AM 42	AMSIL2-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	445	510	478	30	11	45	22	142
AM 43	AMSIL3-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	575	642	608	30	11	45	35	36.8
AM 44	AMSIL4-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	810	642	712	680	30	11	45	43	30.5
AM 45	AMSIL5-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	788	800	892	840	40	13	56	62	10.9
AM 46	AMSIL6-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	788	995	1082	1028	40	13	56	110	1.54
AM 61	AMSIL5-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	788	800	892	840	40	13	56	62	10.9
AM 62	AMSIL6-S	STANDARD	-4	-8	-18	-24	-19	-16	-11	900	788	995	1082	1028	40	13	56	110	1.54
AM 21	AMSIL1-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	310	376	345	30	11	45	22	434
AM 22	AMSIL2-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	445	510	478	30	11	45	33	142
AM 23	AMSIL2-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	445	510	478	30	11	45	33	142
AM 24	AMSIL3-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	575	642	608	30	11	45	56	36.8
AM 41	AMSIL1-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	310	376	345	30	11	45	22	434
AM 42	AMSIL2-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	445	510	478	30	11	45	33	142
AM 43	AMSIL3-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	575	642	608	30	11	45	56	36.8
AM 44	AMSIL4-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1110	642	712	680	30	11	45	63	30.5
AM 45	AMSIL5-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1088	800	892	840	40	13	56	88	10.9
AM 46	AMSIL6-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1088	995	1082	1028	40	13	56	170	1.54
AM 61	AMSIL5-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1088	800	892	840	40	13	56	88	10.9
AM 62	AMSIL6-L	LONG	-8	-12	-32	-42	-33	-32	-18	1200	1088	995	1082	1028	40	13	56	170	1.54

Note: Air Pressure Drop of Attenuator (Pa) = Z x Q^2 where Z = Factor listed in table above Q = Air Volume Flow Rate (m^3/s).

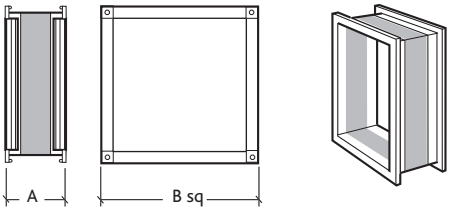
ANCILLARIES FOR AIRMOVER UNITS

DOUBLE FLANGED FLEXIBLE CONNECTOR (mm)

Square with a pair of propriety quickfit flanges. The flexible duct material is a sound barrier mat with wear resistant skin, designed to improve sound installation. The material is self extinguishing and suitable for operating temperatures between –30°C to +65°C.

Dimensions (mm)

Airmover	Code	A	B
AM 41/AM 21	AMDF 1	150	370
AM 42/AM 22/AM 23	AMDF 2	150	505
AM 43/AM 24	AMDF 3	150	635
AM 44	AMDF 4	150	702
AM 45/AM 61	AMDF 5	150	865
AM 46/AM 62	AMDF 6	150	1075

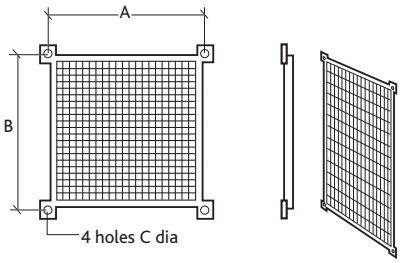


GUARD FOR SQUARE FANS (mm)

Manufactured from galvanised steel wire or polyester coated mild steel.
Resistance to airflow is negligible.

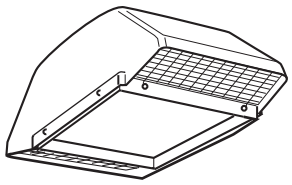
Dimensions (mm)

Airmover	Code	A	B
AM 41/AM 21	AMGD 1	345	345
AM 42/AM 22/AM 23	AMGD 2	345	345
AM 43/AM 24	AMGD 3	608	608
AM 44	AMGD 4	680	680
AM 45/AM 61	AMGD 5	840	840
AM 46/AM 62	AMGD 6	1028	1028



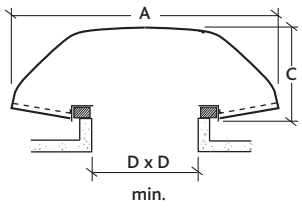
ANCILLARIES FOR AIRMOVER UNITS CONT.

TERMINATOR COWLS DIMENSIONS (mm)



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

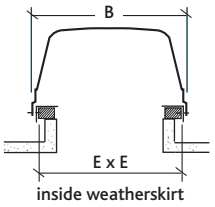
Cowls are manufactured from flame retardant polymer and can be supplied with gravity backdraught shutters, bird guards and hand guards. The terminal is finished in BS00A05 Grey as standard. All BS or RAL colours are available. The cowl will normally be fitted to the upstand by a roofing contractor or 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

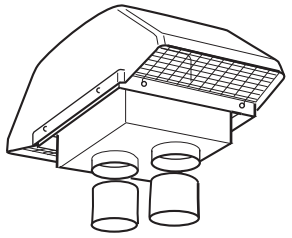
Note: Air Pressure Drop of Attenuator (Pa) = Z x Q^2

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

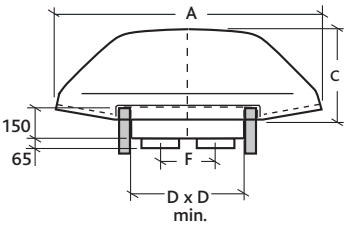


Code	A	B	C	D	E	Weight Kg	Discharge	Z Intake
TRTS-A	900	620	340	460	600	12.3	67	118
TRTS-B	1080	740	375	560	695	14.7	39	87
TRTS-C	1320	964	475	700	945	26.0	28	62
TRTS-D	1470	1076	490	800	1050	28.2	19	32
TRTS-E	1780	1170	485	900	1136	50.0	7	11.3
TRTS-F	2260	1476	600	1200	1452	88.0	2.5	3.6

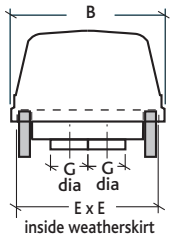
SUPPLY/EXTRACT COWLS DIMENSIONS (mm)



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	21.3
TRSE2	900	620	340	460	600	200	125	21.3
TRSE3	900	620	340	460	600	200	150	21.3
TRSE4	1320	964	475	700	945	345	200	41.4
TRSE5	1320	964	475	700	945	345	250	41.4
TRSE6	1320	964	475	700	945	345	315	41.4
TRSE7	1780	1170	489	900	1150	450	400	76.8

Resistance to airflow of this item is negligible.

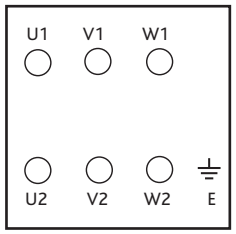
WIRING - AIRMOVER

Two speed motors DOL starting on both speeds

Observe the motor plate and connection details.
3 phase two speed tap/pam wound motors require a three contactor control.
3 phase Dual wound motors require a two contactor control.

Motor Terminal Box

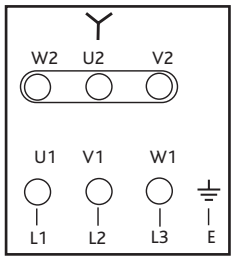
Note: HIGH SPEED -
Supply U2 V2 W2
Link U1 V1 W1
LOW SPEED
Supply U1 V1 W1



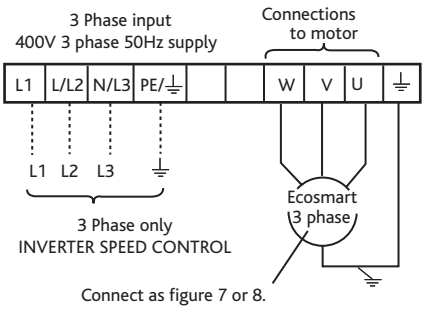
400V 3 phase 50Hz supply

3 phase units up to 3KW

3 phase motors are connected directly to the Motor Terminal Box.

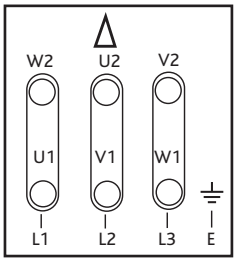


3 phase units with matched frequency inverter

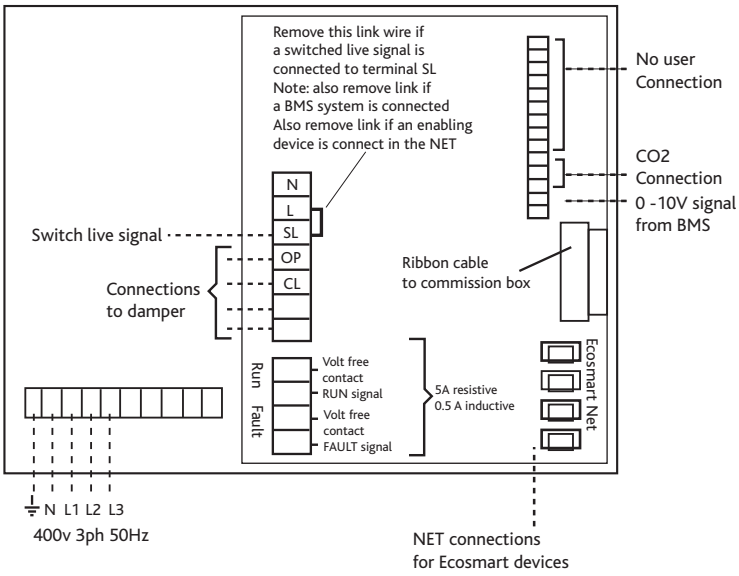


Notes:
Total length of motor leads should not exceed 50 mtrs.
If a screened motor cable is used, maximum length should be 30 mtrs.
Consult our Technical Department if you wish to use longer leads.
Inverters are configured to suit specific fans and control applications as described on the Customer Order.

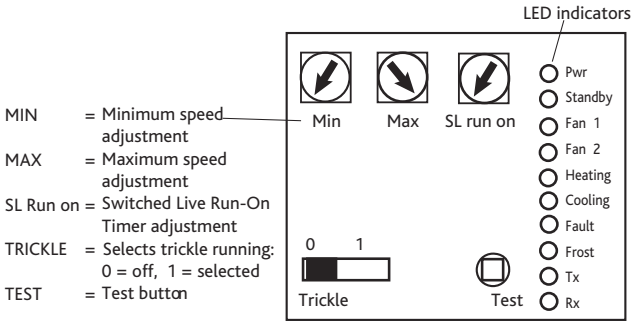
3 phase units 4KW and above



3 phase (Ecosmart)



Set up/Commissioning Box



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

CONSULTANTS SPECIFICATION

SYSTEM SPECIFICATION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the Airmover type as manufactured by Nuaire. The units shall be manufactured from a highly rigid pentapost framework with 25mm double skinned infill panels. The panels shall contain inert high density infill. Panel materials are heavy gauge Aluzinc corrosion resistant steel. The units shall provide exceptional thermal and acoustic insertion. The very low breakout noise level through the unit casing must not be exceeded. The general construction is to class A leakage.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with IE2 high efficiency motors to EN60034-30 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel.

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.

All other components shall be in accordance with the manufacturer's specification.

The unit and ancillaries shall be of the Airmover type as manufactured by Nuaire Ltd.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

2. BMS INTERFACES

The fan unit shall be provided with the following integrated BMS interfaces

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
  Switch the unit on/off.
  Switch from low speed to high speed.
  Full speed control facility.

- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.

- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

3. COMMISSIONING SET UP

The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

4. STANDARD CONTROLS

The unit shall be provided with a standard speed control or starter in accordance with the manufacturer's recommendations.

The Fan unit shall have a 3 year warranty.
Ecosmart Airmover shall have a 5 year warranty.

All equipment shall be as manufactured by Nuaire Ltd.

SQUIF SINGLE FANS

HIGH PRESSURE AND VOLUME CENTRIFUGAL EXTRACT FAN WITH MOTOR OUT OF AIRSTREAM, IDEAL FOR KITCHEN CANOPY APPLICATIONS.

ecosmart OPTIONS AVAILABLE

FOR HIGH TEMPERATURE RANGE REFER TO SMOKE SECTION

BENEFITS

QUIET OPERATION
One of the quietest solutions for motor unit out of airstream applications. The units shall be suitable for operation in airstream temperatures up to 90°C.

CLEANER OPERATION
'Out of air stream' motors are ideal for dirty extract and greasy environments. Cleaner motor operation extends motor life.

IDEAL FOR HIGH RESISTANCES
Backward curved centrifugal impellers provide high pressure development suitable for ducted systems and kitchen canopy with extreme filtration.

FLEXIBLE SOLUTION
Can be mounted internally, externally, vertically or horizontally.

CONTROL-ABILITY AS STANDARD
All 3 phase units have the flexibility to be speed controlled utilising Nuaire Ecosmart controls or frequency inverters.

INSPECTION PANELS
Allow for easy access.

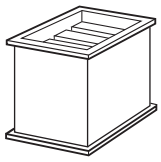
FAN TO SUIT ALL APPLICATIONS
2-speed motors available for day-to-day extract.

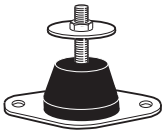
EASY MAINTENANCE
'Out of air stream' allows for quick and easy access and lower maintenance costs.

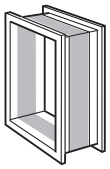
ECOSMART COMPATIBILITY
Can be supplied with Ecosmart controls, providing a simple to install, easy to commission, energy efficient solution. Also facilitates the interconnection of supply AHU.

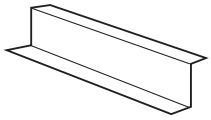
WARRANTY
Squif has a 3 year warranty.
Ecosmart Squif has a 5 year warranty.

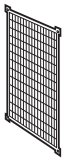
SQUIF ANCILLARIES


Splitter Attenuator.


AV Mounts.

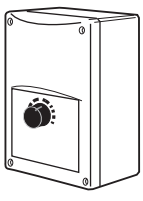

Flexible Connector.

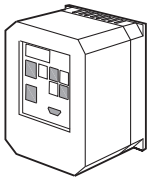

Feet built in.


Guard for square units.

CONTROLS

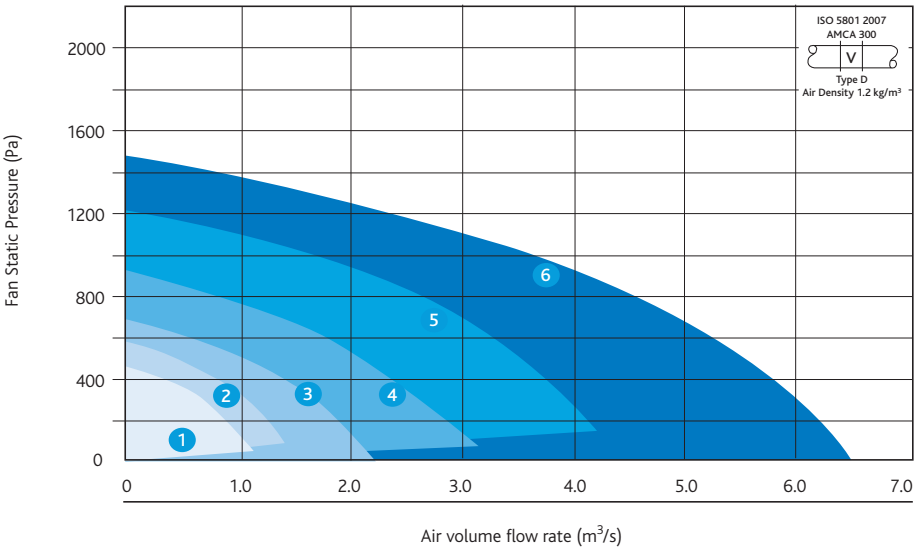
ecosmart OPTIONS AVAILABLE


Electronic Speed Control. (Single phase).

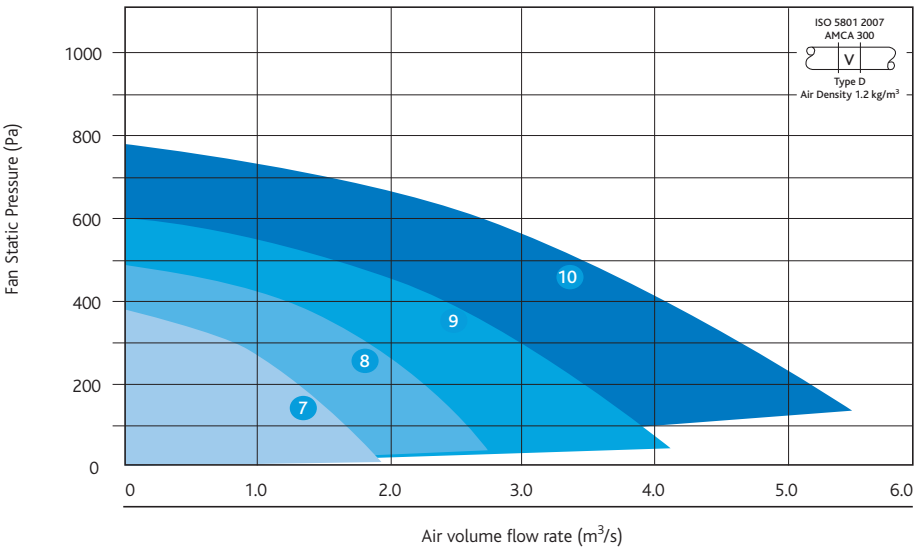

Inverter Speed Control. (Three phase).

PERFORMANCE - SQUIF SINGLE FANS

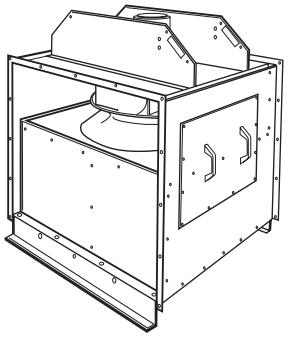
Squif - 4 pole



Squif - 6 pole



Casing



Code descriptions

SQFA 4 1 - 3 ES B C

1 2 3 4 5 6 7 8

1. Squif range
2. A = Ambient
3. Pole (4 or 6)
4. Curve No.
5. Phase (1 or 3)
6. ES = Full Ecosmart controls – BMS interfaces and commissioning controls (as 6 & 7 below) full compatibility with Ecosmart sensors.
7. B = BMS interfaces 0-10V, volt free run and fail indication.
   Commissioning/speed control built in Adjustable trickle and boost if required.
8. C = Commissioning/speed control built in.
   Adjustable trickle and boost if required.
   All the above control options are pre-programmed with a soft start function
   The above control options are provided in a purpose made module, mounted remote from the unit.
   Other controls to be specified separately please contact Nuaire for details.

SQUIF EXTRACT FANS

ELECTRICAL & SOUND

Curve	Code	Phase	RPM	Motor Power (kW)	FLC (amps)	SC (amps)	SC ★/▲	Data Type	Sound Power Levels (dB re 10 -12 W) Octave band mid frequency (Hz) 125	250	500	1K	2K	4K	8K	dBA @ 3m
1	SQFA41-3	3	1450	0.37	1.1	5.2	-	I	90	79	70	70	70	69	62	50
	SQFA41-1	1	1410	0.37	2.8	11.2		O	91	74	68	74	75	70	64	
2	SQFA42-3	3	1450	0.75	2	9.0	-	I	92	82	77	74	76	75	67	53
	SQFA42-1	1	1370	0.75	5.4	21		O	93	78	74	78	80	77	69	
3	SQFA43-3	3	1450	1.1	2.5	12	-	I	95	83	79	77	78	78	71	56
	SQFA43-1	1	1420	1.1	7	35		O	96	79	77	82	83	79	73	
4	SQFA44	3	1450	2.2	4.8	28.8	-	I	93	89	82	77	80	80	71	58
								O	87	86	87	81	82	82	68	
5	SQFA45	3	1450	4	9.1	59	-	I	99	87	85	85	84	83	81	62
								O	100	83	82	89	89	84	83	
6	SQFA46	3	1450	7.5	15.2	108	-	I	103	92	86	86	85	86	83	63
								O	92	90	91	89	87	87	81	
7	SQFA61	3	960	0.75	2.1	8.82	-	I	89	84	75	70	73	73	64	47
								O	83	81	80	74	75	75	61	
8	SQFA62	3	960	1.1	3	13.2	-	1	96	83	78	76	75	74	72	56
								O	97	78	76	80	79	75	74	
9	SQFA63	3	960	2.2	5.9	28.9	-	I	100	87	79	76	76	77	73	59
								O	101	82	77	80	80	78	75	
10	SQFA64	3	960	4	9.4	61.2	20.4	I	103	91	82	79	77	77	74	62
								O	104	86	80	83	82	78	76	

The electrical and sound information in the table is nominal. Breakout dBA@3m is spherical, free field.
Start currents (sc) are DOL. * Motor electrical supply, 1=1 phase (230V, 50Hz) 3=3phase (400V, 50Hz)
I - Induct Inlet O - Induct Outlet.

QUICK SELECTION GUIDE

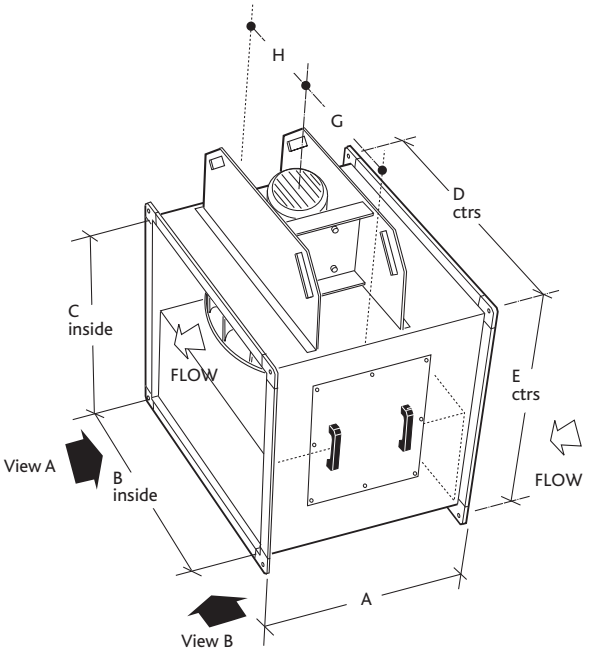
SQUIF

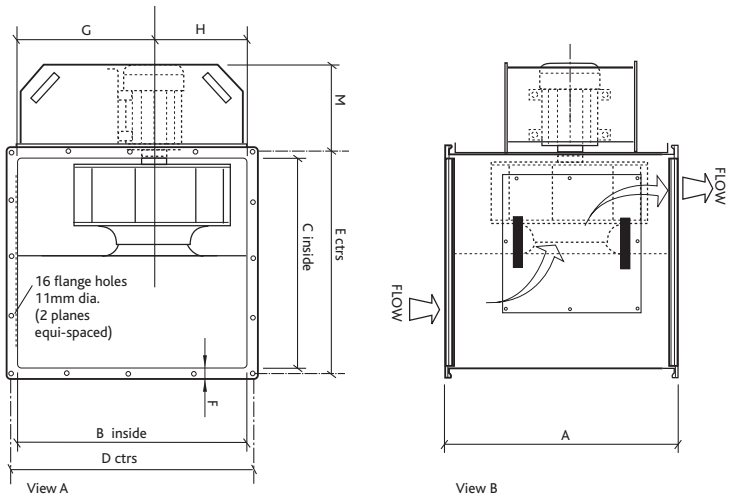
Fan unit	Frequency Inverter	Standard silencers	Long silencers	Flexible Connectors	Fan Guards	AV Mounts
SQFA41-3	3ISC1.2A	SQFS1S	SQFS1L	SQFF1	SQFGD1	NAV2
SQFA41-1	-	SQFS1S	SQFS1L	SQFF1	SQFGD1	NAV2
SQFA42-3	3ISC2.6A	SQFS2S	SQFS2L	SQFF2	SQFGD2	NAV2
SQFA42-1	-	SQFS2S	SQFS2L	SQFF2	SQFGD2	NAV2
SQFA43-3	3ISC3.3A	SQFS3S	SQFS3L	SQFF3	SQFGD3	NAV2
SQFA43-1	-	SQFS3S	SQFS3L	SQFF3	SQFGD3	NAV2
SQFA44	3ISC5.6A	SQFS4S	SQFS4L	SQFF4	SQFGD4	NAV5
SQFA45	3ISC12.5A	SQFS5S	SQFS5L	SQFF5	SQFGD5	NAV5
SQFA46	3ISC15.6A	SQFS6S	SQFS6L	SQFF6	SQFGD6	NAV3
SQFA61	3ISC7.3A	SQFS4S	SQFS4L	SQFF4	SQFGD4	NAV3
SQFA62	3ISC5.6A	SQFS5S	SQFS5L	SQFF5	SQFGD5	NAV4
SQFA63	3ISC5.6A	SQFS7S	SQFS7L	SQFF6	SQFGD6	NAV4
SQFA64	3ISC8.8A	SQFS8S	SQFS8L	SQFF7	SQFGD7	NAV6

DIMENSIONS

SQUIF DIMENSIONS (mm) AND WEIGHTS

Unit size	A	B	C	D	E	F	G	H	M	Weight (Kg)
SQFA41-3	634	500	500	532	532	26.5	273	227	193	52
SQFA41-1	634	500	500	532	532	26.5	273	227	193	52
SQFA42-3	692	700	600	730	630	32	382	318	215	60
SQFA42-1	692	700	600	730	630	32	382	318	215	60
SQFA43-3	750	750	650	780	680	32	412	338	231	70
SQFA43-1	750	750	650	780	680	32	412	338	231	70
SQFA44	820	800	700	830	730	32	440	360	290	100
SQFA61	820	800	700	830	730	32	440	360	290	100
SQFA45	901	900	800	930	830	32	490	410	290	150
SQFA62	901	900	800	930	830	32	490	410	290	150
SQFA46	994	1000	900	1030	930	32	546	454	387	255
SQFA63	994	1000	900	1030	930	32	546	454	387	255
SQFA64	1114	1100	1000	1130	1030	32	600	500	387	315



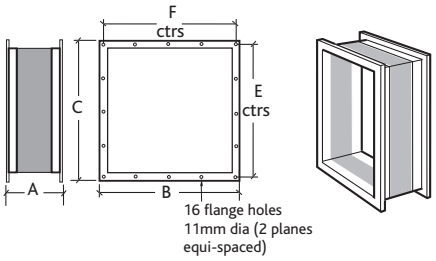


ANCILLARIES FOR SQUIF UNITS

DOUBLE FLANGED FLEXIBLE CONNECTOR (mm)

Flexible duct material is flame proof. Heat resistance is 400°C with excellent resistance to chemicals, ozone, oil and grease. The connector is air-tight, waterproof and tested to BS476 Part 7.

Code	Squif Fan	A	B	C	F	E
SQFF 1	SQFA41-3 SQFA41-1	150	560	560	532	532
SQFF 2	SQFA42-3 SQFA42-1	150	760	660	730	630
SQFF 3	SQFA43-3 SQFA43-3	150	810	710	780	680
SQFF 4	SQFA44 SQFA61	150	860	760	830	730
SQFF 5	SQFA45 SQFA62	150	980	880	930	830
SQFF 6	SQFA46 SQFA63	150	1080	980	1030	930
SQFF 7	SQFA64	150	1180	1080	1130	1030

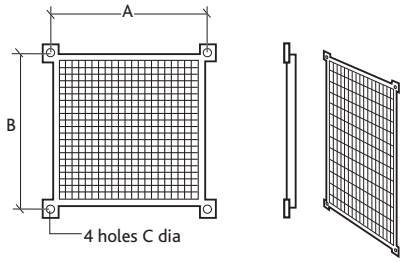


ANCILLARIES FOR SQUIF UNITS CONT.

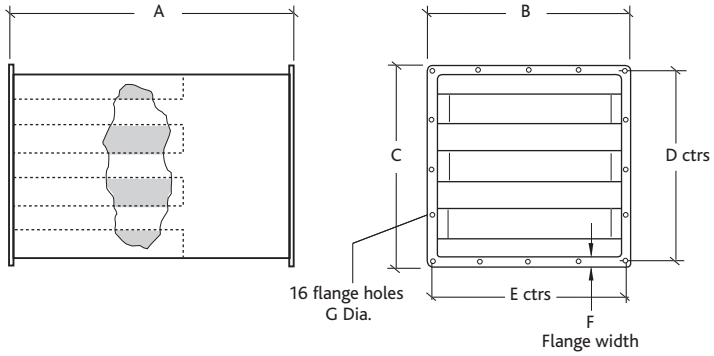
GUARD FOR SQUARE FANS (mm)

Manufactured from galvanised steel wire or polyester coated mild steel.
Resistance to airflow is negligible.

Code	Squif Fan	A	B	C
SQFGD 1	SQFA41-3 SQFA41-1	532	532	11
SQFGD 2	SQFA42-3 SQFA42-1	730	630	13
SQFGD 3	SQFA43-3 SQFA43-3	780	680	13
SQFGD 4	SQFA44 SQFA61	830	730	13
SQFGD 5	SQFA45 SQFA62	930	830	13
SQFGD 6	SQFA46 SQFA63	1030	930	13
SQFGD 7	SQFA64	1130	1030	13



Silencers



SQUIF LONG SILENCERS DIMENSIONS (mm) & WEIGHTS

Matching Unit	Attenuator Code	Dynamic insertion loss (db) 125	250	500	1K	2K	4K	8K	Dimensions & Weights A	B	C	D	E	F	G	Weight Kg	Z
SQFA41-3	SQFS1L	-8	-12	-32	-42	-33	-32	-18	1200	560	560	532	532	26.5	11	38	36.8
SQFA41-1	SQFS1L	-8	-12	-32	-42	-33	-32	-18	1200	560	560	532	532	26.5	11	38	36.8
SQFA42-3	SQFS2L	-8	-12	-32	-42	-33	-32	-18	1200	760	660	630	730	32	11	43	30.5
SQFA42-1	SQFS2L	-8	-12	-32	-42	-33	-32	-18	1200	760	660	630	730	32	11	43	30.5
SQFA43-3	SQFS3L	-8	-12	-32	-42	-33	-32	-18	1200	810	710	680	780	32	11	46	30.5
SQFA43-1	SQFS3L	-8	-12	-32	-42	-33	-32	-18	1200	810	710	680	780	32	11	46	30.5
SQFA44	SQFS4L	-8	-12	-32	-42	-33	-32	-18	1200	860	760	730	830	32	11	60	10.9
SQFA61	SQFS4L	-8	-12	-32	-42	-33	-32	-18	1200	860	760	730	830	32	11	60	10.9
SQFA45	SQFS5L	-8	-12	-32	-42	-33	-32	-18	1200	980	880	830	930	32	12.5	91	5.47-
SQFA62	SQFS5L	-8	-12	-32	-42	-33	-32	-18	1200	980	880	830	930	32	12.5	91	5.47
SQFA46	SQFS6L	-8	-12	-32	-42	-33	-32	-18	1200	1080	980	930	1030	32	12.5	98	5.47
SQFA63	SQFS7L	-8	-12	-32	-42	-33	-32	-18	1200	1080	980	930	1030	32	12.5	116	1.54
SQFA64	SQFS8L	-8	-12	-32	-42	-33	-32	-18	1200	1180	1080	1030	1130	32	12.5	122	1.54

Note: Air Pressure Drop of Attenuator (Pa) = Z x Q2 where Z = Factor listed in table above Q = Air Volume Flow Rate (m^3/s)

SILENCERS CONT.

SQUIF SHORT SILENCERS DIMENSIONS (mm) & WEIGHTS

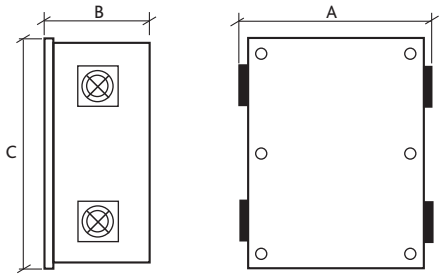
Matching Unit	Attenuator Code	Dynamic insertion loss (db) 125	250	500	1K	2K	4K	8K	Dimensions & Weights A	B	C	D	E	F	G	Weight Kg	Z
SQFA41-3	SQFS1S	-4	-8	-18	-24	-19	-16	-11	900	560	560	532	532	26.5	11	15	36.8
SQFA41-1	SQFS1S	-4	-8	-18	-24	-19	-16	-11	900	560	560	532	532	26.5	11	15	36.8
SQFA42-3	SQFS2S	-4	-8	-18	-24	-19	-16	-11	900	760	660	630	730	32	11	29	30.5
SQFA42-1	SQFS2S	-4	-8	-18	-24	-19	-16	-11	900	760	660	630	730	32	11	29	30.5
SQFA43-3	SQFS3S	-4	-8	-18	-24	-19	-16	-11	900	810	710	680	780	32	11	32	30.5
SQFA43-1	SQFS3S	-4	-8	-18	-24	-19	-16	-11	900	810	710	680	780	32	11	32	30.5
SQFA44	SQFS4S	-4	-8	-18	-24	-19	-16	-11	900	860	760	730	830	32	11	42	10.9
SQFA61	SQFS4S	-4	-8	-18	-24	-19	-16	-11	900	860	760	730	830	32	11	42	10.9
SQFA45	SQFS5S	-4	-8	-18	-24	-19	-16	-11	900	980	880	830	930	32	12.5	61	5.47
SQFA62	SQFS5S	-4	-8	-18	-24	-19	-16	-11	900	980	880	830	930	32	12.5	61	5.47
SQFA46	SQFS6S	-4	-8	-18	-24	-19	-16	-11	900	1080	980	930	1030	32	12.5	68	5.47
SQFA63	SQFS7S	-4	-8	-18	-24	-19	-16	-11	900	1080	980	930	1030	32	12.5	81	1.54
SQFA64	SQFS8S	-4	-8	-18	-24	-19	-16	-11	900	1180	1080	1030	1130	32	12.5	86	1.54

Note: Air Pressure Drop of Attenuator (Pa) = Z x Q2 where Z = Factor listed in table above Q = Air Volume Flow Rate (m^3/s)

CONTROLS

ECOSMART CONTROL (mm)

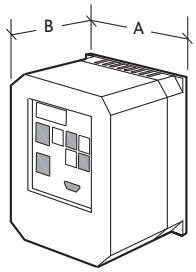
Fan code	A (mm)	B (mm)	C (mm)	Weight Kg	Drill D (mm)	Pattern E (mm)
ES-ISC1.2A	230	325	410	6	340	298
ES-ISC2.4A	230	325	410	6	340	298
ES-ISC3.3A	230	325	410	6	340	298
ES-ISC4.1A	230	325	410	6	340	298
ES-ISC5.6A	290	390	455	14	470	373
ES-ISC7.3A	290	390	455	14	470	373
ES-ISC8.8A	290	390	455	14	470	373
ES-ISC12.5A	290	390	455	20	470	373
ES-ISC15.6A	290	390	455	20	470	373
ES-ISC23.1A	290	390	455	20	470	373
ES-ISC38.0A	355	525	805	40	710	510



Please note:

- Control selected by ensuring the fan's flc is below stated in the ES-ISC code e.g. fan is 7 amps then controller will be ES-ISC7.7A.
- The mains power supply to the controller must be appropriately sized and installed via a local isolation switch (by others). The isolator must also accommodate the switched live (if used). The mains supply from the ecosmart controller to the fan must be appropriately sized, not exceeding 25 metres and must be a screened power cable, earthed at both ends. A four point glanding plate is formed from the base of the control and in order to main EMC compliance, a Zerohm EMC glanding kit is supplied. An isolator should be located adjacent to the fan.
- Contra and run and standby fans will require two controls, one for each fan for run and standby use ES-ISCT cone control.
- All integrated sensors plug directly into the control panel.
- Refer to product datasheet No. 671432 for further information.

CONTROLS CONT.



INVERTER SPEED CONTROL (mm)

Code	Motor Kw	A	B	C	Weight Kg
3ISC1.2A	0.37	70	142	280	1.5
3ISC1.9A	0.55	70	142	280	1.5
3ISC2.4A	0.75	70	142	280	1.7
3ISC3.3A	1.1	70	142	280	1.7
3ISC4.1A	1.5	70	142	280	1.7
3ISC5.6A	2.2	70	142	280	1.7
3ISC7.3A	3	70	142	280	1.7
3ISC8.8A	4	70	142	280	1.7
3ISC12.5A	5.5	169	177	299	3.5
3ISC15.6A	7.5	169	177	299	3.5
3ISC23.1A	11	169	177	299	3.5
3ISC31.0A	15	260	177	320	5
3ISC38.0A	18.5	260	177	320	5
3ISC44.0A	22	260	177	320	5
3ISC59.0A	30	260	177	320	24
3ISC72.0A	37	260	177	320	24
3ISC87.0A	45	260	177	320	24

The inverters are microprocessor controlled and use state of the art technology to produce variable output frequency to control the speed of 3 phase squirrel cage motors. In addition to speed control, the inverters offer a number of built in features:

- Soft start to reduce electrical and mechanical load.
- Infinitely variable speed adjustment or pre-set steps.
- Motor over-current detection.
- Alarm signals.
- Proportional control using a 0-10V signal from an external sensor.

All inverters are supplied complete with EMC filter with external filters being used for units above 7.5kW. To ensure the installation complies with EMC requirements, the use of screened power and signal cables are essential. The inverter can be operated over a wide ambient temperature range, 0°C to 50°C and in any clean indoor environments. To ensure safe and trouble-free operations, do not install the inverter near any heat source or in environment containing pollutants, e.g. dust, corrosive gas/vapours or be subjected to water spray or condensation. The inverter can be configured to suit the control regime required for the ventilation system. This can be simple manual control using the front panel of the inverter through to fully automated control via BMS. Please contact our technical support department to discuss your specific needs. All inverters use 400V 3 phase 50Hz power supply.

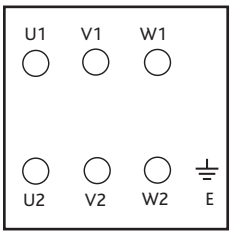
Please note that the selection should be based on the full load current of the fan NOT the motor rating.

WIRING - SQUIF

Two speed motors DOL starting on both speeds

Motor Terminal Box

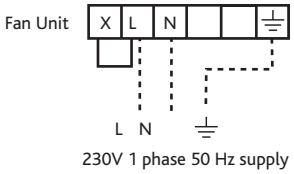
Note: HIGH SPEED -
Supply U2 V2 W2
Link U1 V1 W1
LOW SPEED
Supply U1 V1 W1



400V 3 phase 50Hz supply

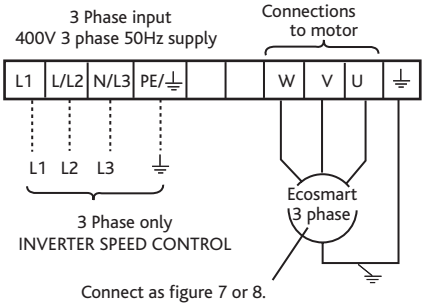
Observe the motor plate and connection details.
3 phase two speed tap/pam wound motors require a three contactor control. 3 phase Dual wound motors require a two contactor control.

Single phase single speed



230V 1 phase 50 Hz supply

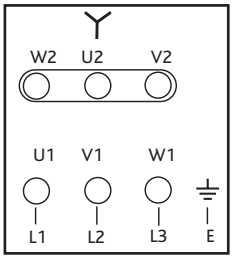
3 phase units with matched frequency inverter



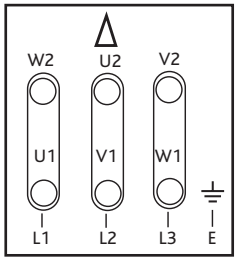
Notes:
Total length of motor leads should not exceed 50 mtrs.
If a screened motor cable is used, maximum length should be 30 mtrs.
Consult our Technical Department if you wish to use longer leads.
Inverters are configured to suit specific fans and control applications as described on the Customer Order.

3 phase units up to 3KW

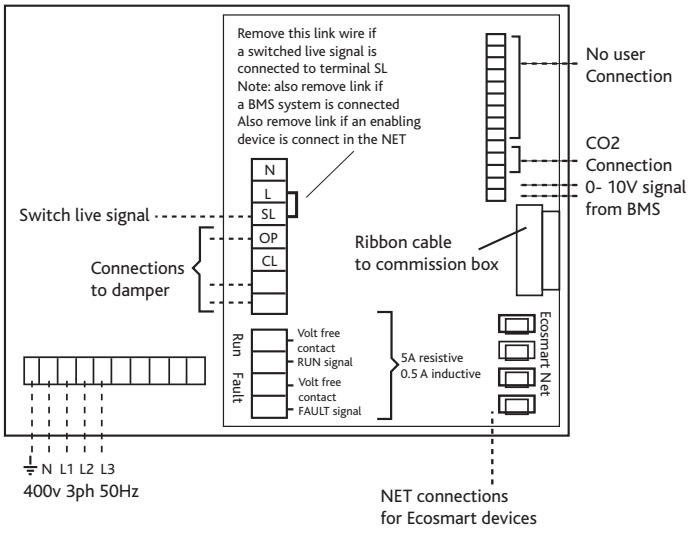
3 phase motors are connected directly to the Motor Terminal Box.



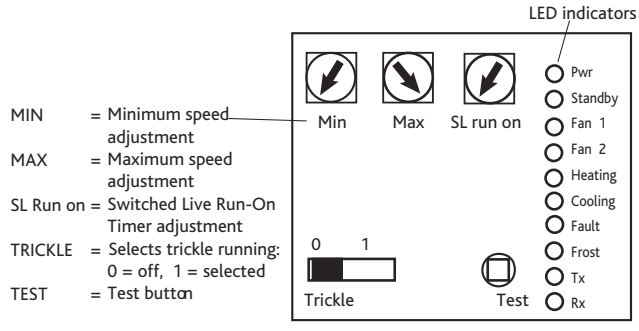
3 phase units 4KW and above



3 phase (ESISC - Ecosmart Control)



Set up/Commissioning Box



CONSULTANTS SPECIFICATION

SYSTEM SPECIFICATION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the SQUIF type as manufactured by Nuaire. The units shall be manufactured heavy gauge galvanised steel. The general construction is to class A leakage.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with IE2 high efficiency motors to EN60034-30 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel and the motor shall be positioned outside the ventilation airflow path.

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.

The unit and ancillaries shall be of the SQUIF type as manufactured by Nuaire Ltd.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.

ECOSMART SYSTEM OPERATION

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

2. BMS INTERFACES

The fan unit shall be provided with the following integrated BMS interfaces:

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
  Switch the unit on/off.
  Switch from low speed to high speed.
  Full speed control facility.

- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.

- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

3. COMMISSIONING SET UP

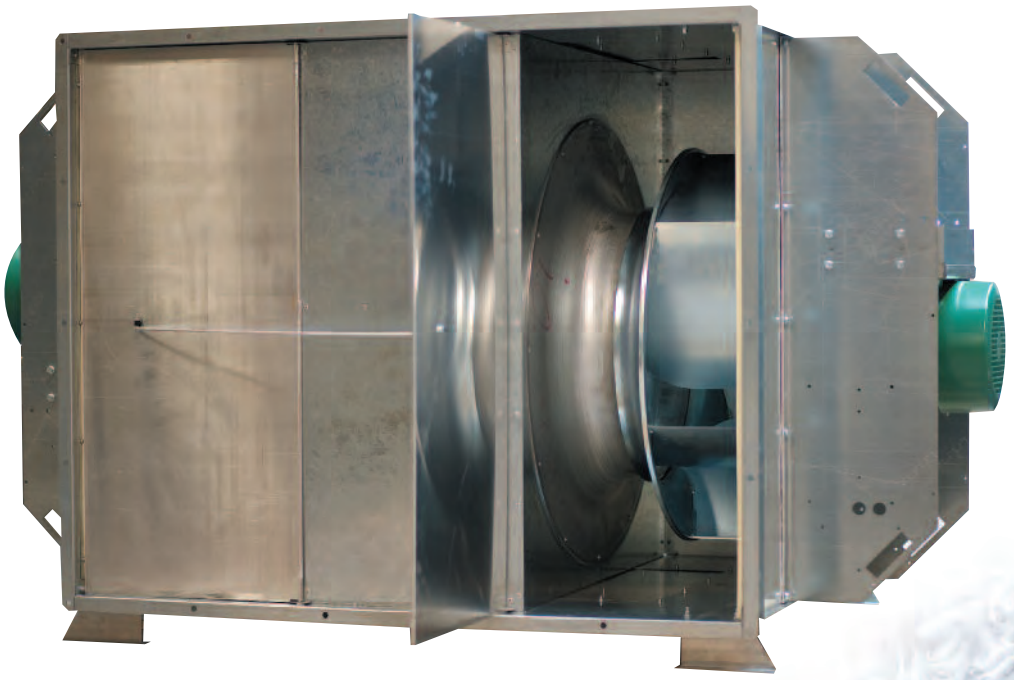
The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

The Fan unit shall have a 3 year warranty.
Ecosmart Squif shall have a 5 year warranty.

All equipment shall be as manufactured by Nuaire Ltd.

TWIN SQUIF FANS

RUN & STANDBY SOLUTION FOR ALL 'MOTOR OUT OF AIRSTREAM' APPLICATIONS.



ecosmart OPTIONS AVAILABLE

FOR HIGH TEMPERATURE RANGE REFER TO SMOKE SECTION

BENEFITS

QUIET AND POWERFUL SOLUTIONS
High performance centrifugal motor/impeller combination providing a low noise solution. The units shall be suitable for operation in airstream temperatures up to 90°C.

CLEANER
'Out of air stream' motors are ideal for dirty extract and greasy environments. Cleaner motor improves cooling and extends motor life.

EASY MAINTENANCE
'Out of air stream' motors allow for quick and easy access. Inspection hatches allow the internal parts to be easily checked and cleaned.

IDEAL FOR HIGH RESISTANCES
High efficiency centrifugal impellers provide high pressure development suitable for ducted systems and kitchen canopy with extreme filtration.

PREVENTS INTERNAL RECIRCULATION
Backdraft dampers inbuilt.

FLEXIBLE SOLUTION
Can be mounted internally, externally, vertically or horizontally. Mounting facilities included.

FAILURE DETECTION
Inverter detects fan failure and Ecosmart control sends signal to 2nd fan.

CONTROLABILITY AS STANDARD
All 3 phase units have the flexibility to be speed controlled utilising Nuaire Ecosmart controls or frequency inverters.

ECOSMART AUTO CHANGE OVER AND DUTY SHARE
Ecosmart models have auto change over in the event of fan/motor failure along with integral duty share.

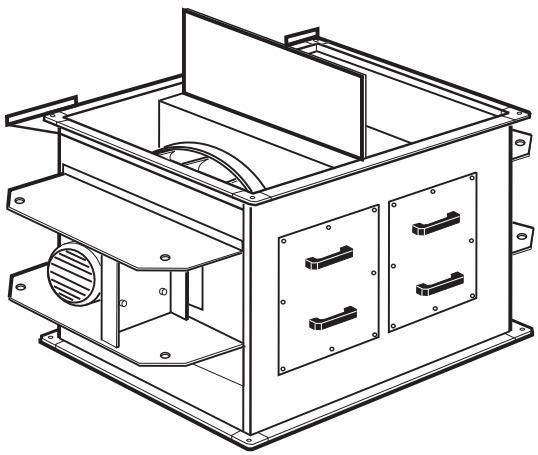
FAN TO SUIT ALL APPLICATIONS
2-speed motors available for day-to-day extract.

WARRANTY
Twin Squif has a 3 year warranty.
Ecosmart Twin Squif (ES) has a 5 year warranty.

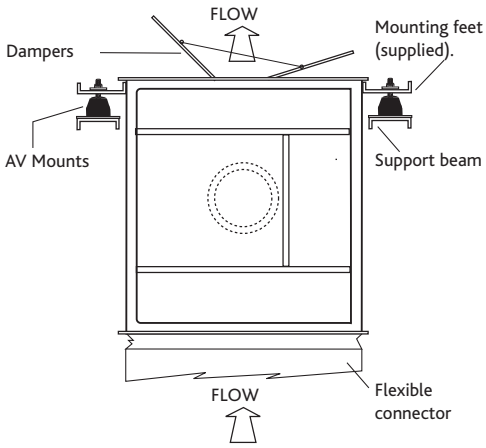
Note: Please contact Nuaire for high temperature enquiries.

Note: For information on Gas Interlock please refer to Single Fan section.

TYPICAL INSTALLATIONS



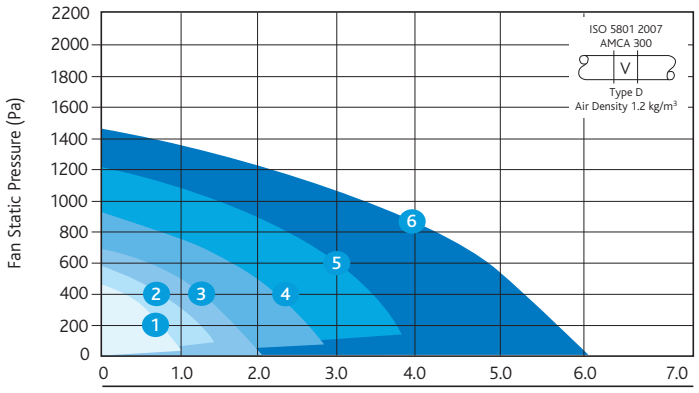
AV mounts fitted to unit mounting feet (supplied) in horizontal discharge mode.



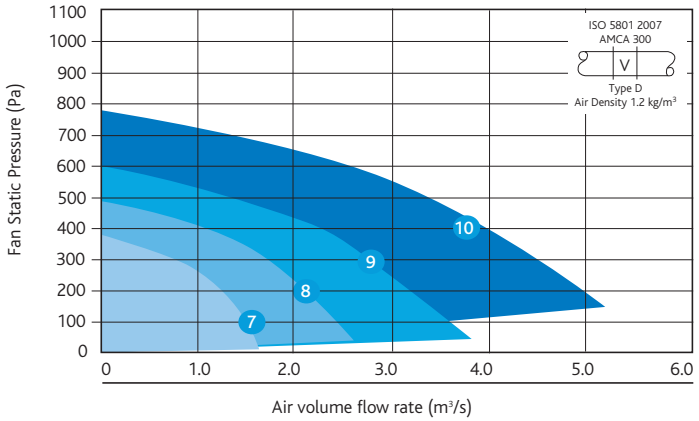
Unit in vertical discharge mode, mounted on support beam using AV mounts.

PERFORMANCE - TWIN SQUIF FANS

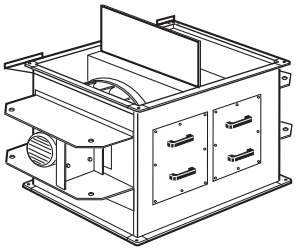
Twin Squif - 4 pole



Twin Squif - 6 pole



Casing



Code descriptions

TSQF 4 1 - 3 ES

1 2 3 4 5

1. Twin Squif Range
2. Pole (4 or 6)
3. Curve No.
4. Phase (1 or 3)
5. Ecosmart control

Note: curves include loss through idling fan.

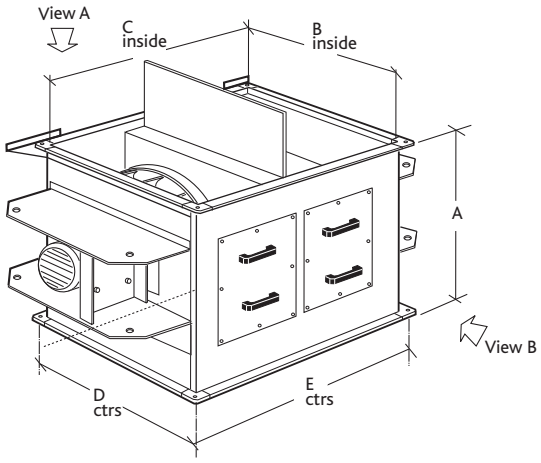
PERFORMANCE - TWIN SQUIF EXTRACT FANS

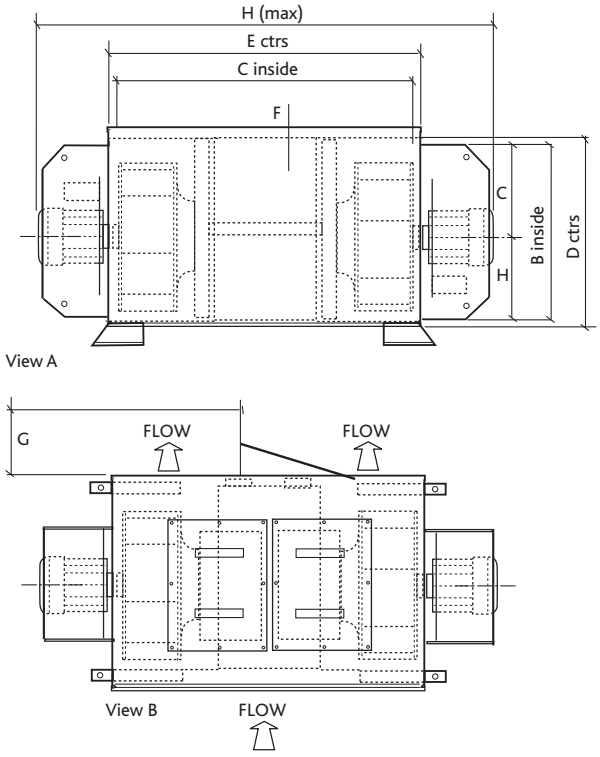
ELECTRICAL & SOUND

				Motor Power	FLC	SC	Data	Induct inlet Sound Power levels dB re lpW								Breakout
Curve	Code	Phase	RPM	(kW)	(amps)	(amps)	Type	63	125	250	500	1K	2K	4K	8K	dBA@ 3m
1	SQFTA41-1	1	1410	0.37	2.8	11.2	I	90	93	79	70	70	70	69	62	52
							O	87	94	74	68	74	75	70	64	
1	SQFTA41-3	3	1450	0.37	1.06	5.2	I	90	93	79	70	70	70	69	62	52
							O	87	94	74	68	74	75	70	64	
2	SQFTA42-1	1	1370	0.75	5.4	21	I	88	95	82	77	74	76	75	67	55
							O	85	96	78	74	78	80	77	69	
2	SQFTA42-3	3	1450	0.75	2.01	9.04	I	88	95	82	77	74	76	75	67	55
							O	85	96	78	74	78	80	77	69	
3	SQFTA43-1	1	1420	1.1	7	35	I	92	98	83	79	77	78	78	71	58
							O	89	99	79	77	82	83	79	73	
3	SQFTA43-3	3	1450	1.1	2.5	12	I	92	98	83	79	77	78	78	71	58
							O	89	99	79	77	82	83	79	73	
4	SQFTA44	3	1450	2.2	4.8	28.8	I	86	96	89	82	77	80	80	71	58
							O	87	90	86	87	81	82	82	68	
5	SQFTA45	3	1450	4	9	59	I	92	102	87	85	85	84	83	81	63
							O	90	103	83	82	89	89	84	83	
6	SQFTA46	3	1450	7.5	15.2	108	I	92	106	92	86	86	85	86	83	64
							O	95	95	90	91	89	87	87	81	
7	SQFTA61	3	960	0.75	2.1	8.82	I	84	92	84	75	70	73	73	64	48
							O	85	86	81	80	74	75	75	61	
8	SQFTA62	3	960	1.1	3	13.2	I	90	99	83	78	76	75	74	72	58
							O	87	100	78	76	80	79	75	74	
9	SQFTA63	3	960	2.2	5.9	28.9	I	90	103	87	79	76	76	77	73	61
							O	87	104	82	77	80	80	78	75	
10	SQFTA64	3	960	4	9.4	61.2	I	91	106	91	82	79	77	77	74	64
							O	88	107	86	80	83	82	78	76	

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

DIMENSIONS - TWIN SQUIF FANS



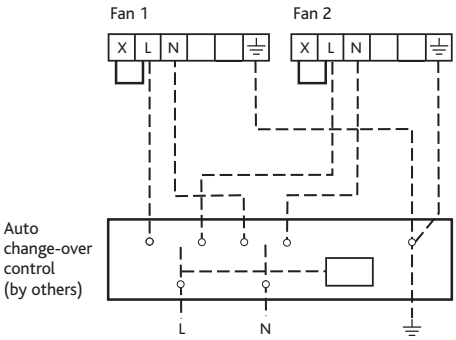


DIMENSIONS (mm) & WEIGHT

Unit Size	A	B	C	D	E	F	G	H	Motor (kW)	Total Fan Weight (Kg)	AV selection	Mounting Orientation
SQFTA41-3	634	500	710	529	741	26.5	223.5	1110	0.37	52	NAV2	
SQFTA41-1	634	500	710	529	741	26.5	223.5	1110	0.37	52	NAV2	
SQFTA41-3ES	634	500	710	529	741	26.5	223.5	1110	0.37	80	NAV2	
SQFTA42-3	692	700	780	730	811	32	248	1220	0.75	77	NAV2	
SQFTA42-1	692	700	780	730	811	32	248	1220	0.75	77	NAV2	
SQFTA42-3ES	692	700	780	730	811	32	248	1220	0.75	77	NAV3	Horizontal discharge or vertically up discharge.
SQFTA43-3	750	750	882	780	913	32	278	1382	11	102	NAV5	
SQFTA43-1	750	750	882	780	913	32	278	1382	11	102	NAV5	
SQFTA43-3ES	750	750	882	780	913	32	278	1382	11	102	NAV5	
SQFTA44	820	800	970	830	1001	32	303	1550	2.2	100	NAV5	
SQFTA61	820	800	970	830	1001	32	303	1550	0.75	111	NAV5	
SQFTA44ES	820	800	970	830	1001	32	303	1550	2.2	100	NAV5	
SQFTA61ES	820	800	970	830	1001	32	303	1550	0.75	111	NAV5	
SQFTA45	901	900	1075	930	1106.5	32	333	1655	4.0	150	NAV3	
SQFTA62	901	900	1075	930	1106.5	32	333	1655	1.1	141	NAV3	
SQFTA45ES	901	900	1075	930	1106.5	32	333	1655	4.0	150	NAV3	
SQFTA62ES	901	900	1075	930	1106.5	32	333	2070	1.1	141	NAV3	
SQFTA46	994	1000	1230	1030	1261	32	383	2070	7.5	315	NAV6	Horizontal discharge only.
SQFTA63	994	1000	1230	1030	1261	32	383	2070	2.2	180	NAV3	
SQFTA46ES	994	1000	1230	1030	1261	32	383	2070	7.5	315	NAV6	
SQFTA63ES	994	1000	1230	1030	1261	32	383	2070	2.2	180	NAV3	
SQFTA64	1114	1100	1380	1130	1411	32	433	2220	4.0	580	NAV52	
SQFTA64ES	1114	1100	1380	1130	1411	32	433	2220	4.0	580	NAV52	

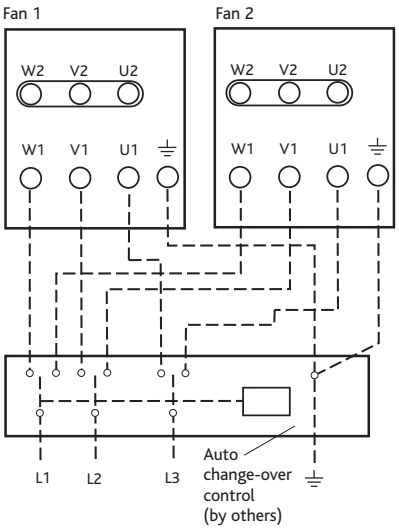
WIRING - TWIN SQUIF FANS

Single Phase Fans - Constant Speed



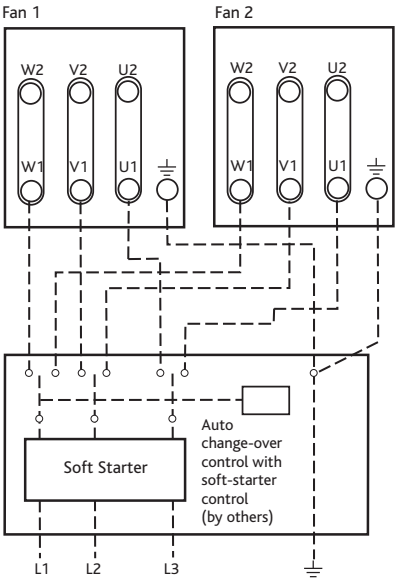
230V 1 phase 50 Hz
Mains supply via local isolator (not shown)

Three phase fans Single speed - motors up to 3kW inclusive



400V 3 phase 50 Hz supply
Mains supply via local isolator (not shown)

Single speed - motors 4kW or above

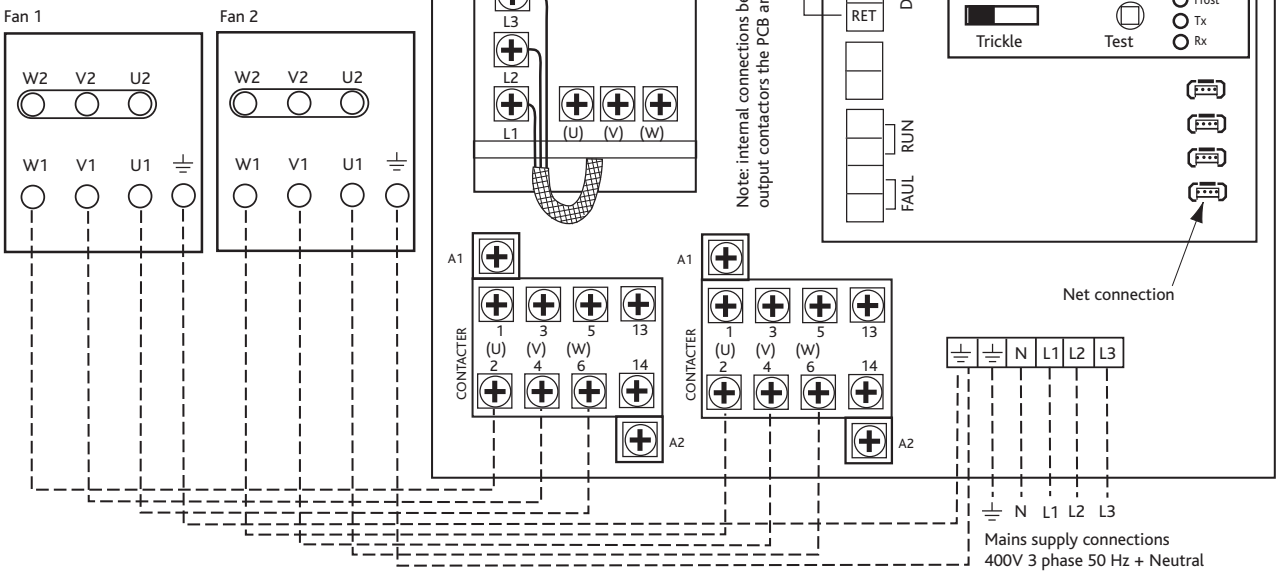


400V 3 phase 50 Hz supply
Mains supply via local isolator (not shown)

Three Phase Fans - with Ecosmart (ES-ISCT) controls Motors up to 3kW inclusive

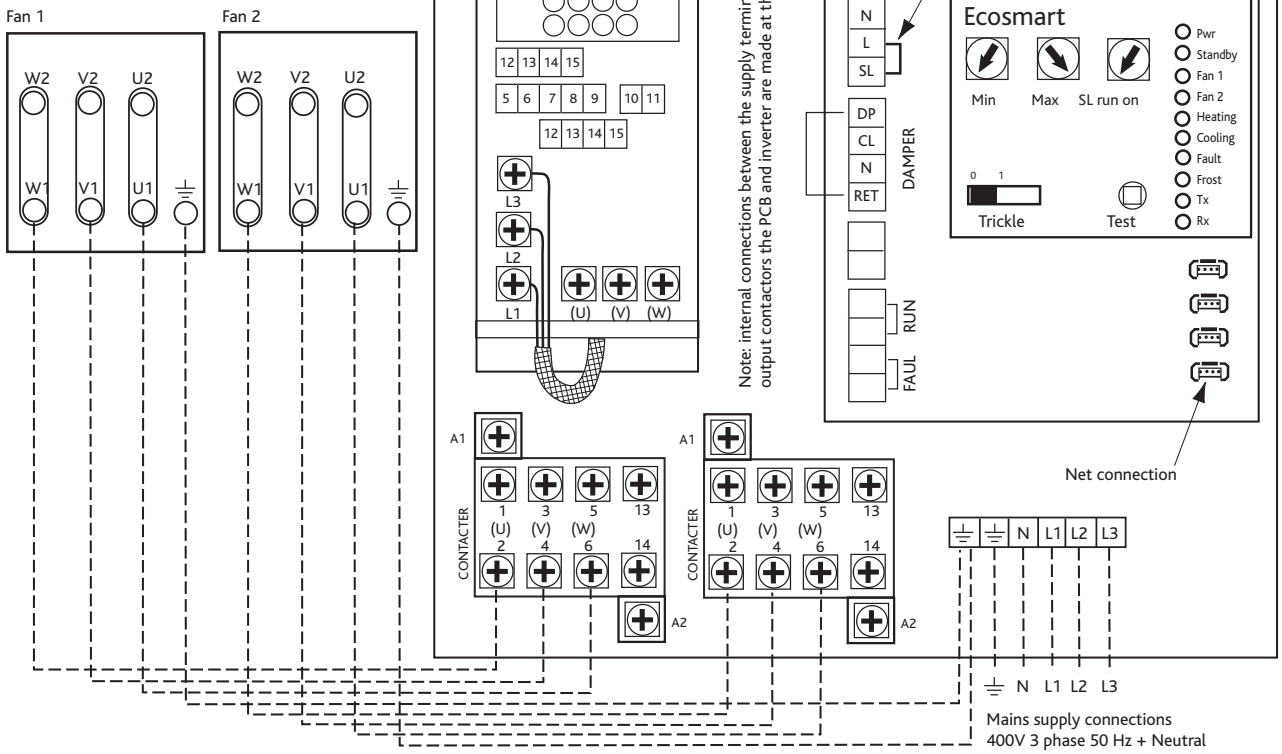
Connections to fans must be via **screened power** cables. Purpose made glands are provided to earth the screening at the control and the fans.

IMPORTANT: the screening of the power cable must be continuous. Bridge any breaks (e.g. at local isolator) using braided earthing cable.



Motors 4kW and above

Important: when the unit is operated in an emergency smoke extract mode all controls must be bypassed.



CONSULTANTS SPECIFICATION

SYSTEM SPECIFICATION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the SQUIF type as manufactured by Nuaire. The units shall be manufactured heavy gauge Aluzinc corrosion resistant steel.

The general construction is to class A leakage.

FAN SPECIFICATION

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with IE2 high efficiency motors to BS5000 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel and the motor shall be positioned outside the ventilation airflow path.

Run and standby fan assemblies to incorporate fan impeller and motors selected to provide the most energy efficient solution conforming to part L regulations and shall be direct with IE2 high efficiency motors to EN60034-30 as standard, belt or direct drive with EN60034-30 motors fitted with "hall effect" air flow failure monitoring, units suitable for operation in ambient temperatures of 40 degrees C.

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.
The unit and ancillaries shall be of the TSQF type as manufactured by Nuaire Ltd.

CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

ECOSMART CONTROLS - OPTION

Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which shall control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer:

- Auto changeover upon fan failure.
- Auto duty share every 12 hours of run time.
- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.

CONSULTANTS SPECIFICATION

ECOSMART SYSTEM OPERATION

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors, controls or fans. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/ background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

BMS INTERFACES – OPTION

The fan unit shall be provided with the following integrated BMS interfaces.

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
  Switch the unit on/off.
  Switch from low speed to high speed.
  Full speed control facility.
- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.
- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

COMMISSIONING SET UP - OPTION

The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

STANDARD CONTROLS

The unit shall be provided with a standard speed control or starter in accordance with the manufacturers recommendations.

Twin Squif has a 3 year warranty.
Ecosmart Twin Squif has a 5 year warranty.

All equipment shall be as manufactured by Nuaire Ltd.

NOTE: For High Temperature requirements refer to Smoke section.

GAS INTERLOCK

safe ventilation for commercial kitchens

Typical control panel.

- All new kitchens must have interlocking on the ventilation system to comply with BS 6173:2001 and GSIUR 27(4).
- Any kitchen built after September 2001 must have interlocking on the ventilation system to comply with BS 6173 and GSIUR 27(4).
- Any existing appliances that are modified or maintained or replaced may also require the ventilation system to be interlocked. (See CORGI Technical Bulletin TB 130).

What is an interlock?

An interlock is a system that will not allow the gas to be turned on until the ventilation system is operating correctly.

Why is an interlock required?

An interlock is required to ensure the safety and comfort of the kitchen staff. If the ventilation system is not operating correctly, gases including carbon monoxide and nitrogen dioxide can build up to dangerous levels.

How does the interlock work?

A sensor must detect an air flow above a certain threshold and then the system will enable the gas isolation valve to open, thereby allowing the gas appliances to be used. If there is no airflow the gas isolation valve CANNOT open. To comply with CORGI regulations, actual airflow "draught" must be measured to determine if the isolation valve should open or not.

The risks of not complying with the regulations include the following:

- Risks to the health of employees.
- Insurance implications of a claim by an individual or because of a related accident.
- The possibility that a CORGI registered installer may issue an 'At Risk' or 'Immediately Dangerous' certificate which could adversely affect trade.

Common Systems available:

- Kitchens requiring a basic interlock, where the appliance has gas proving.
- Systems that vary the airflow matched to gas usage with or without gas proving.
- Systems for kitchens with older equipment without flame protection or failure device. This system combines gas proving and interlock features.

The Nuaire Ecosmart Control system has many advantages in a kitchen application:

- The on board controls allow accurate commissioning.
- The supply and extract fan can be easily connected for balanced supply and extract.
- The Ecosmart control can be connected easily to a number of commercially available Inerlocks with automatic speed control feedback eg 0-10V input.
- Nuaire twin kitchen Extracts are available.
- The supply fan can be easily shut down when the fire suppression is activated in its 'fire mode' to comply with BS 6173.

Contact Nuaire now for further information.